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Surviving a pandemic - Understanding the role of student stress, personality and coping on course satisfaction and anxiety during lockdown

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ABSTRACT

The aims explored associations between stress ratings and influences on coping and personality on student course satisfaction and anxiety. Most research construes stress as distress, with little attempt to consider positive 'eustress' experiences. Undergraduate students (N = 162) were surveyed on student and pandemic-related stressors, personality, support, control and on course satisfaction and anxiety. For course satisfaction, conscientiousness was the strongest predictor, followed by uplifting ratings of learning resources adapted during the pandemic. These uplifting ratings also support the efficacy of optimism. Support ratings were significant, but only as a hassle. This suggests work still needs to be done to maximise support opportunities on virtual learning platforms. Lack of motivation was strongly associated with anxiety. Context control and optimism had a buffering and mediating effect on levels of anxiety. Optimistic thinking strategies were effective in managing pandemic circumstances outside student control. Conscientiousness, control, support and optimism are integral in building student coping.


KEYWORDS

Stress; eustress; personality; optimism; support; context control; course satisfaction; anxiety

Introduction

The Transactional model of stress (Lazarus & Folkman, 1987), compared to the models that preceded it, placed psychological and social factors front and centre in recognising and interpreting demands (the primary appraisal) and in managing those demands (the secondary appraisal). Individual interpretations could lead to the judgement that the stressor is irrelevant, a challenge or a threat. As illustrated in Figure 1, sources of stress that are interpreted as demands associated with optimal anxiety and in which one can achieve, are called eustress (B) and those that are perceived as associated with apathy or boredom (A) or, more often, as exceeding one's capacity to cope (C), are sources of distress (Gibbons, 2008). The traditional health psychology approach construed stress in terms of degrees of distress. This study adopted a positive psychology framework, with university demands measured using an adapted UK National Student Survey (NSS) and response scale that allowed stress demands to be rated as hassles (that hold the potential to have an adverse effect on well-being) and as uplifts (that hold the potential to enhance well-being). This is consistent with the 'threat' and

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 Supplemental data for this article can be accessed [here](#)

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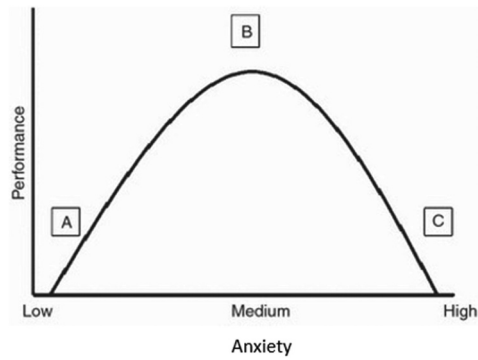


Figure 1. Adapted from the Yerkes and Dodson (1908)

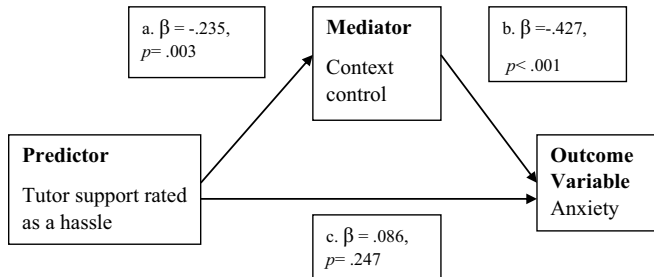


Figure 2. Context control Mediator.

'challenge' or distress and eustress primary appraisal judgements in the Transactional model. The secondary appraisal in the model refers to individual coping resources and factors affecting coping. This study measured daily and on-going student demands.

Pre-pandemic sources of student stress

Sources of student stress pre-pandemic include stressors related to academic demands, such as coursework, assessment, exams and work-life balance (Ansari et al., 2014; Robotham & Julian, 2006); to fear of failure and lack of timely feedback on assessments and to the quality of teaching (Gibbons, 2008, 2010, 2015). Personal sources of stress include financial concerns, managing apparent free time, frequently working part-time while studying, and concerns about future careers (Gibbons, 2015). The changes students experience as they transition to university are frequently a source of acute stress. For most, they are learning to live independently, meet new people and, often, live in close confines with strangers, as well as managing their own finances, and all along with the challenges posed by a course that may leave them feeling overwhelmed (Denovan & Macaskill, 2017).

