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To cite this article: Martin Holt, Timothy Broady, Denton Callander, Mish Pony, Liz Duck-Chong, Teddy Cook & Shoshana Rosenberg (2022): Sexual experience, relationships, and factors associated with sexual and romantic satisfaction in the first Australian Trans & Gender Diverse Sexual Health Survey, International Journal of Transgender Health, DOI: [10.1080/26895269.2021.2016540](https://doi.org/10.1080/26895269.2021.2016540)

To link to this article: <https://doi.org/10.1080/26895269.2021.2016540>



Published online: 05 Jan 2022.



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Sexual experience, relationships, and factors associated with sexual and romantic satisfaction in the first Australian Trans & Gender Diverse Sexual Health Survey

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ABSTRACT

Background: Sexual and romantic satisfaction are important aspects of sexual health and wellbeing, but they have not been thoroughly investigated among transgender and gender diverse ('trans') people in Australia.

Aims: To address this gap and improve sexual health and wellbeing, we assessed the sexual behavior and relationships of a national sample of trans people in Australia, and factors associated with sexual and romantic satisfaction.

Methods: We conducted a national survey of trans people from Australia in October-November 2018.

Results: The sample included 1,613 trans participants, of whom 353 (21.9%) were men, 397 (24.6%) were women and 863 (53.5%) were non-binary. Over 70% of the sample had been sexually active in the previous year, and 56.9% were in a relationship, but only 32.4% were satisfied with the sexual aspects and 47.1% with the romantic aspects of their lives. Sexual satisfaction was associated with younger age, being asexual, having more trans friends, more frequent sex, and using illicit drugs in the context of sexual activity. Anxiety or fear about sex was associated with less sexual satisfaction, as was being in an open relationship. Romantic satisfaction was associated with younger age, having non-binary partners, and being in a current relationship (particularly a monogamous one). Recent distress, anxiety, or fear about sex were associated with less romantic satisfaction.

Conclusion: Participants reported a broad range of sexual relationships, but low levels of satisfaction with the sexual and romantic aspects of their lives. The findings underscore the importance of supportive partners, access to social support and peer networks of trans people, as well as access to mental health support and sex-positive, trans affirming counseling in sexual health services.

KEYWORDS

relationships; romantic satisfaction; sexual behavior; sexual satisfaction; transgender persons

Introduction

Sexual and romantic relationships are an important part of people's lives and a critical component of sexual health and wellbeing. The World Health Organization asserts that sexual health is not simply the absence of disease or dysfunction, but a state of wellbeing that "requires a positive and respectful approach to sexuality and sexual relationships, as well as the possibility of having pleasurable and safe sexual experiences, free of coercion, discrimination and violence" (World Health Organization, 2017, p. 3).

Throughout this article we use 'trans' to refer to transgender and gender diverse people. In

Australia and internationally, relatively little is known about the sexual and romantic lives of trans people. The burgeoning international literature on trans health is overwhelmingly focused on surgery, mental health, and endocrinology, with fewer than 3% of publications addressing sexuality (Wanta and Unger, 2017). When sexual and reproductive health are addressed in studies of trans people, these often focus on HIV and sexually transmitted infections, reflecting the disproportionate burden of these infections, particularly on trans women (Bradford and Spencer, 2020; Reisner et al., 2016). Few studies of trans people and their partners address sexual or

romantic satisfaction, and if they do they tend to focus on the effects of gender affirmation on relationship satisfaction and quality, or conversely how support and satisfaction within a relationship may affect the experience of gender affirmation (Fuller and Riggs, 2021; Galupo et al., 2019; Marshall et al., 2020). Exploratory research conducted with trans people in Australia found that just under half were in a relationship, and the sample described difficulties in meeting partners, including feeling anxious about negative reactions or discrimination from potential partners (Riggs, von Doussa, and Power, 2015).

There are notable absences in the research literature on sexual and romantic satisfaction among trans people. Firstly, non-binary people (people whose gender sits within, outside of, across or between the spectrum of the male and female binary) are excluded or rendered invisible in most research on sex and relationships (Matsuno and Budge, 2017), although there are notable exceptions (Anzani et al., 2021; Galupo et al., 2019). This is despite the growing recognition of the diversity of non-binary identities in Australia and elsewhere (Callander et al., 2021; Hill et al., 2021; McNabb, 2018; Monro, 2019). Secondly, studies of sexual and romantic satisfaction tend to privilege primary relationships, and neglect relationships with casual or other sex partners. This potentially disguises or ignores the range of romantic and sexual relationships in which people engage.

