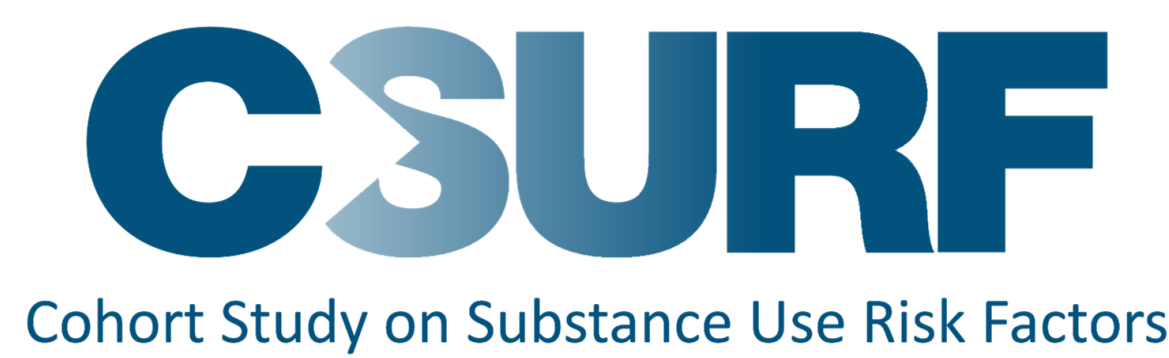


# Sexual minority orientation is associated with greater psychological impact due to the COVID-19 crisis

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## Introduction

- COVID-19 and its countermeasures caused a considerable psychological impact
- Psychological impact is higher in specific subgroups of the population
- Many publications reported a high psychological impact among sexual minorities (1, 2), but few compared the impact in sexual minorities to heterosexual people and few have a data point before the crisis. The strength of our study is the ability to compare the psychological impact between sexual minority men and heterosexual men, and the availability of a data point before the crisis.
- Factors explaining the worse reaction to the crisis in sexual minorities may be
  - Worse mental health before the crisis, largely due to minority stress (3, 4)
  - Differences in sociodemographic factors (e.g. living more often alone)
  - Lower socioeconomic status (2)
  - Differences in personality, notably higher expressions in Neuroticism/Anxiety

## Aims

- Aim 1: To test whether sexual minority orientation is associated with a higher psychological impact of the COVID-19 crisis.
- Aim 2: To investigate to which degree the higher psychological impact in sexual minority men is explained (attenuated) by differences in a) experiences related to COVID-19; b) sociodemographic factors; c) indicators of mental health before the crisis; and d) personality traits

## Methods

### Participants

- The sample included 2345 young Swiss men from the Cohort Study on Substance Use Risk Factors (C-SURF), a sample drawn for the general population of young men. Mean age at was 29.07 (SD=1.28).

### Design

- Baseline measure shortly before the COVID-19 crisis (up to February 2020)
- Follow up during the early COVID-19 crisis (May to June 2020)

### Measures

- Participants were asked whether they are attracted to women or to men on a five point scale, and participants at least somewhat attracted to men were recoded as sexual minority
- Psychological impact due to COVID-19 (psychological trauma, fear, isolation)
- Psychological impact in form of depression, perceived stress and sleep quality, measured before and during the crisis

### Statistical Analysis

- Aim 1: Linear regression models with sexual orientation predicting psychological impact, adjusted for pre-COVID-19 levels (baseline) where possible
- Aim 2: For the second aim, it was tested to which degree the coefficients of sexual orientation were attenuated if adjusted for other factors, i.e. which part of the association was explained by these factors. Significance of the attenuation was tested with the KHB addon (5) in Stata.

## Results

- Out of 2345 young men, 310 (13.2%) were at least somewhat sexually attracted by other men.
- Sexual minority men were slightly more likely to report COVID-19 symptoms .

## Results

Aim 1: Compared to heterosexual men, sexual minority men reported...

