Safety, Risk and Wellbeing on Dating Apps: Final Report

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Prof. Kath Albury
Dr. Paul Byron
A/Prof. Anthony McCosker
Tinonee Pym
Jarrod Walshe
Swinburne University of Technology

Prof. Kane Race
The University of Sydney

Doreen Salon
Family Planning NSW

Daniel Reeders
DNM Consulting / Swinburne University of Technology

Tim Wark
ACON Health

Dr. Jessica Botfield
Family Planning NSW

Christopher Dietzel
McGill University / Swinburne University of Technology

Safety, Risk and Wellbeing on Dating Apps: Final Report is an output from the Australian Research Council Linkage Project 'Safety, Risk and Wellbeing on Digital Dating Apps' (LP160101687)

For inquiries, contact the Lead Chief Investigator Professor Kath Albury
kalbury@swin.edu.au

Report layout and logo design: Stephanie Luk, Hannah Bacon and Anh Huynh.

We pay respects to the traditional custodians of all the lands on which we work, and acknowledge their Elders, past, present and emerging.

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ACRONYMS

ACON: ACON Health, formerly known as the AIDS Council of NSW

BDSM: Bondage, domination, submission and masochism, also commonly referred to as 'kink'

CALD: Culturally and Linguistically Diverse

LGBTQ+: A commonly-used acronym for Lesbian, Gay, Bisexual, Transgender and Queer people that is not limited to these identities but can include Pansexual, Asexual, Questioning, and a range of other identity groups beyond a cisgender and heterosexual identity.

MSM: Men who have sex with men (commonly used in sexual health research)

NSW: New South Wales

STI/HIV: Sexually transmissible infections / Human Immunodeficiency virus

PrEP: Pre-Exposure Prophylaxis (an oral drug used to prevent the transmission of HIV)

ACKNOWLEDGEMENTS

FOREWORD: PARTNER ORGANISATIONS

Family Planning NSW has been involved in this project in a partner investigator capacity over the past two years. It has already provoked internal conversations about updating our key messaging around digital technologies and healthy relationships with plans to write new community education sessions and resources.

We value this involvement because it allows us to translate research findings immediately into evidence-based health promotion programs that are relevant to young people. Existing healthy relationships education programs for young people in schools and the community will be enhanced with the addition of evidence-based key messages around the use of dating apps alongside other digital technologies topics such as sexting, pornography and social media.

Our existing relationships resource for young people *You&Me=Us* will be updated with the second edition including new and contemporary strategies relating to the use of dating apps. These new findings also open the possibility for innovative digital health promotion programs such as social media campaigns and in-platform messaging that promote the health, wellbeing and safety of dating app users.

Rob Hardy, Manager Health Promotion, Family Planning NSW

ACON is NSW's leading health organisation specialising in community health, inclusion and HIV responses for people of diverse sexualities and genders. Established in 1985, ACON works to create opportunities for people in our communities to live their healthiest lives. ACON has been a partner investigator in this important study for the past two years.

The study provides key insight and evidence for how people of diverse genders and sexualities understand and engage with dating app cultures. The outcomes of this study are extremely valuable for ACON's work, as this study provides a deeper understanding of how people in our communities use hookup apps and social media in their everyday lives in relation to friendship, building relationships and engaging in sex and sexual intimacy.

These outcomes will be used to better inform and tailor our health promotion campaigns, resource development, prevention health programs and services. In particular, the findings on how people in our communities negotiate app safety have sparked internal discussions around incorporating the findings into our workshops targeting young people, HIV and STI prevention campaigns, online resources and a broad range of other programs and services.

Brent Mackie, Associate Director Policy, Strategy and Research, ACON

GLOSSARY: APPS AND PLATFORMS

Bumble is a dating and social networking app, primarily targeting straight and bisexual users. Bumble offers connections for dating, friendship, and professional networking, but is primarily used for dating. It is promoted as a 'safer' dating app for women, as only women can initiate chat.

Facebook is a commonly used social networking service, which allows users to create profiles, 'friend' and follow other users, share pictures and join public, private or secret (unsearchable) interest groups or forums, and chat via the Messenger application. Until recently, a range of dating apps (including Tinder and Bumble) required users to sign up via their Facebook account as a form of identity verification (and data linkage).

FetLife is a social networking website that serves people interested in BDSM, fetishism, and kink. While the site has personals forums, it is primarily used for chat, event promotion and picture and video sharing.

Grindr is a dating app used mostly by gay men. The app makes geographically proximate users visible to each other via a grid. It is the most common app used by gay/bi/queer men in Australia. Grindr now offers a range of gender, sexuality and pronoun options.

Happn is a dating app which makes geographically proximate users visible and offers a 'timeline' feature showing how many times users have 'crossed paths'. Users must 'like' one another to receive messages.

HER is a geolocative dating app for lesbian, bisexual and queer women and non-binary people, which offers a broad range of gender and sexuality options. It includes a 'communities' feature where users can connect with others around particular topics or shared identities.

Hinge is a dating app which uses the slogan 'designed to be deleted' and is marketed to people seeking dates and longer-term relationships. Similarly to social media platforms, users can like or comment on specific areas of each other's profiles.

Hornet is a dating app marketed as a 'gay social network' for gay/bi/queer men. It includes functions which are more commonly associated with social media platforms, such as following other users and posting 'stories'.

Instagram is a picture and video-sharing social networking platform owned by Facebook. Many dating app users choose to link their Instagram account to their dating app profile.

Jack'd is a location based dating app which bills itself as 'the most diverse community for gay, bi, trans and queer guys around the globe.'

OKCupid is a dating app that invites users to populate a detailed profile and answer a series of questions that generate algorithmic matches. Due to the flexibility of its profile format, it is popular with users seeking non-normative dating and/or sexual arrangements.

Only Women is a geolocative dating app for lesbian and bisexual women.

Plenty of Fish is a dating app that allows users to populate a profile and answer questions.

RedHotPie is an Australian dating and hook-up app most commonly used for 'alternative' sexual meet-ups and event promotion (including fetish and swingers parties).

Scruff is a geolocative dating and hook-up app for gay, bi, trans, and queer men. It is the second most popular dating app for men in Australia.

Spotify is a music streaming service. Spotify can be linked to other social media accounts, which facilitates music sharing, but also enables data-aggregation.

Tinder is a dating app best known for popularising the 'swipe' function – where users browse a series of 'cards' or photo profiles, swiping right to match.

Wapa, formerly **Brenda**, is a dating app for 'lesbian, bi or curious women', which makes geographically proximate users visible to each other via a grid.

EXECUTIVE SUMMARY

The rise of dating apps generates a number of issues regarding cultures of health and wellbeing, including risks of sexual assault and STI transmission. News reports of sexual privacy breaches (in the form of image-based abuse, or large scale data leaks), along with harassment, sexual assault and murder have heightened tensions around the use of dating apps. Despite this, little evidence exists regarding the role apps currently play in users' everyday negotiations of consent, condom use, contraception, personal safety, and other aspects of sexual health and wellbeing.

This project responds to the need to provide more detailed firsthand accounts to better understand the way health, wellbeing and safety are experienced through dating apps. The report outlines key findings of a two-year ARC Linkage partnership between Swinburne University of Technology, ACON Health, Family Planning NSW and the University of Sydney.

Adopting a mixed-methods approach, we surveyed app users across all Australian states and territories (N=382), undertook research workshops with 18-35 year-old dating app users in urban and regional NSW (n=51), and conducted interviews with 10 NSW dating app users aged 18-35. Online consultations with three reference groups also informed the research: NSW professionals in the field of sexual health, sexuality education and/or youth work (n=18); NSW LGBTQ+ app users aged 18-35 (n=11) and NSW straight app users, aged 18-35 (n=10). A review of media reporting on dating and hook-up apps was undertaken and published as *Swiping, stealthing and catfishing: dating and hookup apps in the media.* Three knowledge translation workshops were delivered with professionals in the field of sexual health, sexuality education and youth work, and these also informed the analysis presented in this report.

Key Findings

A wide range of dating and hook-up apps are used, but the most popular among our respondents are Tinder (LGBTQ+ women, straight women and men), Grindr (LGBTQ+

men), OK Cupid (non-binary participants), and Bumble (straight women).

Responses to most survey questions vary greatly among participants depending on gender, sexuality and cultural diversity. Overall, apps are more commonly used to 'relieve boredom' and for 'chat' than seeking sex or long-term relationships.

Of all respondents, 44% reported experiencing discrimination when using apps. LGBTQ+ users were most likely to report experiencing harassment through app use (63.4% versus 43.4% non-LGBTQ+). Harassment is most likely to occur through chat and when sharing photos.

Participants described both the beneficial and detrimental impact of app use on mental health. App use improved social connection, friendships and intimate relationships, but were also at times a source of frustration, rejection and exclusion.

Safe sex and sexual health were discussed holistically by participants in relation to sexual negotiation, sexual consent, and the use of contraceptives. There were marked differences, with LGBTQ+ users 1.8 times more likely than non-LGBTQ+ to discuss safe sex with other users within apps. Female participants (of all sexualities) were 3.6 times more likely to want to see app-based information about sexual consent than male participants.

While dating and hook-up apps may be seen as a 'novel' technology within some health promotion and sexual health education settings, they are viewed as 'ordinary' technologies by their users. Dating and hook-up apps can also be understood as specific environments with distinct cultural norms. App users have much to offer to both researchers and health professionals, in terms of sharing both their expertise and experiences – including established strategies for negotiating safety and risk when dating and hooking up.

A key finding of this study is that dating app use is interconnected with the use of other social media platforms, such as Instagram, Facebook

and Twitter. Participants deliberately connected (and disconnected) their dating app use with their preferred social media platforms in order to manage a sense of safety and visibility in encounters with friends and strangers.

Experiences of dating and hook-up apps varied greatly according to the gender and sexuality of app users, and the apps they chose to use. Research participants described a range of practical strategies for feeling safer on apps. They also shared strategies for managing or mitigating against distress associated with app use, which can be productively adapted and shared in health and education contexts.

Recommendations

Sexual health professionals (including clinical health care providers, health promoters, youth support workers and sexuality educators) seeking to engage with and support dating and hook up users — and benefit from the expertise they offer — should:

1. Develop an understanding of dating app use as an ordinary and everyday element of contemporary sexuality, dating and relationships, which is fundamentally interconnected with the use of other social media platforms and technologies – especially other social media not conventionally seen as designed for hooking up.

2. Recognise and address the ways that experiences of feeling safer or less safe when using apps are linked to broader socio-cultural experiences of identity, sexuality and gender. Those who are marginalised or vulnerable in other ways (due to experiences of ill health, ableism, ageism, misogyny, homophobia, racism and transphobia) are also likely to experience feeling less safe when using apps. At the same time, apps fulfil important objectives for people who experience marginalisation and vulnerability and offer entry-points for asset-based health promotion approaches.

3. Adapt and expand existing policy and practice frameworks relating to sexual health to include user-centred definitions of 'safe sex'. That is, contextualise STI and HIV prevention, testing and treatment within a holistic understanding of 'safe sex' that encompasses sexual negotiation, personal safety, emotional wellbeing and consent. Policy and practice should acknowledge that friendship and sexual intimacy are interwoven, and that hook-up apps and social media play a role in weaving them together.

INTRODUCTION

The rise of dating apps generates a number of issues regarding cultures of health and wellbeing, including risks of sexual assault and STI transmission. News reports of sexual privacy breaches (in the form of 'revenge porn', or large scale data leaks), along with harassment, sexual assault and murder have heightened tensions around the use of dating apps. Despite this, little evidence exists regarding the role apps currently play in users' everyday negotiations of consent, condom use, contraception, personal safety, and other aspects of sexual health and wellbeing.

This project report adopts methodological approaches drawn from the fields of media and cultural studies, in which the study of dating apps and app users have proliferated over the past five years. It aims to bring the voices of dating app users into policy and practice frameworks for sexual healthcare, health promotion and education, adopting a participatory and collaborative approach to research design.

Report contents include an overview of our research approach (including an introduction to survey findings); a brief review of existing research into dating apps in the field of sexual health; and key findings from our qualitative and qualitative research activities, including the survey, workshops, interviews, and reference group consultations. These findings include insights into reasons for using dating apps; connections between app use and other social media practices; user's preferred apps; practices of negotiating safety; and user accounts of the connections between app use

and their experiences of mental health and wellbeing. Findings also offer insights into app users' concerns regarding sexual health, consent and sexual negotiation.