The absence of research about trans people's sexual lives poses a challenge to those working in sexual health and related fields to deliver appropriate care. More broadly, understanding trans people's sexual lives is important to recognize their sexual and relationship diversity but also to improve a holistic sense of sexual health and wellbeing in this population. Using data from the first survey explicitly designed to assess the sexual health of trans people in Australia (Callander et al., 2021; Callander et al., 2019; Rosenberg et al., 2021), here we assess the range of sexual partners and relationships that trans people have, and the factors associated with sexual and romantic satisfaction in this population. This analysis aimed to identify factors that can be harnessed to improve sexual and romantic satisfaction and the sexual health and wellbeing of trans people.

Method

Participants and procedures

A national online, cross-sectional survey of trans people was conducted in Australia in October–November 2018 (Callander et al., 2021; Callander et al., 2019; Rosenberg et al., 2021). The study was designed to compensate for the lack of detailed information about the sexual health of trans people in Australia. From the outset, the study had a high degree of community oversight and control, with the study team led by five trans investigators in collaboration with four cisgender researchers (Callander et al., 2019). This was to ensure the research was of relevance to community members, inclusive and non-stigmatizing, made accessible to community members after the study, and designed to influence and improve gender inclusive and affirming practices, policies, and services (Adams et al., 2017; Bouman, 2018; Newman et al., 2021).

The study design was reviewed and approved by the Human Research Ethics Committee of UNSW Sydney (ref. HC180613) and the Research Ethics Review Committee of the community organization ACON. Eligible participants were people aged 16 or older who lived in Australia and whose gender was different from that presumed at birth. Advertising for the survey was conducted and distributed online through social media, paid advertising on Facebook and Instagram, and through organizations that provide health services to trans people in Australia. A dedicated website provided information about the study and a link to the study questionnaire (using Qualtrics, Provo, UT). Starting and completing the survey was taken as evidence of consent, which could be completed anonymously. Parental or guardian consent was not sought for 16–17-year-olds, who were judged to be 'informed minors' as the age of consent for sex across most of Australia is 16 years old. The online survey used adaptive routing.

Variables

After questions determining their eligibility, participants were asked about demographics, gender, sexual orientation and experience, sexual and

romantic partners, mental health and wellbeing (including the K6 distress scale; Kessler et al., 2003), recent sex and drug use, engagement with sexual health services, access to and engagement with gender affirming processes, and experiences of health care. To manage the wide range of gender identities expressed by participants (using fourteen nonexclusive categories plus an open text box in the original survey), we derived three gender categories from a hierarchical clustering analysis of participant responses: i) man (e.g. male, man, trans man), ii) woman (e.g. female, woman, trans woman), and iii) non-binary (e.g. agender, genderqueer) (Callander et al., 2021). When participants expressed both binary and non-binary gender identities, priority was given to non-binary identities when classifying them, as non-binary identities can be understood as entirely or partially outside of binary gender. We acknowledge that, for some, this appears to suppress the gender diversity expressed by participants, but it is both a pragmatic way to manage the complexity of the data in a statistical analysis and a way to demonstrate how a classification system can routinely extend beyond binary gender. In the remainder of the article, male and female participants are sometimes described as 'binary' participants when compared with non-binary participants.

Outcomes

The two primary outcomes in this analysis were i) satisfaction with the sexual aspects of one's life and ii) satisfaction with the romantic aspects of one's life, measured with two items: 'I am satisfied with the sexual aspects of my life', derived from the Multi-Dimensional Sexual Self-Concept Questionnaire (Snell, 2010), and 'I am satisfied with the romantic aspects of my life', both scored from Strongly Disagree (1) to Strongly Agree (5).

Statistical analyses

Descriptive statistics are shown for participants' demographic details, sexual and romantic experience, and a range of covariates, stratified by the gender categories. Differences between the gender categories were assessed with Kruskal Wallis

(continuous/ordinal variables) and chi-square tests (categorical variables). To identify independent associations with sexual and relationship satisfaction, ordinal logistic regression models for each outcome variable were created. Covariates with a statistically significant bivariate relationship with an outcome variable ($p < 0.05$) were block entered into the relevant multivariate model. Crude and adjusted odds ratios (OR) and 95% confidence intervals (CI) were calculated.