Pre-pandemic stress effects in students

Well-being is defined as: ‘... a state of complete physical, mental and social well-being and not merely the absence of disease and infirmity’ (World Health Organization, 2006, p. 100). The experience of stress can affect student well-being, learning motivation and course satisfaction. Aspects of well-being studied include – mental health (Gibbons, 2021); depression (Zhang et al., 2015); happiness (Denovan & Macaskill, 2017) and even suicidal ideation (Abdollahi et al., 2015). Macaskill (2012) reports that students under 26 suffer most because they are still transitioning into adulthood.

The key stress effect measured in the NSS, the most widely used student survey in UK higher education, is course satisfaction. The NSS was born out of the British Government White paper ‘*The future of higher education*’ in 2003. Students rate a range of common experiences, such as teaching and learning, assessment and feedback, learning resources. Final-year students take the survey and the results are key in determining a university’s positioning in league tables.

While understanding the influences on course satisfaction is important, understanding the influences on anxiety may be more important because anxiety has a stronger influence on actual performance. The x axis in Figure 1, for example, is often operationalised through measures on anxiety and increases in anxiety beyond the optimum are associated with a decline in performance, such as a narrowing in attention and a reduction in the efficiency of working memory (Eysenck et al., 2007). Akram et al. (2019) measured anxiety levels in UK students and found that anxiety was associated with adverse quality of life and mental health and this was more pronounced for female students.

Pandemic stressors and effects

In the Student Academic Experience Survey (Neves & Hewitt, 2020), taken in March, after most students had stopped face-to-face teaching, there was a marked increase in loneliness and decline in mental health (in depression and anxiety) compared to pre-pandemic levels. Other studies offer similar results (NUS Insight, 2020; Office for National Statistics, 2020). While based on different sampling procedures and designs, and while all used non-probability sampling and often lacked non-student comparison groups, the similarity in the findings from several large surveys lays testament to the adverse impact Covid-19 has had on students’ lives and well-being. Gibbons (2021), found that key pandemic-related stressors included isolation and procrastination, and these were key predictors of adverse mental health.

Coping with stress

According to Neves and Hewitt’s (2020) UK survey, key predictors of course satisfaction during pre-pandemic 2019 (n = 14,072) and 2020 (n = 10,227) were: the level of challenge in course demands; the student effort invested; the opportunity to interact with others, and how well the course was organised. University life changed dramatically with the pandemic and this impacted on all these factors. Faculty, for example, faced a huge challenge in adapting their programmes to accommodate the Covid restrictions. This

varied, for the university in this study, from in-person, socially distanced, reduced class sizes, necessitating repeated delivery by faculty; teaching in-person and virtual audiences simultaneously; create pre-recordings for all lectures and, later, a move to complete remote teaching.

The course organisation logistics were considerable, especially as it required preparing for multiple contingency plans depending on the path of the pandemic and all while maintaining a course that retained the academic standards to satisfy the psychology governing body, along with a learning programme that remained sufficiently challenging to students.

Key influences on coping include personality, and past experiences and these are drawn on to perceive and manage stress demands. Of all the Big Five traits, the significance given to student effort in Neves and Hewitt's (2020) findings, reflects the importance of conscientiousness in relation to student performance and course satisfaction (Gibbons, 2021). The opportunity to interact with other students reflects the importance associated with support (Gibbons, 2009a, 2009b; Neves & Hewitt, 2020; Taylor, 2011). Recent research links the benefit of support through the opportunity it provides to increase kindness, in turn boosting well-being and reducing burn-out (Schabram & Heng, 2021). Context control has been found to be an important coping resource in several studies (Gibbons, 2015, 2021). While dispositional control is a strong predictor, so is context control or the skills one acquires to feel in control in a given situation (Gibbons, 2008; Maddi, 2002). Given the potential context control has over dispositional control in improving coping, it is this that is measured. Other important Big Five traits (McCrae & Costa, 2004) linked to successful coping include extraversion (Kuijpers et al., 2021), levels of emotional stability and openness (Vollrath & Torgersen, 2000). In education contexts, openness is important if learning is to expand; and both learnt and dispositional optimistic thinking strategies have been associated with performance, course satisfaction and well-being (Schwarzer, 1994; Seligman, 2008). Those scoring high on optimism construe stress demands in a way that make success more likely. They tend to perceive change and stress demands as opportunities to grow and achieve and good copers more frequently score stress demands as higher on uplifts and lower on hassles (Gibbons, 2010). They are biased to attend more to positive events over negative ones (defensive optimism), and they are more active in learning from their coping mistakes (Lazarus & Folkman, 1987).

