



Article

Emotional Exhaustion and Engagement in Higher Education Students during a Crisis, Lessons Learned from COVID-19 Experience in Italian Universities

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Abstract: Italian university students face an uncertain future characterised by a competitive neoliberal academic environment with high demands and a weak labour market that often cannot hire those who are best qualified. The COVID-19 pandemic has exacerbated students' uncertainty and negatively affected their well-being. The purpose of this study is to explore perceptions of academic life during the pandemic and to examine the relationship between study load, reduced academic performance, internet addiction, academic self-efficacy, and engagement and emotional exhaustion. A sample of university students (N = 10,298) from 11 Italian universities completed a self-report questionnaire about their academic and personal lives between May and June 2021. We performed two multiple linear regressions and one ANOVA to highlight gender differences. Results indicate that female students reported lower levels of engagement and academic self-efficacy, and higher levels of exhaustion and study demands compared to male students, while older students generally appear to exhibit higher levels of well-being. Study load, reduced academic performance, and internet addiction showed a negative association with engagement, particularly the first two, and a positive association with exhaustion, while self-efficacy was positively associated with engagement and negatively associated with exhaustion. The results suggest the need to introduce additional forms of support, such as psychological support, internet addiction awareness courses or counseling services.

Keywords: academic self-efficacy; emotional exhaustion; engagement; Job Demands-Resources Model; COVID-19



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1. Introduction

In the academic year 2020/2021, 1,793,210 students were enrolled in Italian universities (Ministero Dell'istruzione 2020), even though Italy is one of the European countries with the lowest percentage of young students who continue their studies. Despite the different academic paths and contexts, many students shared the same experience of higher education. The university student population has often been considered a privileged target group due to their age and living conditions (Lederer and Oswald 2017; Lederer et al. 2019; LeViness et al. 2019; Lipson et al. 2018; Schwartz and Kay 2009); however, in recent years, more attention has been paid to the physical and mental well-being (or lack thereof) of this population, both due to an increased focus on these issues and the broader topic of student services, and due to changes in the population itself. Thanks in part to policies promoting the right to education, students from different socioeconomic backgrounds are participating

in academic life: however, given the high cost of academic study and information barriers (Barone et al. 2017; Contini and Scagni 2013), the difference in economic resources means that participation in academic life is not equal for all. At the same time, the phenomenon of globalisation and recent changes in the labor market, together with the widespread precariousness of work, reinforce the sense of insecurity even among those who are still studying, a perception that negatively affects their well-being (Musumeci and Ghislieri 2020). Students face a weak labour market that often does not adequately employ them, even when they earn their degrees on time, at prestigious universities, and with very high grades. In other words, students perceive the labour market as extremely demanding and full of inequality and injustice (Capone et al. 2020).

Apart from the systematic surveys on the well-being of university students, these aspects were highlighted in Italy by an episode that shook up public opinion, institutions and academics. In the summer of 2021, three female students from the Scuola Normale di Pisa, one of the most prestigious universities in Italy, gave a powerful and forceful graduation speech about the great opportunities offered by the education system, while being highly critical of the current neoliberal system, which exaggerates competition, emphasises differences, and thus exacerbates inequalities, with negative effects on students' psychological health.

This and other powerful evidence led several researchers to question the experiences of university students, especially during the pandemic COVID-19 (Schröpfer et al. 2021). The pandemic context and subsequent containment measures exacerbated an already delicate situation by introducing new elements into academic life: the reduction, if not complete negation, of social interactions in presence; the unprecedented massive reliance on distance learning that accompanied low digital skills among faculty and students; the need to use information and communication technologies (ICT) in every aspect of life, sometimes in inappropriate spaces and with less appropriate devices (Amerio et al. 2020); the inability to access higher education resources, most of which were closed or had limited access anyway (Lederer et al. 2021).

These profound changes have led many universities to establish and expand psychological support services for students and make them remotely accessible to meet the increasing demand for help in the wake of a drastic deterioration in student well-being. These requests have come from different sources, such as teaching staff, student services desks, and other entities that capture the student body's needs.