Results

Participant characteristics

In total, 1,920 eligible participants started the survey with 305 partial completions and two duplicates removed. The final sample of 1,613 participants ranged in age from 16-80 years old with a median age of 27 years. Participant characteristics are shown in Table 1. Women in the sample had the highest median age, compared with the other groups. Over three-quarters of participants came from New South Wales, Queensland and Victoria. Most participants were born in Australia. Participants could indicate more than one sexual orientation; the most common were queer, fluid or bisexual. Men were the most likely to report that they were heterosexual, women the most likely to report that they were homosexual, non-binary participants as fluid, queer, or asexual. The majority of the sample reported an annual income of less than AU\$40,000, below the median personal income in Australia at the time (Australian Bureau of Statistics, 2020). Nearly half the sample was university educated.

Nearly four out of five participants had altered their appearance to affirm their gender (using medical or non-medical processes), and a slightly smaller proportion had ever used gender affirming hormone treatment. Most people who had experience of using gender affirming hormones were currently using them at the time of the survey (895 out of 942). Male and female participants were more likely than non-binary participants to have altered their appearance or taken gender affirming hormones. Less than half the sample rated their access to gender affirming care as good or excellent; male and female participants

Table 1. Participant characteristics.

	Total N = 1,613 n (%)	Gender			Test statistic	p value
		Man n = 353 n (%)	Woman n = 397 n (%)	Non-binary n = 863 n (%)		
Median age in years (IQR ¹)	27 (22-36)	25 (21-34)	34 (25-48)	26 (22-33)	123.26	<0.001
State/territory					20.62	0.002
New South Wales	495 (30.7)	112 (31.7)	128 (32.2)	255 (29.6)		
Queensland	502 (31.1)	97 (27.5)	99 (24.9)	306 (35.5)		
Victoria	234 (14.5)	62 (17.6)	67 (16.9)	105 (12.2)		
Other	382 (23.7)	82 (23.2)	103 (25.9)	197 (22.8)		
Country of birth					5.19	0.075
Australia	1,370 (84.9)	313 (88.7)	330 (83.1)	727 (84.2)		
Overseas	243 (15.1)	40 (11.3)	67 (16.9)	136 (15.8)		
Aboriginal or Torres Strait Islander	70 (4.3)	19 (5.4)	18 (4.5)	33 (3.8)	1.51	0.469
Sexual orientation ²						
Asexual	127 (7.9)	13 (3.7)	27 (6.8)	87 (10.1)	14.97	0.001
Bisexual	310 (19.2)	59 (16.7)	72 (18.1)	179 (20.7)	3.02	0.221
Fluid	330 (20.5)	58 (16.4)	75 (18.9)	197 (22.8)	7.09	0.029
Heterosexual	93 (5.8)	46 (13.0)	35 (8.8)	12 (1.4)	71.50	<0.001
Homosexual	288 (17.9)	61 (17.3)	110 (27.7)	117 (13.6)	37.22	<0.001
Queer	342 (21.2)	64 (18.1)	14 (3.5)	264 (30.6)	121.77	<0.001
Annual income					18.07	<0.001
<\$40k	1,042 (65.2)	225 (65.2)	223 (56.7)	594 (68.8)		
\$40k	556 (34.8)	120 (34.8)	170 (43.3)	266 (30.9)		
University educated	780 (48.4)	142 (40.2)	191 (48.1)	447 (51.8)	13.44	0.001
Altered appearance to affirm gender	1,285 (79.7)	320 (90.7)	354 (89.2)	611 (70.8)	90.31	<0.001
Experience of gender affirming hormone treatment	942 (73.3)	286 (89.4)	325 (91.8)	331 (38.4)	218.46	<0.001
Good/excellent access to gender affirming processes	642 (39.8)	176 (49.9)	194 (48.9)	272 (31.5)	53.23	<0.001
No. of trans or gender diverse friends					64.21	<0.001
None	163 (10.1)	53 (15.0)	47 (11.8)	63 (7.3)		
A few	805 (49.9)	201 (56.9)	223 (56.2)	381 (44.1)		
Half	379 (23.5)	62 (17.6)	71 (17.9)	246 (28.5)		
Most/all	266 (16.5)	37 (10.5)	56 (14.1)	173 (20.1)		
Psychological distress (K6 scale)					4.48	0.106
No probable serious mental illness	1,004 (62.7)	229 (65.4)	258 (65.5)	517 (60.3)		
Probable serious mental illness	597 (37.3)	121 (34.6)	136 (34.5)	340 (39.7)		
Good/excellent sex education at school	178 (11.0)	30 (8.5)	49 (12.3)	99 (11.5)	3.17	0.205

