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Understanding effects of COVID-19 on undergraduate academic stress, motivation and coping over time

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Abstract

The rapid and unprecedented shift from face-to-face instruction to remote online learning as a consequence of the COVID-19 pandemic had a substantial impact on teaching and learning in Higher Education: students had to adapt to a new way of learning, away from typical campus settings and their peers, and to new forms of assessments. This study examined academic stress, learning strategies, motivation and ways of coping from a sample of 177 unique students from a large London university, collecting primary data via survey at three time points during the academic year 2020/21 when teaching was remote and online only. Our findings show how patterns in academic stress, learning strategies, motivation and coping vary over the course of the academic year giving novel insight into how student learning and adaptation to the situation changed over time. We also report on differences in these patterns according to year group and for those students who are the first-in-family to attend university and those who are not. Based on these findings we identify priority areas where higher education institutions should support undergraduate students

and provide evidence that some groups of students may need more and targeted support to secure their ongoing learning and well-being.

KEYWORDS
COVID-19, higher education, learning, well-being

1 | INTRODUCTION

The global health crisis caused by the COVID-19 outbreak has had a substantial impact on students in higher education (HE) across the United Kingdom and beyond (Aucejo et al., 2020), both in terms of teaching and learning, and the wider student experience. From March 2020, 1.8 million students in the United Kingdom experienced a rapid and unprecedented shift from conventional teaching and learning to online and blended provision, often physically distant from campus. At a time when the intensity of the crisis may be in decline, research suggests that the effects of the pandemic on the HE sector will have far-reaching consequences for society in terms of innovation and productivity, the training of a skilled workforce, and general economic growth (Dolton, 2020). A generation of graduates now faces a shifting outlook and a changing job market (Henehan, 2020; Oreopoulos et al., 2012). Together, these factors have contributed to a context of uncertainty for undergraduate (UG) students during the pandemic which still persists.

Existing research from before the crisis suggests that there are strong links between increased uncertainty and its impact on coping (Taha et al., 2014), and outcomes such as anxiety levels and academic performance (Masten, 2014). The relationship between academic motivation and performance is also widely documented (Deci & Ryan, 1985; Wigfield et al., 2016). Students are already known to be a vulnerable group in terms of mental health and well-being (Auerbach et al., 2018; Denovan & Macaskill, 2017), and it seems likely that the pandemic will exacerbate existing problems (Cao et al., 2020). Prevailing inequalities, including retention and attainment gaps for Black Asian and Minority Ethnic Communities and 'first-in-family' students (Arday, 2018; Henderson et al., 2020), and those from poorer socioeconomic backgrounds and with lower levels of social and economic support (Aucejo et al., 2020), are likely to be heightened by pandemic-related changes to education provision.

Initial research on the impact of the pandemic suggested that students found studying during the pandemic and the move to primarily online provision challenging, and they reported a negative impact on learning and motivation (Neves & Hewitt, 2020; Zwiener-Collins et al., 2020). The view of the impact on well-being is more mixed, with some evidence indicating a negative effect (Cao et al., 2020; Young Minds, 2021), and some evidence indicating that levels of depression decreased but anxiety levels increased, with better well-being outcomes for specific groups such as those from minority ethnic groups (Bennett et al., 2022). Calls have been made for research exploring impacts on educational progress and mental health, as well as the different ways in which students are attempting to adapt to the new learning environment (Grubic et al., 2020). To address such calls, we sought to explore how key indicators of educational success and mental well-being in students, and the coping strategies they use might be impacted by a year of remote learning.

One of the central indicators of student well-being is academic stress, whereby an individual encounters demands related to their academic experience, which overwhelms available adaptive resources (Wilks, 2008). Academic stress has been consistently shown to negatively impact academic performance and attainment (Rickwood et al., 2016), future employment success (Noble et al., 2008), as well as physical and mental health (Ribeiro et al., 2017; Stults-Kolehmainen & Sinha, 2014).

It has been argued that academic stress might intensify during severe and unforeseen external events like the COVID-19 pandemic (Mosanya, 2021). Indeed, emerging research, including from the United States (Cohen

et al., 2020), Australia (Savitsky et al., 2020), Spain (Ruiz-Robledillo et al., 2022) and China (Yang et al., 2020) suggests that many students experienced heightened levels of academic stress and resulting feelings of lack of control and loneliness induced by enforced social isolation (Mosanya, 2021). As well as the stressors experienced in daily life resulting from the pandemic, students have struggled both with practical disruptions to teaching and learning and the pressures of navigating the move to often unfamiliar online learning environments and heightened uncertainty surrounding their academic and employment future (Aucejo et al., 2020; Clabaugh et al., 2021; D'Amato, 2020). While students commonly perceived the transitioning to online learning as a necessary step (Almahasees et al., 2021; Clabaugh et al., 2021), they nonetheless encountered numerous challenges, including reliable access to necessary technology, digital competence, reduced interaction with faculty and workload management (Almahasees et al., 2021), which function to increase stress. These issues and associated increases in stress, coupled with the abrupt cessation of in-person access to university well-being support (Burns et al., 2020), have resulted in substantial negative impacts on student well-being (e.g. Clabaugh et al., 2021; Savage et al., 2020).

The experience of academic stress in the context of COVID-19 has also highlighted and exacerbated existing inequalities: female and lower-income students tend to report greater stress and poorer emotional well-being than their male counterparts, and Black, Asian and minority ethnic community students have been found to experience substantially higher levels of stress and uncertainty relating to their academic prospects (Clabaugh et al., 2021; Craig et al., 2020; Rodríguez-Planas, 2022). One dimension of inequality that might be particularly significant in the experience of academic stress in the context of COVID-19 concerns first-in-family students. Existing literature suggests that these students are less likely to graduate from elite universities and experience a greater likelihood of non-completion (Henderson et al., 2020). Similarly, first-in-family students often take longer to adjust to the HE context and, as a consequence, experience higher levels of academic stress and anxiety (Stebleton et al., 2014). Given the importance of family capital, and networks of experience to draw on (O'Shea, 2015), it may also take students without these resources longer to adjust to a new form of learning. Taken together, these findings suggest that the consequences of the COVID-19 pandemic on academic stress for students in HE are likely to be significant, and may disproportionately affect already marginalised groups.

Motivation is a key factor in academic stress, via links to academic performance and anxiety. Typically, high motivation leads to improved academic performance, where motivation is associated with high levels of engagement and effort in a subject (Deci & Ryan, 1985; Wigfield & Koenka, 2020); and where unregulated anxiety can inhibit and undermine motivation (Camacho et al., 2021; Pekrun et al., 2017; Schunk, 2008). Macro-theories of motivation such as Deci and Ryan's self-determination theory (Deci & Ryan, 1985, 2000) describe the importance of a careful balance between the individual's needs for autonomy, competence and relatedness to support motivation and well-being where intrinsic motivation and an autonomy-supportive environment for learning can underpin a successful learning experience (Niemiec & Ryan, 2009). These are further underlined in a recent study exploring the role of resilience in UG students during the pandemic, which identifies the importance of both intrinsic motivation and relational factors such as friends, family and teachers as central (Ang et al., 2022). The global pandemic significantly disrupted daily life, leading to continued uncertainty and reported high anxiety among students (Baloran, 2020; Lee, 2020) and poor mental health (Jiang, 2020), and there are indications that indeed the effects of the pandemic on motivation have been mediated by anxiety level (Göksu et al., 2021). Some evidence indicates that novel situations might support academic motivation, at least in the short term (Fridkin, 2018; Lechner et al., 2016). However, increases in academic stress, as discussed above, might exacerbate a sense of loss of control, typically associated with decline in motivation (Zapata & Onwuegbuzie, 2022). Emerging research underlines this, where academic motivation in UG students has waned during the pandemic (Hicks et al., 2021; Tan, 2020).