Given this complex scenario, our study has two objectives. It aims to explore how Italian students perceived academic life during the pandemic and which variables contributed to emotional exhaustion and engagement by examining the relationship between specific variables, relevant during the COVID-19 pandemic, in a large sample of Italian college students during the second lockdown. The study is part of a larger data collection project aimed at expanding knowledge on this topic and identifying strategies and interventions at universities to improve quality of life (Ghislieri et al. 2022b). Unlike other studies (e.g., Lipson et al. 2018; Son et al. 2020), this work does not inquire about the presence of mental disorders in the population of college students but focuses on dimensions that contribute to or worsen quality of life in academia. Our study takes into account the framework of the Job Demands and Resources model (JD-R model; Bakker and Demerouti 2017), which has been used in other studies to understand the dynamics of higher education students' well-being (Naylor 2022). Specifically, we considered emotional exhaustion (a dimension of burnout) and engagement, both adapted to the academic context. Engagement refers to a positive state of mind, characterised by vigour (energy and mental resilience), dedication (being strongly involved with a sense of significance, enthusiasm, and challenge) and absorption (being happily focused on activities) (Schaufeli and Taris 2014). Indeed, engagement has been analysed from various perspectives, being considered a resource for subjective well-being but also as a consequence of subjective well-being or as a related variable (Datu and King 2018). With respect to the possible determinants of exhaustion and engagement, we first considered a study demands (study load), alongside two dimensions particularly

relevant during the pandemic period (Giusti et al. 2021; Salimi et al. 2021), namely reduced academic performance (RAP) and internet addiction (IA); we also considered academic self-efficacy (ASE) as a personal resource.

1.1. Higher Education Students during the Pandemic

Given the radical and sudden lifestyle changes, concerns about student well-being and mental health grew during the pandemic (Capone et al. 2020; Elmer et al. 2020; Gavurova et al. 2022; Schröpfer et al. 2021; Van De Velde et al. 2021). Several studies have found increases in anxiety and depression levels among university students (Křeménková et al. 2021; Matos Fialho et al. 2021; Wang et al. 2022) and risk for future mental health problems (Lederer et al. 2021). Other work, while not pointing to problematic indicators of distress, emphasised the role of certain personal resources in maintaining adequate well-being (Capone et al. 2020).

In an international study conducted in 62 countries, Aristovnik et al. (2020) highlighted college students' experience of apprehension and boredom during the first lockdown, along with a general appreciation for the role of universities and hospitals (relative to other institutions). In addition to the increasing need for support, several studies have highlighted a number of important risk factors: overuse of technology and lack of adequate digital skills for effective remote learning, leading to potentially poorer academic performance (Giusti et al. 2021; Salimi et al. 2021); the perception of a heavier workload, which is seen as a major source of frustration (Tasso et al. 2021); concerns about one's performance, continuity of study, and economic situation, with associated changes in sleep patterns (Gavurova et al. 2022). It should be noted that some of the dimensions associated with decreased academic achievements (e.g., delayed graduation; Aucejo et al. 2020) have been considered both an outcome and a cause of stress.

In the Italian context, unequal access to ICTs and poor Internet connectivity, combined with the inaccessibility of academic spaces, were also major problems for many students. Even when universities kept dormitories or some spaces open on campus, students in need remained mostly isolated and had limited access to services. In addition, the quality and impact of online teaching and learning, which we will not address in this paper, has been the subject of several debates (Balestra et al. 2021; Ghigi and Piras, 2021; Goglio 2022).

Psychological dimensions and personal resources were analysed as important protective factors in coping with the pandemic and containment measures. In addition to self-efficacy, discussed below, other studies have highlighted the role of the sense of responsibility and belonging (Procentese et al. 2020); the latter lies between personal and organisational resources, as it is fostered by organisational support and care measures such as counselling services. Even before the pandemic, the demand for additional resources to support mental health and well-being interventions on campus was higher than the available resources (LeViness et al. 2019; Lederer et al. 2021), a situation that was exacerbated during the pandemic, further threatening students' future well-being and continuity of study. Finally, some studies have pointed to gender differences (Sánchez-Teruel et al. 2021), geographic background, and socioeconomic status. Regarding gender, Ding et al. (2020) found that female students had greater risk perception related to COVID-19. Alsaady et al. (2020) also observed higher levels of exam anxiety among female students, and Prowse et al. (2021) found a more pronounced negative effect on academic performance, social isolation, stress, and mental health among female students compared to their male peers. Regarding performance (measured by the number of credits earned), Bratti and Lippo (2022), using administrative data from a public college in northern Italy, showed that the gender difference did not change, while women improved their performance compared to men in some fields of study (social sciences and humanities). These data, as well as some considerations from the extensive work of Aristovnik et al. (2020), suggest that special attention should be paid to gender differences (Sánchez-Teruel et al. 2021).