¹ IQR = interquartile range, ² Not mutually exclusive.

rated their access as better than non-binary participants. The majority of the sample had at least some trans friends; men were the least likely and non-binary participants the most likely to have these friends. Over a third of the sample reported recent distress on the K6 scale that could indicate 'serious mental illness' (Kessler et al., 2003). Only one in ten in the sample described their experience of sex education at school as good or excellent.

Sexual experience and relationships

The sexual experience and relationships of the sample are shown in Table 2. The majority of the sample was sexually experienced, and over 70% of the sample had been sexually active in the last year. Non-binary participants were more

likely than binary participants to have been recently sexually active. Over a quarter of the sample reported condomless sex with casual partners in the previous year. A minority of the sample reported ever having used illicit drugs in the context of sexual activity; binary participants were less likely to report this than non-binary participants. Over a third of the sample indicated they felt anxious and a similar proportion felt fearful when thinking about their sex life. Fear about one's sex life was more commonly reported by binary participants than non-binary participants.

In terms of relationship history, participants were most likely to have had cisgender ('cis') female partners and least likely to have had trans male partners. Trans male participants were the most likely to have had cis male partners, and

Table 2. Participants' sexual experiences and relationships.

	Total N = 1,613 n (%)	Gender			Test statistic	p value
		Man n = 353 n (%)	Woman n = 397 n (%)	Non-binary n = 863 n (%)		
Sexual experience					42.05	<0.001
None	166 (10.3)	41 (11.6)	33 (8.3)	92 (10.7)		
Not in the last year	310 (19.2)	59 (16.7)	120 (30.2)	131 (15.2)		
In the last year	1,137 (70.5)	253 (71.7)	244 (61.5)	640 (74.2)		
Frequency of having sex					53.41	<0.001
No previous sex	166 (10.3)	41 (11.6)	33 (8.3)	92 (10.7)		
No regular sex	324 (20.1)	69 (19.6)	117 (29.5)	138 (16.0)		
Few times per year	386 (23.9)	76 (21.5)	112 (28.2)	198 (22.9)		
Monthly	434 (26.9)	85 (24.1)	86 (21.7)	263 (30.5)		
Weekly	303 (18.8)	82 (23.2)	49 (12.3)	172 (19.9)		
Any condomless sex with casual partners in last year	443 (27.5)	108 (30.6)	100 (25.2)	235 (27.2)	2.79	0.248
Ever used drugs for sex	255 (15.8)	48 (13.6)	42 (10.6)	165 (19.1)	16.56	<0.001
Anxious when thinking about sex life	628 (38.9)	149 (42.2)	156 (39.3)	323 (37.4)	2.44	0.295
Fearful when thinking about sex life	548 (34.0)	134 (38.0)	151 (38.0)	263 (30.5)	10.13	0.006
Relationship history (romantic or sexual) by gender of partners ¹						
Cisgender men	1,033 (64.0)	260 (73.7)	186 (46.9)	587 (68.0)	71.04	<0.001
Cisgender women	1,221 (75.7)	269 (76.2)	296 (74.6)	656 (76.0)	0.38	0.829
Non-binary partners	695 (43.1)	110 (31.2)	95 (23.9)	490 (56.8)	145.86	<0.001
Transgender men	444 (27.5)	107 (30.3)	59 (14.9)	278 (32.2)	42.80	<0.001
Transgender women	524 (32.5)	62 (17.6)	163 (41.1)	299 (34.7)	50.98	<0.001
Current relationship partner(s)					38.32	<0.001
No relationship	696 (43.2)	161 (45.6)	188 (47.4)	347 (40.2)		
One partner	764 (47.4)	186 (52.7)	169 (42.6)	409 (47.4)		
Multiple partners	153 (9.5)	6 (1.7)	40 (10.1)	107 (12.4)		
Relationship type					39.94	<0.001
No relationship	762 (47.2)	173 (49.0)	210 (52.9)	379 (43.9)		
Monogamous	470 (29.1)	123 (34.8)	119 (30.0)	228 (26.4)		
Open/other	381 (23.6)	57 (16.2)	68 (17.1)	256 (29.7)		

¹ Not mutually exclusive.

non-binary participants were the most likely to have had non-binary partners. Trans men were the least likely to have had partners who were trans women and trans women were the least likely to have had partners who were trans men.