Our research focus was shaped by regular online meetings with our Professional Reference Groups and our Partner Investigators from ACON and Family Planning NSW. In the final six months of our project we conducted a range of face-to-face workshop activities to share preliminary findings and invite expert feedback from NSW professionals in the fields of health promotion, clinical services, sexuality education and youth work. These included a two-hour 'critical friends' meeting hosted by Family Planning NSW; a three-hour knowledge exchange workshop hosted by ACON; and a 90-minute workshop with participants at the Australian Association for Adolescent Health annual meeting. This report reflects the priorities identified by participants in these activities. We are grateful for their generous contribution to this work, and conclude with recommendations for sexual health, education and youth support professionals.

BACKGROUND AND RESEARCH APPROACH

The project aims to:

1. Map dating app users' consumption and usage patterns, demographics, motivations for use and health and wellbeing implications through a comprehensive survey of diverse Australian dating app users;
2. Analyse the role of digital technologies (including platforms, devices and software) in producing, transforming and regulating contemporary cultures of care in mobile dating;
3. Guide evolving health promotion policy and practice regarding apps users' beliefs and practices by bringing diverse app users and health promotion professionals into dialogue via participatory research and knowledge exchange activities.

The study adopts a mixed-methods approach including:

- Online consultations with 3 reference groups: NSW professionals in the field of sexual health, sexuality education and/or youth work (n=18); NSW LGBTQ+ app users aged 18-35 (n=11); and NSW straight app users, aged 18-35 (n=10).
- A review of media reporting on dating and hook-up apps, published as *Swiping, stealthing and catfishing: dating and hookup apps in the media*.
- A quantitative survey of 382 app users aged 15-35 across all Australian states and territories.
- 8 qualitative research workshops with 51 app users aged 18-35, from urban and regional NSW.
- 10 interviews with a range of NSW dating app users aged 18-35.
- 3 knowledge translation workshops with professionals engaged in sexual health, sexuality education and/or youth work.

Reference Group Consultations

Our initial approach to the research was shaped by consultations with a Professional Reference Group, and two App-User Reference Groups. The Reference Groups were facilitated via a secure focus group platform that allowed meeting transcripts to be downloaded and thematically coded using NVivo software. Appendix 1 gives an overview of Professional and App-User Reference Groups.

Quantitative Survey

An online survey was conducted from 24 July 2018 to 28 March 2019 with recruitment of participants through the social media channels of partner organisations and sponsored advertising. The sample consists predominantly of LGBTQ+ people, which may reflect the greater ease of targeting a defined community in convenience sampling. In addition, relatively few heterosexual men took part. The non-random sample means the survey findings are indicative rather than representative of the overall population of hook-up app users aged 16-35 in Australia. The sample is roughly equivalent to the population in terms of Aboriginal and Torres Strait Islands people and Australians of culturally and linguistically diverse (CALD) backgrounds. LGBTQ+ respondents were more likely than non-LGBTQ+ respondents to report living with some degree of disability (WG-SS scale) and reported somewhat lower physical and mental health (SF-8 scale). This sample goes beyond a common research focus on men who have sex with men (MSM), as found in our literature review (see following section). The small number of straight male participants limits the applicability of findings to this group.

The survey yielded a total number of 382 respondents, with 379 of these responses analysed in this report (including partial completions). Sample characteristics are shown in Table 1. In the tables below, 'LGBTQ+' includes all participants who self-identified as lesbian, gay, bisexual, and other same- or all-gender attracted identities. Some groupings had too few respondents to analyse separately and could not be sensitively re-categorised, and in response we have chosen to emphasise their experiences in our reporting of the qualitative data instead.

The survey collected data on app use by respondents, including: apps ever, currently,

and most used; positive and negative perceptions of apps; reasons for use and satisfaction; duration and intensity of app use; and how users transitioned between hook-up apps and other social media. Respondents were also asked about their perceptions of safety and discrimination on apps, the kind of health information they desired to see on apps, and their communicative and protective safe sex practices. This report presents the results of preliminary analyses of patterns in app use and health needs by audience, conducted by a statistical consultant using R software. The analyses are presented as tables with columns showing differences by sexual identity, gender identity, cultural diversity, disability, and where relevant, higher than average experiences of anxiety. These do not mark out discrete groups, as these are broad markers of identity and very often overlap in specific individuals.

App User Workshops

The participatory workshops (see Appendix 2) drew on creative and visual approaches (Barker et al. 2012). This approach facilitated discussions of app users' experiences of safety, risk and wellbeing, without requiring excessive participant disclosure. Workshop participants were invited to undertake creative activities, such as mapping their personal history of app use or designing the 'ideal' profile. These activities invited participants to reflect on their uses and understandings of apps, discuss connections between dating/hook-up apps and other forms of social media. Participants also reflected on how users, apps and health professionals could make app use feel safer.

Interviews

Through in-depth interviews, ten participants reflected on their use of apps within the context of their sex, dating and relationship practices, as well as their identities. Participants offered a range of accounts for app use, including positive and negative experiences, and personal strategies for safer app use. Qualitative digital methods – including the 'media go-along' (Jørgensen 2017), were used, where participants were invited to open an app and describe user profiles. Interviews explored more 'sensitive' aspects of app use than elicited in the user workshops, including: connections between app use and recreational drug use, experiences of app use as a sex worker, experiences of racism, and using apps as a couple seeking additional partners.

See Appendix 3 for demographic details of young people involved in all qualitative data: workshops, interviews, and reference groups.
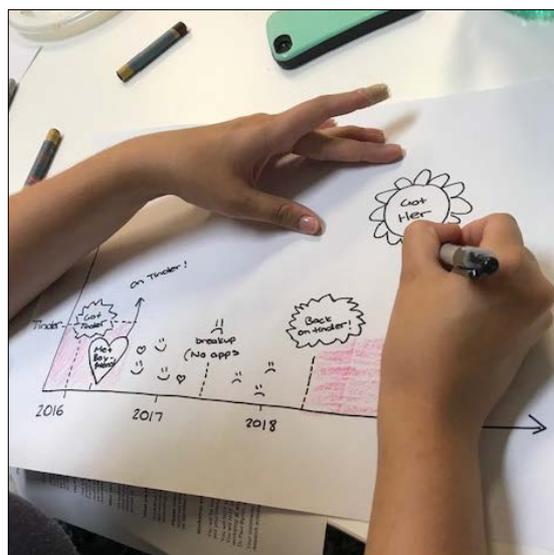
Image 1. Workshop participant's app biography.

Table 1. *Characteristics of the sample (including partial completions) (n = 379).*

		LGBTQ+		Straight		Total	
		N	**%**	**N**	**%**	**N**	**%**
Age group	16-20	11	4.1	10	8.9	21	5.5
	21-25	88	33.0	30	26.8	118	31.1
	26-30	88	33.0	39	34.8	127	33.5
	31-35	80	30.0	33	29.5	113	29.8
Sexuality		267	70.5	112	29.5	379	100.0
Gender	Female	126	47.2	80	71.4	206	54.4
	Male	101	37.8	32	28.6	133	35.1
	Non-binary	40	15.0	0	0	40	10.6
Culturally and Linguistically Diverse	Yes	47	17.6	11	9.8	58	15.3
	No	219	82.0	101	90.2	320	84.4
	Missing	1	0.4	0	0	1	0.3
Aboriginal and/or Torres Strait Islander	Yes	11	4.1	4	3.6	15	4.0
	No	256	95.9	108	96.4	364	96.0
Born in Australia	Yes	214	80.2	101	90.2	315	83.1
	No	53	19.9	11	9.8	64	16.9
Geographical location	Sydney	93	34.8	29	25.9	122	32.2
	Melbourne	80	30.0	28	25.0	108	28.5
	Other location	93	34.8	55	49.1	148	39.0
	Missing	1	0.4	0	0	1	0.3
WG-SS disability status	No disability	242	90.6	110	98.2	352	92.9
	Some disability	25	9.4	2	1.8	27	7.1

		Mean	Mean	Mean
SF-8 physical and mental health status	Physical subscale	19.12	20.01	19.38
		(95% CI 18.7, 19.6)	(95% CI 18.7, 19.6)	(95% CI 18.7, 19.6)
	Mental subscale	15.93	17.85	16.50
		(95% CI 15.4, 16.4)	(95% CI 17.2, 18.5)	(95% CI 16.1, 16.9)
	Total	35.06	37.86	35.89
		(95% CI 34.2, 35.8)	(95% CI 36.7, 38.9)	(95% CI 35.2, 36.5)

RESEARCH ON DATING APPS AND SEXUAL HEALTH

With Grindr released in 2009, and Tinder launched in 2012, there is now a decade of health research literature on dating and hook-up apps. This mostly relates to app use among MSM, with much literature coming from health sciences and focusing on STI/HIV prevention (Albury & Byron 2016). In line with the priorities of our partner organisations (ACON and Family Planning NSW), we reviewed recent literature on dating/hook-up apps and sexual health (from 2015-2018). We located and reviewed 99 journal articles, highlighting common themes and approaches. The following six themes dominated. See Appendix 4 for full list of articles.

Sexual Risk Behaviours: A focus on whether or not app use facilitates risk behaviour.
Feasibility: A focus on whether dating/hook-up app outreach/interventions are feasible, Including their acceptability to users.
Prevalence: A focus on levels of app use in certain population groups, often in particular cities or locations.
Sexual Health Negotiations: A focus on how users negotiate sexual health within apps, including disclosure of HIV status or their use of PrEP.
Digital Outreach: A focus on existing health outreach work that engages with app users through apps.
App-Based Interventions: Accounts of researchers engaging app users through apps.

Ninety-eight of the articles sourced can be classified under these themes, with some classified under multiple themes. A significant proportion of this literature focuses on the relationship between app use and sexual risk behaviours (see Figure 1).

The *Sexual Risk Behaviours* literature commonly focused on whether app users (sometimes in direct comparison to non-app users) were more or less likely to use condoms, or had 'less consistent condom use' practices. Some articles considered the STI/HIV testing practices of app users, and fewer considered PrEP use and awareness among MSM app users. Some considered rates of STI diagnoses among MSM app users. Many considered a range of associated 'risk factors', particularly whether app users had more sex partners and more casual sex, and some articles considered more specific 'risk practices' such as group sex, and the use of saliva as a sexual lubricant. Throughout, the focus is on whether or not app users are at greater risk of STI/HIV infections.

Some papers discussed 'sensation seeking' through app-use, which was typically also implied to be a risk practice. No papers explicitly discuss sexual health risks and negotiations among queer and lesbian women on apps. Women only feature in less specific research on 'young people', or some papers focus on trans women. In some papers, the experiences of trans women and MSM are explored together or compared.

Many articles focusing on the feasibility of app-based interventions, along with some articles focusing on sexual risk behaviours, note the need for more digital interventions or outreach.

Dating/hook-up apps and sexual health literature
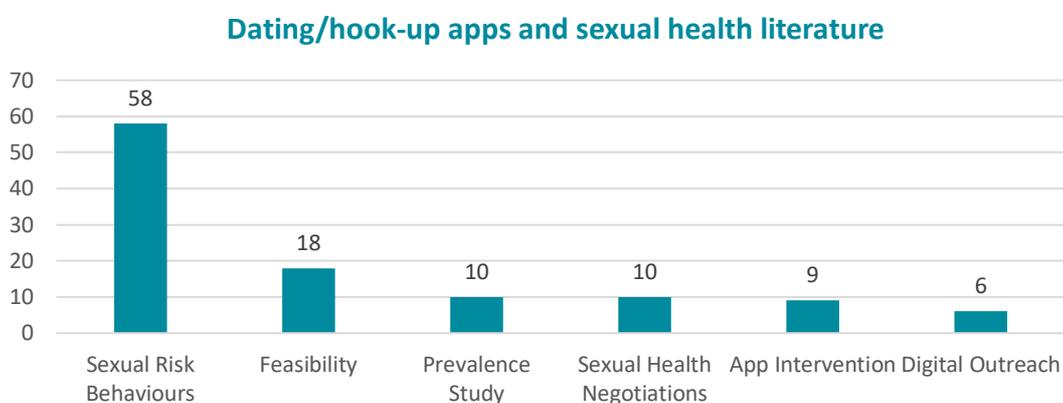
Figure 1. Key themes across dating/hook-up apps and sexual health literature, 2015-2018.

In the *Sexual Risk Behaviours* literature, sexual risks often expanded beyond sexual health risks (of STIs/HIV), including risks of abuse, drug and alcohol use, intimate partner violence, and body dissatisfaction.

Many papers not included in the *Sexual Risk Behaviours* literature also relied on a common understanding of sex as inherently risky. Whether explicit or implicit, dating/hook-up apps are often presented as facilitators of sex, and therefore they are approached and understood as risky environments. This logic was often used to justify a perceived need for more dating/hook-up app interventions.

Research on MSM make up three quarters of the literature (N=74), with only five articles about straight young people, and 20 articles on mixed population groups. Figure 2 illustrates the strong focus on MSM across all themes.