1.2. Emotional Exhaustion and Engagement in Higher Education

The JD-R model is a widely known model of occupational well-being that assumes that each organisational context has specific job demands and resources, and therefore well-being depends on the balance of these two aspects (Bakker and Demerouti 2017). Due to its flexibility and adaptability to different professional and educational contexts, the JD-R model allows for parallel reflection between the work and academic contexts. While the model is generally used in conventional work contexts, there have been recent studies that have applied the JD-R model to university students, such as the work of Naylor (2022), who conducted a study during the pandemic and used this model in conjunction with the self-determination theory (Ryan and Deci 2000) to analyse psychological distress, highlighting the importance of motivational processes and analytic, data-driven measures that address various aspects of being a student.

Regarding the components of the model, job demands have been defined as psychological, social, or organisational aspects that require skills and efforts with associated physiological and psychological costs. Resources (related to the job or personal; Schaufeli and Taris 2014), on the other hand, refer to aspects that perform one of the following three functions: reducing job demands and their costs; supporting the achievement of work goals, and promoting personal growth and learning (Bakker and Demerouti 2017).

The relationship between demands, resources, and outcomes is complex; for example, it usually involves the moderating effect of resources on the relationship between demands and negative outcomes (Ibrahim et al. 2021; Kim and Wang 2018; Tadić et al. 2015; Xanthopoulou et al. 2007). In this study, however, we focus only on the direct relationships and pursue a more general goal of identifying determinants of emotional exhaustion and engagement and possible interventions to promote well-being. Specifically, we focus on the two well-known direct processes of the JD-R model, namely health impairment and motivation. The first process states that demands, especially when perceived as excessive or poorly designed, can deplete workers' energy, leading to strain and other negative consequences such as emotional exhaustion (and more generally burnout); moreover, this process is negatively related to resources. Conversely, the other process states that resources have a motivational potential for workers, leading to engagement and thus positive outcomes, with a negative relationship to demands.

Concerning demands, in this study we focused on study load, a demand that refers to the amount and intensity of academic activities, which, as the name suggests, mainly revolve around studying and preparing for exams. Although study load is not fully synonymous with the workload dimension, the two variables are known to have some conceptual similarities and have similar effects on burnout and engagement; for example, one of the dimensions of student burnout is defined as exhaustion caused by study demands (Schaufeli et al. 2002), which is not dissimilar to the definition of work-related burnout. Two recent studies have indicated that students perceived an increased study load during the pandemic, which is considered a major source of frustration and is positively correlated with stress and poorer mental and physical health (Tasso et al. 2021; Yang et al. 2021). Consistent with status as a requirement in the JD-R model and in line with the literature, our hypotheses are that study load is positively related to emotional exhaustion and negatively related to engagement.

In the most recent review of the JD-R model, Bakker et al. (2023) consider the various antecedents of burnout, taking into account the sources already reviewed by Lee and Ashforth (1996); these authors included stressful events in their meta-analysis on the determinants of burnout. Reduced academic performance, already mentioned among the relevant aspects during the pandemic, can be considered a distressing event. Multiple aspects can be identified as determinants of reduced academic performance during the pandemic, from social isolation to the radical and sudden changes in class attendance and studying. Increased study demands may also have played a role through their potential to reduce existing resources; in this study, given its cross-sectional nature, we simply observed the direct relationship between reduced academic performance and emotional exhaustion

and engagement. Thus, we hypothesise that reduced academic performance is positively related to emotional exhaustion and negatively to engagement.