Over half the sample were in a relationship at the time of their participation, including 10.6% who were married. Most of those in current relationships had one partner, but one in six participants in relationships had multiple partners. Non-binary participants were the most likely and male participants the least likely to have multiple relationship partners. Monogamous relationships were slightly more common than open or other relationship types. Men were the most likely to report monogamous relationships and non-binary participants the most likely to have open or other relationship types.

Sexual and romantic satisfaction

Just under a third of participants (32.4%) agreed or strongly agreed that they were satisfied with

the sexual aspects of their life. The analysis of factors associated with sexual satisfaction is shown in [Table 3](#). Higher levels of sexual satisfaction were independently associated with younger age, being asexual, having more trans friends, having more frequent sex, and more frequently using illicit drugs in the context of sexual activity. Lower levels of sexual satisfaction were associated with feeling anxious or fearful when thinking about one's sex life, or being in an open or other type of relationship compared with being in a monogamous relationship. Sexual satisfaction was not independently related to the other covariates, including gender, altering one's appearance to affirm gender, using gender affirming hormone treatment, access to gender affirming care, recent distress, recent sex with casual partners, relationship history, or being in a current relationship. To clarify the finding that asexual participants were more likely to be sexually satisfied, we looked at their levels of recent sexual activity. Compared with other (allosexual)

Table 3. Ordinal logistic regression of factors associated with satisfaction with sexual aspects of one's life (N=1,613).

Variable	Crude OR ¹	95% CI ²	p value	Adjusted OR ¹	95% CI ²	p value
Age in years	0.99	0.98-0.99	<0.001	0.97	0.96-0.98	<0.001
Gender ³						
Man	0.97	0.79-1.20	0.777			
Woman	0.71	0.58-0.87	0.001	0.77	0.57-1.03	0.076
Non-binary	1.31	1.10-1.57	0.002	0.85	0.66-1.08	0.186
Sexual orientation ³						
Asexual	1.85	1.33-2.57	<0.001	5.82	3.99-8.48	<0.001
Bisexual	0.85	0.68-1.06	0.153			
Fluid	0.93	0.75-1.16	0.530			
Heterosexual	0.82	0.56-1.20	0.302			
Homosexual	0.83	0.66-1.04	0.111			
Queer	1.35	1.09-1.67	0.006	1.04	0.83-1.32	0.722
Altered appearance to affirm gender	0.85	0.68-1.05	0.128			
Experience of gender affirming hormone treatment	0.82	0.66-1.02	0.076			
Good/excellent access to gender affirming processes	1.29	1.08-1.54	0.005	1.10	0.90-1.33	0.353
No. of trans or gender diverse friends ⁴	1.29	1.17-1.42	<0.001	1.13	1.01-1.28	0.035
Psychological distress (K6) ⁵	0.95	0.94-0.97	<0.001	0.99	0.97-1.01	0.206
Good/excellent sex education at school	0.84	0.64-1.11	0.226			
Frequency of having sex ⁶	1.88	1.74-2.03	<0.001	1.45	1.30-1.62	<0.001
Any condomless sex with casual partners in last year	1.52	1.25-1.85	<0.001	0.99	0.80-1.23	0.943
Frequency of drug use for sex ⁷	1.87	1.47-2.37	<0.001	1.43	1.10-1.87	0.008
Anxious when thinking about sex life ⁸	0.41	0.37-0.44	<0.001	0.48	0.43-0.53	<0.001
Fearful when thinking about sex life ⁸	0.51	0.47-0.55	<0.001	0.86	0.78-0.95	0.004
Relationship history (romantic or sexual) by gender of partners ³						
Cisgender men	1.25	1.05-1.50	0.015	0.85	0.69-1.04	0.111
Cisgender women	1.20	0.98-1.47	0.086			
Non-binary partners	1.62	1.36-1.93	<0.001	1.02	0.81-1.27	0.895
Transgender men	1.32	1.09-1.60	0.005	0.83	0.66-1.04	0.102
Transgender women	1.50	1.25-1.81	<0.001	1.12	0.90-1.40	0.304
Current relationship partner(s)						
One partner	Ref.			Ref.		
Multiple partners	1.27	0.93-1.72	0.128	1.31	0.91-1.88	0.149
No relationship	0.32	0.26-0.38	<0.001	0.76	0.47-1.24	0.278
Relationship type						
Monogamous	Ref.			Ref.		
Open/other	0.88	0.69-1.12	0.304	0.75	0.56-1.00	0.048
No relationship	0.27	0.22-0.34	<0.001	0.74	0.44-1.24	0.250