Finally, coping, or how individuals navigate and respond to stressors, has been found to play a significant role in psychological well-being (Folkman et al., 1986; Quy et al., 2018; Rueda & Valls, 2020). Coping strategies can be classed as adaptive if they help manage individual stress responses in the long term (for instance, doing something constructive, or focusing on the positive in a situation) or maladaptive if they do not help, or even exacerbate the problem (Moritz et al., 2016). According to the Transactional Model of Stress and Coping (Lazarus, 1966; Lazarus &

Folkman, 1984), stress reactions to stimuli are influenced by a range of factors including individual interpretation, and also social context, and various individual factors and experience all of which may have been impacted by the pandemic.

There is an emerging literature exploring coping responses in this way in the context of COVID-19. Emotion-focused coping, including denial, wishful thinking and emotional expression, has consistently been associated with poorer outcomes and higher levels of internalising symptoms (Compas et al., 2001; Guszkowska & Dąbrowska-Zimakowska, 2022; Quy et al., 2018). Furthermore, uncertainty, such as that engendered by a global health crisis, has been linked to increases in emotion-focused coping, potentially leading to increases in anxiety (Taha et al., 2014). Similarly, avoidant coping, such as disengagement, in the context of COVID-19 has been found to be negatively associated with well-being (Dawson & Golijani-Moghaddam, 2020). From a more positive perspective, Logel et al. (2021) found an association between maintaining social connections as a coping strategy and self-reported well-being, measured across dimensions including satisfaction with life and university, social connections, mental and physical health, and perceived disruptions caused by the pandemic, while Lyons et al. (2020) found the use of video platforms and social media to maintain communication and social connection, as well as exercise and hobbies, to be commonly adopted strategies.

Taken together, these findings suggest that the uncertainty engendered by COVID-19 and the switch to online learning is likely to have had a substantial impact on student motivation and learning, and may be impacted by the coping strategies students use. Studies exploring these relationships over time are needed to help us understand how students have (or have not) adapted to this new way of learning across this period and to better understand the problems and challenges of online learning associated with different phases of the academic year. Given existing issues of equality in HE, it is also valuable to explore the effects on more vulnerable groups. This study takes a longitudinal perspective and reports on how a year of online learning due to the COVID-19 outbreak impacted the student learning experience over a full academic year, additionally exploring some group differences.

This paper specifically explores how motivation for learning has been affected over the academic year 2020–2021 for a sample of HE UG students. The research aims to ascertain whether motivation is elevated at the start of the academic year but may then decline over the year, where changes will be related to levels of anxiety and academic stress (too high or too low) and the individual's coping profile and resilience, where more adaptive coping strategies are related to higher motivation (Ang et al., 2022).

This study seeks to address the following questions:

1. How do coping, anxiety, learning strategies and motivation vary across a year of remote learning?
2. How do these factors vary between students in different year groups?
3. How do these factors vary for students who are first-in-family at university?

2 | METHODS

2.1 | Online survey on learning experiences

This study explores students' academic stress and their coping strategies and motivation using primary data from an online survey of all UG students of one university faculty. Due to the ongoing COVID-19 pandemic and the fact that many students studied from remote locations, an online survey was the only mode of data collection possible at the time. However, many of the disadvantages commonly associated with online data collection – for example, undercoverage or difficulties to design appropriate sampling frames – did not apply to this particular target population: We invited all students enrolled in five UG degree programmes in a faculty of a large London university to fill in our online questionnaires. The invitations were sent via email by programme administration teams, via the faculty's well-being newsletter, and through notifications on their virtual learning environment. To be able to

explore changes throughout the academic year 2020/2021, the survey was repeated at three different times: in Term 1 (November 2020) to capture views soon after students had started online learning, in Term 2 (February 2021) at a mid-point when students had had the chance to adjust but when workloads are typically high, and in Term 3 (May 2021) during the assessment period. Since the third wave of the survey took place in the summer term, when students were expected to focus on their assignments and less likely to engage with survey requests, respondents were offered an incentive for participation (a draw for one of four £25 vouchers).

2.2 | Sample

We conducted a *full survey* of all UG students in the faculty, in other words, all students who were enrolled in a UG degree in the faculty ($N = 947$), and, thus, were part of the target population, were invited to take part. Of the 947 eligible students, 177 unique students in total (response rate: 19%) took part in at least one survey: $N = 77$ in wave 1, $N = 96$ in wave 2, $N = 49$ in wave 3; 25 students participated in two waves, and 10 in all three waves. Demographic data including age, gender, ethnicity,[1] as well as information on year group and whether or not a student is a first-in-family student[2] was collected and is reported in Table S1 in the Appendix. Of particular note is that 89% of participants ($N = 147$) reported to identify as female, which is slightly higher than university faculty figures. Lastly, more than half of those who reported their year group are Year 1 students (52%, $N = 85$), 28% ($N = 47$) are Year 2 students and 19% ($N = 31$) are Year 3 students.

2.3 | Variables and instruments

The online surveys included a set of repeated questions in each survey wave, as well as some wave-specific and open-ended questions. The main concepts of interest, levels of academic stress, coping, and motivation, were assessed through a set of well-established instruments for which performance and validity are well documented, which were included in all waves of the study.

Academic stress was measured using the Perception of Academic Stress Scale (Bedewy & Gabriel, 2015). The scale was initially developed for psychology students in Egypt but has since been used in a number of different studies, including in the context of the pandemic (Capone et al., 2020) and its validity has been well established. It consists of 18 statements (e.g. 'Am unable to catch up if getting behind in my work') to which students respond on a 5-point-Likert scale ('strongly disagree' to 'strongly agree'). For our data, the overall scale shows a high degree of internal consistency ('reliability'), both overall (Cronbach's $\alpha = 0.84$), and for each of the waves (wave 1, $\alpha = 0.81$; wave 2, $\alpha = 0.83$; wave 3, $\alpha = 0.85$). As an exploratory factor analysis (see Table S2 in the Appendix) suggests a three-dimensional structure, we also created three subscales, measuring *self-perceptions* ($\alpha = 0.77$), *workload-related stress* ($\alpha = 0.77$), and *performance-related stress* ($\alpha = 0.75$).[3] To construct the overall scale and the subscales, the mean of the respective items was taken and, thus, they range from 1 (low stress) to 5 (high stress).