Only six papers report on health outreach where health promoters engage with target populations via apps, and all six papers related to MSM. This likely reflects a legacy of digital media outreach for HIV/STI prevention among gay men. Most articles about straight and mixed populations of app users took a *Sexual Risk Behaviours* approach.

Across the literature, many studies refer to 'meeting partners online' or using 'the internet' to find partners, without distinguishing between apps and online dating (but only articles that mention their inclusion of app use were analysed here). In such articles, there is little reflection on the cultures of particular apps. This detail was mostly present in articles exploring *App Interventions* or *Digital Outreach*.

No outreach or intervention articles reported on using Tinder, nor focused on straight app users. Only *Sexual Risk Behaviour* articles focused on Tinder use. Given that Tinder is one of the most popular apps, for straight and also many LGBTQ+ users, it is surprising that there has been less specific attention to this platform.

Summary of Key Findings

The key findings from research on dating apps and sexual health are:
- MSM populations (N=74) continue to be the focus of this literature.
- Despite a sustained focus on 'sexual risk behaviours' there is little agreement that app use increases sexual risk taking or STI/HIV transmissions.
- Despite many recommendations for more app-based interventions, there is no evidence of these increasing since 2015.
- Sexual health research on straight app users (N=5) remains uncommon.
- Literature seems to have peaked in 2016, yet a research interest is ongoing.
- Most articles are from the US (approximately 50%), with others mostly from UK, China, Australia and Canada.

Themes per study population
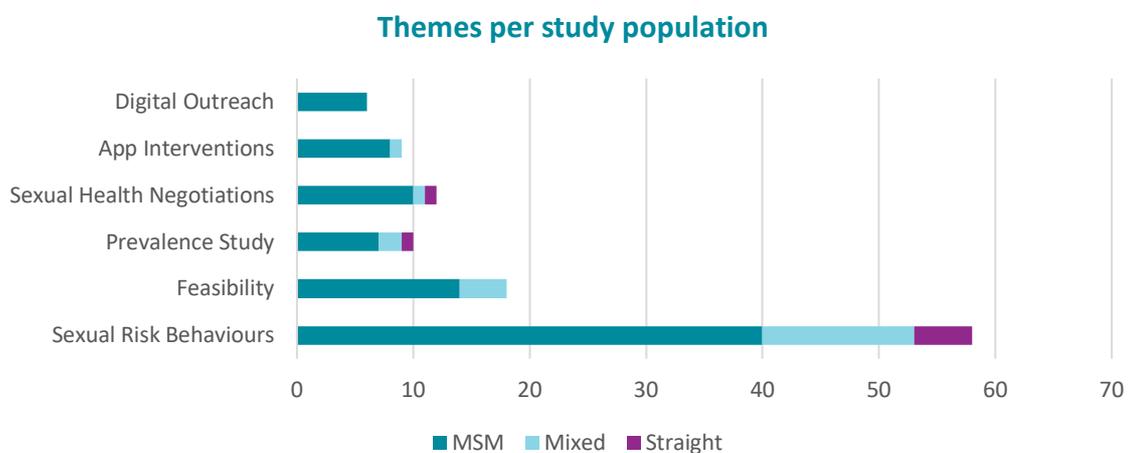
Figure 2. Theme density for three study population groups.

FINDINGS

This section combines mixed data gathered from the survey, workshops, interviews, and app user reference group consultations. It elaborates the priority themes identified in our consultations and workshops with health, education and youth work professionals, offering insights into cultures of app use, and users' negotiations of safety, mental health, wellbeing and sexual health. Throughout this report, we use workshop, interview and reference group participants' self-described identities (e.g. cisgender, non-binary, lesbian) and we specify whether they live in regional or urban settings. An overview of participant demographics for the workshops, interviews and app user reference groups is outlined in Appendix 3.

1. USING APPS AND CONNECTING THROUGH SOCIAL MEDIA

1.1 App Use

Table 2 below, shows the five most used apps among respondents. A complete table of app use is presented in Appendix 5 including ever, currently, most used, and top 3 listed apps (see report Glossary for details of the apps and social media platforms mentioned above and throughout the report).

Among their top 3 apps ever used, participants were asked to nominate the one that best matches a range of perceptions, including: Most used; Best for dating; Best for sex; Feels the safest; Have had the most bad experiences; Has the most annoying users; Have used the longest; Most likely to experience racism, and more. The results are presented in Table 9 in Appendix 6.

Table 3 (over the page) presents an overview of app users' reasons for using apps. The lower field presents users' assessment of whether their experiences of app use are satisfactory, according to the reason listed. That is, where apps were used with the intention of relieving boredom, we asked users to express whether or not they were satisfied that the app was 'fit for purpose.'

CALD participants are more likely to use apps weekly or more frequently, for reasons including relieving boredom, seeking sex, friendships and relationships. Compared to non-CALD participants they reported much lower satisfaction for every usage except finding one-off sex and new friends. Additionally, participants with anxiety were less likely to be seeking new friends and more likely to be seeking a relationship than those without anxiety.

1.2 Installing and Deleting Apps

As outlined in Appendix 2, workshop participants were invited to map their dating and hook-up app 'biographies', showing breaks away from apps, intense use periods and links between their use of these apps and other social media. For some, app use was associated with occasional or sporadic periods of increased interest in sexual activity:

> **Nora:** I never had [Tinder] for more than a month – I'll get it, I'll be really horny, I'll pursue something, and then I'll delete it. (19, bisexual, female, regional)

Many participants reported deleting and reinstalling apps regularly. Deleting apps corresponded with the establishment of a monogamous relationship in some cases, but was also explained as a self-care or self-regulation strategy. Reasons for deleting apps included a desire to focus on study during exam periods, and management of depression and anxiety associated with dating and hooking up. Some participants spoke about repeatedly deleting apps due to feelings of frustration and disappointment about the low number of matches or messages they received.

1.3 Linking Dating/Hook-Up Apps with Other Social Media Accounts

Participants' social media profiles (particularly for Instagram) were commonly shared on dating apps, whether via linked accounts (when a user's Instagram link or Spotify anthem is included in their profile) or privately shared when chatting, as a form of identity verification and a way of learning more about each other. In straight male workshops, participants mostly discussed social

media linking as a way to see more of someone's tastes. Social media platforms such as Instagram, Snapchat and Twitter were also used as dating apps in themselves.

Most female participants using apps to meet straight men preferred that their matches' social media was linked or shared, and it was felt that having someone's Facebook account helped verify their identity and indicate mutual friends (who can be contacted for 'character reference'). Brej (20, straight, female, urban) thought that linked accounts gave more context to a person, noting that the messaging process 'should go somewhere else because Tinder's [used] to meet the person – then it's like okay, what else, where else am I seeing you?'

However, some female participants were also concerned that linking their own accounts made them more visible to people they didn't want to connect with. Some women reported receiving unwanted messages on Instagram from men who saw the link on their Tinder profile, even though they had not matched with them. For Ruby (29, bisexual, female, urban), linking one's own accounts felt 'invasive' and 'takes away your opportunity to set the scene… and set the direction.'

The use of linked social media as a safety strategy was also reported by participants in the LGBTQ+ male regional workshop. For Dan (24, gay, male), moving the conversation off the app to messaging on Instagram or Facebook Messenger

was a tactic for identity verification. He would only give his address via social media messaging: 'If you don't have Facebook or Instagram, then… you're not real.' Max (23, queer, non-binary transmasculine) agreed, saying that if a user refused to move the chat to another social media platform, 'It makes me think that either they're catfishing or they're cheating.' Alex (26, lesbian, non-binary, urban) commented, 'I've never met up with someone off the apps who I haven't interacted [with] through Facebook Messenger… let's continue it to Facebook so I can really see who you are.'

Participants from the urban LGBTQ+ male workshop sometimes cross-checked users' social media profiles for safety reasons, but thought that ultimately no verification methods were failsafe. For many in this group, moving to social media platforms was a sign of seeking an ongoing connection with a person, rather than an identity verification measure prior to meeting. For some, Instagram was the exception and seemed more anonymous – you might follow the Instagram account of someone you met on Grindr, but Facebook was associated with a 'long term' connection (Charles, 34, gay/queer, male) or 'established chemistry' (Mike, 24, gay, male). These boundaries were blurrier for some participants, such as Louis (35, gay, male), who was a member of fetish groups on Facebook and saw a lot of crossover between the people he connected with on hook-up apps and social media platforms.

Table 2. Most used apps by gender and/or sexuality.

LGBTQ+ women	Tinder (49.2%)	HER (22%)	OKCupid (17%)	Bumble (13.6%)	Fetlife (4.2%)
LGBTQ+ men	Grindr (70%)	Tinder (43%)	Scruff (29%)	Hornet (10%)	Jack'd (9%)
Non-binary	OKCupid (27.5%)	Fetlife (12.5%)	HER (12.5%)	Bumble (10%)	Grindr (10%)
Straight women	Tinder (40%)	Bumble (26.3%)	OKCupid (8.8%)	Happn (2.5%)	Plenty of Fish (2.5%)
Straight men	Tinder (56.3%)	Bumble (21.9%)	OKCupid (9.4%)	Hinge (6.3%)	-

***Table 3.** Experiences of app use — most used app.*

		Sexuality		Gender			CALD		Self-reported emotional issues (anxiety or depression)	
		LGBTQ+	Straight	Female	Male	Non-binary	No	Yes	Yes	No
	App used weekly or more frequently	65.2	60.8	57	79	47.5	63.1	69	58	66.3
Reasons for app use	Relieving boredom	62.2	58.9	59.7	63.2	62.5	59.1	72.4	59.2	66.1
	Chatting to randoms	55.1	33.0	45.1	54.9	45.0	47.2	55.2	46.8	52.7
	Chatting to people I've chatted with before	30.7	18.8	17.0	42.1	30.0	27.5	25.9	28.1	25.0
	Chatting to existing friends	16.9	17.9	14.6	23.3	10.0	17.5	15.5	18.4	14.3
	Seeking one-off sex / hook-ups	51.3	25.9	31.1	63.9	42.5	41.6	55.2	43.8	43.8
	Seeking a fuckbuddy	44.9	27.7	32.0	51.1	42.5	38.4	46.5	40.8	37.5
	Seeking new friends	41.6	17.0	22.8	48.1	47.5	31.6	48.3	30.0	44.6
	Seeking long-term relationship	51.7	58.9	56.8	52.6	42.5	51.9	63.8	57.3	45.5
	Exchanging/viewing pics	21.4	11.6	9.7	35.3	7.5	17.2	24.1	19.5	16.1
	Other reasons	4.9	6.2	5.3	1.5	17.5	5.6	3.5	4.9	6.2
Satisfied with app for…	Relieving boredom	46.9	56.2	53.3	45.1	45.8	50.8	45.0	47.1	54.8
	Chatting to randoms	52.8	52.8	53.8	52.1	50.0	55.7	40.0	49.2	60.3
	Chatting to people I've chatted with before	62.8	75.0	84.8	57.4	45.5	69.0	42.9	66.2	63.0
	Chatting to existing friends	63.6	83.3	79.3	62.1	50.0	72.7	42.9	67.4	75.0
	Seeking one-off sex / hook-ups	54.8	53.6	51.6	61.0	35.3	54.5	56.7	61.7	37.5
	Seeking a fuckbuddy	41.5	42.9	46.9	38.5	35.3	45.8	24.0	46.7	29.3
	Seeking new friends	32.1	27.8	31.9	30.6	33.3	32.0	30.8	32.5	30.0
	Seeking long-term relationship	21.8	22.2	23.7	17.9	26.7	25.0	8.6	26.0	10.0
	Exchanging/viewing pics	56.4	61.5	55.0	62.2	0	61.1	46.2	54.9	64.7
	Other reasons	38.5	50.0	50.0	50.0	28.6	41.2	50.0	58.3	14.3

2. NEGOTIATING SAFETY

Qualitative findings show that safety was negotiated at many levels of app use – from reading and assessing user profiles, to in-app communication, to meeting outside apps (if it came to that). Participants typically defined safety in terms of 'feeling safe', including in an emotional sense. Many participants spoke of strategies they have adopted (or heard of others adopting) to make apps feel safer, whether this be precautions against physical harm or emotional fallout. Many of these discussions of safety reflected cultural understandings of gender and who is more at risk in negotiating sex, dating and relationships, and reflect wider cultures of sex and relationships in Australia.

2.1 Strategies for Assessing Profiles

Participants described a range of strategies for feeling safer when using apps, including moving interactions to social media accounts (see Section 1.3). Jackie (22, bisexual, female, urban) described having felt more secure on Tinder when the app required users to have a Facebook account in order to create a profile. Some users felt that Bumble was safer than Tinder because of formal identity verification and a sense that it was better policed – however a number of gay male participants felt that identity verification wouldn't work with male-focused queer apps.

