ORIGINAL RESEARCH

Love during lockdown: findings from an online survey examining the impact of COVID-19 on the sexual health of people living in Australia

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ABSTRACT

Introduction Australia recorded its first case of COVID-19 in late January 2020. On 22 March 2020, amid increasing daily case numbers, the Australian Government implemented lockdown restrictions to help ‘flatten the curve’. Our study aimed to understand the impact of lockdown restrictions on sexual and reproductive health. Here we focus on sexual practices.

Methods An online survey was open from the 23 April 2020 to 11 May 2020. Participants were recruited online via social media and other networks and were asked to report on their sexual practices in 2019 and during lockdown. Logistic regression was used to calculate the difference (diff) (including 95% CIs) in the proportion of sex practices between time periods.

Results Of the 1187 who commenced the survey, 965 (81.3%) completed it. Overall, 70% were female and 66.3% were aged 18–29 years. Most (53.5%) reported less sex during lockdown than in 2019. Compared with 2019, participants were more likely to report sex with a spouse (35.3% vs 41.7%; diff=6.4%; 95% CI 3.6 to 9.2) and less likely to report sex with a girl/boyfriend (45.1% vs 41.8%; diff=−3.3%; 95% CI −7.0 to −0.4) or with casual hook-up (31.4% vs 7.8%; 95% CI −26.9 to −19.8). Solo sex activities increased; 14.6% (123/840) reported using sex toys more often and 26.0% (218/838) reported masturbating more often. Dating app use decreased during lockdown compared with 2019 (42.1% vs 27.3%; diff=−14.8%; 95% CI −17.6 to −11.9). During this period, most people significantly reduced their activities outside their homes, 5 and some (especially those with non-cohabitating intimate partners) reported reducing their distance from those outside their household.6 As restrictions were enforced across the country, confusion abounded among those with non-cohabitating intimate partners regarding whether visits were allowed. While some states banned people, including non-cohabitating intimate partners, to meet,7 others changed course during lockdown and ultimately made an exception to allow non-cohabitating partners to meet.8 9

Although significant declines in sexual activity during lockdown were reported, people did not completely stop engaging in sexual activities, highlighting the importance of ensuring availability of normal sexual and reproductive health services during global emergencies.

INTRODUCTION

In late January 2020, Australia recorded its first case of COVID-19.1 In response to rapidly increasing daily case numbers,2 the Australian Government began to introduce several measures in an attempt to ‘flatten the curve’. On 22 March, stage 1 restrictions were announced, including the temporary closure of non-essential businesses and services, limiting the size of non-essential gatherings, promoting social distancing and advising against non-essential travel.2 Further lockdown measures were implemented from 29 March, with people asked to remain in their homes and only leave for four activities: shopping for essential goods and services, to exercise, to seek medical care or to attend work or education where these activities could not take place at home.3 In addition to the closure of the international border, most state and territory borders were also closed, effectively preventing interstate travel. These measures continued until 8 May 2020, when the Australian Government announced a plan for the easing of restrictions and a ‘COVID-safe Australia’4 as case numbers across the country significantly declined.5
behavioural Research Services, providing access to a network of people in the general population. To enable participant tracking over time, participants provided their month and year of birth and their ‘porn star name’ when they signed up to participate.

Methods

Sexual and reproductive health during COVID-19 online survey

The first survey was administered online using Qualtrics survey software between 23 April and 11 May. All Australian states and territories were under lockdown to varying degrees during this period, with restrictions easing from 8 May. The survey comprised questions pertaining to the impact of COVID-19 on sexual practices and sexual and reproductive health. As a repeated cross-sectional survey, participants were asked to provide their month and year of birth and their ‘porn star name’ (name of their first pet and the name of the first street they lived on) to enable participant tracking over time.