To assess students' coping responses during the pandemic, statements on coping strategies from the *Profile of Coping Dimensions in Children (PCDC)* by Quy et al. (2020) were included. The PCDC is a theory-driven measure that explores 11 different dimensions of coping, each assessed through a statement (e.g. 'I try to think about how I can solve the problem') with the answer categories 'yes' and 'no'. The statements are not intended to be summarised into an overall score but rather are used to determine the profile of coping strategies used by students.

Finally, a measure for motivation and learning strategies was designed using the well-established *Motivated Strategies for Learning Questionnaire (MSLQ)* by Pintrich et al. (1991). The full MSLQ consists of two subscales—motivation and learning strategies—with a total of 81 items that belong to one of six (motivation) or nine (learning strategies) components respectively. We selected only those components that we expected to be affected by the changes due to online delivery: *Control of Learning Belief, Extrinsic Goal Orientation, Intrinsic Goal Orientation*

and *Self-Efficacy* for motivation, and *Effort Regulation*, *Environment Management*, *Help-Seeking*, *Organisation* and *Self-Regulation* for learning strategies. This leaves 52 items measuring students' agreement to statements (e.g. 'If I study in appropriate ways, then I will be able to learn the material on this programme') on a 7-point scale ('not at all true of me' to 'very true of me'). For our data, we find a high degree of internal consistency ('reliability') between the items of the two subscales, overall (motivation: $\alpha = 0.89$; learning strategies: $\alpha = 0.90$) as well as across the three waves (motivation: $\alpha = 0.85/0.91/0.87$; learning strategies: $\alpha = 0.88/0.91/0.89$, respectively). The subcomponents have acceptable to high levels of internal consistency (see Table S2 in the Appendix for an overview). All motivation and learning strategy scales were created as the mean of their items and ranged from 1 (low motivation/use of strategy) to 7 (high motivation/use of strategy).

2.4 | Data analysis strategy

We explore differences in stress, motivation, the use of learning strategies and coping between different groups of students, as well as changes over time, by describing and comparing the mean values (and standard deviations) of the scales, as is appropriate for outcomes in a metric measurement level. To assess if differences (between groups, as well as over time) are statistically significant, we report the results of *t*-tests (two means are compared) and ANOVAs (for multiple means), with associated significance levels (mostly $p < .1$) also reported.

3 | RESULTS

3.1 | Academic stress, motivation, use of learning strategies and coping for all students

We find a marked pattern in *academic stress* over the year: academic stress peaked in Term 2 (Term 1: $M = 2.81$, $SD = 0.56$; Term 2: $M = 3.10$, $SD = 0.62$) before returning to levels similar to Term 1 in Term 3 ($M = 2.80$, $SD = 0.66$). Both the increase and the subsequent decrease are statistically significant ($p < .10$). The detail of the subscales in Figure 1 shows that this pattern is driven by the increase from Term 1 to Term 2 and subsequent decrease in Term 3 in stress arising both from workload pressures and from self-perception. Although the performance-related stress measure behaves similarly, it is not statistically significant.

Motivation remained relatively stable over time (see Figure S1 in the Appendix). Although a dip in overall motivation was observed in Term 2 (Term 1: $M = 5.21$, $SD = 0.67$; Term 2: $M = 4.98$, $SD = 0.89$), the decrease is not statistically significant. However, the motivation subscales indicate a statistically significant decline and subsequent recovery in Term 2 in intrinsic motivation, whereby students are motivated by internal drivers, (Term 1: $M = 5.24$, $SD = 0.91$; Term 2: $M = 4.83$, $SD = 1.09$; Term 3: $M = 5.26$, $SD = 0.92$).

There is also a statistically significant decrease in the use of *learning strategies* in the second term (Term 1: $M = 3.22$, $SD = 0.71$; Term 2: $M = 2.71$, $SD = 0.84$), however, in contrast to academic stress and intrinsic motivation, the subsequent change in Term 3 (Term 3: $M = 3.01$, $SD = 0.79$) is not statistically significant (see Figure 2). The subscales show that the pattern in the use of learning strategies was driven by a decline in organisation, self-regulation, learning environment and effort regulation, while help-seeking behaviour remained roughly the same.

In terms of *coping*, although we observed slight variations in the reported use of both adaptive and maladaptive strategies in Term 2 compared with Term 1, and afterwards in Term 3 compared with Term 2 (see Figure S2 in the Appendix), these were not statistically significant, suggesting that overall students continued to use similar coping strategies to manage stress throughout the year.
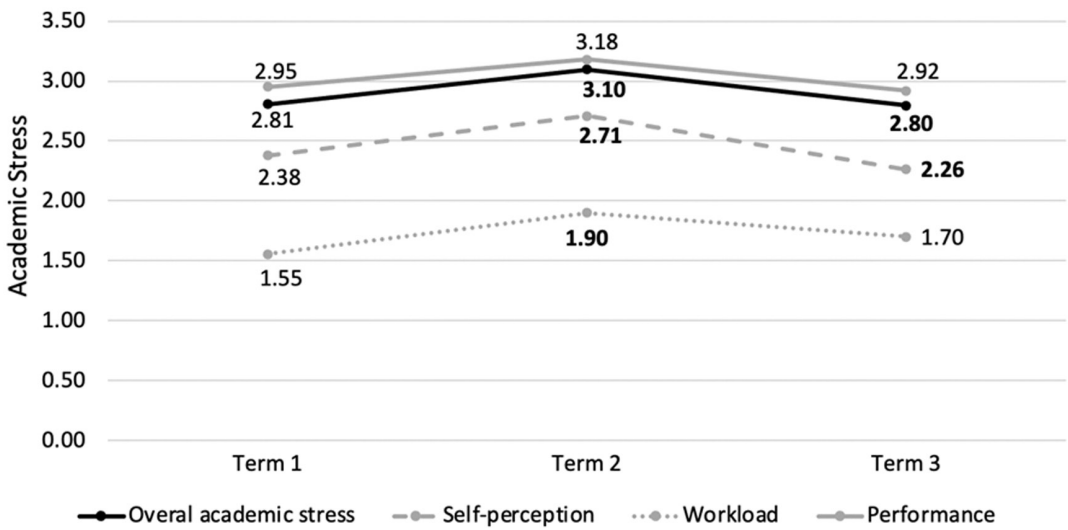
FIGURE 1　Academic stress for all students during the academic year. Means in **bold** show a statistically significant (*p* < .10) change compared with the corresponding (sub)scale mean in the previous term.