'Discreet' profiles (with no face pic) posed particular challenges for users of 'seeking men' apps. Several gay male participants described the need to balance protecting their own safety while connecting with others, for example:

> **Owen**: You want to put yourself out there to meet people and [are] also reluctant to do so, because you are not sure who that other discreet profile might be. (29, gay, male, regional)

> **Dan:** I understand the 'not out' thing because I was in that stage in the country. It was pretty tough… But I don't have the time to be trying to pry it out of someone… If I was in a different stage and I cared more about helping people feel comfortable about coming out, then that would be different. (24, gay, male, regional)

Fake profiles were a concern across all groups, with queer women and non-binary users reporting frustration with the frequent appearance of deceptive accounts and/or cis male profiles on 'seeking women' apps. Alex (26, lesbian, non-binary, urban) commented, 'The Only Women app has so many fake profiles that I just got over it, it was like every maybe fifth to sixth profile'. Many women who had their Tinder set to 'women only' encountered male-female couples seeking a third. Several users were concerned about 'catfish' profiles using a fake set of photos stolen from social media.

2.2 Establishing Safety through Chat

Many participants discussed their practices of reading a profile for 'red flags'. This included lack of information, unclear photos, and profile text that indicated sexism, racism, and other undesirable qualities. For apps that require a mutual match before messaging (e.g. both parties swiping right), this requirement was perceived to filter out much unwanted interaction. Sexual messages that were sent 'too soon' were a red flag for many, although both gay men and bisexual women mentioned being open to sexual images or text in the initial stages of messaging, depending on the person.

> **Charles**: For me, I think [a red flag is] probably nude photos completely unsolicited or [if] the first message that I get from you [is] just five pictures of your dick. I would think that's a straight up signal that you're not going to respect my boundaries because you're – yeah, you think it's okay just to shove your dick in front of somebody's face. So I'm not going to have an opportunity to say no to you and if we meet in real life, this is how it's going to be. (34, gay/queer, male, urban)

Dealing with unwanted messages was discussed mostly by women and non-binary participants. Ruby (29, bisexual, female, urban) stated: 'The good thing about apps is that if you're getting a bad feeling, you can just stop talking to someone. You can just block them.' Some women and gay/queer men pointed to pushy behaviour as a 'red flag', with several experiencing abusive messages from men whose messages they didn't respond to.

Some users had tried reporting abusive messages and profiles to the app platforms. Alex (26,

lesbian, non-binary, urban) described using the reporting function to report men's behaviour on three different apps for queer women and non-binary people, receiving no response. Others said they had hesitated to report unwelcome messaging because they were unclear on the outcome for users who were reported (Jess, 22, straight, female, urban).

For some users, the timing of in-app chat could be a deterrent – many noted that messages received in the middle of the night were a red flag, and some felt that messages requesting hook-ups late on a weeknight showed a lack of social awareness.

2.3 Meeting Up and Hooking Up Safely

When meeting others for the first time, most women in all workshops said they would only meet in public, even if the intention was for a hook-up to follow shortly after. This was viewed both as a safety precaution and as a means to avoid the potential 'awkwardness' of changing their mind about hooking up. Meeting in public was also a strategy to avoid the presumption that sex was guaranteed. Initially meeting at someone's home was a more common practice among LGBTQ+ men, and participants in that urban workshop felt it was easier to indicate a change of mind if they went to someone else's house but no longer wanted to have sex, rather than when they were hosting a hook-up.

Inviting someone into one's home enacted an invitation that many found difficult to retract. Amber (22, bisexual, female, regional) said, 'I have quite a few times just gone straight to the guy's house or just invited him straight over, but I have been really scared'. She described a time when she had been at a man's house and wanted to leave, but had not felt it was safe to assert this directly 'in case he got aggressive… so, I tried to satisfy him and then kind of go.' Callan (28, gay, male, urban) recalled feeling obliged to have sex upon meeting at either person's home. Others also discussed the difficulty of 'rejecting' other users.

LGBTQ+ women and non-binary participants who do not date cisgender men expressed less concern about app safety than straight and bi women. Alex (26, lesbian, non-binary, urban) said they would typically arrange casual daytime dates at a café or beach as an initial meet-up, or

suggest meeting at a queer party or community event. Claire (26, queer, cis woman, urban) said 'I think if I was dating men… I would have more and stricter rules'. Amy (29, queer, female, urban) agreed that she would be 'more likely to let a few people know where I am' when meeting up for the first time. Amber (22, bisexual, female, regional) suggested that girls are generally safer: 'because I'm like, they're girls. They're not going to be weird. They're not going to be creepy.' For some users, however, safety was always a concern:

> **Sam:** It's impossible to have been socialised as a woman and not to be mindful of safety in dating. Even when I'm dating people who are not men… [I] can't just not think of safety. (23, pansexual, non-binary, urban)

LGBTQ+ women from an urban workshop indicated that they would rarely meet at someone's house, but framed this more in terms of awkwardness rather than safety. Claire (26, queer, cis woman) thought this would add 'pressure… to not necessarily have sex with them, but just… there's no out… and it's a bit more intimate – they know where you live.'

Charles (34, gay/queer, male, urban) felt that official guidance on staying safe on apps (from the police or health organisations) were usually out of touch with actual sexual practices and cultures:

> **Charles:** …they just seem to be in a totally different place from how people who use apps, *use apps*. When they say 'always meet in public first', that's useless to anybody who is just going for a hook-up to someone's house.

This highlights the difficulty of promoting app safety strategies that presuppose how apps are used (i.e. for dating only, rather than casual sex). It also highlights the heteronormative focus of many safety tips and other advice, and the different norms and expectations of different users.

Other contextual factors were sometimes more pertinent. Robert (30, gay, male, urban) gave an example of feeling unsafe when a hook-up was under the influence of drugs or alcohol. Several gay/queer men discussed safety in the context of

potential robbery, describing hiding their valuables before inviting a hook-up over.

Beyond being alert to catfishing scams, straight male participants were generally not concerned about app use safety. Tim (20, straight, male, regional) recalled once picking up a date from her house, and acknowledged that this was unusual: 'I would probably say, don't give a random dude your address.'

Informing friends of your location or details of who you are meeting was viewed as a safety measure across all groups, with the exception of straight men. But this was mostly discussed among female participants. Ruby (29, bisexual, female, urban) had an online group chat with friends where they would share details of who they were meeting with, and others described telling female family members where they planned to be. Anna (29, lesbian, female, regional) described an arrangement she had with her friends for getting out of bad dates:

> **Anna:** If at any point I send them a message about sport, they know that shit is going down… That's like our code that we have because I don't ever talk about sport ever. So if I send them a [message] being like, 'How is the football going?' they know to call me.

2.4 Experiences of Discrimination and Harassment

Among survey participants, LGBTQ+ respondents were more likely than straight respondents to experience discrimination (57.3% vs 26%) and harassment (63.4% vs 43.4%). Non-binary people were more likely to experience discrimination than male and female respondents (67.9% vs 56.9% and 39.6%). CALD participants experienced much higher rates of discrimination (67.9% vs 44.5%) and harassment (67.9% vs 55.7%). Participants with anxiety were more likely than participants without to report discrimination (52.8% vs 46.2%), as were participants with disability than those without it (58.3% vs 47.5%). A breakdown of experiences of discrimination and harassment and perceptions of safety by group is presented in tables 4 and 5 below.

As shown in table 4, survey respondents reported experiences of discrimination related to age, ethnicity, gender, religion, sexuality and size. Responses to the 'other' category included

experiences of ableism, and discrimination based on open/poly relationship status, appearance, kink/fetish disclosure, being a sex worker, parental status and employment.

Similar experiences of discrimination were described by reference group participants. Vivienne (21, straight, female, regional) said that 'for straight people, things are mostly assumed about sexuality, and there seems to be less openness about kinks'. Regina (35, straight, female, regional) agreed, saying she once dated a man through Tinder who was involved in kink and play parties but did not indicate any of this on his profile. He disclosed this after a few hook-ups and while she was happy with the news, she acknowledged that 'this "reveal" could have been viewed by other people as deceptive'. Alex (26, lesbian, non-binary, urban), who is a sex worker, spoke about stigmatising attitudes toward sex work in the lesbian community, and how they had been blocked upon disclosing this.

Some women described experiences of biphobia on apps for women meeting women. Agnes (22, pansexual, female, urban) experienced other users telling her that she was 'probably in a phase, and were not interested in talking to me because they didn't want to be my "first girl."' LGBTQ+ men surveyed reported the highest rates of discrimination based on ethnicity, and this is reflected in our interview and workshop data. Gay/queer male workshop participants discussed the frequency of app profiles specifying racist criteria. Gabriel (31, gay, male, urban) reported receiving racist insults in app messages from users he had hooked up with or turned down previously. Wei (29, gay, male, regional) spoke about being sexually harassed by a white male user he met on Grindr in Hong Kong, saying that perhaps the other person 'felt he was entitled to do it.'

Interviewees also discussed being racially fetishised on apps:

> **Wei:** I get yellow fever people, because I'm Asian… they are usually older, middle-aged white males, that will particularly look out for younger, Asian males. (29, gay, male, regional)

> **Jackie:** The people who use it here [in Australia], I don't know what it is about them, they seem like major, major creeps… when

they message me, it's always like, I can't tell if it's a fetish that they just want to check 'Black girl' off their list, you know what I mean? (22, bisexual, female, urban)

In our workshops with app users, trans, non-binary, and straight or bisexual female participants were more likely to report harassment. For example, bisexual women discussed their tendency to not disclose their sexuality in their dating app profiles to avoid contact from men seeking threesomes with other women. Stephen (27, bisexual, trans male, regional) discussed being fetishised as trans on particular gay apps, and Max (23, queer, non-binary transmasculine, regional) had received messages from users asking about their genitals, asking them to explain what non-binary means,

or making assumptions about their identity and body.

Unsolicited picture sharing was a commonly cited form of harassment, which many workshop participants had developed strategies for avoiding. Nora (19, bisexual, female, regional) said that she offers her Snapchat profile when Tinder matches ask her to share her social media, as Snapchat allows contacts to follow her posts without her 'adding' them to a friend-list: 'when I do add them back, I usually get a lot of unwanted pics.' Wei (29, gay, male, regional) spoke of Tinder as inducing 'less anxiety' than Grindr 'because I'm only talking to people who have liked me somewhat on Tinder… (and) there is no chance of unsolicited dick pics.'

Table 4. Experiences of app use — discrimination.

		Sexuality		Gender		
		LGBTQ+	Straight	Female	Male	Non-binary
Experience of discrimination	Any	57.3	26.0	39.6	56.9	63.9
	Age	13.0	11.0	10.2	17.1	8.3
	Ethnicity	16.7	6.0	7.5	23.6	11.1
	Gender	20.7	2.0	8.6	12.2	61.1
	Religion	2.0	0	1.6	1.6	0
	Sexuality	24.0	3.0	18.2	11.4	38.9
	Size	29.7	15.0	19.8	31.7	33.3
	Other	9.3	8.0	7.5	11.4	8.3
	Total (average count)	1.2	0.5	0.7	1.1	1.6

		CALD		Self-reported emotional issues (anxiety or depression)		Disability	
		No	Yes	Yes	No	Yes	No
Experience of discrimination	Any	44.5	67.9	52.8	46.2	58.3	47.5
	Age	12.0	13.2	6.6	15	12.5	12.4
	Ethnicity	5.8	56.6	11.3	14.6	20.8	13.0
	Gender	15.1	15.1	22.6	12.1	33.3	14.0
	Religion	1.0	3.8	0.9	1.7	0	1.6
	Sexuality	17.8	17.0	26.4	14.2	37.5	16.5
	Size	24.3	30.2	27.4	24.6	33.3	24.8
	Other	9.9	3.8	12.3	7.5	8.3	9.0
	Total (average count)	0.9	1.4	1.1	0.9	1.5	0.9

