

Mental Health Among Third-Level Students in Ireland During COVID-19

David Mothersill^{1*}, Hau Nguyen¹, Gerard Loughnane², and April Hargreaves¹

¹*Psychology Department, School of Business, National College of Ireland*

²*School of Business, National College of Ireland*

Abstract

This study aimed to examine levels of mental ill-health and predictive factors of mental ill-health in third-level students in Ireland during COVID-19. A total of 268 students completed an online questionnaire. LGBTI status, relationship status, caring for children, living location, international student status, having a pre-existing mental health condition, and change in social life were entered into logistic regression analyses to examine whether these variables predicted probable diagnosis of post-traumatic stress disorder (PTSD), complex post-traumatic stress disorder (CPTSD), depression, or anxiety. Probable diagnosis is an estimate that the individual would receive a diagnosis of the condition after a more comprehensive assessment, based on their responses to survey questions about specific symptoms. Students who reported a negative change in their social life were over twice as likely to attain a probable diagnosis of PTSD or depression (with the former not statistically significant and the latter statistically significant). Given prior evidence that social isolation predicts negative mental health outcomes, and the association between negative change in social life and probable negative mental health outcomes observed in our study, future research should examine ways of increasing opportunities for social engagement among students attending online and blended third-level courses in Ireland.

Keywords: mental health, third-level students, online and in-person tuition, COVID-19

Author Note

*David Mothersill may be contacted at David.mothersill@ncirl.ie
David Mothersill's ORCID iD is: <https://orcid.org/0000-3013-4088>
David Mothersill and Hau Nguyen contributed equally to this work.

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The coronavirus (COVID-19) pandemic has been present globally since December 2019. In previous pandemics, mental health issues were widely reported, even in those uninfected with disease (Cheng & Cheung, 2005; Reynolds et al., 2008). Recent research suggests that COVID-19 will have a similar impact on mental health (Talevi et al., 2020; Usher et al., 2020). This impact is exacerbated by factors such as loneliness, isolation, loss of income, increased familial responsibility (Jiang & McCoy, 2020), urbanicity (Zhang et al., 2021), and pre-existing mental health conditions (Chatterjee & Mukherjee, 2020). Additionally, certain cohorts are at greater risk of psychological distress, such as those with pre-existing health conditions (Talevi et al., 2020). Thus, interventions need to be tailored to meet the specific needs of these cohorts.

One cohort placed at further psychological risk due to COVID-19 is third-level students, who have experienced academic pressure, the possibility of post-pandemic unemployment, fear of viral infection, restriction of movement, and decreased social engagement (Bruffaerts et al., 2018; Chang et al., 2020; Son et al., 2020; Wang et al., 2020; Zhai & Du, 2020). Student social life provides protection against stress (Stadtfeld et al., 2019). Thus, reducing social interaction negatively impacts students' psychological wellbeing (Elmer et al., 2017). Indeed, student social isolation and reduced social contact are associated with mental disorders like anxiety and depression (Elmer et al., 2017; Fruehwirth et al., 2021).

Within this pressured group of third-level students, certain sub-cohorts who are at additional risk of mental ill-health (international and LGBTI [lesbian, gay, bisexual, transgender, and intersex] students, for example) may suffer the impact of marginalisation, discrimination, and reduced social support (Chatterjee, 2014; Zhai & Du, 2020). For many, attending college in person opens doors to freedom and better mental health (Dunbar et al., 2017; Pitcher et al., 2018). Closure of colleges forced many LGBTI students to return to their home environment, which may be less accepting, and potentially abusive (Salerno et al., 2020) and limited their access to social support from LGBTI and international communities, student counselling, and supportive peers (Salerno et al., 2020).

In March 2020, universities and colleges in Ireland transitioned from face-to-face to online instruction to deter transmission of COVID-19, with third-level institutions moving back to face-to-face teaching in 2021 and 2022. Studies in other countries

have shown that the sudden change in March 2020 left many students with elevated levels of burnout, stress, depression, anxiety, and uncertainty (Bolatov et al., 2021; Irawan et al., 2020; Mheidly et al., 2020; Moawad, 2020; Murphy et al., 2020). To date, only a few studies have examined the impact of COVID-19 on the mental health of third-level students in Ireland (see, for example, O’Byrne et al.’s 2021 study of medical students). Also lacking is research investigating specific, at-risk, sub-cohorts of students, including international students and LGBTI students. Given the dearth of existing research, the study described in this article aimed to investigate the impact of COVID-19 on third-level students in Ireland in relation to:

1. levels of mental ill-health
2. predictive factors of mental ill-health, and
3. impact on international and LGBTI students.