Alongside these variables, considering the specific pandemic experience of increased ICT use and an intensified presence of internet addiction issues, we included the latter in our study. Together with contextual factors, personal variables were considered possible determinants of emotional exhaustion and engagement; for example, some studies highlight the effect of neuroticism and internet addiction (Lubbadeh 2020; Pohl et al. 2021; Toth et al. 2021). Internet addiction is a form of behavioural addiction that has attracted increasing interest since its conceptualisation in the late 1990s, both in terms of its prevalence and epidemiology and its association with multiple personal and social psychological dimensions (Fumero et al. 2018; Pan et al. 2020; Young 1998a). This is particularly true for young adults, who have reported high levels of problematic Internet use in recent years (Lozano-Blasco et al. 2022). While there are different models of Internet addiction, it can be broadly defined as compulsive and excessive Internet use with serious and negative effects on personal lives (Poon 2018). Specifically, this work draws on Young's (1998a, 1998b) model, which defines Internet addiction as a psychological dependence characterised by loss of control and problems with time management, interference with daily tasks and social relationships, excessive preoccupation and inability to moderate Internet use, mood changes, and hiding behaviours.

The association between Internet addiction and stress, anxiety, and depression has been documented in the student population both before (Younes et al. 2016) and after (Gavurova et al. 2022) the COVID-19 pandemic. Gavurova et al. (2022) found that the emergency context highlighted the importance of ICTs in students' lives, not only for academic activities but also for leisure and maintaining meaningful social relationships. However, in addition to the positive aspects of ICTs use, we must also consider the sudden increase in technology-mediated academic activities, which not only already act as an independent demand, but also increase the risk of excessive Internet use, which is positively associated with academic burnout (Zhu et al. 2022). Moreover, excessive Internet use (especially for distraction and entertainment) might have been employed as a maladaptive coping strategy (Widyanto and McMurren 2004) for mood regulation or simply to avoid an overwhelming situation characterised by increased demands, dwindling resources, uncertainty, stress, and boredom. In other words, the Internet may have been the perfect tool to escape academic obligations, but at the same time the source of overstudying. Therefore, we hypothesise that Internet addiction has a positive relationship with emotional exhaustion and a negative relationship with engagement.

Self-efficacy is widely viewed in the literature as a positive factor in academic achievement, including during the pandemic (Capone et al. 2020; Alemany-Arrebola et al. 2020). This widely studied dimension represents a personal resource that comes into play in the interplay of demands and resources (Salanova et al. 2002). Bandura defined self-efficacy as the "beliefs in one's capabilities to organise and execute the courses of action required producing given attainments" (Bandura 1977, p. 3). Bandura emphasised the role of self-efficacy in the pursuit of meaningful goals and in adaptive self-regulation, which positively affect overall health and well-being; based on one's achievement, feedback received, and modeling, self-efficacy beliefs influence one's ability to perform well and to develop positive and proactive attitudes toward academic challenges. Regarding gender differences, results are sometimes contradictory; while some studies found no significant differences (Rivera Heredia et al. 2016), others reported higher levels of self-efficacy in men (Molino et al. 2018; Olmedo et al. 2018). Thus, we hypothesise that academic self-efficacy has a negative relationship with emotional exhaustion and a positive relationship with engagement.

H1. *Study load (a) reduced academic performance (b) and internet addiction (c) have a positive relationship with emotional exhaustion.*

H2. *Academic self-efficacy has a negative relationship with emotional exhaustion.*

H3. *Study load (a) reduced academic performance (b) and internet addiction (c) have a negative relationship with engagement.*