FIGURE 2　Learning strategies by all students during the academic year. Means in **bold** show a statistically significant (*p* < .10) change compared with the corresponding (sub)scale mean in the previous term.
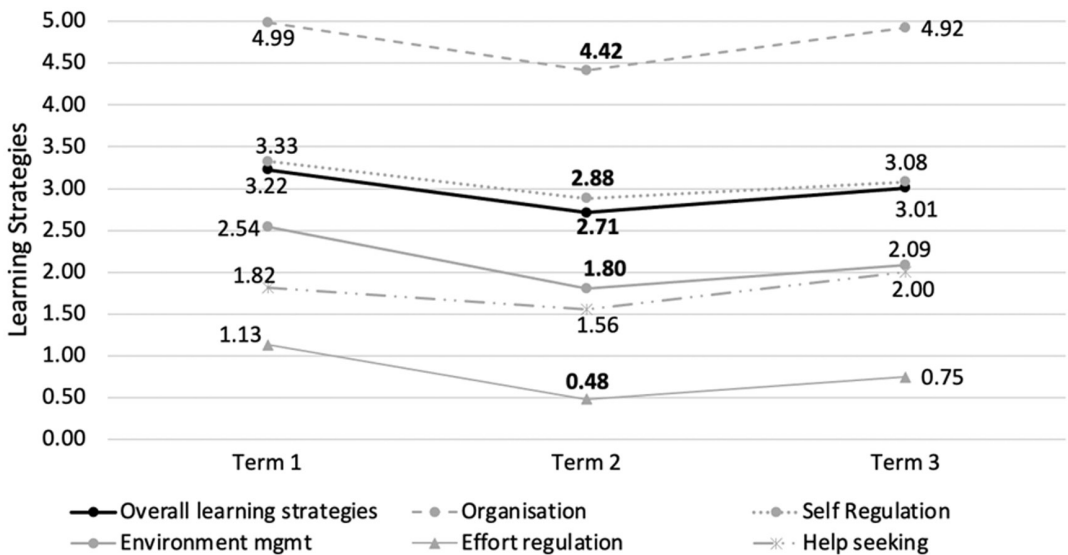
3.2 | Academic stress, motivation, use of learning strategies and coping by year group and for students who are first-in-family to attend university

Given the heterogeneity in the experience of studying in HE, of existing peer networks, and academic demands, we also explored if academic stress, motivation, use of learning strategies and coping varied systematically between students from two key groups, those in different year groups and students who are first-in-family to attend university compared with those who are not first-in-family students.

3.2.1 | Differences by year group

We did not find any marked differences in levels of *academic stress* between different year groups. The overall pattern observed in the pooled data, with elevated levels of academic stress in Term 2, and a subsequent decrease in Term 3, does not apply to Year 3 students, for whom stress continuously increases throughout the year (Term 1: $M = 2.57, SD = 0.69$; Term 2: $M = 3.00, SD = 0.82$; Term 3: $M = 3.06; SD = 0.87$). However, differences between year groups, both overall and in each of the terms, do not reach conventional levels of statistical significance. Similarly, we did not find any significant differences across groups regarding their use of *learning strategies*. There is some variation between year groups, most notably, an increase in learning strategy use in Term 3 for students in Years 1 and 3, but not Year 2, and once again, these differences are not statistically significant on any conventional significance level.

Although no systematic group differences in the levels of academic stress were detected, our analyses show striking differences in the way students *cope* with stress. Year 2 students show statistically significantly higher levels of maladaptive coping overall, $p < .10$ (Year 1: $M = 1.98, SD = 1.48$; Year 2: $M = 2.46, SD = 1.32$; Year 3: $M = 2.05, SD = 1.38$). The same pattern is shown in each wave, however, due to the smaller sample size, does not reach statistical significance. In terms of adaptive coping, differences between year groups are less marked, but it is worth noting that the small (not significant) advantage Year 3 students appear to have in Terms 1 and 2 is no longer apparent by Term 3. Finally, we find little evidence for differences in motivation between different year groups. Students from all year groups report similar levels of motivation overall (Year 1: $M = 5.12, SD = 0.79$; Year 2: $M = 5.06, SD = 0.78$; Year 3: $M = 5.10, SD = 0.78$) and similar patterns over the year.

3.2.2 | Differences between first-in-family and non-first-in-family students

Turning now to first-in-family students and non-first-in-family students, we do not find any substantial differences in *academic stress* between both groups of students ($M = 2.93, SD = 0.60$ and $M = 2.96, SD = 0.68$) overall, and across waves (see Table 1). First-in-family students and non-first-in-family students also display a similar use of *learning strategies* overall ($M = 3.08, SD = 0.85$; and $M = 2.93, SD = 0.80$), as well as in each wave, with a small (but not significant) advantage for first-in-family students. In contrast, both groups differ with regard to their *coping* strategies: both overall and in waves 1 and 2, non-first-in-family students have much higher levels of adaptive coping than first-in-family students (overall: $M = 3.61, SD = 2.09$; vs. $M = 2.96, SD = 2.18$). In wave 3, levels of adaptive coping are similar for both groups of students, but there is a marked difference in maladaptive coping. First-in-family students report, on average, the use of 2.54 ($SD = 1.33$) maladaptive coping strategies compared with only 1.77 ($SD = 2.54$) for non-first-in-family students. Finally, we observe some differences in students' *motivation*: in Term 3, there is a statistically significant difference in levels of motivation between first-in-family and non-first-in-family students, where non-first-in-family students report statistically significantly higher levels of motivation ($p < .10, M = 5.28, SD = 0.74$) than their first-in-family peers ($M = 4.93, SD = 0.79$).

4 | DISCUSSION

This study reports on the effects of remote learning during the COVID-19 pandemic on the UG student learning experience, looking specifically at patterns in academic stress, learning, motivation and coping across three points in time during the course of one academic year. We have also explored how these patterns vary across different groups of students, specifically those in different years of study, and between those who are first-in-family students and those whose parents have attended university.

Prior studies indicate that academic stress is likely to increase when students feel overwhelmed by workload (e.g. González-Cabanach et al., 2008, 2016, 2017) and may be exacerbated by stressful external events such as

TABLE 1 Group differences in means of academic stress, learning strategies, coping and motivation.

		Non-first-in-family students		First-in-family students		Year 1		Year 2		Year 3	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Academic stress	Overall	2.93	0.60	2.96	0.68	3.00	0.60	2.95	0.54	2.80	0.78
	W1	2.80	0.53	2.82	0.67	2.88	0.53	2.91	0.49	2.57	0.69
	W2	3.13	0.55	3.09	0.71	3.24	0.51	3.01	0.58	3.00	0.82
	W3	2.74	0.70	2.98	0.66	2.67	0.70	2.88	0.58	3.06	0.87
Strategies	Overall	2.93	0.80	3.08	0.85	2.93	0.78	2.96	0.88	3.07	0.85
	W1	3.16	0.77	3.34	0.59	3.08	0.80	3.32	0.58	3.39	0.65
	W2	2.70	0.78	2.78	0.99	2.71	0.73	2.78	1.03	2.51	0.85
	W3	2.95	0.80	3.12	0.90	3.10	0.79	2.77	0.83	3.23	0.90
Maladaptive coping	Overall	2.18	1.40	2.13b	1.43	1.98*	1.48	2.46*	1.32	2.05	1.38
	W1	2.24	1.30	1.96	1.48	2.03	1.50	2.36	1.26	2.11	1.23
	W2	2.36	1.41	2.12	1.45	2.07	1.45	2.54	1.40	2.23	1.48
	W3	1.77*	1.50	2.54*	1.33	1.70	1.53	2.47	1.36	1.70	1.57
Adaptive coping	Overall	3.61*	2.09	2.96*	2.18	3.40	2.27	3.22	2.03	3.49	2.10
	W1	3.76*	1.97	2.79*	2.20	3.27	2.26	3.27	2.03	3.83	1.89
	W2	3.70*	2.10	3.00*	2.35	3.51	2.31	3.21	2.15	3.62	2.14
	W3	3.23	2.26	3.23	1.88	3.40	2.28	3.13	1.92	2.70	2.41
Motivation	Overall	5.14	0.78	5.00	0.79	5.12	0.79	5.06	0.78	5.10	0.78
	W1	5.24	0.70	5.14	0.62	5.18	0.70	5.19	0.74	5.28	0.53
	W2	4.99	0.84	4.87	0.94	4.98	0.85	5.00	0.88	4.78	0.96
	W3	5.28*	0.74	4.93*	0.79	5.30	0.80	4.97	0.68	5.22	0.82

Note: N = 177.