Participants

People were eligible to participate if they were aged 18 years or older and living in Australia at the time of the survey. Participants were recruited via various means, including the research team’s existing networks (eg, emailing the recruitment flyer to colleagues and sexual and reproductive health newsletter lists for distribution and posting the recruitment flyer on our research group’s Twitter account) and via paid Facebook ads. Participants were asked to pass the link to the survey on to their own networks. Participants clicked on a link that took them to the survey page where they were provided with a plain language statement. If they were interested in participating, they were asked to confirm that they were aged 18 years or over, they understood what the survey was about and they consented to participate.

Data collection

Survey questions included trends and changes in sexual practices, intimate relationships, access to essential goods and services, trends and changes in contraceptive use and pregnancy intentions. Sex was defined as physical contact with other people for sexual pleasure including oral sex and mutual masturbation. For several questions, participants were asked to report on two time periods: their experiences and practices during all of 2019 and during ‘lockdown’ (the period after 22 March when restrictions commenced). Participants were also asked to report on the frequency of sexual activity by commenting on whether their sexual activity was less, the same or more during lockdown than in 2019. They were also asked to report whether specific sexual practices (such as masturbating alone or oral sex) were being performed the same amount, less often, more or stopped completely because of COVID-19.

RESULTS

Demographics

A total of 1187 people consented to participate and commenced the survey; 963 (81.3%) completed it and were included in the analysis. Those who completed the survey were older on average than those who did not complete (28.6 vs 26.2 years, p<0.01), but there was no difference in gender (p=0.44) or sexuality (p=0.11). Overall, 70.0% were female, 66.3% were aged under 30 years (median age=24; IQR=20–33; range 18–77), 82.7% reported sex in 2019 and 60.3% (555/920) during lockdown. Overall, 9.1% reported testing for COVID-19, but none had tested positive. Sociodemographic data are reported in Table 1.

Sexual activity

Participants reported a median of one sex partner in 2019 (IQR 1–3; range: 0–1000) and a median of one sex partner (IQR 0–1; range: 0–10) during lockdown. Overall, 89.8% (847/943) reported sex in 2019 and 60.3% (555/920) during lockdown (difference (diff)=−29.5%; 95% CI −32.6 to −26.3). Most participants (472/883; 53.5%) reported less sex during lockdown than during 2019 with a small proportion (126/883; 14.3%) reporting that they were having more sex. There was no difference in the frequency of sex by gender, but it varied across age groups (p<0.01), by sexuality (p<0.01) and by relationship status (p<0.01). Across all variables, MSM were the most likely to report less sex than in 2019 (56/80; 70.0%) and those in a cohabitating relationship were the most likely to report the
same amount of sex (146/321; 45.5%) or more sex than in 2019 (62/321; 19.3%, online supplemental table 1).

Participants were more likely to report having sex with a spouse during lockdown compared with 2019 (41.7% vs 33.5%; diff=6.4%, 95% CI 3.6 to 9.2) and less likely to report sex with a girl/boyfriend (41.8% vs 45.1%, diff=−3.3%, 95% CI −7.0 to −0.4) or sex with a casual hook-up (7.8% vs 31.4%; diff=−23.4%, 95% CI −26.9 to −19.8, online supplemental table 2). The difference in proportions between time periods for each partner type did not vary by sexuality or age, but males were more likely to have sex with their spouse during lockdown (diff=12.4% for males vs 4.6% for females; p=0.04). Singles had significantly less sex with a girl/boyfriend during lockdown compared with those in cohabitating relationships (diff=−26% vs 0.9%, p<0.01). A small number of participants (10/815, 1.2%) reported participating in group sex, swinging or threesomes since lockdown compared with 2019 (133/815, 16.3%; diff=−15.1%; 95% CI −17.6 to −12.5).

Sexual practices
When asked whether participants had changed their sexual practices because of COVID-19, 14.6% (123/840) reported that they were using sex toys more often on their own and 26.0% (218/838) reported that they were masturbating more. When stratified by frequency of sex during lockdown, those who reported less or no sex during lockdown were more likely to report using sex toys alone (18.3% vs 8.3%, diff=10.0%; 95% CI 5.5 to 14.6) and masturbating alone (35.6% vs 10.3%; diff=25.3%; 95% CI 20.0 to 30.6) compared with those who reported the same amount or more sex since COVID-19 (figure 1). A total of 98 participants (11.5%) reported buying a sex toy during lockdown and of these, 24.0% indicated that this was their first.