H4. *Academic self-efficacy has a positive relationship with engagement.*

2. Materials and Methods

2.1. Procedure

The study is part of a broader research project of the National Conference for Equality in Italian Universities, an organisation that gathers representatives of the University Committees of Guarantee, working on issues of gender equality, work-life balance, well-being, and inclusion in the Italian academic context (Ghislieri et al. 2022a). Participation in the study was proposed to every Committee of Guarantee of the universities affiliated with the network; documents and information materials were attached to the proposal to support the presentation of the study at each university. The study aimed to build a comprehensive and comparable database useful for planning interventions to improve the well-being of the student population, using a research-intervention approach. Data were collected through an online survey that universities disseminated through their specific communication channels based on a common national document. Each university received a specific Limesurvey link; the cover letter indicated the purpose of the study and voluntary and anonymous participation and provided information about data processing. At the end of the survey, as indicated in the privacy policy, each Committee could request their data to conduct targeted analyses. Committees of Guarantee of the participating universities sent the link to access the questionnaire to the students' institutional emails, a channel that is certainly monitored, but often underutilised, by the Italian university student population; furthermore, as already stated, the participation was completely voluntary, without any form of incentive or compensation. All these factors influenced the response rates, which are reported below in the participant section. Following the data collection, the national results were presented to the participating universities in a presentation and discussion workshop, where some practical implications were explained according to the main needs that had emerged. The survey was approved by the Bioethics Committee of the University of Turin on 30 April 2021 (Prot. No. 266199); the study was conducted in accordance with the Declaration of Helsinki (World Medical Association 2013), Italian data protection and privacy regulations (Law 196/2003), and GDPR.

2.2. Participants

Participants completed an online self-report survey on the Limesurvey platform between May and June 2021. Students (N = 10,298) came from eleven universities in different Italian regions: 2 from Northern Italy, 3 from Central Italy, and 6 from Southern Italy and the Islands. Table 1 illustrates the distribution of participants among regions, while Table 2 shows the size of the participating universities, calculated based on the number of enrolled students: The categories are small (up to 10,000 students), medium (10,000 to 20,000 students), large (20,000 to 40,000 students) and mega (more than 40,000 students). The total number of students enrolled in the participating university at the time of completion was of 219,255 average response rate was 5.42%, ranging from 1.37% to 12.83%.

Table 1. Distribution of participants in the Italian geographical areas.

Area	Frequency	Percentage
North Italy	3314	32.2%
Central Italy	599	5.8%
South Italy and Islands	6385	62%

Table 2. Distribution of participants by university size.

Size	Number of Respondents	Percentage
Small	217	2.1%
Medium	2051	19.9%
Large	5892	57.2%
Mega	2138	20.8%

Most respondents were women ($N = 7282$, 70.8%), followed by men ($N = 2930$, 28.5%) and individuals identifying as non-binary or in transition ($N = 71$, 0.7%). The mean age was 24.25 years ($SD = 0.46$) and ranged from 18 to 68 years. Almost all participants were full-time students (92.2%); most were enrolled in undergraduate studies (59.3%), followed by postgraduate studies (24.7%), and finally 5- or 6-year postgraduate studies (15.3%). Most students were enrolled in their first (34.2%) or second year of study (30.6%), followed by students in their third year of study (22.5%), while the remainder (12.6%) were enrolled in their fourth, fifth, or sixth year of study; 15.7% of students reported that it takes them longer than usual to complete their studies. More than half of the sample (51.5%) reported being further behind on their exams than they expected, and only 35% reported being on par with their schedule. Concerning academic fields, 42.5% of students were enrolled in STEM, while the most frequent courses were, in order, Medicine (13.8%), Economics and Statistics (13.3%), Engineering (13.1%), and Classics, Philology, Literature, Art History (13%). The majority of students were not employed (70.7%), followed by part-time (18.8%) and full-time (2.8%). Just over half of the respondents (57.5%) were residential students.

We asked participants to rate their satisfaction with the support they received from fellow students and faculty in their study activities, on a scale from 1 to 5. The participants could also indicate if they did not ask for support; since a good proportion of respondents chose this question, we also reported it along the other answers (Table 3).

Table 3. Satisfaction with the support received from peers and teaching staff.

