



UNCOVER
Usher Network for COVID-19
Evidence Reviews

Summary: What is the impact of COVID-19 mitigation strategies on the mental health of post-secondary school students?

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Purpose of the review: The purpose of this review was to identify and synthesise evidence of the impact of COVID-19 mitigation strategies on the mental health of post-secondary school students, in order to inform educational recovery as we emerge from the pandemic.

Key findings:

- This review found evidence of increased anxiety and depression in students during the COVID-19 period, compared to pre-COVID-19, across a range of diverse student populations and contexts. Lockdown and the rapid transition to online learning may have impacted on students' feelings of loneliness, stress and burnout and this may to some extent explain the observed increases in anxiety and depression in some students.
- The impacts of COVID mitigations are differentially experienced, depending on individual and/or cohort circumstances. Whilst there is some evidence of increasing stress during the lockdown period, there is also evidence consistent with lockdown reducing or eliminating some of the stressors associated with student life in normal times, such as academic and social pressure and being short of time, particularly for those students suffering from social anxiety or with pre-existing mental health conditions. However, for others, particularly those who perceive that they are missing out on the development of key skills, such as final year clinical medicine students, lockdown may increase levels of distress.
- Evidence on a range of health behaviours relating to diet, alcohol consumption and physical activity is inconclusive. However this was not the focus of our study.

Review limitations

The results of this review should be treated with caution for a number of reasons:

- Limitations in the designs of included studies mean that it is not possible to determine with any degree of certainty the extent to which the observed findings are attributable to COVID-19 itself or to COVID-19 mitigation strategies.
- Because of time pressures, we limited our primary search to mental health, as opposed to wider wellbeing, outcomes. The wellbeing outcomes we report here were those presented by the included studies; however, this is an incomplete assessment and we recommend a further review focused on key wellbeing items, such as loneliness, stress and burnout, sleep and health behaviours.
- Study samples are heavily skewed towards female respondents, which limits generalisability to male students.
- Mitigation measures are imprecisely defined and described, typically combining a range of societal and institutional measures in place simultaneously, including lockdowns and online learning arrangements, so it is challenging to identify the impact of particular measures.
- Studies were drawn from a wide range of diverse countries and educational cultures, so the results may not be directly applicable to the UK context. Differences in the intensity and timing of the pandemic across different countries also present a challenge.
- Finally, most of the evidence was collected in the early months of the pandemic (spring and summer 2020), thus not addressing the impacts of longer term and repeated lockdowns on student wellbeing outcomes and health behaviours.

Policy implications of findings:

- Institutions must recognise the impact of the pandemic on the level and intensity of depression and anxiety and ensure that robust systems are in place to identify and support students who may be struggling.
- Institutions must also be alert to the fact that certain groups of students may have experienced lockdown as a positive escape from the stressors of normal student life. Those responsible for student welfare must be alert to the potential for these students to experience difficulties during the transition back to campus-based learning and again, robust systems should be put in place to ensure early identification and appropriate support.
- Institutions should be alert to the fact that the impact of lockdown and online teaching is not evenly distributed across year groups or study subjects. It is incumbent on institutions to audit the concerns of students across faculties and year groups, in order to identify and if possible, ameliorate any adverse impacts.
- This review has identified the real world impacts of the four harms of COVID and consequently investigating the impact of lockdowns on alcohol consumption, eating behaviours, physical activity and screen time in student populations is
- Finally, student welfare and mental health is crucially important and it is key that both student welfare services and public services are adequately resourced to enable them to support students as we move into a phase of COVID-19 recovery.

Key references

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Summary of methods

This rapid review was guided by the Preferred Reporting Items for Systematic Review and Meta-Analysis (PRISMA-2020) protocols statement (Page et al. 2020). We developed a study protocol and registered it on Prospero (CRD42021266889).

Search strategy: We developed a search strategy by combining four search strings, including terms which related to COVID-19, mental health outcomes, university students, and COVID-19 mitigations. We searched ten databases: PubMed, CINAHL, Embase, Preview, WHO COVID-19 database, PsycINFO, Medline, ERIC, Scopus, Medrix. Following the searches, de-duplication of records was conducted both automatically and manually. The resulting data set was then imported into the systematic review system Covidence, where a final deduplication of records was conducted.

Screening: Title and abstract screening, followed by full text screening, were performed in Covidence by two independent reviewers (LG, DI, KH, BL, JF, PK, EF), assessed against pre-defined inclusion and exclusion criteria. Any disagreements were resolved by a third independent reviewer (EM).

