



Depression and anxiety in Australian gay and bisexual men prior to and during COVID-19 restrictions

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Disclosures

Year	Type of relationship	Entity	Comment
2020	Honorarium, travel	HIV Education Queensland	Clinical education session
2020	Honorarium	Australasian Society for HIV Medicine	Clinical education sessions
2019	Honorarium, travel	Gilead Sciences	Presentation at scientific meeting
2019	Honorarium	Pharmaceutical Society of Australia	Training workshop on PrEP for pharmacists
2018	Honoraria	Pharmaceutical Society of Australia	Training workshops on PrEP for pharmacists
2018	Honorarium	Australasian Society for HIV Medicine	Clinical education session

Background

- Emerging research has started to document the impacts of COVID-19 and the related restrictions on mental health.
- Most research has been cross-sectional in nature and thus cannot compare *change* in mental health status.
- Gay and bisexual men already experience higher rates of mental ill health; concerns that this may have been exacerbated by COVID-19.

Aims

- In a cohort of GBM in Australia, this analysis aimed to:
 1. Determine changes in depression and anxiety prior to and after COVID-19 restrictions, including an examination of long-term trends;
 2. Determine factors associated with increased depression and increased anxiety after COVID-19 restrictions.

Methods: Study design

- Flux is a national, online, open, prospective observational cohort study of GBM in Australia, launched in 2014.
 - Men were eligible to participate if they were ≥ 16 years of age, identified as gay or bisexual or had sex with a man in the previous 12 months, and lived in Australia.
 - Online surveys every six months between 2014 and 2019.
 - In April 2020, all participants were invited to complete a special survey round focusing on COVID-19.
- Men were included in this analysis if they had participated in a Flux survey during 2019 and in 2020, and provided complete responses to the depression and anxiety measures.

Methods: Depression and Anxiety

- Depression measured using the 9-item Patient Health Questionnaire (PHQ-9).
- Anxiety measured using the 7-item Generalised Anxiety Disorder Assessment (GAD-7).
- A score >10 indicates clinical depression or anxiety.
- A ≥ 5 -point increase between 2019 and 2020 defined as 'reliable deterioration' (i.e. depression or anxiety increased).

Methods: Analysis

- Mean 2019 and 2020 scores on the scales compared using paired-samples t-tests.
- For depression and anxiety separately, each participant classified as having increased or not.
- Factors associated with increases in depression and anxiety were identified:
 - By t-tests or chi-square test at the bivariate level
 - By multivariate logistic regression at the multivariate level.

Results: The sample

- **664** men completed the two mental health measures in 2019 and in the 2020 COVID-19 round.

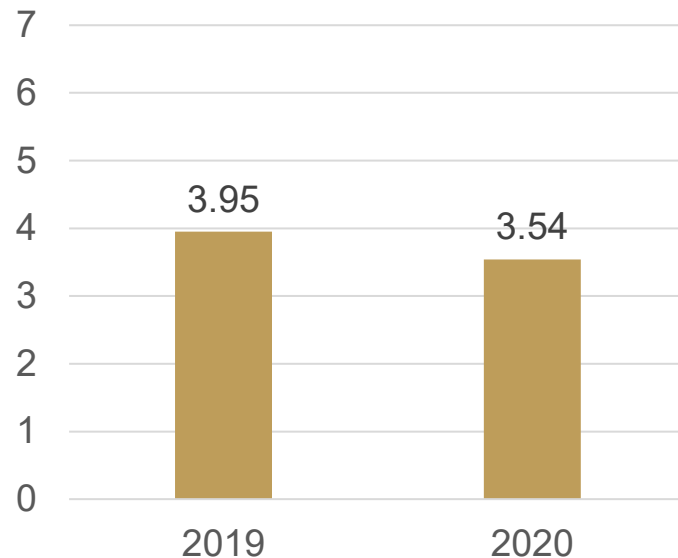
Median age (IQR)	44 (34-56)
Born in Australia	80.1%
Anglo-Celtic ethnicity	79.1%
University education	72.4%
Living in 'gay' postcode	25.9%
HIV status	
Positive	7.7%
Negative	89.0%
Unknown	3.3%