	Support from Peers	Support from Teaching Staff
Did not ask for support	21.7%	34.6%
Not satisfied	16.4%	28.0%
Average satisfaction	18.6%	17.7%
High Satisfaction	43.3%	19.7%

Finally, we asked participants to rate their concern about two aspects on a scale from 1 (not at all) to 5 (very much): contracting COVID-19 in everyday life and finding a secure job. Regarding COVID-19, the mean score was 3.31 ($SD = 1.24$), with women more concerned than men (women: $M = 3.44$, $SD = 1.21$; men $M = 2.97$, $SD = 1.25$; $F = 304.47$, $p < 0.001$), while concern about job security was quite high ($M = 4.15$, $SD = 1.13$), and again women ($M = 4.28$, $SD = 1.13$) were more concerned than men ($M = 3.81$, $SD = 1.28$; $F = 361.54$, $p < 0.001$).

2.3. Data Analysis

We performed correlation analyses and analyses of variance (ANOVA) to assess gender differences and tested two hierarchical regression models. All analyses were conducted using IBM SPSS, version 26.

2.4. Measures

Study load was measured with three items adapted from Bakker et al. (2004) scale, with mentions of work replaced by the relevant study aspects. Respondents were asked to rate the items on a Likert scale from 1 ("never") to 5 ("always"). An example item is "I have to study under pressure". Cronbach's alpha was 0.73.

Reduced academic performance (RAP) was measured with two ad hoc items on a 5-point Likert scale ranging from 1 (“completely disagree”) to 5 (“completely agree”). The first item referred to the decrease in productivity, and the second to the decrease in study performance. A sample item is “my level of productivity has decreased”. The coefficients Cronbach’s alpha and Guttman split-half were both 0.89.

Internet addiction (IA) was assessed with six items from the Italian validation (Fiorevanti and Casale 2015) of Young’s Internet Addiction Test (IAT; Young 1998a), which were selected after an intersubjective evaluation work of the research team; four items related to the role of “online time management and compromised personal well-being”, and two related to “interpersonal, emotional and obsessive conflict as a result of internet use”. As with the other scales, the scale was modified to reflect the academic setting. Participants were asked to rate the items on a five-point Likert scale ranging from 1 (“never”) to 5 (“always”). An example item is: “How often do you feel depressed, moody or nervous when you are offline, which goes away once you are back online?” Cronbach’s alpha was 0.76.

Academic self-efficacy (ASE) was measured with four ad hoc items on a 5-point Likert scale ranging from 1 (“never”) to 5 (“always”), which were compiled along the lines of other measures of self-efficacy. Participants were asked to rate, how often they felt motivated and prepared to tackle academic challenges and achieve their goals. An example of this is “Do you feel that you have the right skills to pass your exams?” The other items related to efforts to achieve goals, effective distribution of learning load and use of successful strategies; all items related to academic tasks and goals. Cronbach’s alpha was 0.83.

Emotional Exhaustion was measured with four items adapted from Demerouti et al. (2010) scale, adopting a similar procedure used for study load. Respondents rated the items on a Likert scale ranging from 1 (“never”) to 5 (“always”). The chosen items are: “There are days when I feel tired before starting to study”, “After studying, I tend to need more time than in the past in order to relax and feel better”, “I can tolerate academic pressures very well (reverse)” “When I’m studying, I often feel emotionally drained”. Cronbach’s alpha was 0.77.

Engagement was assessed with four items adapted from Demerouti and colleagues’ (Demerouti et al. 2010) scale. Participants answered on scale from 1 (“never”) to 5 (“always”). The chosen items were: “After working, I have enough energy for my leisure activities”, “After work, I usually feel worn out and weary (reverse)”, “Usually, I can manage the amount of studying well”, “When I’m studying, I usually feel energized”. Cronbach’s alpha was 0.74.

The participants were asked to refer to the last six months when rating each scale.

3. Results

Table 4 shows the means, standard deviations, and correlations of the study variables. The correlations were all significant for $p < 0.01$, except for the correlation between age and support in the male subsample, which was significant for $p < 0.05$.

Table 4. Correlation and reliability coefficients of study variables.