*Means in **bold** are statistically significant ($p < .10$).

the pandemic because there are additional demands on adaptive resources. In support of this, the present study found that academic stress was significantly higher at wave 2 (February 2021) when students are typically juggling competing deadlines from Term 1 modules with the Term 2 workload and there was a national lockdown with enforced isolation across the United Kingdom. It should be noted that for our sample, workload might be particularly onerous due to the volume of reading and background research required. Our findings suggest that this may have been further compounded by the use of effective learning strategies, with a steady decline in reported organisation, self-regulation, impact of learning environment and effort regulation across the three terms where this might be expected to be important for maintaining motivation and engagement (Niemiec & Ryan, 2009). This might indicate that a certain amount of fatigue set in over the year as students had to maintain levels of interaction in a strained and challenging environment and without the traditional avenues for support.

Our findings also demonstrate that performance stress was significantly higher for Year 1 students compared with both Year 2 and Year 3 students. This is in line with findings by Copeland et al. (2021) who found evidence of the negative effect on behavioural and emotional functioning in Year 1 UG students. We suggest that this may be indicative of the new environment for students starting on their UG degree courses where they do not yet understand the academic requirements or standards, where their academic performance has not yet been assessed in this setting, and where these students have not yet had the chance to establish social connections, both with peers and faculty, compared with their peers in Year 2 and Year 3. Nonetheless, this must be balanced by the fact that more senior students—Year 3 students in particular—are facing higher pressure to perform, as their grades contribute more towards the final degree qualification. The non-significant but more linear pattern of increasing stress across the year for Year 3 students in particular likely reflects both the extra pressure of undertaking final year dissertations and preparing to leave the relative safety of university during a period of unprecedented uncertainty (Aucejo et al., 2020).

Although reported help-seeking behaviour remained constant over this period, this may be impacted by individual differences and students might typically expect to receive informal support through avenues such as spontaneous interaction with peers, opportunities for shared learning or to discuss ideas with lecturers informally which would have been removed in a wholly online environment.

In line with the stable help-seeking behaviours, we found no significant change in reported coping across the academic year when we consider the whole group of students. This is in line with expectations where coping style increasingly remains relatively stable after adolescence (Aldwin et al., 2021; Kirchner et al., 2010). However, of note is that there was a similar pattern across all three year-groups in their use of maladaptive coping strategies during the academic year as a whole. This pattern, although only significant for Year 2 students, suggests that students were more likely to rely on strategies commonly associated with poorer emotional outcomes (e.g. Quy et al., 2018).

Furthermore, we also found that first-in-family students were also statistically more likely to rely on maladaptive coping strategies. This may reflect the developmental nature of coping: younger adults who may be still developing effective coping strategies have been found to be more likely to use maladaptive strategies (Aldwin et al., 2021). It is also possible that this pattern is indicative of a sequence effect, in that when adaptive strategies fail to yield results, individuals may come to rely on maladaptive strategies in times of increased stress and adversity (Boergers et al., 1998; Wadsworth, 2015). These findings suggest that there is significant scope for intervention in university and HE settings to provide additional support and training for this group to support their academic stress management and to avoid reliance on maladaptive coping strategies which may serve to exacerbate the negative effects of stress and increase risk of poorer emotional and psychological outcomes.

Our results show that overall motivation did not significantly change over time. However, we also found that intrinsic motivation decreased in Term 2 and then increased again by Term 3. This is an important finding in an educational context where intrinsic motivation is a consistent predictor of academic performance (Taylor et al., 2014) and is closely aligned with levels of effort and engagement based on internally driven interest (Deci & Ryan, 2000) that may indicate that students were having to work harder to achieve and may also explain the finding that academic stress increased in Term 2. However, first-in-family students did not follow this trend, and this group of students reported statistically significant lower levels of motivation in Term 3. Taken

together, with the finding that this group of students also relies on maladaptive coping strategies, this suggests a need to pay attention to this group. In line with self-determination theory (Deci & Ryan, 2000), difficulties in coping, feelings of disconnection from peers and the university environment and without appropriate support, appear to have undermined motivation for this group of students and indicate that HE establishments would do well to offer support both in terms of academic stress management, coping strategies and to boost academic engagement.

4.1 | Limitations and future considerations

The limitations of this study mostly concern the sample. First, the overall sample size of 177 is small, with a response rate of only 19% and a very small number of participants who completed more than one wave, thus as a self-report survey this may have affected the study design. Furthermore, as all students were enrolled at one faculty of a large London university, the findings may lack generalisability to the wider student population. Nonetheless, the data collected is unique in that comparable students were tracked over a full academic year and this gives novel insight into the learning experience over time. Finally, there may be further factors that contributed to the reported measured effects that have not been revealed by this study: we recommend the exploration of qualitative evidence to further illuminate our understanding of the findings reported here.

5 | CONCLUSION

Overall, the findings presented in this paper indicate that there has been a significant impact on academic stress and motivation for UG students during the COVID-19 pandemic, with students reporting significant increases in stress and declines in motivation, particularly in areas significant for academic success. These impacts were particularly evident during 'high stakes' periods of the academic year, during which the changes to teaching and learning, as well as day-to-day life, compounded typical educational pressures. These issues were especially prevalent for students new to HE who have yet to familiarise themselves with UG life, but there was also some indication that students at the end of their UG path are experiencing unique difficulties as they face an uncertain future.

How students navigated these pressures also emerged as important. While coping remained relatively stable over time, reflecting the developmental stage of this sample, there was evidence of increased reliance on coping strategies traditionally associated with poorer emotional and psychological outcomes.

Perhaps most significantly, the effects noted here appear to exert a differential effect on already vulnerable groups, specifically 'first-in-family' students, suggesting that the pandemic has exacerbated existing educational inequalities. Our findings show that HE institutions would do well to ensure appropriate support is in place for this group of students to help mitigate the effects from this period of online learning.