State of residence	
NSW	43.7%
Victoria	24.9%
Queensland	13.7%
Other	17.8%

Results: **Gay social engagement**

- The 'gay social engagement' scale comprises two items (scored 0-7):
 - How many gay friends the participant has
 - How much free time is spent with gay friends
- Between 2019 and the 2020 COVID-19 round, there was a significant decrease in mean score on the scale:

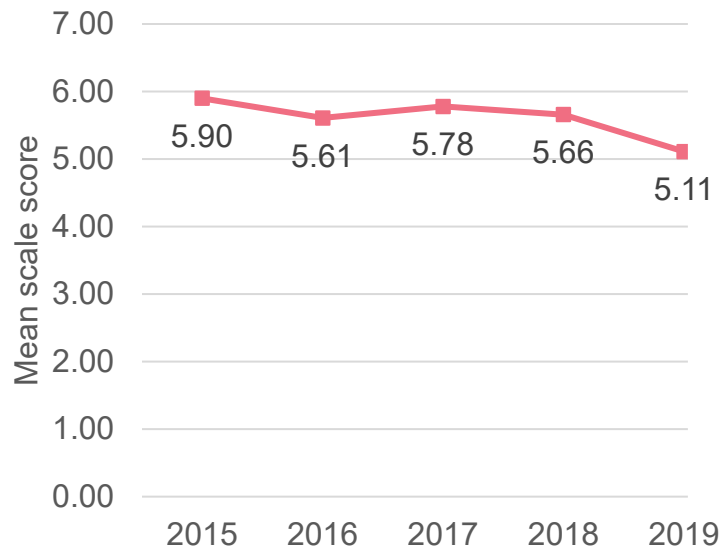
Mean gay social engagement score



$t = 7.89, p < 0.001$

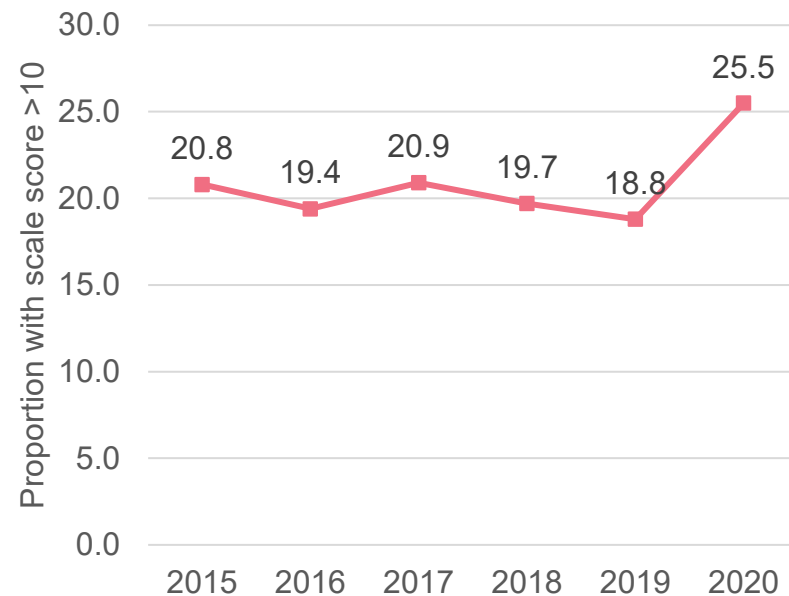
Results: Depression

- Mean PHQ-9 scores were stable between 2015 and 2018 ($p=0.510$), then decreased in 2019 ($p=0.007$).
- Mean score was 5.11 (SD=5.99) in 2019.
- It increased markedly in the 2020 COVID-19 round to 6.55 (SD=6.00; $p<0.002$).