Aims and hypotheses

The factors affecting the rating of stress as eustress is a relatively under-researched area in student populations (Gibbons, 2015). Study hypotheses explored correlations between stress (hassle and uplifting) ratings and influences on coping and personality on student course satisfaction and anxiety.

Methods

Design

A survey-based, correlational design was employed. The predictor variables were: course-related demands (rated as hassles *and* as uplifts), amended from the National Student Survey; pandemic-related stressors, including social media use and changes in diet and exercise. Coping influences were measured through support, context control and personality. The outcome variables for the regression analyses were course satisfaction and anxiety.

Participants

A sample of 162 university students (81% of the cohort) were recruited from the second-year of a psychology BSc programme. On demographics, 86.4% were female ($n = 140$) and 13% male ($n = 21$). Participants' average age was 22 years ($SD = 4.55$ and range 18–59 years). The focus was on the experience of stress during a pandemic and so the inclusion criteria avoided first-year students because of the additional demands faced by first-year students in adjusting to university life.

Materials

Students completed an online survey that included a brief and instructions and gathering information on demographics; sources of student stress, coping influences, course satisfaction and anxiety. The α for all measures ranged from .64 to .89. Reliability and validity studies are described by the authors of each of the measures used. A 5-point Likert 'Strongly Agree' to 'Strongly Disagree' response scale was used unless otherwise stated.

The National student survey (NSS; HEFCE (Higher Education Funding Council for England, 2017)

NSS items were adapted with participants rating each demand twice on a 5-point scale, from 'no hassle' and 'no uplift' (0), up to 'strong hassle' and 'strong uplifting' experience (5). A range of factors were measured across 25 items, such as teaching demands, time management and support. An example item is:

An example *Learning motivation* item is: 'I have found the course motivating' and an example *course satisfaction* item is: 'I enjoy my studies'.

Pandemic-related stressors

Two sub-scales were developed by the author following focus groups with existing students: *time on devices* (2 items) and *lack of motivation* (3 items). Respondents rated each item on a 10-point response scale from 1 (Not at all True) to 10 (Very True) e.g. 'During the period of Covid-19 restrictions, have you found that you have been: ' ...

using social media more than usual' (time on devices), '... losing your mojo' (lack of motivation). The α for each sub-scale exceeded .8 and the items were judged to have face validity.

Context control (Gibbons, 2010)

The Context control scale, of three items, measured in-situ control, for example, 'The pace of learning often leaves me with little feeling of control'.

The values in action (VIA) scale (Seligman et al., 2004)

The eight-item hope/optimism sub-scale from the longer VIA scale was used to measure levels of optimistic thinking, for example, 'I always look on the bright side'.

Big five inventory –10 (BFI-10; Rammstedt & John, 2007)

Respondents are asked to rate 10 statements that describe personality, for example, 'I see myself as someone who is reserved'. Two items measured each trait.

Hospital anxiety and depression scale (HADS) (Zigmond & Snaith, 1983)

The seven-item HADS anxiety sub-scale was used and respondents rated each on a scale from 0 to 3, where 0 is 'not at all' and 3 is 'most of the time' e.g. 'I feel tense or wound up'. This test is widely used in non-clinical settings (Gibbons, 2005).

Ethics and procedure

The cohort was made aware of the study via email and in links on their course homepage. The study received approval from the Ethics committee at the host university. All participants received a brief and a point of contact for further clarifications. All were informed that participation was voluntary and they were free to stop at any time and all acknowledged informed consent before participating. All ethical considerations and methods were executed in accordance with the Declaration of Helsinki.