Materials and Methods

Participants

Participants were recruited via online websites including social media, as well as from student bodies of Irish third-level institutions. Eligibility criteria stated that participants must be currently attending third-level education and resident in Ireland. A total of 268 third-level students meeting these criteria completed the survey online, using Google Forms, between June 8 and July 2, 2021. There were no subsequent exclusions, as participants had to confirm that they met the eligibility criteria to submit a questionnaire. Recruitment was challenging due to the ongoing COVID-19 pandemic. If in-person third-level courses had been available during the time that our survey was open, there would have been more opportunities to promote the study and recruit additional participants. Overall, 162 participants identified as female and 104 identified as male; sixty-seven identified as LGBTI. Eighty participants were living in a rural location, and 187 in an urban location.¹ The sample contained 72 international students. Forty-three participants reported caring for a child and more than one quarter (77) reported having a pre-existing mental health condition. Almost 75% of all participants were aged between 18 and 34 years – the mean age was 28.52 years. More information on this dataset, including age percentiles, can be found in Table 1.

¹ Figures do not sum to the total number of participants due to missing data.

TABLE 1

*Demographic Variables and Survey Responses**

Categorical Variables							
Variable	N	Categories (%)					
Gender	266	Female = 162 (60.9)			Male = 104 (39.1)		
LGBTI status	264	LGBTI = 67 (25.4)			Non-LGBTI = 197 (74.6)		
Occupation	268	Unemployed = 103 (38.4)			Employed = 165 (61.6)		
Relationship status	265	Single = 149 (56.2)			Coupled = 116 (43.8)		
Living arrangement	268	Living alone = 42 (15.7)			Living with others = 226 (84.3)		
Responsible for rent	268	Yes = 79 (29.5)			No = 189 (70.5)		
Caring for a child	268	Yes = 43 (16)			No = 225 (84)		
Caring for an adult	266	Yes = 23 (8.6)			No = 243 (91.4)		
Living location	267	Rural = 80 (30)			Urban = 187 (70)		
International student	268	Yes = 72 (26.9)			No = 196 (73.1)		
Pre-existing mental health condition	268	Yes = 77 (28.7)			No = 191 (71.3)		
Social life change	261	Negative = 147 (56.3)			Positive or no change = 114 (43.7)		
Attains a probable diagnosis of PTSD	268	Yes = 67 (25)			No = 201 (75)		
Attains a probable diagnosis of CPTSD	259	Yes = 44 (17)			No = 215 (83)		
Attains a probable diagnosis of depression	268	Yes = 128 (47.8)			No = 140 (52.2)		
Attains a probable diagnosis of anxiety	268	Yes = 92 (34.3)			No = 176 (65.7)		
Age Percentiles							
	5	10	25	50	75	90	95
Weighted average	18	19	20	26	35	42	48

*Note. All response percentages relate to the number of students responding to a particular question and not the whole sample; minor discrepancies between the overall total and sub-totals are due to missing data.

Ethical approval was granted by the National College of Ireland Research Ethics Committee in 2020, prior to student recruitment. All procedures contributing to this work comply with the ethical standards of the relevant national and institutional committee on human experimentation and with the Helsinki Declaration of 1975, as revised in 2008. All student participants provided informed consent in accordance with the committee guidelines.

Measures

The survey contained questions on demographics, including questions on age, gender, LGBTI status, and living location. Other questions focussed on personal experiences of COVID-19 and its impact, and whom respondents felt were to blame for the situation at that time. Participants were also asked if they had a pre-existing mental health condition. Separately, the authors calculated whether participants met the criteria for a probable diagnosis of PTSD, CPTSD, depression, or anxiety, based on their responses to three pre-validated measures. This process is described below.