This study is unique in that it has tracked a group of students across an academic year during the COVID-19 pandemic. It affords insight into levels of academic stress during this period and how these students managed this stress, as well as exploring the impact on motivation and learning strategies. Moreover, by examining findings across the three year-groups of UG study as well as comparing those students who are first-in-family students against those who are not, we can present differences in these variables and, therefore, determine where students are most in need of support to deal with academic stress in times of uncertainty and maintain engagement with their studies.

ETHICS STATEMENT

This research project received full ethical approval from the university ethics committee (Rec 1408, Data protection registration number: Z6364106/2020/09/05).

CONFLICT OF INTEREST STATEMENT

There are no conflicts of interest to disclose.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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ENDNOTES

[1] The ethnicity profile of the student body at this university is markedly different to that in other universities across the UK, therefore this is not a focus of the current study.

[2] For this study, students whose parents (or close older relatives) have not attended university are considered to be first-in-family students.

[3] Although these subscales do not correspond to the subscales suggested in Bedewy and Gabriel (2015) nor match the results of their factor analysis, they are theoretically meaningful, and robust to different specifications.

REFERENCES

Aldwin, C. M., Yancura, L. A., & Lee, H. (2021). Stress, coping, and aging. In K. W. Schaie, & S. Willis (Eds.), *Handbook of the psychology of aging* (9th ed., pp. 275–286). Academic Press. https://doi.org/10.1016/B978-0-12-816094-7.00016-7

Almahasees, Z., Mohsen, K., & Amin, M. O. (2021). Faculty's and students' perceptions of online learning during COVID-19. *Frontiers in Education*, 6, 638470. https://doi.org/10.3389/feduc.2021.638470

Ang, W., Shorey, S., Lopez, V., Chuew, H. S. J., & Lau, Y. (2022). Generation Z undergraduate students' resilience during the COVID-19 pandemic: A qualitative study. *Current Psychology*, 41(11), 8132–8146. https://doi.org/10.1007/s12144-021-01830-4

Arday, J. (2018). Understanding race and educational leadership in higher education: Exploring the Black and ethnic minority (BME) experience. *Management in Education*, 32(4), 192–200. https://doi.org/10.1177/0892020618791002

Aucejo, E. M., French, J., Ugalde Araya, M. P., & Zafar, B. (2020). The impact of COVID-19 on student experiences and expectations: Evidence from a survey. *Journal of Public Economics*, 191, 104271. https://doi.org/10.1016/j.jpubeco.2020.104271

Auerbach, R. P., Mortier, P., Bruffaerts, R., Alonso, J., Benjet, C., Cuijpers, P., Demyttenaere, K., Ebert, D. D., Green, J. G., Hasking, P., Murray, E., Nock, M. K., Pinder-Amaker, S., Sampson, N. A., Stein, D. J., Vilagut, G., Zaslavsky, A. M., Kessler, R. C., & WHO WMH-ICS Collaborators. (2018). WHO World Mental Health Surveys International College Student Project: Prevalence and distribution of mental disorders. *Journal of Abnormal Psychology*, 127(7), 623–638. https://doi.org/10.1037/abn0000362

Baloran, E. (2020). Knowledge, attitudes, anxiety, and coping strategies of students during COVID-19 pandemic. *Journal of Loss and Trauma*, 25(8), 635–642. https://doi.org/10.1080/15325024.2020.1769300

Bedewy, D., & Gabriel, A. (2015). Examining perceptions of academic stress and its sources among university students: The perception of academic stress scale. *Health Psychology Open*, 2(2), 1–9. https://doi.org/10.1177/2055102915596714

Bennett, J., Heron, J., Gunnell, D., Purdy, S., & Linton, M. (2022). The impact of the COVID-19 pandemic on student mental health and wellbeing in UK university students: A multiyear cross-sectional analysis. *Journal of Mental Health*, 31(4), 597–604. https://doi.org/10.1080/09638237.2022.2091766

Boergers, J., Spirito, A., & Donaldson, D. (1998). Reasons for adolescent suicide attempts: Associations with psychological functioning. *Journal of the American Academy of Child & Adolescent Psychiatry*, 37(12), 1287–1293. https://doi.org/10.1097/00004583-199812000-00012

Burns, D., Dagnall, N., & Holt, M. (2020). Assessing the impact of the COVID-19 pandemic on student wellbeing at universities in the United Kingdom: A conceptual analysis. *Frontiers in Education*, 5, 582882. https://doi.org/10.3389/feduc.2020.582882

Camacho, A., Correia, N., Zaccoletti, S., & Daniel, J. R. (2021). Anxiety and social support as predictors of student academic motivation during the COVID-19. *Frontiers in Psychology*, 12, 644338. https://doi.org/10.3389/fpsyg.2021.644338

Cao, W., Fang, Z., Hou, G., Han, M., Xu, X., Dong, J., & Zheng, J. (2020). The psychological impact of the COVID-19 epidemic on college students in China. *Psychiatry Research*, *287*, 112934. https://doi.org/10.1016/j.psychres.2020.112934

Capone, V., Caso, D., Donizzetti, A. R., & Procentese, F. (2020). University student mental well-being during COVID-19 outbreak: What are the relationships between information seeking, perceived risk and personal resources related to the academic context? *Sustainability*, *12*(17), 7039. https://doi.org/10.3390/su12177039

Clabaugh, A., Duque, J. F., & Fields, L. J. (2021). Academic stress and emotional well-being in United States college students following onset of the COVID-19 pandemic. *Frontiers in Psychology*, *12*, 628787. https://doi.org/10.3389/fpsyg.2021.628787

Cohen, A. K., Hoyt, L. T., & Dull, B. (2020). A descriptive study of COVID-19-related experiences and perspectives of a national sample of college students in spring 2020. *The Journal of Adolescent Health*, *67*(3), 369–375. https://doi.org/10.1016/j.jadohealth.2020.06.009

Compas, B. E., Connor-Smith, J. K., Saltzman, H., Thomsen, A. H., & Wadsworth, M. E. (2001). Coping with stress during childhood and adolescence: Problems, progress, and potential in theory and research. *Psychological Bulletin*, *127*(1), 87–127.

Copeland, W. E., McGinnis, E., Bai, Y., Adams, Z., Nardone, H., Devadanam, V., Rettew, J., & Hudziak, J. J. (2021). Impact of COVID-19 pandemic on college student mental health and wellness. *Journal of the American Academy of Child and Adolescent Psychiatry*, *60*(1), 134–141.e2. https://doi.org/10.1016/j.jaac.2020.08.466

Craig, S., Ames, M., Bondi, B. C., & Pepler, D. (2020). Canadian adolescents' mental health and substance use during the COVID-19 pandemic: Associations with COVID-19 stressors. *Canadian Journal of Behavioural Science*, *55*, 46–55. https://doi.org/10.1037/cbs0000305

D'Amato, P. (2020). Coronavirus accelerates higher education's trend toward distance learning. *The Hechinger* Report. https://hechingerreport.org/coronavirus-accelerates-higher-educations-trend-toward-distance-learning/

Dawson, D. L., & Golijani-Moghaddam, N. (2020). COVID-19: Psychological flexibility, coping, mental health, and wellbeing in the UK during the pandemic. *Journal of Contextual Behavioral Science*, *17*, 126–134. https://doi.org/10.1016/j.jcbs.2020.07.010

Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior.* Plenum Press.

Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, *11*(4), 227–268. https://doi.org/10.1207/S15327965PLI1104_01

Denovan, A., & Macaskill, A. (2017). Stress and subjective wellbeing among first year UK undergraduate students. *Journal of Happiness Studies: An Interdisciplinary Forum on Subjective Well-Being*, *18*(2), 505–525. https://doi.org/10.1007/s10902-016-9736-y

Dolton, P. (2020). The Economics of the UK University System in the Time of COVID-19. *National Institute of Economic & Social Research Policy Paper 019*. https://www.niesr.ac.uk/publications/economics-uk-university-system-timecovid-19

Folkman, S., Lazarus, R. S., Dunkel-Schetter, C., DeLongis, A., & Gruen, R. J. (1986). Dynamics of a stressful encounter: Cognitive appraisal, coping, and encounter outcomes. *Journal of Personality and Social Psychology*, *50*(5), 992–1003. https://doi.org/10.1037/0022-3514.50.5.992

Fridkin, L. (2018). *The impact of motivation on children's reading comprehension: Differential effects of gender and ability* [Doctoral dissertation, UCL Institute of Education]. UCL Database. https://discovery.ucl.ac.uk/id/eprint/10053870/

Göksu, İ., Ergün, N., Özkan, Z., & Sakız, H. (2021). Distance education amid a pandemic: Which psycho-demographic variables affect students in higher education? *Journal of Computer Assisted Learning*, *37*, 1539–1552. https://doi.org/10.1111/jcal.12544

González-Cabanach, R., Souto-Gestal, A., & Fernández-Cervantes, R. (2017). Profiles of emotional regulation and academic stress in physiotherapy students. *European Journal of Educational Psychology*, *10*, 57–61.

González-Cabanach, R., Souto-Gestal, A., & Franco, V. (2016). Stressor academic scale for the evaluation of academic stressors in undergraduates. *Ibero-American Journal of Health Psychology*, *7*, 41–50. https://doi.org/10.1016/j.rips.2016.05.001

González-Cabanach, R. G., Rodríguez, S., Valle, A., Piñeiro, I., & Millán, P. G. (2008). Metas académicas y vulnerabilidad al estrés en contextos académicos [Academic goals and vulnerability to stress in academic contexts]. *Aula Abierta*, *36*, 3–16.

Grubic, N., Badovinac, S., & Johri, A. M. (2020). Student mental health in the midst of the COVID-19 pandemic: A call for further research and immediate solutions. *The International Journal of Social Psychiatry*, *66*(5), 517–518. https://doi.org/10.1177/0020764020925108

Guszkowska, M., & Dąbrowska-Zimakowska, A. (2022). Coping with stress during the second wave of the COVID-19 pandemic by Polish university students: Strategies, structure, and relation to psychological well-being. *Psychology Research and Behavior Management*, *15*, 339–352. https://doi.org/10.2147/PRBM.S345648

Henderson, M., Shure, N., & Adamecz-Volgyi, A. (2020). Moving on up: 'First in Family' university graduates in England. *Oxford Review of Education*, *46*(6), 734–751. https://doi.org/10.1080/03054985.2020.1784714

Henehan, K. (2020). *Class of 2020: Education leavers in the current crisis*. Resolution Foundation. https://www.resolution foundation.org/publications/class-of-2020/

Hicks, L. J., Caron, E. E., & Smilek, D. (2021). SARS-CoV-2 and learning: The impact of a global pandemic on undergraduate learning experiences. *Scholarship of Teaching and Learning in Psychology*. Advance online publication. https://doi.org/10.1037/stl0000250

Jiang, R. (2020). Knowledge, attitudes and mental health of university students during the COVID-19 pandemic in China. *Children and Youth Services Review, 119*, 105494. https://doi.org/10.1016/j.childyouth.2020.105494

Kirchner, T., Forns, M., Amador, J. A., & Muñoz, D. (2010). Stability and consistency of coping in adolescence: A longitudinal study. *Psicothema, 22*(3), 382–388.

Lazarus, R., & Folkman, S. (1984). *Stress, appraisal, and coping*. Springer.

Lazarus, R. S. (1966). *Psychological stress and the coping process*. McGraw-Hill.

Lechner, C. M., Tomasik, M. J., & Silbereisen, R. K. (2016). Preparing for uncertain careers: How youth deal with growing occupational uncertainties before the education-to-work transition. *Journal of Vocational Behavior, 95–96*, 90–101. https://doi.org/10.1016/j.jvb.2016.08.002

Lee, J. (2020). Mental health effects of school closures during COVID-19. *The Lancet. Child & Adolescent Health, 4*(6), 421. https://doi.org/10.1016/S2352-4642(20)30109-7

Logel, C., Oreopoulos, P., & Petronijevic, U. (2021). Experiences and coping strategies of college students during the COVID-19 pandemic. *National Bureau of Economic Research. Working Paper Series 28803*. https://EconPapers.repec.org/RePEc:nbr:nberwo:28803

Lyons, Z., Wilcox, H., Leung, L., & Dearsley, O. (2020). COVID-19 and the mental well-being of Australian medical students: Impact, concerns and coping strategies used. *Australasian Psychiatry: Bulletin of Royal Australian and New Zealand College of Psychiatrists, 28*(6), 649–652. https://doi.org/10.1177/1039856220947945

Masten, A. S. (2014). *Ordinary magic: Resilience in development*. Guilford Press.

Moritz, S., Jahns, A. K., Schröder, J., Berger, T., Lincoln, T. M., Klein, J. P., & Göritz, A. S. (2016). More adaptive versus less maladaptive coping: What is more predictive of symptom severity? Development of a new scale to investigate coping profiles across different psychopathological syndromes. *Journal of Affective Disorders, 191*, 300–307. https://doi.org/10.1016/j.jad.2015.11.027

Mosanya, M. (2021). Buffering academic stress during the COVID-19 pandemic related social isolation: Grit and growth mindset as protective factors against the impact of loneliness. *International Journal of Applied Positive Psychology, 6*(2), 159–174. https://doi.org/10.1007/s41042-020-00043-7

Neves, J., & Hewitt, C. (2020). *Student Academic Experience Survey 2020*. Advance HE. https://www.hepi.ac.uk/wp-content/uploads/2020/06/The-Student-Academic-Experience-Survey-2020.pdf

Niemiec, C. P., & Ryan, R. M. (2009). Autonomy, competence, and relatedness in the classroom: Applying self-determination theory to educational practice. *Theory and Research in Education, 7*(2), 133–144. https://doi.org/10.1177/1477878509104318

Noble, T., Wyatt, T., McGrath, H., Roffey, S., & Rowling, L. (2008). *Scoping study into approaches to student wellbeing—Final report*. Brisbane, Australia. https://docs.education.gov.au/documents/scoping-study-approaches-student-wellbeing-final-report

Oreopoulos, P., Von Wachter, T., & Heisz, A. (2012). The short-and long-term career effects of graduating in a recession. *American Economic Journal: Applied Economics, 4*(1), 1–29. https://doi.org/10.1257/app.4.1.1

O'Shea, S. (2015). Filling up silences—First in family students, capital and university talk in the home. *International Journal of Lifelong Education, 34*(2), 139–155. https://doi.org/10.1080/02601370.2014.980342

Pekrun, R., Lichtenfeld, S., Marsh, H. W., Murayama, K., & Goetz, T. (2017). Achievement emotions and academic performance: Longitudinal models of reciprocal effects. *Child Development, 88*(5), 1653–1670. https://doi.org/10.1111/cdev.12704

Pintrich, P. R., Smith, D., Garcia, T., & McKeachie, W. (1991). *A manual for the use of the motivated strategies for learning questionnaire (MSLQ)*. The University of Michigan.