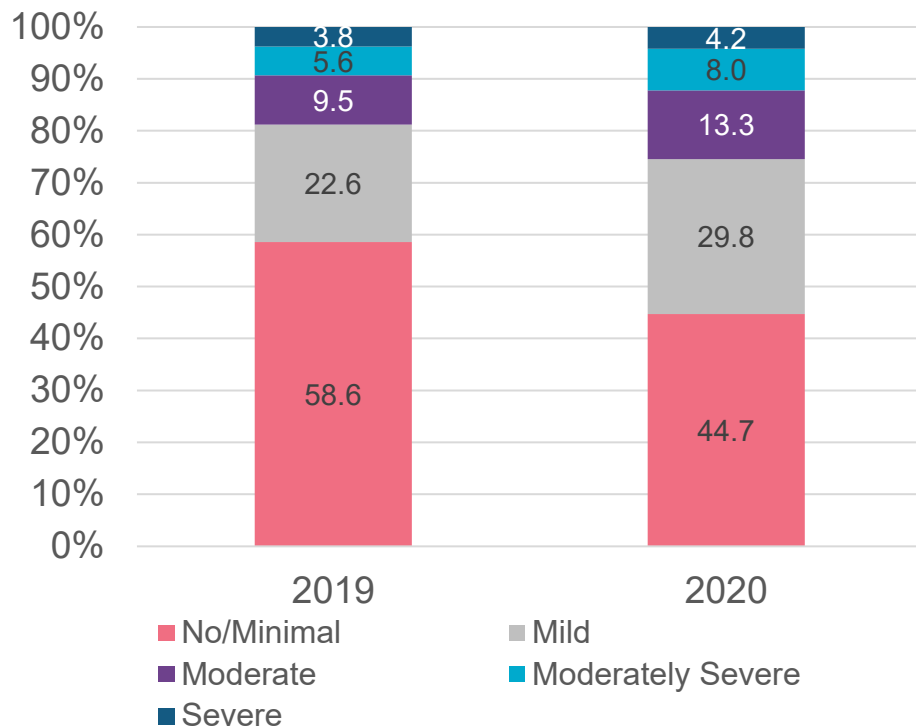
Results: Depression

- The proportion with a PHQ-9 score >10 (indicating clinical depression) followed a similar pattern.



Results: Depression

- Between 2019 and 2020, the proportion in all depression categories increased.
- In 2020, 12.2% of men were classified as having moderately severe or severe depression.



Results: Depression

- Overall, 158 participants (23.8%) increased ≥ 5 points on the PHQ-9 between 2019 and 2020.
 - Within these men, mean PHQ-9 score increased from 2.49 (SD=4.03) to 11.65 (SD=5.51; $p < 0.001$).
 - In 2020, 55.7% of these men had a score consistent with clinical depression.
 - The proportion with severe depression increased from 0.6% to 10.1%.
- Depression was more likely to increase in men *who did not already have* clinical depression in 2019 (27.1% versus 9.6%).

Results: Depression

Bivariate associations with increased depression

	Depression did not increase (n=506)	Depression increased (n=158)	p-value
N (%)			
Laid off temporarily or permanently	52 (10.3)	31 (19.6)	0.002
Concerned about losing job due to COVID-19	93 (18.4)	51 (32.3)	<0.001
Finding it very difficult to:			
Work from home	31 (6.1)	27 (17.1)	<0.001
Stop going out for entertainment	138 (27.3)	62 (39.2)	0.004
Stop kissing/hugging friends and family	181 (35.8)	82 (51.9)	<0.001
Finding it very difficult to not have sex with new partners	90 (17.8)	44 (27.9)	0.006
Agreement with:			
'I struggle to find someone to talk to'	182 (36.0)	87 (55.1)	<0.001
'It is hard to maintain friendships and social connections'	302 (59.7)	123 (77.9)	<0.001
'I have lost contact with people I care about'	209 (41.3)	102 (64.6)	<0.001
Mean (SD)			
Age	45.7 (13.6)	41.6 (12.2)	0.001
Gay social engagement (2019)	3.9 (1.5)	4.2 (1.5)	0.040
Gay social engagement (2020)	3.5 (1.5)	3.5 (1.6)	0.953