Table 5. *Experiences of app use — safety and harassment.*

		Sexuality		Gender			CALD		Self-reported emotional issues (anxiety or depression)		Disability	
		LGBTQ+	Straight	Female	Male	Non-binary	No	Yes	Yes	No	Yes	No
Experienced harassment		63.4	43.4	60.4	54.9	52.7	55.7	67.9	59.4	56.9	58.3	57.6
Felt safe…	Chatting	86.4	92.9	87.5	90.9	82.9	89.2	84.9	83.7	90.3	83.3	88.6
	Sharing photos of me	44.6	54.1	45.7	50.4	45.7	48.6	41.5	42.3	49.6	41.7	47.8
	Receiving photos of others	61.2	57.1	45.1	81.8	62.9	59.4	62.3	53.8	62.7	50.0	60.8
	Knowing the distance between me and other users	58.3	60.2	54.9	64.5	60.0	59.8	54.7	45.2	64.8	50.0	59.5
	When other users know how far away I am	40.9	37.8	31.5	51.2	45.7	39.9	39.6	29.8	44.5	37.5	40.2
	When someone shares their Instagram with me	62.0	70.4	60.9	71.1	60.0	66.8	52.8	50	70.8	50.0	65.5
	When I share my Instagram with someone else	25.6	35.7	23.9	34.7	31.4	29.0	26.4	22.1	31.4	29.2	28.5
	Disclosing my cultural background / ethnicity	65.3	71.4	67.4	67.8	62.9	70.3	50.9	66.3	67.4	58.3	67.7
	Facebook-friending other users	37.8	46.9	40.3	40.7	40.0	43.5	24.0	41.6	39.9	34.8	40.8
	When my friends use the same dating/hook-up apps as me	67.6	69.8	65.7	72.0	68.6	69.3	64.0	71.3	67.0	78.3	67.5
	Moving the conversation to another social media platform	70.6	70.8	68.5	72.9	74.3	71.0	70.0	73.3	69.5	60.9	71.4
	Giving people my phone number	33.6	42.7	38.7	33.9	31.4	38.2	26.0	28.7	39.5	39.1	36.0
	Meeting people after a brief chat on a dating/hook-up app	42.0	45.8	39.8	49.2	40.0	41.7	52.0	33.7	47.2	17.4	45.0
	Meeting up with people I've chatted to on dating/hook-up apps	67.2	70.8	64.6	75.4	62.9	67.1	76.0	66.3	69.1	56.5	69.1
	Meeting people when we have friends in common	83.2	85.4	84.0	84.7	80.0	84.8	80.0	88.1	82.0	87.0	83.6

3. MENTAL HEALTH AND WELLBEING

Participants mostly discussed app use in neutral terms – as neither beneficial nor detrimental to mental health. Some participants indicated that app use has had a positive impact on their mental health, particularly in relation to social connection. For others, app use could be stressful or frustrating.

3.1 Finding Friendship, Making Connection and Feeling Confident

For many participants, dating apps provided a space for pleasure, play, connecting with community or meeting new people. LGBTQ+ participants reported that dating and hook-up apps could be an important space for users to map queer community and find friends, particularly in regional areas where it was not always safe to be out. Max (23, queer, non-binary transmasculine, regional) commented, 'Tinder's been really good for meeting other trans people, just like as a bit of a community, if that makes sense. Because it's pretty fucking scary being out as trans in [regional city].' This was also true for cisgender LGBTQ+ participants – for example, Miles (26, gay/queer, male, urban) talked about mapping his gay community through apps when growing up in a regional city.

For many LGBTQ+ participants, apps were also a place to find non-sexual intimacy: for example, Alex (26, lesbian, non-binary, urban) had met a 'snuggle buddy' who they regularly watched movies with. Sylvan had made connections through hook-up apps that spanned friendship and sex, but saw this as sometimes incongruous with the assumptions others brought to apps:

> **Sylvan:** I'm a big fan of sexual friends and friends with benefits. I like sexual intimacy and being emotionally connected and supportive to people [but] that's not always the culture of hook-up apps. (33, queer, cis male, urban)

Apps were also discussed among LGBTQ+ participants in relation to building confidence in dating and hooking up. Agnes (22, pansexual, female, urban) talked about how using apps allowed her to 'explore [her] sexuality and come out completely'. Sam specifically addressed this in the context of their mental health:

> **Sam:** App use has improved my mental health so much, which has been great… [I] would have struggled to make these initial displays of interest to people in real life. But apps have made that a lot easier and as a result I've been able to date people and have relationships that I wouldn't have been able to have had otherwise. (23, pansexual, non-binary, urban)

Apps also allowed users to feel more confident in knowing that someone they had met in everyday life was queer or interested in them. Amy (29, queer, female, urban) described being uncertain about an acquaintance's availability until they matched on Tinder. She reported feeling more confident walking into queer parties knowing in advance who had swiped right on her.

Friends were often referenced as good sources of advice on app use. Some participants discussed using apps with their friends (e.g. Tinder swiping together, or for each other). Some sought friends' help in setting up their profiles, and many would screenshot and share profiles and conversations to friends for feedback or advice. While consulting with friends on app use could be helpful, it could also be a 'demoralising' experience for some. For example, Bart (21, straight, male, urban) described watching his female friends swipe on Tinder and recognising that women's experiences of dating apps were different to his own (e.g. mostly left-swiping). Some users expressed concern about their desire for validation from other app users. Others felt that app use reflected their state of mind generally, and could amplify the highs (or lows) of their existing mood:

> **Jolene:** When I've been in a bad headspace and using the apps religiously it would become overwhelming sometimes – how many dates can I fit into a week, how hot are the people that I keep matching with etc. But when I've been in a good headspace it's super fun and I get a lot from it. (27, queer, female, urban)

Rebecca (23, lesbian, female, regional) noted that apps 'definitely can send someone into a deep depression as well as an ego boost. If you've been on the app and had little to no matches or no success, you begin to question yourself.'

3.2 Managing Feelings of Rejection

Rejection was discussed in relation to feelings of community exclusion among some gay male participants. Jin (22, gay, male, urban), a reference group member who immigrated from China, expressed disappointment about exclusion on apps: 'For me and my friends, dating apps [are] a way of getting to know other people who are also sexual minorities… I feel sad [about] being rejected by people who are in my community'.

Grindr's block feature was a challenge discussed by many, and some participants developed strategies for managing their feelings around this.

> **Callan:** There are some [users who respond to my messages with] nothing, there are some that straight away block me… So I take this really hard; it affects me as well, like rejection and stuff. So [I experience] a little bit of anxiety and depression from the apps. (28, gay, male, urban)

Some participants reflected on their own in-app behaviours:

> **Gabriel:** I've spoken to my friends about it and reflecting myself, like we have a different persona on Grindr. We are a bit more nasty and more direct, depending on what we want. (31, gay, male, urban)

Miles (26, gay/ queer, male, urban) commented that he gets 'a little bit of anxiety about – like I'll message someone that I don't actually think will respond and then will actually even go to a different app so I don't have to see the grid change from them blocking me.'[1] Non-gay app users also discussed rejection, and this was recognised as an experience of many straight men:

> **Vivienne**: Many friends of mine, all male, have discussed how upsetting it is to be on Tinder and not get any matches. This can certainly put down a person's own worth, and I think would definitely contribute to depression. (21, straight, female, regional)

Some straight male workshop participants characterised apps as 'disheartening' (Jacob, 24, straight, male, urban). For some, the messaging process was experienced as 'a number of hurdles to even talking and connecting' (Henry, 24, straight, male, urban). Henry noted that many straight men experience apps as a space of 'scarcity' in contrast to 'an abundance of choice' for women, and this was echoed by others. Jacob spoke about 'the anxiety and self-doubt' experienced during the messaging process, and for Bart (21, straight, male, urban), the potential to fill in detailed amounts of information on an app like OKCupid caused him to overinvest in his hopes for a match, and then feel disappointed.

Regina understood that app users who feel unsuccessful are likely to keep this to themselves, further increasing feelings of isolation:

> **Regina:** I think when people are having a hard time with the apps they are quite private about it. They'll only share with friends who they know are regular/current users and might disclose their use – even bordering on addiction to swiping – in a sensitive moment. (35, straight, female, regional)

Some experiences extended into management of 'emotional safety' (though rarely discussed in those terms). For example, Robert (30, gay, male, urban) described a time he had negotiated an evening of snuggling and watching Netflix together in app chat, but after traveling to their home he had been treated coldly and asked to leave straight after having sex. This experience profoundly affected his feelings of safety and trust in other app users. Abby (30, 'mostly hetero', female, regional) referred to her own app use as 'risk-taking' as she felt it left her vulnerable to 'all kinds of violence. Emotional, mental – gaslighting, things like that.'

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[1] When someone is blocked on apps like Grindr, each person is immediately removed from the other's grid of nearby users and previous chat also disappears.

3.3 Taking Breaks, Deleting Apps and Turning Off Notifications

Some participants discussed taking breaks from app use during times of stress or when focus was needed elsewhere, such as during exams. Turning off notifications was a common self-care strategy:

Olivia: I turned all my notifications off for apps like that because I was getting a bit addicted to my phone always having things pop up. (23, heteroflexible, female, regional)

Lee: I turn notifications off when I've got other stuff going on and I make the choice to go in and use it because notifications are big for me. I think a lot of people are the same; if it comes up, it's like oh, you've got to respond straight away. (26, gay, male, urban)

Temporary deletion of apps was a common response to negative experiences. For example, Alex (26, lesbian, non-binary, urban) deleted an app after attempting to meet an app-user who may have been catfishing. Some participants directly referred to their mental health as a reason for deleting apps:

Callan: I have issues with depression and anxiety [and] I experienced some nasty things, so I completely stopped. (28, gay, male, urban)

Jackie: The messages were also deteriorating my mental health in ways because yeah, [while] I appreciate you want to fuck me and I look good and stuff... it's not the way I want it right now. (22, bisexual, female, urban)

It was considered good practice by some users to take some time after deleting apps before returning to them:

Jolene: So many of my friends regularly will take app breaks. It's also often a question with breakups – 'are you ready to be on the apps yet?' Much like people will try to detox from technology on the whole, people are recognising the negative aspects of dating apps and trying to detox specifically from them. (27, queer, female, urban)

Some participants suggested changes to app features and formats that would be supportive of mental health, such as including 'a list of helplines you can call' (Gabriella, 22, straight, female, urban), as well as dating or relationship advice, or links to relevant blogs. Others noted opportunities for health promoters to engage with app-based frustrations, and how to deal with the interpersonal aspects of app use in order to support mental health and self-esteem:

Henry: ...there's definitely scope for more education about how these apps are transforming, in some ways, the way in which you do interact and the way in which relationships evolve. There are going to be setbacks and there are going to be a lack of just pleasant conversations. (24, straight, male, urban)
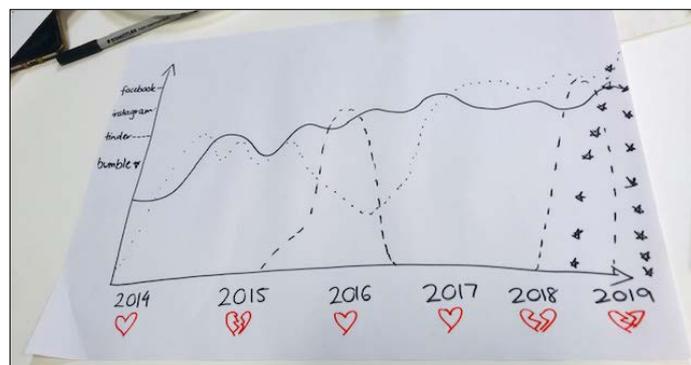

Image 2. Workshop participant's app biography.