PTSD – International Trauma Questionnaire (ITQ) (Cloitre et al., 2018)

Participants used a 5-point Likert scale, ranging from 0 (not at all) to 4 (extremely), to indicate how often they were bothered by each of six symptoms over the previous month. They were directed to think about their experience of the COVID-19 pandemic whilst answering. The six PTSD-related items were accompanied by three items that measure functional impairment caused by these symptoms. A response of 2 or higher (i.e., moderately or more) indicates symptom endorsement. Two core symptoms reflect the 'Re-experiencing' (Re) cluster (i.e., Re1 upsetting dreams and Re2 feeling the experience is happening again in the here and now). Two core symptoms reflect the 'Avoidance' (Av) cluster (i.e., Av1 internal reminders and Av2 external reminders). Two core symptoms reflect the 'Sense of Threat' (Th) cluster (i.e., Th1 hypervigilance and Th2 exaggerated startle response). The internal reliability (Cronbach's alpha) of the six PTSD items used for diagnostic purposes was satisfactory ($\alpha = 0.862$), as were the reliabilities for the Re ($\alpha = 0.797$), Av ($\alpha = 0.794$), and Th ($\alpha = 0.833$) clusters. A probable PTSD diagnosis requires the endorsement of at least one symptom from each symptom cluster as well as the endorsement of at least one indicator of functional impairment. The psychometric properties of the ITQ have been demonstrated in general population samples (Ben-Ezra et al., 2018).

To assess Complex PTSD (CPTSD) symptomatology, participants were asked to respond to a set of six questions reflecting how they typically feel, think about themselves, and relate to others, also using a 5-point Likert scale ranging from 0 (not at all) to 4 (extremely). These symptom domains collectively represent disturbances in self-organisation (DSO) that are central to CPTSD diagnosis. Two items capture

the 'Affective Dysregulation' (AD) cluster; one measures hyperactivation (AD1) (i.e., When I am upset, it takes me a long time to calm down) and another measures hypoactivation (AD2) (i.e., I feel numb or emotionally shut down). Two items capture the 'Negative Self-Concept' (NSC) cluster (i.e., NSC1, I feel like a failure and NSC2, I feel worthless), and two items capture the 'Disturbed Relationships' (DR) cluster (i.e., DR1, I feel distant or cut off from people and DR2, I find it hard to stay emotionally close to people). The internal reliability of the six DSO items was satisfactory ($\alpha = 0.883$), as were the reliability estimates for the AD ($\alpha = 0.624$), NSC ($\alpha = 0.925$), and DR ($\alpha = 0.813$) clusters. As with the PTSD symptoms, there are three items that screen for functional impairment associated with CPTSD symptoms (Func4-Func6).

Depression – Nine-Item Patient Health Questionnaire (PHQ-9) (Kroenke et al., 2001)

Participants used a 4-point Likert scale, ranging from 0 (not at all) to 3 (nearly every day), to indicate how often they have been bothered by each symptom over the last two weeks. A cutoff score of 10 or higher was used to identify participants suffering from major depression. This score has been shown to produce good sensitivity (0.85) and specificity (0.89) (Kroenke et al., 2001). The psychometric properties of the PHQ-9 scores have been widely supported (Manea et al., 2012), and the reliability in the current sample was good ($\alpha = 0.875$).

Anxiety – Seven-Item Generalised Anxiety Disorder Scale (GAD-7) (Spitzer et al., 2006)

Participants used a 4-point Likert scale, ranging from 0 (not at all) to 3 (nearly every day), to indicate how often they have been bothered by each symptom over the past two weeks. A cutoff score of 10 or higher was used to identify participants suffering from generalised anxiety disorder. This score has been shown to produce good sensitivity (0.89) and specificity (0.82) (Spitzer et al., 2006). The GAD-7 has been shown to produce reliable and valid scores in community studies (Hinz et al., 2017), and the reliability in the current sample was good ($\alpha = 0.921$).

The survey was honed using a student-centred approach referred to as Patient and Public Involvement (PPI) (Russell et al., 2019). Actively involving participants can be seen as a marker of good research practice because it leads to research that is relevant, better designed, with clearer outcomes, and a faster uptake of new evidence. In the current study, student involvement was achieved via in-depth discussions with three third-level students. Feedback and input from students during this process resulted in the final version of the survey, including the choice of demographic questions and scales. No changes were made to the specific questionnaires given the good psychometric properties previously reported.

Design

This research used a cross-sectional design. Criterion variables comprised probable diagnosis of PTSD, CPTSD, depression, and anxiety. Predictor variables comprised LGBTI status (non-LGBTI or LGBTI), relationship status (coupled or single), caring for children (yes or no), living location (urban or rural), international status (yes or no), pre-existing mental health diagnosis (yes or no), and social life change (positive or no change or negative). These predictor variables were chosen given that (a) they impact mental health, (b) seven predictor variables are statistically recommended for this sample size (Harrell Jr et al., 1984), and (c) the seven variables showed acceptable levels of multicollinearity (see statistical analysis below).