Results

Multiple hierarchical regressions were run using SPSS version 27. Predictors were entered in line with the Transactional model – Sources of stress (primary appraisal factors) were entered in block one and personality and the influences on coping (secondary appraisal factors) in block two, along with demographics. The regression tables illustrate the final block for each model. Regression assumptions were checked and confirmed, and the guidelines proposed by Baron and Kenny (1986) were followed to arrive at the most parsimonious model and in testing for mediation.

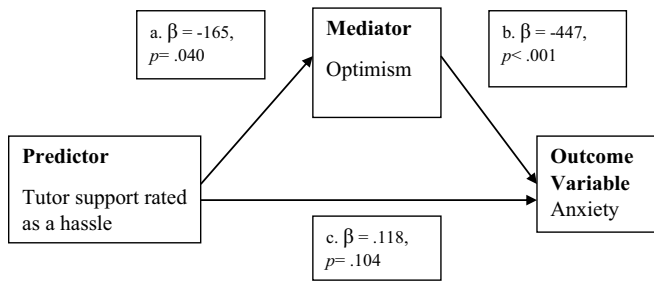


Figure 3. Optimism Mediator.

Table 1. Multiple regression model with course satisfaction.

Model	Unstandardised Coefficients		Standardised Coefficients
	B	Std. Error	β
(Constant)	7.98	1.60	
Intellectual stimulation uplift	.29	.08	.23***
Peer support hassle	-.20	.08	-.19**
Wider university support hassle	-.18	.08	-.18**
Lack of motivation	-.80	.04	-.15**
Optimism	.15	.06	.18**
Conscientiousness	.41	.12	.24***

* $p < .05$ ** $p < .01$ *** $p < .001$

The regression model explained 37.3% of the variance in scores on course satisfaction.

Agreeableness was significant as a trend in the model with anxiety (Table 1). Increases in hassle ratings, according to tutor support were associated with increases in anxiety. This was significant in block one but not block two. Those significant predictors in block two were tested as potential mediators and Figures 2 and 3 demonstrate the mediating role of context control and optimism.

Table 2. Multiple regression model with anxiety.

Model	Unstandardised Coefficients		Standardised Coefficients
	B	Std. Error	β
(Constant)	18.01	3.15	
Tutor Support Hassle	.26	.14	.12
Lack of Motivation	.30	.08	.28***
Learning motivation	.44	.21	.15*
Context control	-.76	.20	-.27***
Optimism	-.45	.14	-.26**
Agreeableness	-.48	.27	-.13

* $p < .05$ ** $p < .01$ *** $p < .001$

The regression model explained 37.2% of the variance in scores on anxiety.

Discussion

Regression model for course satisfaction

Conscientiousness was the strongest predictor of course satisfaction (Table 2). As it increased so too did course satisfaction. This supports the pre-pandemic evidence of student effort (Neves & Hewitt, 2020).

The items measuring intellectual stimulation (NSS) referred to the accessibility and suitability of the resources provided on the course. This included the online resources – pre-recorded lectures, live seminars and tutorials and the online quizzes, as well as the standard reading material provided. The uplifting rating given to intellectual stimulation suggests the student body have valued these resources, along with the efforts by faculty to deliver a course that remained academically challenging. This finding is consistent with the pre-pandemic importance given by students to the suitability and organisation of the course as predictors of course satisfaction (Neves & Hewitt, 2020).

Support, as a hassle, was negatively correlated with course satisfaction, both the support from other students and peers and the broader infrastructure of support provided by the university. Interestingly, support as an uplift did not feature. Neves and Hewitt (2020) and Gibbons (2015) found positive ratings of student support, pre-pandemic, to be a key predictor of satisfaction. The significance of support as a hassle, but not an uplift, suggests it functions differently during a pandemic. During a period where most students are literally isolated at home, with their only contact with others via a computer monitor, the support opportunities through online peer learning activities, for example, in seminars and tutorials and through one-to-one pastoral support, took on a new importance. Moreover, it may be difficult to create a virtual student experience of support that is truly uplifting (note – difficult but not impossible).