Table 6. *Sexual health practices and information.*

| | | Sexuality & Gender | | | | | CALD | | Experienced discrimination | | Safety | | Disability | | Anxiety | |
| | | LGBTQ+ | | | Straight | | | | | | | | | | | |
		F	M	NB	F	M	No	Yes	Yes	No	Higher	Lower	Yes	No	Yes	No
Want information about	Sex	39.4	58.1	50.0	35.7	37.5	44	46.9	49.7	39.6	48.4	43.0	59.1	43.5	47.4	43.4
	Sexuality	56.9	51.2	61.8	25.7	41.7	49.8	36.7	53.5	42.7	48.4	47.8	72.7	46.2	59.0	43.4
	Sexual health	73.4	79.1	73.5	54.3	54.2	70.0	65.3	75.3	63.4	74.2	67.4	77.3	68.8	73.7	67.5
	Contraception	49.5	18.6	35.3	48.6	29.2	39.9	26.5	39.6	36.6	37.6	38.3	54.6	36.9	39.0	37.7
	STI	67.0	81.4	79.4	61.4	41.7	69.6	65.3	75.2	62.8	68.8	69.1	81.8	68.1	74.6	66.7
	Consent	85.3	60.5	91.2	77.1	50.0	76.9	63.3	78.0	72.0	68.8	77.4	81.8	74.4	85.3	70.6
	Dating advice	33.9	45.4	29.4	34.3	25.0	34.1	44.9	37.7	34.2	39.8	34.4	40.9	35.6	29.5	38.6
	None	3.7	5.8	0	8.5	16.7	5.5	8.2	4.4	7.3	6.5	5.7	4.6	6.0	4.2	6.7
	Total (median count)	4	5	5	3	2.5	4	4	4	4	4	4	6	4	4	5
Communication	Use Grindr's last tested field	-	68.6	-	-	-	71.0	62.5	72.9	59.3	65.5	70.2	100.0	67.1	65.2	69.8
	Comfort disclosing HIV status	-	77.5	-	-	-	85.6	58.3	78.4	75.8	74.2	79.3	83.4	77.1	83.3	75.4
	Frequently discuss safe sex	37.7	51.8	61.5	44.0	20.0	43.3	52.5	54.3	31.8	47.4	43.3	50.0	44.3	43.0	45.3
	Ask partners' HIV status	28.0	59.6	51.4	16.9	4.0	32.7	50.0	52.2	18.5	32.3	36.4	39.1	34.9	35.0	35.3
	Ask if partners on PrEP	6.6	50.6	17.6	0	0	15.5	34.0	29.3	7.4	19.0	17.9	13.6	18.5	13.7	20.1
	Ask partners' viral load	5.6	10.1	5.9	1.6	4.0	5.6	8.3	8.9	3.1	5.3	6.3	0	6.4	3.2	7.1
Protective practices used frequently	I use condoms	65.7	69.7	74.3	87.1	96.0	75.4	71.4	79.0	70.3	74.0	74.9	65.2	75.3	74.8	74.6
	I take PrEP	0	34.4	0	0	0	7.3	22.9	13.2	6.1	14.7	7.5	0	10.4	6.3	11.1
	I have undetectable viral load	0	2.3	0	0	0	0.4	2.1	1.3	0	0	0.9	0	0.7	1.0	0.4
	Serosorting	12.2	24.7	32.4	12.3	12.0	15.9	29.2	22.2	13.6	19.0	17.3	13.0	18.2	13.5	19.6
	Other practices	54.6	39.8	64.7	44.6	36.0	50.0	38.3	53.8	42.6	51.6	46.7	43.5	48.5	48.4	48.0

4. SEXUAL HEALTH

In keeping with the World Health Organisation's (2017) observation that sexual health and reproductive health are "distinct, but intertwined concepts", our participants discussed safe sex and sexual health holistically in relation to sexual negotiation, sexual consent, and the use of contraceptives. This broad 'non-expert' definition of sexual health and safety reflects Byron's findings that young people's practices of 'sexual safety' typically exceed safe sex practices to encompass broader negotiations of intimacy (2017). In this section we present these diverse accounts of safe sex and sexual health in the contexts offered by app users, drawing out some of the gendered experiences of sexual health.

4.1 Approaches to Safe Sex Differed According to Sex, Gender and Sexuality

In survey responses, 50.8% of straight people said they never or rarely discussed safe sex with potential partners on dating/hook-up apps, compared to 30.7% of LGBTQ+ participants (see Table 6 (on previous page).

Looking across each group of participants, safe sex was more commonly reported as always/often discussed within apps among non-binary participants (61.5%), followed by LGBTQ+ men (51.2%), straight women (43.9%), LGBTQ+ women (38.7%), and straight men (20%).[2]

Overall:
- LGBTQ+ respondents were 1.8 times more likely to 'frequently discuss safe sex' than straight respondents (p = .029).

Within sexuality:
- LGBTQ+ men were 2.1 times more likely to 'frequently discuss safe sex' than LGBTQ+ women (p = .008).
- Non-binary participants were 2.4 times more likely than LGBTQ+ women (p = .040).

There was no significant difference between LGBTQ+ men and non-binary participants or between straight men and women.

Participants in both the urban and regional LGBTQ+ women's workshops expressed concern about a lack of safe sex awareness among LGBTQ+ women, which some linked to the heteronormativity of school-based sex education. While some LGBTQ+ survey participants explicitly nominated the use of gloves as an 'other' safe sex practice, a number of workshop participants commented that gloves, condoms and dams were rarely used by women having sex with women.

> **Anna:** Even when I meet up with a lot of girls they don't have any education around it or haven't been tested... or like they want to use sex toys but they don't have condoms and they expect that we're going to share. (29, lesbian, female, regional)

Alex (26, lesbian, non-binary, urban) felt that sexual health discussions were important but that apps were not the place for this, noting their frustration that within the lesbian community 'people don't disclose things' and 'don't open up about sexual health'.

Concerns regarding safe sex also varied depending on what users were seeking. Ruby (29, bisexual, female, urban) spoke about becoming more mindful of negotiating safe sex since using apps with her male partner, noting that this was less of a concern for her when she was only having sex with women. Anna (29, lesbian, female, regional) noted that the dating app HER has a discussion forum that sometimes hosts sexual health themes and she indicated that she would like to see sexual health awareness incorporated into app profiles.

Many workshop participants noted a preference for safe sex discussions in person, rather than stating one's preferences within profiles or via app messaging. In-app negotiation of safe sex was only common among LGBTQ+ men (e.g. Grindr and Scruff) – with many such apps being involved in community HIV prevention efforts. For other users, such discussions were uncommon and could send the wrong message. For example, Amy (29, queer, female, urban) noted that because many app 'matches' do not

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[2] Only 20 straight men answered this question, so we cannot give much weight to this. Similarly, only 26 non-binary participants responded to this question.

reach the point of meeting up, discussions about consent and safe sex were more suited to 'a foreplay thing… I don't think they need to happen on the app. I think it's too much.' Safe sex discussion was understood in this way as foreclosing ongoing negotiation around consent.

In survey data, male respondents were 3 times more likely to ask a potential partner about PrEP than non-binary respondents (p = .041), who were 4.8 times more likely to ask about PrEP than female respondents (p = .01).

CALD respondents were 2.9 times more likely to ask about PrEP than non-CALD participants (p = .005). Participants who reported experiences of discrimination on dating and hook-up apps were 4.3 times less likely to ask about PrEP (p < .001). Among survey participants PrEP use was relatively low, however CALD respondents were four times more likely to indicate they used PrEP (p = .002).

Within the subset of queer participants, non-binary people were 4.2 times more likely to use serosorting (relying on having the same HIV status) as a safe sex method than LGBTQ+ women (p = .011). No differences were found between non-binary participants and LGBTQ+ men, and LGBTQ+ men and LGBTQ+ women.

4.2 Negotiating Consent

Consent was less discussed among male participants, both straight and LGBTQ+, though there was some indication that consent-related negotiations often happened within apps for LGBTQ+ men:

> **Evan**: I guess most people are able to have that conversation with their partner or hook-up person about consent. Most conversations are explicit in the sense that there is negotiation around condom use, topping and bottoming, hosting, etc. (32, 'predominantly homosexual', male, urban)

For most women, consent was understood as an aspect of sexual health that included discussing safe sex practices, and participants in the straight women's urban workshop suggested the incorporation of consent information into dating apps. Many women spoke about the challenges of initiating these conversations – some noting

the difficulty of finding out if someone has tested for STIs:

> **Chelsea**: If I talk about it I feel like, am I ruining the moment? Am I going, 'okay so at 12 o'clock we're going to do this' and then [what if] I don't want to? (19, bisexual, female, regional)

Several women found it was useful to manage safe sex expectations prior to meeting up for the first time, via messaging. Amber said she is 'always the one that has to initiate a sex talk over messages' in order to discuss what she likes, to assert her need for condom use, give an account of her own sexual health, and to feel 'safer'.

> **Amber:** It's a fun conversation. It doesn't have to be sexting, it doesn't have to be super sexy. Just like a conversation…. I just wish it was easier just to discuss sex in a non-sexual way…. Most of the girls that are my friends… they're like, 'it's way too awkward, I don't talk about sex with a guy', not even when they're having sex. (22, bisexual, female, regional)

Both straight/bi women and gay/queer male participants described times they had felt pressure to have sex with people they had met with in either person's home, saying it felt unsafe or difficult to negotiate or 'reject' others in that context.

4.3 Sexual Behaviours and Testing for STIs

Concern was expressed by women in a regional workshop about the lack of awareness about sexual health among men in the area.

> **Olivia:** There's a lot of unsafe sex that goes on with these sort of apps and I think there's a lot of people that don't get tested, especially a lot of guys that maybe don't understand…. I was talking to someone the other day and he was like, 'Someone I slept with told me they had chlamydia but I don't think it has any effects for guys, I think it's just girls that can get it. I haven't got tested yet cos I don't think it really matters.' And I'm like, 'You really should.' (23, heteroflexible, female)

Olivia added that 'most of the time, you would have to bring [condom use] up', and Amber (22, bisexual, female) said that 'almost all guys will try and stick it in without a condom… probably 50

per cent of the time they try to convince you to do it without.' Olivia further noted that women's use of contraceptives give men a 'false sense of security' and less regard for condom use. Many women in the group agreed. Olivia felt that straight men's reluctance to use condoms was particularly an issue in her regional city, compared to other places she had lived.

In the straight reference group, several women described a similar reluctance regarding condom use and STI testing among straight men: Polly said, 'I've known straight men who say they are "clean" because they only sleep with "clean" women... despite having never been tested' (32, straight, female, regional).

Some participants suggested that the reputation of app users having a lot of sexual experience is overstated, and that many users were sexually inexperienced:

> **Beth**: (T)here is quite a stereotype about ['promiscuity' on dating apps] and I think it's declining now just because so many people use it. When I first got it and I was meeting people, I kind of expected them all to be very experienced and I actually found it was usually the opposite, like someone that had a long-term relationship, just got out of it. [It] was very common actually... (19, bisexual, female, regional)

This suggests that health promotion and health service organisations should not make assumptions about app users' existing sexual knowledge or behaviour when eliciting sexual histories or offering health information. Indeed, sexual health stigma was raised in relation to GPs:

> **Vivienne:** In my experience, going to Family Planning is 100 times better than a GP. Every time I have been to a GP for testing they are extremely judgemental, rude and shame you on your sexual status. Additionally, I have found that you often need to know what to ask the doctor to be tested on. (21, straight, female, regional)

LGBTQ+ men in both the urban and the regional workshops expressed concern about stigmatising attitudes and language used to refer to, HIV and STIs. Charles commented, 'the word "clean" is an instant block for me' (34, gay/queer, male,

urban). For the regional group, STI and HIV awareness resources on apps were suggested to combat this. Miles (26, gay/queer, male, urban) felt that this stigma was stronger among straight people and so this was where the awareness raising needed to occur. Other participants also suggested a need for health promotion campaigns that challenge STI stigma:

> **Max:** Health promotors can take that kind of advertising platform… to say, okay, you're swiping through Tinder, and one of the swipe cards that comes up is actually, 'What is herpes? Click on this profile' or 'Swipe right on this profile to find out more.' (23, queer, non-binary transmasculine, regional)

Some gay/queer men utilised the fields on apps such as Grindr and Scruff that indicate 'date last tested' for HIV/STIs. Urban gay/queer male workshop participants noted that this strategy is only helpful if user information is updated regularly. One user stated that he will often clarify other users' status when their response to this field is contradictory or when their profile suggests a lack of knowledge regarding sexual health. Evan discussed the limitations of profile-based testing information:

> **Evan:** I think that there is very limited opportunity to have conversations on sexual health [on apps]. Vocabulary can mean anything. Some people say 'clean' while others say 'STI free'. Grindr for example only says 'HIV status' or 'last test' – does not ask about any other STIs. (32, 'predominantly homosexual', male, urban)

Several participants discussed disclosing their HIV status and the related stigma and discrimination. Robert (30, gay, male, urban) said that he tells other app users he is HIV negative and on PrEP: 'I'm [HIV] positive, but take medication, and I know I'm not detectable, and I know that if you're undetectable then it's basically like you've got nothing anyway'. Gabriel (31, gay, male, urban) spoke about not having STI conversations as much now that he is on PrEP, as he considers other STIs easier to deal with should they occur. Jackie (22, bisexual, female, urban) described the challenge of deciding when to disclose her herpes status to other Tinder users, noting that her profile reads 'We will have a conversation about sexual health'. She also used Positive

Singles app (for HIV/STI positive users) where STIs and their discussion were less stigmatised.

4.4 Survey Respondents Accounts of Safe Sex and Contraception

A substantial number of participants in all gender and sexuality categories used the survey open field to nominate contraceptive technologies as a preferred 'safe sex method'. For example, while approximately 75% of both straight male and straight female respondents said they used condoms, thirty-seven straight and bisexual respondents listed the pill, contraceptive implants or IUDs as an 'other' safe sex method.

Among self-identified lesbian, gay, pansexual and queer respondents, 24 listed various kinds of hormonal contraception or an IUD as an 'other' safe sex method. Additionally, two non-binary participants listed hormonal implants as an 'other' safe sex method. Respondents from all participant groups indicated they would like to see contraceptive information on dating apps, with female respondents 3.6 times more likely to want to see information about contraception than male respondents (p < .001). There was no significant difference between gender diverse respondents and male or female respondents.