Statistical Analysis

To examine whether our seven predictor variables predicted a probable diagnosis of PTSD, CPTSD, depression, or anxiety, we conducted four binary logistic regression analyses using IBM SPSS Statistics Version 26. To ensure that the seven predictor variables did not show high multicollinearity, we first ran four multiple regression models using the same predictor and criterion variables. Across these four multiple regression models, the tolerance ranged from 0.813 to 0.960 and the variance inflation factor ranged from 1.042 to 1.231, indicating acceptable levels of multicollinearity (Daoud, 2017). We considered individual predictors statistically significant at $p < .05$, Bonferroni-corrected for the seven predictors examined, i.e., $p < .00714$.²

Finally, given our hypothesis that being an LGBTI or international student would be associated with worse mental health outcomes, and given that correlations between these variables and other predictors may have reduced our ability to determine their unique contribution to mental health outcomes, we ran a series of exploratory logistic regression models focused on LGBTI and international student variables only. Initial multiple regression models indicated acceptable levels of multicollinearity and we considered individual predictors statistically significant at $p < .05$, Bonferroni-corrected for the two predictors examined, i.e., $p < .025$.

Results

Exploratory Analysis on LGBTI and International Student Variables

Given the particular challenges faced by LGBTI and international students during this time, as previously noted, and given the potential correlation between these factors and the other predictor variables of interest, an exploratory logistic regression

² Since the results include Bonferroni-corrected significance levels, exact p -values are reported.

analysis was conducted examining only the LGBTI and international student variables. This exploratory analysis revealed that LGBTI students were 2.52 times more likely to attain a probable diagnosis of CPTSD ($p = .01$) and 1.99 times more likely to attain a probable diagnosis of anxiety ($p = .021$). However, these variables were not significant predictors of mental health outcomes when the other predictor variables of interest were included, as shown below.

Logistic Regression Analysis

Four logistic regression tests were performed to estimate the effects of our seven predictor variables on the likelihood of meeting the criteria for a probable diagnosis of (1) PTSD, (2) CPTSD, (3) depression, and (4) anxiety. The contribution of each predictor variable to each of the four models is reported in Table 2. Results for variables with statistically significant associations are described next.

TABLE 2*Contribution of Each Predictor Variable to Each Logistic Regression Model**

Logistic Regression Model	Criterion Variable	Predictor Variable	B	Standard Error	Wald	df	Sig.	Exp(B)	95% C.I. for Exp(B) Lower	95% C.I. for Exp(B) Upper
1	Attains a probable diagnosis of PTSD	LGBTI status	0.431	0.339	1.618	1	.203	1.539	0.792	2.993
		Relationship status	0.169	0.309	0.299	1	.585	1.184	0.647	2.167
		Caring for a child	-0.175	0.457	0.146	1	.703	0.840	0.343	2.057
		Living location	0.514	0.357	2.072	1	.150	1.672	0.830	3.365
		International student	0.421	0.373	1.277	1	.258	1.524	0.734	3.164
		Pre-existing mental health condition	0.760	0.320	5.634	1	.018	2.138	1.142	4.003
		Social life change	0.877	0.326	7.222	1	.007	2.403	1.268	4.555
		Constant	-2.320	0.422	30.281	1	< .001	0.098		
2	Attains a probable diagnosis of complex PTSD	LGBTI status	0.769	0.391	3.87	1	.049	2.157	1.003	4.638
		Relationship status	0.017	0.366	0.002	1	.962	1.018	0.497	2.085
		Caring for a child	-1.049	0.658	2.539	1	.111	0.350	0.096	1.273
		Living location	0.088	0.430	0.042	1	.837	1.092	0.470	2.537
		International student	0.105	0.438	0.057	1	.811	1.110	0.471	2.620
		Pre-existing mental health condition	1.048	0.365	8.229	1	.004	2.853	1.394	5.839
		Social life change	0.655	0.390	2.827	1	0.093	1.925	0.897	4.132
		Constant	-2.541	0.494	26.426	1	< .001	0.079		