Among those who reported sexual contact with another person during lockdown, 12.1% (62/511) reported kissing on the mouth, 13.0% (66/509) having oral sex, 15.1% (77/509) changing sexual positions, 19.8% (101/510) washing hands before and after sex and 2.6% (13/507) using condoms, dams or gloves more frequently than they did before COVID-19. When stratified by frequency of sex during lockdown, those who reported the same or more sex during lockdown were more likely to report kissing (17.2% vs 4.4%; diff=12.8%; 95% CI 7.7 to 17.9), oral sex (17.9% vs 5.4%; diff=12.6%; 95% CI 7.3 to 17.9) and changing sexual positions (20.9% vs 6.4%; diff=14.5%; 95% CI 8.8 to 20.2) during COVID-19 than those who reported less or no sex. However, they were less like to report washing hands before and after sex (15.8% vs 25.5%; diff=−9.6%; 95% CI −16.9 to −2.4, figure 1).

Dating app use
Overall 42.1% (406/956) participants reported using dating apps in 2019 with a median of two apps each (IQR=1–2; range: 1–7). The most popular apps were Tinder (78.7%), Bumble (64.8%), Hinge (15.7%) and Grindr (11.7%). App use in 2019 was reported most among MSM (61/91; 67.0%), women who have sex with women (WSW) (107/201; 53.2%) and among singles (220/329; 66.9%) and least among those in cohabitating relationships (71/346; 20.5%). During lockdown, app use was reported most among MSM (40/89; 44.9%) and singles (198/325; 60.9%) and least among those in cohabitating (23/344; 7.3%) and non-cohabitating (20/245; 8.2%) relationships. Overall, app use decreased significantly during lockdown (42.1% vs 27.3%; diff=−14.8%; 95% CI −17.6 to −11.9, table 2). The decrease in app use was significantly smaller for singles (−5.9% vs −13.3%, p<0.01) and significantly greater for those in a non-cohabitating relationship (−27.3% vs −13.3%, p<0.01) compared with those in cohabitating relationships. No other differences were found (online supplemental table 3).
Behaviour

App use during lockdown increased significantly for chatting/texting (89.8% vs 94.5%; diff=4.7%; 95% CI 1.0 to 8.3) and for virtual dates (2.6% vs 17.2%; diff=14.6%; 95% CI 10.1 to 19.2) and decreased significantly for face-to-face dates (69.1% vs 16.0%; diff=−53.1%; 95% CI −59.5 to −47.2) and hook-ups (46.7% vs 14.8%; diff=−31.8%; 95% CI −37.8 to −25.8, figure 2). The change in app use between time periods did not vary by gender but varied significantly by age for swapping pictures (diff=−9.2% for 18–29 years vs 4.9% for 30+ years; p=0.02) and by sexuality for hook-ups (diff=−63.9% for MSM vs −22.9% for heterosexuals; p<0.01). No other differences were found (online supplemental table 4).

Health service use and STI diagnosis

Overall, 26.5% (211/797) reported a telehealth consultation with a general practitioner (GP) during lockdown, 0.4% (3/797) reported accessing online STI testing and 5.4% (43/797) reported using an online pharmacy during lockdown. Few (1.2%; 10/819) reported being diagnosed with an STI during lockdown.

DISCUSSION

Findings presented here demonstrate clear changes in sexual activity and sexual practices during the peak of the COVID-19 pandemic (to-date) in Australia and the lockdown measures it prompted. Our findings show a decline in sexual activity