Data extraction: After piloting, data extraction was conducted independently by one reviewer for each study (LG, DI, KH, BL, JF, PK, EF, EM). Data extraction was cross-checked by the lead reviewer (LG) and any uncertainties were resolved through discussion between team members. The following data were extracted: first author, year published, study design, country, study methods (data collection and recruitment), student population (total number, year of study, course type), demographic characteristics (age, gender, ethnicity), dates for data collection pre or post and during the mitigation, total number of participants at each time point, and COVID-19 mitigations present at each time point, measures of effect at each time point (mental health outcomes and results), secondary measures of effect (mental well-being outcomes and results), prevalence (percentage), effect estimate (between time points), 95% confidence intervals, p value.

Quality assessment: Risk of bias assessment was conducted using Joanna Briggs Institute (JBI) checklists. Quality assessments were conducted independently by one reviewer for each study (LG, DI, KH, BL, JF, PK, EF, EM). Any disagreements were resolved through discussion between team members (LG, BL, DI).

Data synthesis: Due to the heterogeneity across studies, data were synthesised narratively. Owing to the time constraints for this rapid review and risk of bias, the highest quality of evidence was prioritised for synthesis. This was defined as any included studies which scored 7 or above (out of a total of 9 questions) in the JBI critical appraisal for quasi-experimental studies.

Search results

Our search identified 6499 unique articles. After title and abstract screening, 323 remained. After full text screening, 26 were retained for analysis, of which 17 were judged to be of high quality.

Link to full review: to insert

Date completed: 24 August 2021

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Figure 1: Visual summary of all mental health and wellbeing outcomes reported by high quality studies included in the review

	Anxiety	Depression	Anxiety and depression combined	General mental health	Borderline personality disorder (BPD) symptoms	Disordered eating	Non-suicidal self-injury (NSSI)	Obsessive-compulsive disorder (OCD)	Post-traumatic stress disorder (PTSD)	Stress	Recent stressful experiences	Loneliness	Sleep	Alcohol behaviours	BMI	Fast food consumption	Unhealthy eating	Screen time	Physical activity	Burnout and academic distress	Body image - appearance evaluation	Body image - internalisation of thin ideals	Body image - media pressure	General health and wellbeing - overall quality of life	General health and wellbeing - self-reported health
Arad 2021	21																								
Baceviciene 2021												1		4	2				2		1		4	1	3
Bolatov 2020				20																					
Conceicao-2021	8																								
Conrad 2021	9	9										9													
Evans 2021																									
Fruehwirth 2021	8																								
Hamza 2021	5	5			6				5	5		6													
Ji 2020	16							16																	
Li H.Y.																									
Mehus 2021	8	8										12, 22													
Rosset																									
Savitsky 2020	8, 10																								
Wilson 2021																									
Yang-2021		8																							
Zis				18																					
Zulevic 2021																					11				

Significant improvement (COVID vs comparator)
Potential improvement (COVID vs comparator) but p-values not provided
Improvement in some sub-groups, no change in others (COVID vs comparator)
Mixed outcomes (improvement in some, deterioration in others, COVID vs comparator)
Deterioration in some sub-groups, no change in others (COVID vs comparator)
Potential deterioration (COVID vs comparator) but p-values not provided
Significant deterioration (COVID vs comparator)
Inconclusive/no change

¹Improvement in women, no change in men

²Improvement in men, no change in women

³Deterioration in men, no change in women

⁴Deterioration in women, no change in men

⁵Improvement in students with pre-existing mental health conditions, deterioration in students without pre-existing mental health conditions

⁶No change in students with pre-existing mental health conditions, deterioration in students without pre-existing mental health conditions

⁷P-values not provided, so result is tentative

⁸Study reports both prevalence and mean score

⁹Comparison is between those mandated to relocate from campus (intervention) and those not required to relocate (control)

¹⁰Comparison is between lockdown (intervention) and post-lockdown (control)

¹¹Burnout reduced among year 4 students who had clinical placements cancelled but increased among year 6 students about to graduate and start work as junior doctors

¹²Feelings of isolation predicted poor mental health outcomes, but unclear if feelings of isolation were linked to COVID mitigations

¹³High levels of loneliness during pandemic period, but levels of loneliness pre-pandemic not provided

¹⁴No change in cross-sectional comparison, deterioration in longitudinal comparison

¹⁵Significant improvement in both anxiety and social anxiety scores

¹⁶Study compares anxiety scores under different levels of quarantine. Outcomes were significantly worse during initial, intense lockdown when students were on winter break, compared with later, less intense lockdown, when they were studying online from home.

¹⁷V-shaped (worst pre-lockdown, best during "intense" lockdown, intermediate when lockdown relaxed) but p-values not provided

¹⁸Mental health

¹⁹Mental health complaints

²⁰Somatic symptoms

²¹Socially anxious students became significantly less anxious from autumn to spring in a pre-COVID cohort but anxiety levels remained high in the COVID cohort

²²Investigated as a risk factor