¹ OR=odds ratio, ² CI=confidence interval, ³ Each category compared with everyone else e.g. man vs. the other categories, ⁴ Scored from 0 None to 3 Most/all, ⁵ Kessler 6 scale scored from 6-30, ⁶ Scored from 0 No regular sex to 3 Weekly, ⁷ Scored from 0 Never to 3 Very often, ⁸ Scored from 1 Strongly Disagree to 5 Strongly Agree.

participants, asexual participants were less likely to report sex in the last year (33.9% vs. 73.6%, $\chi^2(1)=88.93$, $p<0.001$) and more likely to report that they had had no previous sex or did not have regular sex (70.1% vs. 27.0%, $\chi^2(1)=102.73$, $p<0.001$). This suggests asexual participants were more satisfied with less sex than allosexual participants.

The proportion of the whole sample (N=1,613) who agreed or strongly agreed that they were satisfied with the romantic aspects of their life was 47.1%. The analysis of factors associated with romantic satisfaction is shown in Table 4. Higher levels of romantic

satisfaction were independently associated with younger age, having a history of non-binary partners, being in a current relationship, and having a monogamous relationship. Lower levels of romantic satisfaction were associated with higher levels of recent distress and feeling anxious or fearful when thinking about one's sex life. Romantic satisfaction was not independently related to the other covariates, including gender, sexual orientation, altering one's appearance to affirm gender, using gender affirming hormone treatment, access to gender-affirming care, and recent sexual experience.

Table 4. Ordinal logistic regression of factors associated with satisfaction with romantic aspects of one's life (N=1,613).

Variable	Crude OR ¹	95% CI ²	p value	Adjusted OR ¹	95% CI ²	p value
Age in years	0.99	0.98-0.99	<0.001	0.97	0.96-0.98	<0.001
Gender ³						
Man	1.04	0.84-1.28	0.718			
Woman	0.66	0.54-0.81	<0.001	0.81	0.60-1.09	0.161
Non-binary	1.31	1.10-1.56	0.002	0.95	0.74-1.21	0.654
Sexual orientation ³						
Asexual	0.78	0.57-1.07	0.123			
Bisexual	0.99	0.79-1.23	0.915			
Fluid	1.00	0.81-1.24	0.997			
Heterosexual	0.86	0.59-1.26	0.439			
Homosexual	0.84	0.67-1.06	0.143			
Queer	1.52	1.23-1.87	<0.001	1.04	0.83-1.32	0.714
Altered appearance to affirm gender identity	0.85	0.69-1.06	0.152			
Experience of gender affirming hormone treatment	0.93	0.74-1.15	0.493			
Good/excellent access to gender affirming processes	1.29	1.08-1.53	0.005	1.20	0.99-1.46	0.065
No. of trans or gender diverse friends ⁴	1.21	1.10-1.34	<0.001	1.07	0.96-1.21	0.228
Psychological distress (K6) ⁵	0.96	0.94-0.97	<0.001	0.96	0.94-0.98	<0.001
Good/excellent sex education at school	1.06	0.80-1.41	0.664			
Frequency of having sex ⁶	1.96	1.82-2.11	<0.001	1.04	0.94-1.16	0.413
Any condomless sex with casual partners in last year	1.13	0.94-1.37	0.201			
Frequency of drug use for sex ⁷	1.45	1.15-1.84	0.002	0.99	0.76-1.29	0.947
Anxious when thinking about sex life ⁸	0.63	0.58-0.68	<0.001	0.79	0.72-0.88	<0.001
Fearful when thinking about sex life ⁸	0.59	0.55-0.63	<0.001	0.90	0.82-1.00	0.046
Relationship history (romantic or sexual) by gender of partners ³						
Cisgender men	1.29	1.08-1.55	0.006	0.97	0.79-1.19	0.774
Cisgender women	1.61	1.31-1.97	<0.001	1.04	0.83-1.31	0.716
Non-binary partners	1.81	1.52-2.16	<0.001	1.40	1.12-1.76	0.004
Transgender men	1.52	1.25-1.85	<0.001	1.03	0.82-1.30	0.808
Transgender women	1.26	1.13-1.63	0.001	0.97	0.78-1.21	0.795
Current relationship partner(s)						
One partner	Ref.			Ref.		
Multiple partners	0.81	0.59-1.11	0.186	0.96	0.66-1.39	0.822
No relationship	0.05	0.04-0.07	<0.001	0.10	0.06-0.16	<0.001
Relationship type						
Monogamous	Ref.			Ref.		
Open/other	0.64	0.50-0.82	<0.001	0.55	0.41-0.75	<0.001
No relationship	0.05	0.04-0.07	<0.001	0.53	0.31-0.88	0.015