Engaging in and creating an effective virtual learning environment was a learning curve for students and staff and the hassle rating accorded to support suggests there is work to be done to make students feel valued and connected with other students and with faculty. It might also reflect the broader disappointment students experience in their lives during a pandemic, devoid of the varied and usual range of university and socially based, in-person contacts.

Lack of motivation negatively correlated with course satisfaction. This variable referred to the 'loss of mojo towards learning demands' (an example item). It appears that apathy and a lack of energy to undertake necessary tasks was a major source of distress. Procrastination is a perennial problem for most people and frequently for students. It is a state that is negatively reinforcing but avoidance adversely impacts on learning and well-being (Gibbons, 2015). The challenge of studying during a pandemic has created a set of circumstances where, despite, often, best efforts, a lack of motivation proved especially difficult and impacted on course satisfaction.

As optimism increased, so too did course satisfaction. This is consistent with the growing body of evidence on the efficacy of optimism (Schwarzer, 1994; Seligman, 2008). These results suggest that in circumstances largely outside the control of the

student – where studying remotely, alone and virtually, was unavoidable – using optimistic thinking strategies, especially defensive optimism, holds the potential to help students cope better.

Interestingly, in an analysis of student stress on mental health, Gibbons (2021) found context control to be a much stronger predictor than optimism but, in this analysis, control did not feature. It seems that, in relation to mental health and, as we will see, anxiety, context control is important, but for course satisfaction, conscientiousness and optimism are important. There are two points of explanation: Where one has no control over, for example, the absence of in-person teaching and a normal student social life, a perspective that homes-in on the positives, such as ‘I’m better at time management’, ‘I understand the material better than last year’, ‘I can study at my own pace’ (consistent comments from students in progress tutorials), is more likely to be positively associated with course satisfaction.

The value of optimism is likely to have contributed to the uplifting rating given to the intellectual stimulation items too. Fournier et al. (2002) offer a similar interpretation in the well-being of patients dealing with either an illness (such as MS) associated with an irreversible decline in health (here defensive optimism worked better) or an illness (such as diabetes) where, with effort invested in medical adherence, a healthy prognosis was likely (here, effort and mastery were stronger predictors). Second, the influence of context control may be masked by the conscientiousness predictor – the application of hard work and effort used by those high on conscientiousness, is likely to be associated with course satisfaction when it is well executed – and that involves mastery and control over study skills.

Regression model for anxiety

In this model (Table 1), lack of motivation was the strongest predictor – as it increased so too did scores on anxiety. This predictor relates to the loss of mojo linked to the restrictions imposed by the pandemic. This finding reinforces the erosive influence the restrictions had on student motivation and is consistent with the lack of motivation and course satisfaction finding in the last model and with wider results on procrastination and student motivation on wellbeing (Gibbons, 2021).

Context control and optimism were both negatively related to anxiety. In the last model (Table 1), optimism featured but control did not and this was linked to the likely benefits of defensive optimism, especially over circumstances, such as enforced restrictions and isolation. Developing the study skills and work habits to feel in control as a student and adopting the thinking strategies of optimists are key to creating anxiety levels conducive to eustress and optimal performance.

Hassle	Uplift
0–5	0–5
Item	
The comprehensibility of the material taught on the course.	

Where course resources were rated as stimulating learning motivation, anxiety increased. This appears counterintuitive, but some anxiety, like some stress, is needed to perform well and, where students rate resources ‘as stimulating their enthusiasm for

further learning' (an item that measured learning motivation), it suggests that the anxiety measured here enhanced performance. This supports the role of anxiety in states of eustress (Eysenck et al., 2007; Gibbons, 2015). Agreeableness was negatively associated with anxiety. This supports the role of this trait as an effective strategy to nurture relationships and, in part, to reduce anxiety by avoiding confrontation.

The mediation analysis (Figures 2 and 3, Tables 3 and 4) revealed it was the extent to which students felt in control as a learner that determined the hassle ratings given to tutor support and a student's level of optimism functioned in the same way: Those high on control or optimism attributed a lower hassle rating to tutor support and it was their level of control and optimism that influenced anxiety. In both analyses, these predictors were negatively associated with levels of anxiety. Such findings support earlier work (Gibbons, 2015; Schwarzer, 1994; Seligman, 2008) and suggests they should form part of initiatives to build student-coping.