	1	2	3	4	5	6	7
1. Age	1	−0.09 **	−0.12 **	−0.14 **	0.13 **	−0.22 **	0.16 **
2. Study load	−0.11 **	0.73	0.27 **	0.18 **	−0.27 **	0.44 **	−0.38 **
3. RAP	−0.16 **	0.27 **	0.89	0.32 **	−0.55 **	0.47 **	−0.45 **
4. IA	−0.13 **	0.17 **	0.32 **	0.76	−0.34 **	0.369 **	−0.34 **
5. ASE	0.13 **	−0.27 **	−0.58 **	−0.31 **	0.83	−0.473 **	0.69 **
6. Exhaustion	−0.25 **	0.43 **	0.50 **	0.35 **	−0.48 **	0.77	−0.59 **
7. Engagement	0.17 **	−0.36 **	−0.48 **	−0.30 **	0.68 **	−0.58 **	0.74

** $p < 0.01$; Coefficients above the diagonal refer to the men subsample; coefficients below refer to the women subsample. Reliability coefficients for the whole sample are reported in the diagonal in bold italic.

Table 5 shows the results from ANOVA. The only variables that did not show a significant difference between female and male students were perceptions of reduced academic performance and Internet addiction. Women reported higher levels of exhaustion and study load, while they reported slightly lower levels of engagement and academic self-efficacy, although the effect sizes are quite low.

Table 5. ANOVA by gender.

	Men		Women		<i>F</i>	<i>p</i>	η^2
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Study load	3.89	0.86	4.04	0.8	69.01	<0.001	0.007
RAP	3.01	1.39	2.99	1.36	0.81	0.368	0.000
IA	2.46	0.85	2.43	0.85	2.83	0.093	0.001
ASE	3.21	0.96	3.15	0.93	7.88	0.093	0.001
Exhaustion	3.70	0.96	3.92	0.92	117.54	<0.001	0.011
Engagement	2.69	0.84	2.52	0.84	93.16	<0.001	0.009

We performed two hierarchical multiple linear regressions with two different outcome variables: one with emotional exhaustion and one with engagement. The first model is shown in Table 6, and the second in Table 7. For both models, we first entered sociodemographic information, followed by the study load in step 2, to better highlight its contribution to the change in the coefficient of determination, reduced academic performance and internet addiction in step 3 and academic self-efficacy in the last step.

Table 6. Hierarchical multiple regression with exhaustion as dependent variable (N = 10,087).

		β	<i>t</i>	<i>p</i>	$R^2 - \Delta R^2$
Step 1	(Constant)		116.25	<0.001	$R^2 = 0.069$
	Gender (0 = men)	0.10	10.86	<0.001	
	Age	−0.24	−24.97	<0.001	
Step 2	(Constant)		47.14	<0.001	$R^2 = 0.234$; $\Delta R^2 = 0.166$; $p < 0.001$
	Gender (0 = men)	0.07	8.16	<0.001	
	Age	−0.20	−22.61	<0.001	
	Study load	0.41	46.74	<0.001	
Step 3	(Constant)		32.40	<0.001	$R^2 = 0.397$; $\Delta R^2 = 0.163$; $p < 0.001$
	Gender (0 = men)	0.09	11.16	<0.001	
	Age	−0.14	−17.30	<0.001	
	Study load	0.30	36.56	<0.001	
	RAP	0.34	39.93	<0.001	
	IA	0.18	21.31	<0.001	
Step 4	(Constant)		39.21	<0.001	$R^2 = 0.424$; $\Delta R^2 = 0.027$; $p < 0.001$
	Gender (0 = men)	0.08	10.75	<0.001	
	Age	−0.13	−16.94	<0.001	
	Study load	0.27	34.31	<0.001	
	RAP	0.24	24.85	<0.001	
	IA	0.15	18.12	<0.001	
	ASE	−0.20	−21.73	<0.001	

In the first step, we inserted gender and age, which were both significant in this and subsequent steps; age had a negative relationship with exhaustion, while the opposite was true from gender, a result already hinted at by the ANOVA. In the second step, study load was significantly and positively associated with exhaustion. In the third step, we inserted the perception of reduced academic performance and internet addiction, with both showing a positive and significant relationship with exhaustion. In the final step, we inserted academic self-efficacy, that had a significant negative relationship with exhaustion. Although the change in the coefficient of determination was the highest in the second step

($\Delta R^2 = 0.166$), the change in the third step is almost as high ($\Delta R^2 = 0.163$), while the change in the fourth step is considerably smaller. The final model predicts 42.4% of the variance.