These findings suggest that while sexual health organisations may understand contraception as 'reproductive' as opposed to 'sexual health', health consumers may have a more holistic understanding – a consideration we address in more detail in Discussion and Recommendations.

4.5 Finding Sexual Health Information through Apps

Survey participants were asked if they had seen sexual health promotion information on dating/hook-up apps (see Figure 3), and were then asked to express preferences regarding the types of information they would like to be offered within apps.

As shown above, LGBTQ+ male participants were significantly more likely to have seen sexual health messaging on apps (88.2%), followed by non-binary respondents (44.1%) – many of these likely using apps such as Grindr and Scruff.

When asked what kind of sexual health information they would like to see on apps, from a list of ten choices (including 'other' and 'none'), information on consent, sexual health and STIs rated most highly (see Figure 4).

Participants suggested ways that app technologies could promote sexual health, including app-based notifications for when a previous sex partner tests positive for an STI, and reminders for STI check-ups. The idea of introducing STI status/testing fields to apps for users other than LGBTQ+ men was felt by some to be inappropriate or 'invasive' (Alex, 26, lesbian, non-binary, urban). Rebecca (23, lesbian, female, regional) felt that if STI information was offered on women's apps, it would probably be ignored.

Have you seen sexual health ads or information on dating/hook-up apps?
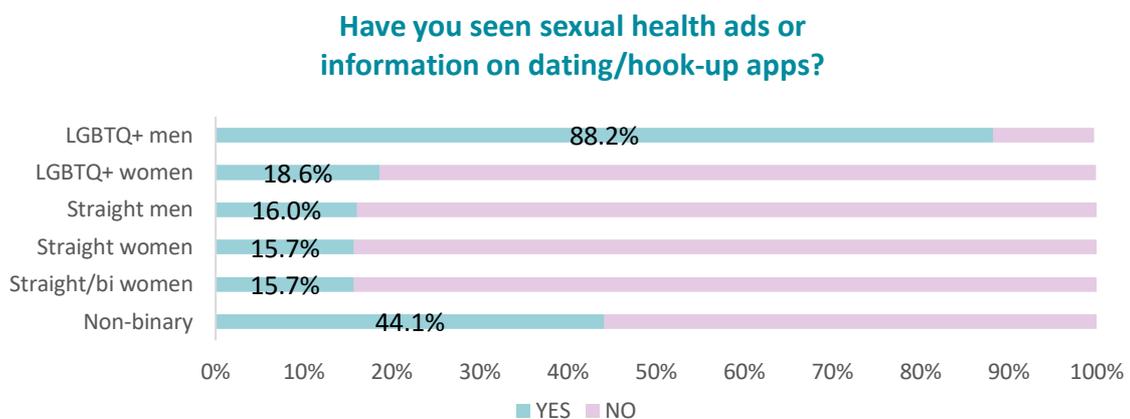
Figure 3: Survey participants who have seen sexual health ads on dating apps.

In survey findings:
- Male respondents were 4 times more likely to want to see information about PrEP than female respondents (p < .001). There was no significant difference between non-binary respondents and male or female respondents.
- Male respondents were 3.6 times less likely to want to see information about consent compared to female respondents (p < .001) and 6.6 times less likely compared to non-binary respondents (p = .008). There was no significant different between female and non-binary respondents.

Compared to straight participants, LGBTQ+ participants were:
- 2.8 times more likely to want to see information about sexuality (p < .001).
- 2.6 times more likely to want to see information about sexual health (p = .001).
- 2 times more likely to want to see information about STIs (p = .008).
- 4.5 times more likely to want to see information about PrEP (p < .001).

Non-CALD participants were 1.9 times more likely to want to see information about consent than CALD respondents (p = .045).

Compared to other participants, those who indicated they had faced discrimination on hook-up apps were:
- 1.8 times more likely to want to see information regarding sexual health (p = .019).
- 1.8 times more likely to want to see information regarding STIs (p = .014).
- 2.4 times more likely to want to see information regarding PrEP (p = .014).

Respondents with a disability were 3.1 times more likely to want to see health info about sexuality compared to respondents without a disability (p = .021).

Respondents who scored higher on SF-8 anxiety questions were 1.8 times more likely to want information about sexuality (p = .011) and 2.4 times more likely to want information about consent (p = .007) compared to those who did not.

What type of information would you like to see on dating/hook-up apps? Select all that apply.
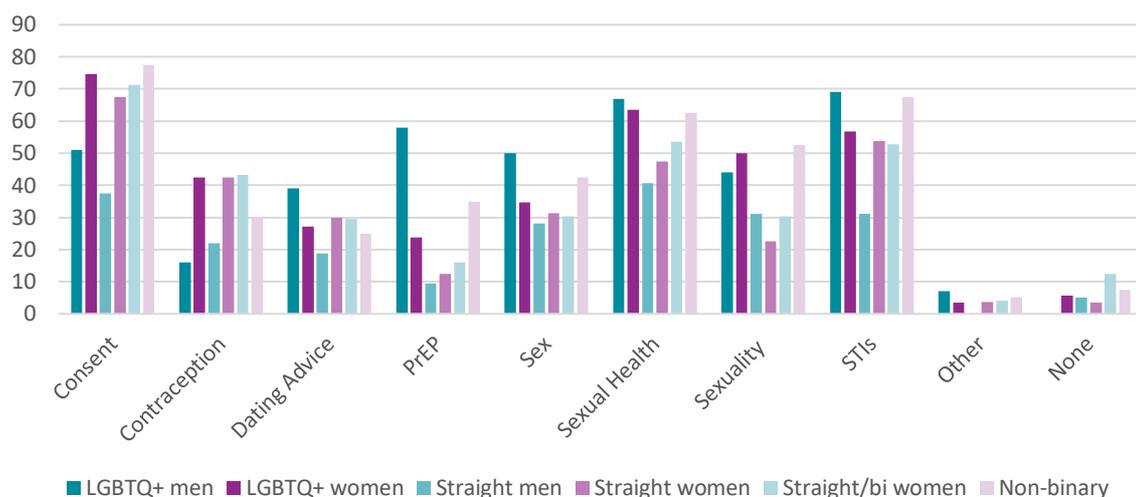
Figure 4: Information that survey participants (by %) would like to see on dating/hook-up apps.

DISCUSSION / CONCLUSIONS

> **Jolene**: I think it's useful to recognise/reinforce that app dating is just part of regular dating life and therefore health promotion should fully integrate it into their campaigns, rather than it be something niche or different. (27, queer, female, urban)

The *Safety, risk and wellbeing on dating apps* project is the first project to explore the ways that Australians of diverse genders and sexualities understand and engage with dating app cultures. As indicated in the quote above, app use was not an exceptional aspect of participants' lives, but was integrated into other everyday experiences of dating, sex and friendship.

While apps may be seen as a 'novel' technology within some clinical services or health promotion and sexual health education settings, they are viewed as 'ordinary' technologies by their users. Dating and hook-up apps can also be understood as specific environments with distinct cultural norms. With this in mind, we recognise that app users have much to offer to both researchers and health professionals, in terms of sharing both their expertise and experiences – including established strategies for negotiating safety and risk when dating and hooking up.

A key finding of this study is that dating app use is interconnected with the use of other social media platforms, such as Instagram, Facebook and Twitter. Participants deliberately connected (and disconnected) their dating app use with their preferred social media platforms in order to manage a sense of safety and visibility in encounters with friends and strangers. They installed and deleted various apps over time, as they experienced them as more or less satisfactory for a diverse range of purposes – including relieving boredom, chatting or exchanging pictures with existing friends and intimate partners, and arranging sex or dates.

As indicated in the Background section of this report, existing sexual health literature has primarily focused on the experiences of men who have sex with men, focusing on the relationship between sexual behaviours and HIV/STI treatment and prevention. Research into MSM's use of apps also dominates the fields of media

and cultural studies. Within these disciplines, dating app research increasingly falls within *digital intimacies* scholarship (Burgess et al. 2016; Dobson et al. 2018), with many researchers observing the integration of dating app use with broader social media practices.

Only few researchers have centred app users' understandings and negotiations of app safety (Albury & Byron 2016; Davis et al. 2016; Pond & Farvid 2017). Recently, there has been a specific focus on sexual harassment, mostly in relation to straight women's experiences of Tinder (Gillett 2018; Shaw 2016; Thompson 2018). Relatively few researchers have focused on safety in relation to data security and privacy (Albury et al. 2017; Lutz & Ranzini 2017). Research on the use of Tinder predominantly engages with heterosexual young people, offers a more sociological account of intimacy (Hobbs et al. 2017; Newett et al. 2018) and tends to interrogate 'hook-up culture' and focus on casual sex (Timmermans & Cortois 2018).

Our study did not start from existing formal definitions of 'safety, risk and wellbeing', but invited app users to define these terms in relation to their own experiences of app use. As our findings indicate, 'feeling safer' was interpreted in relation to personal safety (i.e. freedom from harassment, discrimination and violence), but also in relation to less tangible aspects of emotional safety. Apps were valued for promoting wellbeing and social connection in some instances, while in others they increased user's experiences of distress, frustration or mental ill health.

Both survey respondents and qualitative research participants defined 'sexual health' and 'safe sex' in broad and holistic terms. Safe sex was not defined solely in terms of condom use, the use of PrEP, or STI testing – many survey respondents suggested IUD use, or the use of hormonal contraception as an 'other' safe sex method. Rather than interpreting this as a deficit in respondents' sexual health literacy, we suggest that this response can be re-interpreted through the lens of 'feeling safe' when dating and hooking up – given that freedom from concerns regarding unwanted pregnancy can increase feelings of emotional safety and wellbeing.

Similarly, sexual negotiation and consent are not always recognised as central aspects of sexual health or 'safe sex' within services focused on STI testing and treatment. In contrast, our participants suggested that the ability to negotiate sexual practice was central to their experiences of feeling safer or less safe when using apps. An ability – and willingness – to negotiate consent was central to confident negotiation of safe sex practices, including the use of condoms, gloves and other barriers; and the ability to discuss STIs, HIV, testing and treatment.

It should be noted that there was no universal experience of specific apps – for example many gay men described Tinder as a 'relationship' app, where straight participants described it as a 'hook-up' app. Preferred modes of app use – and the sense that a specific app was more or less safe to use – varied greatly according to sexual/gender identities of participants.

Heterosexual cisgender men were less likely than any other group to feel unsafe when using apps. A lower number of these men in the study, and higher rates of cisgender heterosexual women and LGBTQ+ participants allows for a study focused on those most at risk, who feel most unsafe and those who are most likely to have experienced harassment and discrimination when using dating and hook-up apps.

In terms of mental health and wellbeing, we note that survey respondents who rated higher in terms of depression and anxiety in our study reported more negative experiences of app use. As this was a self-selected sample, we caution against drawing a causal link between the use of apps and experiences of mental ill health. Indeed, many participants in the qualitative research activities reported that app use enhanced feelings of wellbeing and social connection.

Participants offered a range of personal strategies for managing or mitigating against distress associated with app use including: taking time out from app use, deleting apps, turning off 'push' notifications and limiting time spent on apps. Some users described strategies for managing their expectations regarding matching or meeting up with other users – for example, in cases where straight male users empathised with the safety concerns that straight women may have in app environments. These strategies can be adapted and shared in health and education contexts.

RECOMMENDATIONS

Sexual health professionals (including clinical health care providers, health promoters, youth support workers and sexuality educators) seeking to engage with and support dating and hook up users — and benefit from the expertise they offer — should:

1. Develop an understanding of dating app use as an ordinary and everyday element of contemporary sexuality, dating and relationships, which is fundamentally interconnected with the use of other social media platforms and technologies – especially other social media not conventionally seen as designed for hooking up.

2. Recognise and address the ways that experiences of feeling safer or less safe when using apps are linked to broader socio-cultural experiences of identity, sexuality and gender. Those who are marginalised or vulnerable in other ways (due to experiences of ill health, ableism, ageism, misogyny, homophobia, racism

and transphobia) are also likely to experience feeling less safe when using apps. At the same time, apps fulfil important objectives for people who experience marginalisation and vulnerability, and offer entry-points for asset-based health promotion approaches.

3. Adapt and expand existing policy and practice frameworks relating to sexual health to include user-centred definitions of 'safe sex'. That is, contextualise STI and HIV prevention, testing and treatment within a holistic understanding of 'safe sex' that encompasses sexual negotiation, personal safety, emotional wellbeing and consent. Policy and practice should acknowledge that friendship and sexual intimacy are interwoven, and that hook-up apps and social media play a role in weaving them together.