- Higher levels of psychological impact due to the COVID-19 crisis:
  - Significantly higher levels of psychological trauma due to COVID-19
  - Significantly more fear due to COVID-19
  - Significantly more feelings of isolation
- Higher psychological impact in measures not mentioning COVID-19 as the cause, measured before and during COVID-19, and adjusted for baseline levels
  - Significantly higher levels of depression, before and after baseline adjustment
  - Significantly higher levels of perceived stress, only before baseline adjustment
  - Significantly lower sleep quality, before and after baseline adjustment

Aim 2: to which degree (in %) explain other factors differences in psychological impact due to sexual orientation?

	Psychological trauma	Fear	Depression	Sleep Quality
<b>COVID-related experiences</b>	<b>5.7%</b>	<b>23.3%</b>	<b>5.1%</b>	<b>11.8%</b>
Personal experience of COVID-19 symptoms	3.3%	10.3%	0.4%	2.5%
Change in employment because of COVID-19	1.7%	5.7%	0.8%	0.7%
<b>Sociodemographic factors</b>	<b>10.2%</b>	<b>18.4%</b>	<b>10.7%</b>	<b>13.1%</b>
Relative financial situation	4.6%	15.2%	0.8%	2.3%
Living situation	4.5%	0.7%	4.2%	5.9%
<b>Total Mental health variables</b>	<b>37.2%</b>	<b>49.2%</b>	<b>15.8%</b>	<b>44.1%</b>
Major depression	25.7%	37.6%	na	29.4%
Perceived stress	15.2%	23.5%	1.2%	8.2%
<b>Total Personality variables</b>	<b>33.4%</b>	<b>45.4%</b>	<b>21.9%</b>	<b>38.6%</b>
Sensation seeking	1.8%	-1.5%	0.6%	0.5%
Neuroticism/Anxiety	32.0%	48.4%	19.6%	36.2%
<b>Total all variables</b>	<b>43.2%</b>	<b>67.8%</b>	<b>37.2%</b>	<b>66.0%</b>

Note: percentages are to which degree the coefficient for sexual orientation was attenuated after adjustment for the respective factor, respectively group of factors. Bold percentages and coefficients represent a statistically significant ( $p < .05$ ) attenuation, respectively coefficient. Individual variables are examples (2 per category), some were omitted due to space restrictions and can be seen in the preprint. Regressions for depression and sleep quality are adjusted for pre-COVID levels. Reading example: The coefficient for sexual orientation was attenuated by 33.4% after adjustment for personality variables, and by 43.2% after adjustment for all variables in the model.

## Conclusions

- Due to pre-existing vulnerabilities, the crisis had a higher impact among sexual minority than heterosexual men.
- Higher psychological impact in sexual minority men can be explained to a large degree by worse mental health and the higher levels of the personality dimension Neuroticism/Anxiety before the crisis. Differences in socioeconomic status and living situation only explained a minor part of the differences in psychological impact.
- Measures aiming at reducing minority stress (6) may help not only to improve mental health among sexual minority men but also to reduce their vulnerability to crises.
- Services offering psychological support or counselling to sexual minorities may need to be reinforced during crises such as the COVID-19 pandemic.

## References

- [1] Konnoth C. Supporting LGBT Communities in the COVID-19 Pandemic. 2020) Assessing Legal Responses to COVID-19 Boston: Public Health Law Watch. 2020.
- [2] OutRight Action International. VULNERABILITY AMPLIFIED: The Impact of the COVID-19 Pandemic on LGBTIQ People. New York; 2020.
- [3] Meyer IH. Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: conceptual issues and research evidence. Psychological bulletin. 2003;129(5):674.
- [4] Herek GM, Garnets LD. Sexual orientation and mental health. Annu Rev Clin Psychol. 2007;3:353-75.
- [5] Karlson KB, Holm A. Decomposing primary and secondary effects: a new decomposition method. Research in Social Stratification and mobility. 2011;29(2):221-37.
- [6] Chaudoir SR, Wang K, Pachankis JE. What reduces sexual minority stress? A review of the intervention "toolkit". Journal of Social Issues. 2017;73(3):586-617.
- [7] More references can be found in the preprint at <https://psyarxiv.com/xg94c/>