Quy, K., Gibb, J., Neil, L., Owen, C., & Smith, M. (2018). Dimensions of coping and anxiety symptoms in a community sample of young children. *Emotional & Behavioural Difficulties, 23*(3), 230–244. https://doi.org/10.1080/13632752.2018.1461456

Quy, K., Gibb, J., Neil, L., & Smith, M. (2020). Development and preliminary validation of a self-report coping response measure in a community sample of children in middle childhood. *Journal of Personality Assessment, 102*(5), 628–640. https://doi.org/10.1080/00223891.2019.1606003

Ribeiro, Í. J. S., Pereira, R., Freire, I. V., de Oliveira, B. G., Casotti, C. A., & Boery, E. N. (2017). Stress and quality of life among university students: A systematic literature review. *Health Professions Education, 4*(2), 70–77. https://doi.org/10.1016/j.hpe.2017.03.002

Rickwood, D., Telford, N., O'Sullivan, S., Crisp, D., & Magyar, R. (2016). *National tertiary student wellbeing survey 2016*. https://www.researchgate.net/publication/338714439_National_Tertiary_Student_Wellbeing_Survey_2016

Rodríguez-Planas, N. (2022). Hitting where it hurts most: COVID-19 and low-income urban college students. *Economics of Education Review, 87*, 102233. https://doi.org/10.1016/j.econedurev.2022.102233

Rueda, B., & Valls, E. (2020). Is the effect of psychological inflexibility on symptoms and quality of life mediated by coping strategies in patients with mental disorders? *International Journal of Cognitive Therapy*, *13*(2), 112–126. https://doi.org/10.1007/s41811-020-00069-4

Ruiz-Robledillo, N., Vela-Bermejo, J., Clement-Carbonell, V., Ferrer-Cascales, R., Alcocer-Bruno, C., & Albaladejo-Blázquez, N. (2022). Impact of COVID-19 pandemic on academic stress and perceived classroom climate in Spanish university students. *International Journal of Environmental Research and Public Health*, *19*(7), 4398. https://doi.org/10.3390/ijerph19074398

Savage, M. J., James, R., Magistro, D., Donaldson, J., Healy, L. C., Nevill, M., & Hennis, P. J. (2020). Mental health and movement behaviour during the COVID-19 pandemic in UK university students: Prospective cohort study. *Mental Health and Physical Activity*, *19*, 100357. https://doi.org/10.1016/j.mhpa.2020.100357

Savitsky, B., Findling, Y., Ereli, A., & Hendel, T. (2020). Anxiety and coping strategies among nursing students during the COVID-19 pandemic. *Nurse Education in Practice*, *46*, 1–7. https://doi.org/10.1016/j.nepr.2020.102809

Schunk, D. H. (2008). Metacognition, self-regulation, and self-regulated learning: Research recommendations. *Educational Psychology Review*, *20*(4), 463–467. https://doi.org/10.1007/s10648-008-9086-3

Stebleton, M. J., Soria, K. M., & Huesman, R. L., Jr. (2014). First-generation students' sense of belonging, mental health, and use of counseling services at public research universities. *Journal of College Counseling*, *17*(1), 6–20. https://doi.org/10.1002/j.2161-1882.2014.00044.x

Stults-Kolehmainen, M. A., & Sinha, R. (2014). The effects of stress on physical activity and exercise. *Sports Medicine (Auckland, N.Z.)*, *44*(1), 81–121. https://doi.org/10.1007/s40279-013-0090-5

Taha, S., Matheson, K., Cronin, T., & Anisman, H. (2014). Intolerance of uncertainty, appraisals, coping, and anxiety: The case of the 2009 H1N1 pandemic. *British Journal of Health Psychology*, *19*(3), 592–605. https://doi.org/10.1111/bjhp.12058

Tan, C. (2020). The impact of COVID-19 on student motivation, community of inquiry and learning performance. *Asian Education and Development Studies*, *10*, 308–321. https://doi.org/10.1108/aeds-05-2020-0084

Taylor, G., Jungert, T., Mageau, G. A., Schattke, K., Dedic, H., Rosenfield, S., & Koestner, R. (2014). A self-determination theory approach to predicting school achievement over time: The unique role of intrinsic motivation. *Contemporary educational psychology*, *39*(4), 342–358.

Wadsworth, M. E. (2015). Development of maladaptive coping: A functional adaptation to chronic, uncontrollable stress. *Child Development Perspectives*, *9*(2), 96–100. https://doi.org/10.1111/cdep.12112

Wigfield, A., & Koenka, A. C. (2020). Where do we go from here in academic motivation theory and research? Some reflections and recommendations for future work. *Contemporary Educational Psychology*, *61*, 101872. https://doi.org/10.1016/j.cedpsych.2020.101872

Wigfield, A., Tonks, S., & Klauda, S. L. (2016). Expectancy-value theory. In K. R. Wentzel & D. B. Mielecpesnm (Eds.), *Handbook of motivation in school* (2nd ed., pp. 55–74). Routledge.

Wilks, S. E. (2008). Resilience amid academic stress: The moderating impact of social support among social work students. *Advances in Social Work*, *9*(2), 106–125. https://doi.org/10.18060/51

Yang, D., Tu, C.-C., & Dai, X. (2020). The effect of the 2019 novel coronavirus pandemic on college students in Wuhan. *Psychological Trauma: Theory, Research, Practice, and Policy*, *12*(S1), S6–S14. https://doi.org/10.1037/tra0000930

Young Minds. (2021). *Coronavirus: Impact on young people with mental health needs.* https://www.youngminds.org.uk/media/esifqn3z/youngminds-coronavirus-report-jan-2021.pdf

Zapata, S. M., & Onwuegbuzie, A. J. (2022). Emotion differentiation and negative emotional states: The mediating role of perceived academic control and the moderated effect of intrinsic motivation. *Current Psychology*, *12*, 1–17. https://doi.org/10.1007/s12144-022-03697-5

Zwiener-Collins, N., Fridkin, L., & Bover-Fonts, N. (2020). *Wellbeing: Engaging with students on their experience of moving online IOE Digital.* https://blogs.ucl.ac.uk/ioe/2020/07/01/wellbeing-engaging-with-students-on-their-experience-of-moving-online/

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