APPENDIX 1: Reference Group Overview

The Professional Reference group met online four times over 14 months, and the App User Reference groups met four times in 12 months. Professional group members provided iterative feedback on the project, guided our research priorities, and identified connections between our findings and their work. App user reference groups also gave feedback on our survey and other planning aspects (their contributions are included in the Findings section of the report).

The professional reference group included 18 participants from:
- ACON
- Family Planning NSW
- headspace
- LGBTI Health Alliance
- Multicultural Neighbourhood Centre, Newcastle
- Nepean Blue Mountains Local Health District
- NSW STI Programs Unit
- Parramatta Mission
- Sydney Sexual Health Centre
- The Centre @ Kurri Kurri, Cessnock
- University of Newcastle
- Western Sydney Local Health District
- Youth Action NSW

These participants offered rich insights into the diversity of sexual health education and health promotion practice, gleaned from past or present experience in the following fields:
- CALD services
- Community development
- Digital communications
- Educational development
- Health promotion (including sexual health promotion)
- HIV and STI support services
- LGBTIQ+ sexual health services
- Services for people who experienced violence (sexual, domestic, and/or family violence)
- Services for people with disabilities
- Therapy (sex and relationships)
- Youth services (including youth development)

We shared preliminary research findings at each of our four meetings, inviting participant input. For example, in Year One, participants were invited to rate their top five priorities from a list of twelve research questions, including questions about sexual health, digital media, and reasons for using dating apps. Notably:
- 63% of participants were most interested in learning how dating app users negotiate sexual consent through dating apps;
- 50% of participants wanted to know more about the potential opportunities that exist to discuss sexual health on dating apps; and
- 38% of participants wanted to learn about the relationships between dating apps and communities, as well as the different practices employed by diverse app users.

Participants reported the following barriers to engagement with dating apps within NSW-based health promotion and education organisations and youth support services:
- Professional and organisational barriers (e.g. prohibitive costs, concerns among managers, 'silos' in the organisation);
- Informational barriers (e.g. lack of knowledge about apps, always feeling behind on current trends); and
- Community engagement barriers (e.g. a sense that dating app users did not engage with the organisation).

Notably, participants identified a need for supportive resources and promotional materials focused on issues relevant to dating app users (e.g. sexual health, mental health, physical safety, relationship development). The absence of targeted sexual health information for trans and non-binary people, cisgender straight men, and lesbian, pansexual and bisexual women were seen as key issues for health promotion professionals and health service providers.

APPENDIX 2: Workshop Outline

We held 4 regional and 4 urban workshops with app users from NSW, aged 18-35, with a total of 51 participants. Participants were recruited via a separate sign-up form following completion of the online survey (but not linked to their survey responses), or via the networks of our partner organisations and professional reference group members. Interviews and workshops were audio-recorded (with participant consent), transcribed and thematically coded via a combined process of inductive and deductive analysis (Braun and Clarke 2006) using NVivo software.

Workshops were roughly divided into 4 straight and 4 LGBTQ+ groups, with each comprised of 3-13 participants. We recruited participants according to apps used rather than identity categories, in order to allow app users who were bisexual, pansexual, trans or non-binary to self-nominate into whichever group they preferred. Throughout this report, where individual workshop participants indicated a binary gender category, we have standardised these as 'male/female' except in cases where a transgender identity was specified.

The first 4 groups were recruited as 'LGBTQ+ people who use apps like Grindr, Hornet, Jack'd, etc' and 'LGBTQ+ people who use apps like HER, Brenda, Bumble, etc'. For the other 4 groups, we recruited 'straight dating app users (any gender)' and divided these workshop groups loosely by binary gender, although it should be noted that not all participants who chose these groups were cisgender. Additionally, all the women's groups included bisexual women. In this way, we were able to gather qualitative insights into participants' comparative experiences with different kinds of apps, users and cultures of use.

Workshop participants were asked to nominate one app they loved, and one they hated, and to explain why. They were then prompted to map their dating/hook-up app 'biography' by drawing a timeline of their app-using history, including breaks away from particular apps, and connections to other social media platforms. Participants were given an example of common 'rules' regarding dating app use found in online listicles, and asked to devise their own top five rules to teach someone how to use their favourite app.

They were then prompted to design a dating/hook-up app profile using celebrities Dwayne 'The Rock' Johnson, Kristen Stewart and Ariana Grande as examples, and to consider a range of components of an 'authentic, reliable, dateable' profile, such as bio, photos, and links to other social media. They were asked what the user's messaging practices and responses would be like, and how they would move from chatting on the app to meeting up in person.

Finally, participants were asked to design a second profile – this time, a 'suspicious, creepy, red flag' version of the same celebrity – and explain their choices. They were also given an opportunity to share any extra information they thought was important about how people learn to use apps, including information useful to health organisations.

APPENDIX 3: Qualitative Demographics

Table 7. Participant demographics: Interviews, workshops, reference groups (n = 82).

|		N	%
Age in years	18-20	18	22.0
	21-25	32	39.0
	26-30	21	25.6
	31-35	9	11.0
	Missing	2	2.4
Gender	Female	43	52.4
	Male	34	41.5
	Non-binary	5	6.1
Sexuality	LGBTQ+	47	57.3
	Straight	35	42.7
Cultural diversity	CALD	22	26.8
	Non-CALD	51	62.2
	Aboriginal or Torres Strait Islander	3	3.7
	Missing	6	7.3
Geographical location	Urban	42	51.2
	Regional	40	48.8
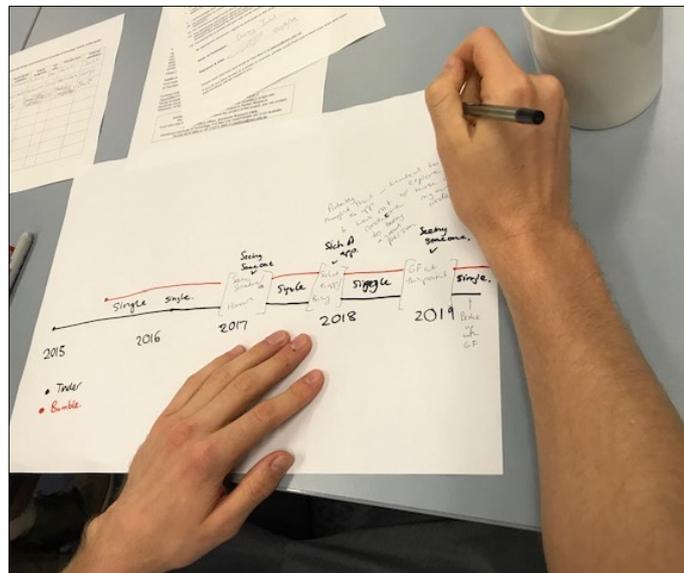
Image 3. Workshop participant's app biography.

APPENDIX 4: Research Literature on Dating Apps and Sexual Health

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Table 8. Dating and hook-up app use.

	Ever used				Currently used				Most used [A]				Used for hooking up				Listed in top 3 apps			
	LGBTQ+		Straight		LGBTQ+		Straight		LGBTQ+		Straight		LGBTQ+		Straight		LGBTQ+		Straight	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Adult Matchmaker	20	7.5	5	4.5	0	0	1	0.9	-	-	-	-	-	-	-	-	3	1.1	2	1.9
BBRT	8	3.0	0	0	1	0.4	0	0	-	-	-	-	-	-	-	-	2	0.8	0	0
Blued	10	3.8	0	0	5	1.9	0	0	-	-	-	-	-	-	-	-	6	2.3	0	0
Bumble	102	38.2	71	63.4	27	10.1	28	25.0	35	13.1	42	37.5	29	10.9	38	33.9	67	25.7	63	58.3
Coffee Meets Bagel	12	4.5	11	9.8	0	0	1	0.9	-	-	-	-	-	-	-	-	3	1.1	3	2.8
eHarmony	30	11.2	16	14.3	2	0.8	0	0	-	-	-	-	-	-	-	-	8	3.1	6	5.6
Fetlife	48	18	7	6.2	13	4.9	1	0.9	-	-	-	-	-	-	-	-	21	8.0	2	1.9
Grindr	109	40.8	3	2.7	76	28.5	1	0.9	84	31.5	2	1.8	79	29.6	1	0.9	96	36.8	1	0.9
GROWLr	17	6.4	0	0	4	1.5	0	0	-	-	-	-	-	-	-	-	7	2.7	0	0
Happn	33	12.4	24	21.4	0	0	2	1.8	-	-	-	-	-	-	-	-	7	2.7	11	10.2
Her	77	28.8	0	0	31	11.6	0	0	29	10.9	0	0	28	10.5	0	0	60	23.0	0	0
Hinge	12	4.5	11	9.8	2	0.8	3	2.7	-	-	-	-	-	-	-	-	2	0.8	5	4.6
Hornet	65	24.3	1	0.9	11	4.1	0	0	10	3.8	0	0	8	3	0	0	22	8.4	0	0
Jack'd	46	17.2	0	0	10	3.8	0	0	-	-	-	-	-	-	-	-	17	6.5	0	0
Oasis Active	11	4.1	5	4.5	0	0	1	0.9	-	-	-	-	-	-	-	-	3	1.1	3	2.8
OKCupid	122	45.7	29	25.9	35	13.1	10	8.9	45	16.9	10	8.9	41	15.4	10	8.9	84	32.2	22	20.4
Plenty of Fish	53	19.9	24	21.4	6	2.2	3	2.7	-	-	-	-	-	-	-	-	16	6.1	13	12.0
RedHotPie	12	4.5	4	3.6	0	0	1	0.9	-	-	-	-	-	-	-	-	3	1.1	1	0.9
RSVP	24	9.0	18	16.1	0	0	0	0	36	13.5	0	0	34	12.7	0	0	1	0.4	5	4.6
Scruff	62	23.2	0	0	32	12.0	0	0	-	-	-	-	-	-	-	-	44	16.9	0	0
Tinder	217	81.3	98	87.5	129	48.3	50	44.6	149	55.8	76	67.9	133	49.8	73	65.2	184	70.5	94	87.0
Zoosk	22	8.2	9	8.0	0	0	0	0	-	-	-	-	-	-	-	-	1	0.4	3	2.8

[A] Participants could choose five apps from their 'ever used' responses to carry forward into subsequent questions including 'most used' and 'used for hooking up.'
Dashed cells indicate the app was not nominated by any participants.

Table 9. *Perceptions of top three apps.*

	Sexuality			
	LGBTQ+		Straight	
	App	%	App	%
I use the most	Tinder	33.3	Tinder	41.1
	Grindr	21.7	Bumble	17.9
	OKCupid	10.1	OKCupid	4.5
Best for meeting people for dating	Tinder	24.3	Tinder	24.1
	OKCupid	19.1	Bumble	21.4
	None	13.9	None	9.8
Best for meeting people for sex	Tinder	33.0	Tinder	50.9
	Grindr	27.3	None	29.5
	None	12.4	Bumble	14.3
Feels the safest	Tinder	19.1	Bumble	30.4
	OKCupid	18.0	Tinder	17.0
	None	16.1	None	12.5
Have had the most bad experiences	Grindr	24.0	Tinder	36.6
	None	21.7	None	21.4
	Tinder	19.8	Bumble	4.5
Best privacy features	None	32.2	None	26.8
	Tinder	14.9	Bumble	20.5
	OKCupid	9.0	Tinder	17.9
Most used by my friends	Tinder	41.2	Tinder	52.7
	Grindr	18.3	Bumble	11.6
	None	10.1	None	5.4
Easiest to use	Tinder	44.9	Tinder	50.9
	Grindr	18.7	Bumble	14.3
	Bumble	4.5	None	2.7
Has the most annoying users	Grindr	25.8	Tinder	42.0
	Tinder	25.8	None	11.6
	None	5.6	Plenty of Fish	5.4
Most likely to experience racism	None	32.2	None	46.4
	Grindr	25.8	Tinder	20.5
	Tinder	17.2	Bumble	1.8
Most likely to experience sexual harassment	Tinder	27.7	Tinder	37.5
	Grindr	26.2	None	22.3
	None	17.2	Plenty of Fish	5.4
Have used the longest	Tinder	32.6	Tinder	53.6
	Grindr	24.0	OKCupid	6.3
	OKCupid	11.6	Bumble	5.4
Used to be better	None	39.3	None	29.5
	Tinder	13.1	Tinder	20.5
	OKCupid	10.1	Bumble	8.0
Most likely to delete	Grindr	16.8	Tinder	29.5
	Tinder	12.0	Bumble	12.5
	Bumble	9.0	None	7.1
Most trusted with my personal data	None	43.8	None	41.1
	Tinder	11.2	Tinder	16.1
	OKCupid	9.0	Bumble	12.5

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