¹ OR=odds ratio, ² CI=confidence interval, ³ Each category compared with everyone else e.g. man vs. the other categories, ⁴ Scored from 0 None to 3 Most/all, ⁵ Kessler 6 scale scored from 6-30, ⁶ Scored from 0 No regular sex to 3 Weekly, ⁷ Scored from 0 Never to 3 Very often, ⁸ Scored from 1 Strongly Disagree to 5 Strongly Agree.

Discussion

We assessed the range of sexual partners and relationships that trans people had, and the factors associated with sexual and romantic satisfaction in a national survey conducted across Australia. Nearly the entire sample was sexually experienced, and most had been sexually active in the past year. Over half the sample was in a current relationship, with monogamous and open or different relationship types being equally likely. Only a third of the sample reported being satisfied with their sex life and just under a half were satisfied with

the romantic aspects of their lives. Younger participants, those who had more sex, and those in (monogamous) relationships tended to be more satisfied, while anxiety and fear about sex were impediments to sexual and romantic satisfaction.

The frequency of sexual activity reported by our participants appears to be higher than that typically reported in samples of mainly cis, heterosexual adults in Australia (Rissel et al., 2014), but lower than that reported in samples of predominantly cis gay and bisexual men (Holt et al., 2017; Holt et al., 2013). Trans people in our study were equally likely as samples of predominantly

cis gay and bisexual men in Australia to have a monogamous or open/non-exclusive relationship (Holt et al., 2013). Condom use with casual partners was more commonly reported by trans people in our study compared with studies of (predominantly cisgender) young adults and gay and bisexual men in Australia (Adam et al., 2019; Holt et al., 2021).

Sexual satisfaction in our sample was associated with a range of factors. Perhaps unsurprisingly, in general participants with more frequent sexual experience were more satisfied with their sex lives, although it is notable that participants who were asexual (having little or no sexual attraction to other people) were more satisfied than their non-asexual peers. This aligned with asexual participants' level of sexual activity, which was much lower than other participants, suggesting they were satisfied with less frequent or no sex i.e. there was an alignment between asexual participants' sexual orientation and level of sexual activity (Bogaert, 2015), while other participants may have desired more sex. Sexual satisfaction was unrelated to gender and not independently associated with accessing gender affirming care, after controlling for other factors. This differs from previous research, which has emphasized the importance of reducing gender dysphoria and providing access to gender-affirming care to improve sexual satisfaction among trans people (Bradford and Spencer, 2020; Lindley, Anzani, and Galupo, 2020; Nikkelen and Kreukels, 2018).

In our survey, it was notable that participants with more trans friends were more satisfied with their sex lives, and those who felt anxious or fearful about sex were less satisfied, underscoring the importance of social support and mental wellbeing in sexual health (Sherman et al., 2020). Having social support, particularly from other trans people, has been found to foster resilience and counter the negative effects of cisgenderism and minority stress (Bariola et al., 2015; Pflum et al., 2015). It is possible that trans people who have trans friends have more access to potential partners, and are more confident in seeking (and getting) the sex they want. They may also share experiences of seeking partners and observe different ways of having a satisfying sex life from their peers. However, the role of social support

in sexual satisfaction is an underdeveloped research area, particularly among trans people, and is worthy of further investigation (Sánchez-Fuentes, Santos-Iglesias, and Sierra 2014). Given the large gap between the proportion of our sample who was sexually active and the minority who were satisfied with their sex lives, our results also suggest considerable room for improvement. Promoting access to peer support and providing person-centred, trans affirming, sex-positive counseling could be beneficial. While trans people commonly experience transphobic or cisgenderist care in sexual health settings (Harb et al., 2019; Lampe and Nowakowski, 2021; Rosenberg et al., 2021), there are a growing number of strengths-based models and frameworks to support positive experiences of sex and sexuality for gender diverse people (Mizock and Lewis, 2008; Rider et al., 2019; Riggs and Bartholomaeus, 2018; Rosenberg, Tilley, and Morgan, 2019; Spencer and Vencill, 2017).