Table 2 Use of dating apps and online dating in lockdown compared with 2019

<table>
<thead>
<tr>
<th>Variable</th>
<th>Used apps in 2019, n/N (%)</th>
<th>Used apps since lockdown, n/N (%)</th>
<th>Difference (95% CI)†</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>406/965 (42.1)</td>
<td>260/953 (27.3)</td>
<td>−14.8 (−17.6 to −11.9)</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>117/247 (47.4)</td>
<td>85/241 (35.3)</td>
<td>−12.1 (−17.3 to −6.9)</td>
</tr>
<tr>
<td>Female</td>
<td>270/673 (40.1)</td>
<td>162/669 (24.2)</td>
<td>−15.9 (−19.4 to −12.4)</td>
</tr>
<tr>
<td>Gender diverse*</td>
<td>18/42 (42.9)</td>
<td>13/41 (31.7)</td>
<td>−11.1 (−24.6 to 2.3)</td>
</tr>
<tr>
<td>Age (years)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18–29</td>
<td>309/635 (48.7)</td>
<td>193/627 (30.8)</td>
<td>−18.0 (−21.8 to −14.1)</td>
</tr>
<tr>
<td>30+</td>
<td>96/323 (29.7)</td>
<td>67/320 (20.9)</td>
<td>−8.8 (−5.1 to −12.4)</td>
</tr>
<tr>
<td>Sexual identity†</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heterosexual</td>
<td>221/632 (35.0)</td>
<td>152/624 (24.3)</td>
<td>−10.6 (−13.9 to −7.3)</td>
</tr>
<tr>
<td>MSM</td>
<td>61/61 (67.0)</td>
<td>40/89 (44.9)</td>
<td>−22.1 (−31.2 to −13.0)</td>
</tr>
<tr>
<td>WSW</td>
<td>107/201 (53.2)</td>
<td>55/201 (27.4)</td>
<td>−25.9 (−33.0 to −18.8)</td>
</tr>
<tr>
<td>Other</td>
<td>15/38 (39.5)</td>
<td>12/37 (32.4)</td>
<td>−7.0 (−22.3 to 8.2)</td>
</tr>
<tr>
<td>Relationship status§</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In a relationship and cohabiting</td>
<td>71/146 (20.5)</td>
<td>25/44 (7.3)</td>
<td>−13.3 (−16.8 to −9.7)</td>
</tr>
<tr>
<td>In a relationship but not cohabiting</td>
<td>88/248 (35.5)</td>
<td>20/245 (8.2)</td>
<td>−27.3 (−33.5 to −21.1)</td>
</tr>
<tr>
<td>Single</td>
<td>220/329 (66.9)</td>
<td>198/325 (60.9)</td>
<td>−5.9 (−11.0 to −0.1)</td>
</tr>
<tr>
<td>Other</td>
<td>25/37 (67.6)</td>
<td>17/36 (47.2)</td>
<td>−20.3 (−39.0 to −1.7)</td>
</tr>
</tbody>
</table>

*Gender diverse includes trans and non-binary.
†The difference in proportions lockdown-2019; calculated from logistic regression model.
‡MSM=men who have sex with men (including bisexual men); WSW=women who have sex with women (including bisexual women); other=asexual and non-binary and those who selected ‘something else’.
§‘In a relationship’ includes those who selected married/do facto/partner/boyfriend/girlfriend/living apart together or long distance relationship; ‘cohabiting’ defined as living with partners; single includes those who selected single/divorced/widowed (and did not select another relationship); other includes people who selected polyamorous or multiple partners (and did not select another relationship option, such as single) and those who indicated in comments that they were casually dating but not exclusive.
during the lockdown period with more than half of participants (53.5%) reporting having less sex during lockdown as compared with 2019. These patterns were most stark among those who reported being single, with 69.1% reporting less sex compared with those who reported being in a relationship. Somewhat unsurprisingly, of those reporting sexual activity during lockdown, sexual partners were most often regular partners, with few reporting sexual activity with casual hook-ups (7.8%). While research on the impact of COVID-19 on sexual behaviour is currently limited, data from a cross-sectional study conducted in the UK among those self-isolating reported similar results, with participants who were married or in a domestic relationship more likely to report sexual activity in the past week than their single counterparts.17

Alongside declines in sexual activity, our findings also demonstrate changes in sexual practices. As could be anticipated given reduced opportunity for meeting partners, our findings show an increase in solo sex activities, including masturbation and using sex toys, particularly among those reporting less or no sex during lockdown. Indeed, adult stores in Australia reported a surge in sales during lockdown.18 We were also interested in whether participants had changed their normal sexual practices or were engaging in additional hygiene practices, like washing their hands before and after sex, due to COVID-19. Although some participants indicated more frequently washing their hands before and after sex, overall we saw little change in partnered sex practices.