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Logistic Regression Model	Criterion Variable	Predictor Variable	B	Standard Error	Wald	df	Sig.	Exp(B)	95% C.I. for Exp(B) Lower	95% C.I. for Exp(B) Upper
3	Attains a probable diagnosis of depression	LGBTI status	-0.052	0.317	0.027	1	.870	0.950	0.511	1.766
		Relationship status	0.394	0.275	2.057	1	.151	1.483	0.865	2.543
		Caring for a child	0.147	0.381	0.149	1	.700	1.158	0.549	2.444
		Living location	0.196	0.315	0.389	1	.533	1.217	0.657	2.255
		International student	-0.503	0.337	2.226	1	.136	0.605	0.312	1.171
		Pre-existing mental health condition	1.058	0.304	12.134	1	< .001	2.879	1.588	5.221
		Social life change	0.800	0.280	8.167	1	.004	2.227	1.286	3.855
Constant	-0.954	0.337	8.034	1	.005	0.385				
4	Attains a probable diagnosis of anxiety	LGBTI status	0.566	0.330	2.932	1	.087	1.760	0.921	3.363
		Relationship status	-0.530	0.297	3.183	1	.074	0.588	0.329	1.054
		Caring for a child	0.390	0.401	0.942	1	.332	1.476	0.672	3.242
		Living location	-0.080	0.347	0.053	1	.818	0.923	0.467	1.823
		International student	0.284	0.369	0.590	1	.442	1.328	0.644	2.738
		Pre-existing mental health condition	1.667	0.312	28.603	1	< .001	5.298	2.876	9.760
		Social life change	0.258	0.301	0.736	1	.391	1.295	0.718	2.337
Constant	-1.334	0.362	13.547	1	< .001	.264				

*Note. Predictors with an associated *p* value less than .00714 are considered statistically significant and highlighted in bold.

The logistic regression model examining PTSD was statistically significant overall ($\chi^2(7) = 19.587, p = .007$). Students who reported a negative change in their social life were 2.40 times more likely to attain a probable diagnosis of PTSD and the change in social life predictor approached the threshold of significance at the Bonferroni-adjusted level ($p = .007201$).

The model examining CPTSD was statistically significant ($\chi^2(7) = 22.003, p = .003$). Students who reported a pre-existing mental health condition were 2.85 times more likely to attain a probable diagnosis of CPTSD ($p = .004$).

The model examining depression was also statistically significant ($\chi^2(7) = 28.406, p < .001$). Students who reported a pre-existing mental health condition were 2.88 times more likely to attain a probable diagnosis of depression ($p < .001$), and students who reported a negative change in their social life were 2.23 times more likely to attain a probable diagnosis of depression ($p = .004$).

The logistic regression model examining anxiety was statistically significant as well ($\chi^2(7) = 41.623, p < .001$). Students who reported a pre-existing mental health condition were 5.30 times more likely to attain a probable diagnosis of anxiety ($p < .001$).

In summary, a pre-existing mental health condition predicted worse mental health outcomes in three of the four logistic regression models (CPTSD, depression, and anxiety), negative change in social life statistically significantly predicted worse mental health outcomes in one of the four models (depression), and exploratory analysis revealed that being an LGBTI student predicted likelihood of attaining a probable diagnosis of anxiety and/or CPTSD. The variables on relationship status, caring for a child, living location, and international student status, were not statistically significant in any of the analyses.

Discussion

Whilst the prevalence of PTSD, depression, and anxiety reported by the participants in our sample is higher than that reported for the general Irish population, both before and during the COVID-19 pandemic, it is comparable with levels reported by 18 to 34 year olds during the pandemic (Daly et al., 2021; Hyland et al., 2020). For example, Table 3, adapted from Daly et al. (2021), presents the percentages of participants with PTSD, depression, or anxiety, before and during the pandemic in Ireland, in a nationally representative sample of adults, and also presents percentages within the 18 to 34 year age group. In Ireland, approximately 45% of 18 to 34 year olds are enrolled in third-level institutions (Lawlor & Burke, 2020), suggesting considerable overlap between being a third-level student in Ireland and belonging to the 18 to 34 year age group. Two pre-pandemic studies, one in the UK (Tabor et al., 2021) and one in France (Kovess-Masfety et al., 2016) compared the mental health of higher-education students to that of non-students aged 18 to 24 years. The findings of both studies revealed

higher scores for non-students on measures of psychological distress, suggesting that it is our participants' young age, rather than their student status, that may have left our sample so vulnerable to mental ill-health. After all, COVID-19 disproportionately affected young people (Power et al., 2020). Given the importance of socialisation to the mental health of young people (Orben et al., 2020), and the fact that negative social change was a key predictor of mental ill-health in our sample, it is possible that our results reflect the impact of the pandemic not only on third-level students, but also on young adulthood.