Limitations

The NSS was used because it is recognised as the, de facto, measure of student experience. However, the evidence of its validity is yet to match the frequency of its use (Sabri, 2013). The use of a survey method and volunteer sample are not without limitations and a larger sample, across all cohorts in the psychology department would have allowed more insight into the different demands faced in each year of study. First-year students were not included to avoid the conflating influence from the stress associated with the transition from school to university. However, attrition rates are greatest, in most disciplines, in the first year (Gibbons, 2015). Therefore, a recruitment strategy that broadens the target population and sample size to include first-year students would strengthen generalisation claims.

Identifying the sources and experience of stress that are likely to enhance performance and are thereby uplifting, as opposed to a hinderance or hassle, is a key challenge for those of us who explore this area of positive psychology. The stress that helps you achieve may be experienced as unpleasant and unwanted at the time and, because of that, be more likely to be rated as a hassle than an uplift. A fuller explanation on the distinction between the sources of stress that can help and that can inhibit performance was added to the participant brief in this compared to earlier studies, but, as an online survey, it was difficult to drive this distinction home to participants. An improvement might be to adopt different labels for 'hassles' and 'uplifts', such as sources of stress that 'hinder' performance and that are 'necessary to facilitate' performance.

Recommendations

During induction and early in their studies, students could be offered stress-management training that includes tips linked to the key interpretations offered here. While loss of mojo was an issue in attempting to study during a pandemic, conscientiousness was the strongest predictor of course satisfaction scores and context control and optimism had a protective and mediating role between stress demands and anxiety. This suggests that an even greater focus could be put on empowering students with the study and time management skills to adjust to higher education demands during induction and early in the teaching period. Helping students develop control and mastery in their learning

skills will mean student effort will be better executed and this is more likely to be associated with optimal anxiety, better performance and positive course satisfaction. Tips that draw on the thinking strategies adopted by optimists will likely offer dividends, for example, that change can be construed as a challenge even if one's initial reaction is one of threat; in defensive optimism, self-compassion and problem-based coping.

As universities look to a new, post-pandemic norm, it is likely that some of the learning and teaching adaptations used during the pandemic will remain. Most universities are looking to offer a blended approach, and Teams or Zoom or some equivalent looks set to stay. Given the findings on support rated as a hassle but not as an uplift and the interpretation offered on online support, the challenge, going forward, is to create meaningful, uplifting support opportunities for students. Hays (2008) has identified the efficacy of 'servant educators'. That is, a teaching approach that puts the spotlight on kindness and respect towards students and on creating an environment that facilitates their learning. Kind gestures build morale. It is a strategy that helps faculty and students learn more about the strengths and weaknesses of individuals. It increases team identity and increases the motivation to succeed in shared goals.

An exercise I have used for over 30 years involves creating tutorial space, once per semester, where students are invited to identify and share a couple of qualities they value or admire in other group members. Each student is in the 'hot seat' to receive these compliments and then it is rotated with another student receiving the compliments. Participation is voluntary. Each group member is the giver, receiver and witness to kind gestures. The efficacy of kindness on well-being is robust and it can also increase states of 'elevation', an uplifting emotion, where one feels inspired or experiences awe (Schabram & Heng, 2021; Sparks et al., 2019). Such an exercise holds the potential to maintain and nurture student support in virtual learning environments.

Authors' contributions

Dr C Gibbons undertook all elements of this study.

Ethics approval and consent to participate

The study received Ethics approval from the QUB Ethics reference: EPS20_01.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Notes on contributor

Dr Chris Gibbons is a lecturer in positive and health psychology at Queen's university Belfast. He is chair of the Association for Psychology Teachers and has received numerous teaching awards and is currently a national 'Teaching Hero', awarded by the National forum for the Enhancement of Teaching and Learning in HE.

Data availability statement

The data set is available at: <https://orcid.org/0000-0001-6631-721X>

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