Contrary to our initial assumptions that dating app use would increase during lockdown, overall our findings showed a marked decrease in use. In particular, we saw significant declines in use among people who identified as female, those aged 18–29 years and those in a relationship. Among singles, dating app use declined by only a small amount. These findings contrast with reports of increasing use of dating apps during periods of lockdown worldwide.19 Dating apps are often used to facilitate in-person sexual and romantic connections19; for the participants in our study, the physical distancing enforced during lockdown perhaps drove usual users off the platform. However, among those still using apps during lockdown, we saw a significant increase in use for chatting/texting and organising virtual dates, and some continued to use the apps to facilitate in-person dates/hook-ups. Interestingly, rates of sexting or swapping intimate pictures did not significantly change between 2019 and lockdown. Furthermore, only a small proportion of participants reported being diagnosed with STIs during lockdown and few reported accessing STI testing. However, given that some participants reported arranging in-person dates/hook-ups during lockdown, ready access to STI screening and treatment services during the COVID-19 pandemic is vital.

Our findings should be interpreted within their limitations. Namely, we used convenience sampling to recruit participants, and our resultant sample was largely homogenous, with most participants identifying as female, aged <30 years and well educated. We also had an over-representation of WSW. It is likely that our findings do not adequately capture the experiences of diverse population groups who have been significantly impacted by the pandemic, including, for example, culturally and linguistically diverse groups and those living in areas of low socioeconomic advantage.20 21 Furthermore, although all Australian states and territories were represented, participants living in the state of Victoria were over-represented. Due to our recruitment methods, namely via our own networks and via Facebook advertising, we are unable to estimate our response rate. Further limitations include recall bias, particularly for data on activity during 2019, and missing data for several variables (although this was usually ≤13%). Several participants also initiated the survey but did not complete it. Those who completed the survey were more likely to be older than those who did not. However, our study is novel in providing unique insight into changes in sexual activity during the peak of COVID-19 lockdown restrictions (to-date) among a cohort of people living in Australia, and its strengths will be realised in subsequent cohort analyses of future waves of data.

The COVID-19 pandemic and the lockdown measures it prompted clearly impacted the sexual activity of people living in Australia. Although restrictions are beginning to ease across most of the country, recent spikes in cases in Melbourne,22 the second largest city in Australia, serve as a reminder that the pandemic is still with us and probably will be for some time. Whether or not the changes in sexual behaviour we report here will continue is unclear. As the pandemic continues, it is important to continue to monitor changes in sexual activity and associated implications
for sexual and reproductive health. In the short term, as restrictions lift and people increasingly engage in casual sex, sexual health organisations have produced guidelines for reducing risk of COVID-19 transmission during these encounters and are encouraging regular HIV and STI screening. Others warn of the continued impact of the pandemic on sexual and reproductive health, including reduced access to abortion services and an increase in intimate partner violence. Whether or not Australia will experience an increase in fertility, as has been observed after high-mortality disasters like the 2004 Indonesian tsunami or a long-term fertility reduction as seen in Sweden after the 1918 influenza pandemic is yet to be seen.

REFERENCES

7 Chief Health Officer Victoria, @VictorianCHO. Tweet: ‘Regarding ‘Stay at Home’ rules: We have no desire to penalise individuals who are staying at home with our partners if they don’t usually reside together. We’ll be making an exemption. Hope that helps.’ Tweeted on: Apr 1 2020, 4:59PM. Available: https://twitter.com/VictorianCHO/status/1245228713517110048

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Sex Transm Infect. first published on 17 November 2020. Downloaded from http://sti.bmj.com/ on February 29, 2024 by guest. Protected by copyright.