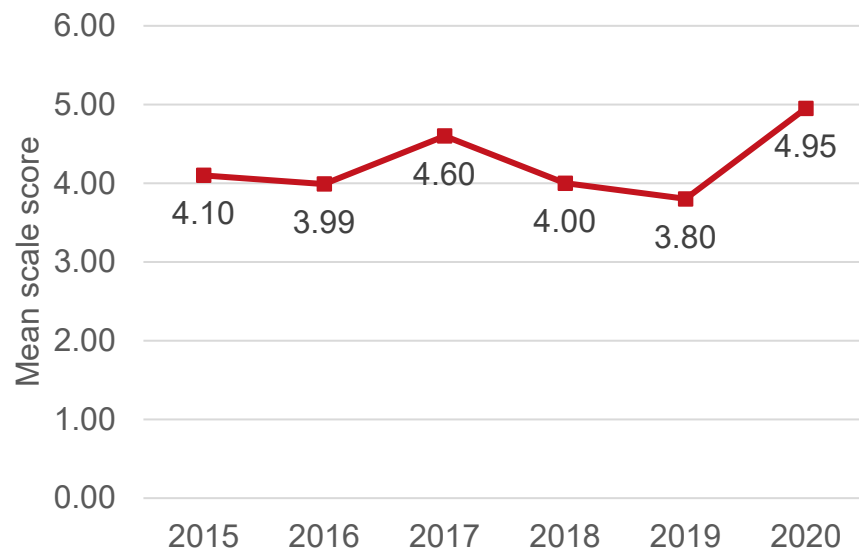
Results: Depression

Multivariate associations with increased depression

	aOR	95% CI	p-value
N (%)			
Concerned about losing job due to COVID-19	1.70	1.02-2.82	0.042
Finding it very difficult to:			
Work from home	2.94	1.52-5.69	0.001
Agreement with:			
'I have lost contact with people I care about'	1.98	1.12-3.49	0.019
Mean (SD)			
Gay social engagement (2019)	1.23	1.06-1.44	0.009

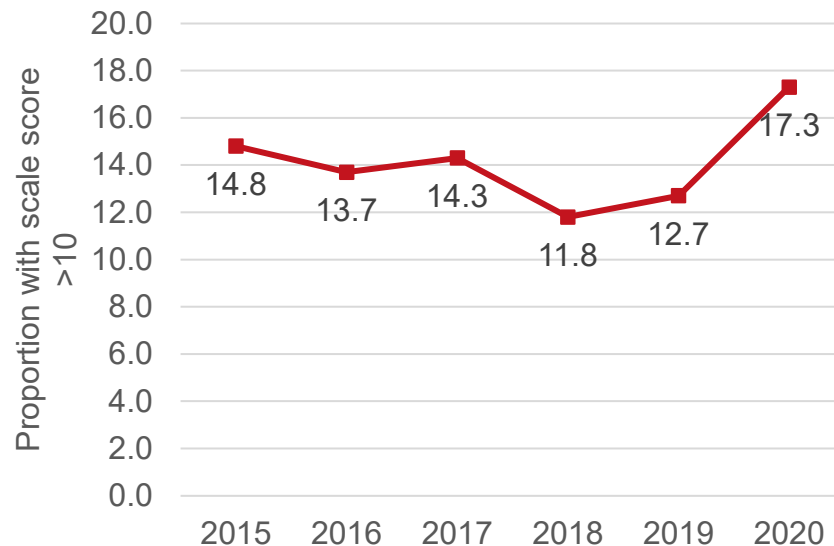
Results: Anxiety

- Mean GAD-7 scores were relatively stable between 2015 and 2019 (with a slight decrease in 2019 to 3.80, SD=4.78).
- Increased to 4.95 (SD=5.05; $p<0.001$).