TABLE 3

*Percentages of Respondents Meeting the Criteria for a Probable Diagnosis of PTSD, Depression, and/or Anxiety, Before and During COVID-19**

Mental health condition and sample	February 2019 %	April 2020 %	May 2020 %	December 2020 %
PTSD total sample	12.5	18.0	22.0	17.2
PTSD 18 to 34 year olds	20.7	30.1	37.4	31.3
Depression or anxiety total sample	31.3	27.9	28.4	32.9
Depression or anxiety 18 to 34 year olds	48.3	46.7	45.0	55.0

*Note. Adapted from Daly et al., 2021

Implications for Third-Level Education

The first implication of this research for third-level education is that young people in Ireland may have been vulnerable to mental health conditions during the COVID-19 pandemic and may benefit from extra support. A second implication is the importance of meeting students' need for social contact to improve mental health outcomes. Our findings regarding the impact of negative social change on students' mental health are consistent with research conducted in other countries. For example, in a study of 419 third-level students in the United States, students who felt socially isolated during the pandemic showed a 16.1% increase in anxiety symptoms and a 17.7% increase in depression symptoms (Fruehwirth et al., 2021). Similarly, in a Swiss study of over 140 third-level students before and during the COVID-19 pandemic, students living alone were more likely to report an increase in depressive symptoms, and students who interacted less with people in their social network were more likely to report an increase in anxiety symptoms (Elmer et al., 2017). This negative impact of increased social isolation extends to LGBTI students and may explain our finding of an association between identifying as LGBTI and increased anxiety and CPTSD. Scroggs et al. (2021) found an association between social distancing and increased stress and hopelessness in this cohort. Similarly, Dawson et al. (2021) report that 74% of LGBT people say anxiety

and stress experienced during the pandemic have negatively impacted their mental health, compared to 49% of those who are not LGBT.

Given (a) prior evidence that shows social isolation predicts negative mental health outcomes, and (b) that negative change in social life predicted probable depression in our sample (and was associated with more than doubled likelihood of probable PTSD also, although this was not statistically significant), third-level institutions in Ireland should do more to mitigate risks associated with mental ill-health among students. They could, for example, examine ways to promote community engagement and to create social opportunities for students attending online and blended courses, where the lack of face-to-face interaction can be challenging (Tareen & Haand, 2020). The growth and popularity of online courses have been rising steadily since before the COVID-19 pandemic due to the development of new technology (Kumar et al., 2019) and this is expected to continue in Ireland and elsewhere over the coming years.

Hill et al. (2020) recommend a collective “whole institution” approach, promoting community engagement with additional support for high-risk students, to improve third-level student mental health and reduce loneliness. For example, third-level institutions in Ireland could enhance student interaction by investing in social spaces on campus to promote more social interaction when students are attending face-to-face classes, while digital sources of social connection might also provide additional benefit for some students (Orben et al., 2020).

Other practical steps to improve community engagement include: further investment in student unions and student societies that can organise in-person social activities; more in-person events on college campuses, including learning, cultural, and/or social events; and, where possible, more affordable student accommodation, so that students do not have to commute long distances across the country and can spend more time on campus, including libraries and social spaces (Hill et al., 2020). Finally, in the context of unforeseeable events that could decrease in-person college attendance, online student counselling services, within third-level institutions, need to be better developed as preventative measures to minimise delay in responding to students’ psychological needs.

Conclusions

This study examined mental health in 268 third-level students during the COVID-19 pandemic in Ireland. Logistic regression analysis revealed that students who reported a negative change in their social lives during this time were over twice as likely to meet the criteria for a probable diagnosis of PTSD or depression (with the former not statistically significant, but the latter statistically significant). This finding has important implications for student affairs’ practice, highlighting the importance of promoting community engagement and social opportunities for third-level students. Ways of

achieving this might include the provision of more social spaces on college campuses, more in-person social events, and more affordable student accommodation. The need for third-level institutions to develop online student counselling services, particularly for those attending online courses, was also noted. Future research should be conducted to examine mental health in larger, population-representative samples of third-level students to provide results that can be applied more broadly and to different age cohorts.

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