Romantic satisfaction was more likely to be reported by participants if they were in a current relationship (with one or multiple partners), and if they were in a monogamous relationship (compared with non-monogamous relationships). We note that research has generated mixed findings about levels of satisfaction in monogamous and non-monogamous relationships (Conley et al., 2017), but most of this research does not focus on trans people. Using the same measure to assess romantic satisfaction in different types of relationship (as we did here) may overlook the fact that people in monogamous and open relationships have different criteria for what makes a relationship satisfying (Conley et al., 2017), which might explain the difference we found. Like sexual satisfaction, access to gender affirming care was associated with romantic satisfaction at a bivariate level, but was not independently associated after controlling for other factors. Participants reporting recent distress or feeling anxious or fearful about their sex lives were less romantically satisfied, echoing previous research (Fuller and Riggs, 2021; Riggs, von Doussa, and Power, 2015). Our findings partially align with international research which has found that being in a supportive relationship and access to gender affirming care are positively related to romantic

satisfaction (Fuller and Riggs, 2021; Marshall et al., 2020). However, as with sexual satisfaction, our analysis suggests that promoting access to trans affirming counseling and mental health support could be beneficial in improving romantic satisfaction among trans people. Peer- and community-level support have also been recommended as practices that foster resilience and wellbeing among trans people (Bariola et al., 2015; Johns et al., 2018; Sherman et al., 2020).

We acknowledge the limitations of our study findings. We recruited one of the largest samples of trans people to date in Australia (Callander et al., 2019; Hill et al., 2021), but this was a self-selected, cross-sectional sample. Representative samples of trans people in Australia do not currently exist, but compared with the adult Australian population, this sample had an overrepresentation of people living on a low income, more residents from Queensland, fewer residents from Victoria, and fewer people who were born overseas (Australian Bureau of Statistics, 2020, 2021a, 2021b). Our measures of sexual and romantic satisfaction were relatively simple single item measures derived from previous research (Snell, 2010), but as this area of research is neglected, we thought it was important to focus on positive aspects of trans people's sexual health, to counter the dominance of risk- and pathology-focused research (Bradford and Spencer, 2020; Reisner et al., 2016; Wanta and Unger, 2017).

Conclusion

Our research with trans people in Australia shows the variety of their sexual partners and relationships, but that only a minority were satisfied with the sexual and romantic aspects of their lives. Our findings underscore the importance of supportive partners and access to social support and peer networks to help improve sexual and romantic satisfaction, indicating opportunities for interventions beyond the individual or relationship level. Experiencing distress, anxiety or fear about sex were barriers to sexual and romantic satisfaction, reiterating the need for access to mental health support and sex-positive, trans affirming counseling in sexual health services.

Acknowledgments

We thank all the trans people who participated in the study and former members of the study investigator group (Vincent Cornelisse, Emanuel Vlahakis and Jeremy Wiggins).

Disclosure statement

No potential conflict of interest was reported by the authors.

Authors' contributions

Study conception, design, data collection, analysis and interpretation: MH, DC, MP, LDC, TC, SR. Statistical analysis for this article: TB. MH wrote the article with input from TB, DC and SR. All authors reviewed the article, provided commentary for revisions, agreed with the final version and agreed to the accuracy and integrity of the work.

Funding

Department of Health, Australian Government. The Australian Trans and Gender Diverse Sexual Health Survey was supported with funding from a National Health and Medical Research Council Program Grant (GNT1071269). The Centre for Social Research in Health and the Kirby Institute receive funding from the Australian Government Department of Health.

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Data availability statement

Data cannot be shared publicly because of their sensitive nature, the potential for individual identification, and ongoing stigma and discrimination enacted against transgender and gender diverse people. Due to these considerations, approval for this research granted by the human research ethics committee of UNSW Sydney (reference: HC180613) and ACON's population-specific human research ethics panel (reference: 2018/21) was provided under the condition that data would not be shared publicly. Data may be provided at request to researchers who agree to the privacy and security provisions of this approval. Such requests can be sent to humanethics@unsw.edu.au

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