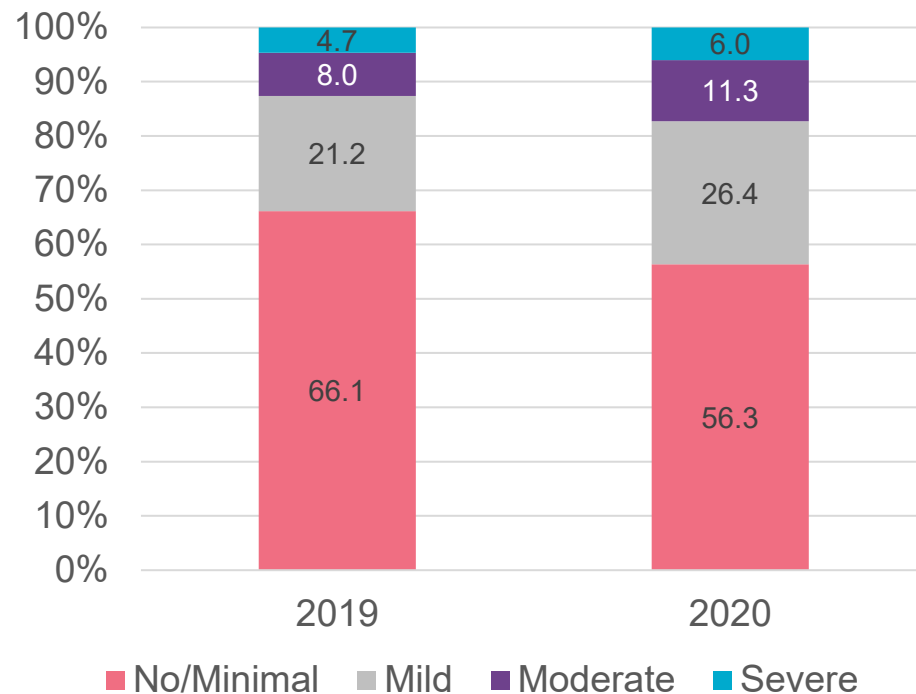
Results: Anxiety

- The proportion with a GAD-7 score >10 (indicating clinical anxiety) also increased markedly between 2019 and 2020.



Results: **Anxiety**

- Between 2019 and 2020, the proportion in all anxiety categories increased.
- In 2020, 6.0% of men were classified as having severe anxiety.



Results: Anxiety

- Overall, 137 participants (20.6%) increased ≥ 5 points on the GAD-7 between 2019 and 2020.
 - Within these men, mean GAD-7 score increased from 2.05 (SD=3.48) to 10.22 (SD=4.69; $p < 0.001$).
 - While only 5.8% of these 137 men had a score consistent with clinical anxiety in 2019, this increased to 41.6% in 2020.
 - The proportion with severe depression increased from 0.7% to 19.0%.
- Anxiety was more likely to increase in men *who did not already have* clinical anxiety in 2019 (22.2% versus 9.5%).

Results: Anxiety

Bivariate associations with increased anxiety

	Anxiety did not increase (n=527)	Anxiety increased (n=137)	p-value
N (%)			
Concerned about losing job due to COVID-19	102 (19.4)	42 (30.7)	0.004
Finding it very difficult to:			
Work from home	38 (7.2)	20 (14.6)	0.006
Stop kissing/hugging friends and family	190 (36.1)	73 (53.3)	<0.001
Finding it very difficult to not have sex with new partners	97 (18.4)	37 (27.0)	0.025
Concerned about:			
Contracting COVID-19	240 (45.5)	82 (59.9)	0.003
Transmitting COVID-19 to others	373 (70.8)	112 (81.8)	0.010
Getting sick with COVID-19	262 (49.7)	84 (61.3)	0.015
Overwhelming the health system	445 (84.4)	125 (91.2)	0.042
Agreement with:			
'I struggle to find someone to talk to'	192 (36.4)	77 (56.2)	<0.001
'It is hard to maintain friendships and social connections'	315 (59.8)	110 (80.3)	<0.001
'I have lost contact with people I care about'	229 (43.5)	82 (59.9)	0.001
Mean (SD)			
Sexual sensation-seeking scale (2019)	30.4 (6.0)	32.0 (6.4)	0.030

Results: **Anxiety**

Multivariate associations with increased anxiety

	aOR	95% CI	p-value
Finding it very difficult to:			
Stop kissing/hugging friends and family	1.83	1.09-3.09	0.022
Concerned about:			
Overwhelming the health system	2.98	1.02-8.76	0.047

Summary

- We observed a dramatic and abrupt increase in both depression and anxiety prior to and during COVID-19 restrictions.
 - 28% increase in mean PHQ-9 scores
 - 30% increase in mean GAD-7 scores.
- The increases were associated with a range of factors including concerns about job security and work, reduction in social and sexual connection or opportunities, and concerns about COVID-19 itself.
- Overall, depression seemed to more linked to personal loss, whereas anxiety appeared more related to general impact and insecurity.

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