Table 7. Hierarchical multiple regression with engagement as dependent variable (N = 10,087).

		β	t	p	$R^2 - \Delta R^2$
Step 1	(Constant)		59.41	<0.001	$R^2 = 0.036$
	Gender (0 = men)	−0.09	−9.60	<0.001	
	Age	0.17	16.93	<0.001	
Step 2	(Constant)		70.02	<0.001	$R^2 = 0.157$; $\Delta R^2 = 0.121$; $p < 0.001$
	Gender (0 = men)	−0.07	−7.16	<0.001	
	Age	0.13	14.11	<0.001	
	Study load	−0.35	−37.99	<0.001	
Step 3	(Constant)		86.90	<0.001	$R^2 = 0.317$; $\Delta R^2 = 0.160$; $p < 0.001$
	Gender (0 = men)	−0.08	−9.75	<0.001	
	Age	0.07	8.25	<0.001	
	Study load	−0.24	−27.41	<0.001	
	RAP	−0.35	−38.87	<0.001	
	IA	−0.15	−17.23	<0.001	
Step 4	(Constant)		34.08	<0.001	$R^2 = 0.519$; $\Delta R^2 = 0.203$; $p < 0.001$
	Gender (0 = men)	−0.08	−9.64	<0.001	
	Age	0.05	7.58	<0.001	
	Study load	−0.18	−24.06	<0.001	
	RAP	−0.07	−8.22	<0.001	
	IA	−0.07	−10.05	<0.001	
	ASE	0.56	65.15	<0.001	

A similar strategy was used for engagement. In the first gender had a negative relationship with the dependent variable, while age had a positive relationship; both were significant in all steps. In the second step, study load had a negative relationship with engagement, showing a good improvement in the coefficient of determination ($\Delta R^2 = 0.121$). In the third step, all inserted variables were significantly and negatively associated with engagement, with the perception of reduced academic performance showing the highest coefficient. In the fourth step academic self-efficacy was positively and significantly associated with engagement, with a considerable improvement in the coefficient of determination ($\Delta R^2 = 0.203$). The final model predicts 51.9% of the variance, with the largest change in the coefficient of determination occurring from model 3 to 4.

4. Discussion

The results confirmed the hypotheses: study load, reduced academic performance and internet addiction are negatively related to engagement and positively related to exhaustion, while the opposite is true for academic self-efficacy. On the descriptive side, it should be noted that participants reported high levels of emotional exhaustion, paired with a high study load and moderate academic self-efficacy, confirming the demanding situation that students experienced during the pandemic.

As for H1, the positive relationship between study load, RAP and IA and exhaustion is in line with the literature, especially concerning the demand, according to the process of health impairment. More specifically, study load has a strong, significant relationship with exhaustion. As it is one of the most common demands, this result is not surprising. Perception of reduced performance was the other variable with a comparable effect on exhaustion; as already illustrated in the literature, this can be considered as a distressing event that can lead to worry and prolonged stress, which ultimately lead to exhaustion and create a negative cycle on performance itself.

Internet addiction also showed a positive relationship with exhaustion, although the effect was lower compared to the other two variables. We can argue that the presence of adequate resources can be considered a protective factor to avoid the development of

internet addiction. Again, the internet could be used as an avoidant coping strategy and students using this strategy have been found to have higher levels of burnout compared to students using active coping strategies (Dodek et al. 2019). Another study, although conducted on a working population, has found that Internet addiction partially mediates the relationship between job insecurity and exhaustion (Ghislieri et al. 2022a). However, the relationship between Internet use and mental health problems could also be reversed; for example, depressive symptoms and stress are strong predictors of problematic internet use (Mamun et al. 2019).

Hypothesis H2 was also confirmed. The small effect on exhaustion, consistent with the effects of the other variables, confirmed the buffering role of resources and, more generally, its importance for students' well-being.

Concerning H3, the effects of study load, RAP and IA on engagement were predictably lower compared to their effects on exhaustion. Engagement is defined as a prolonged state of vigour, absorption, and dedication; study load, being the variable with the higher effects on emotional exhaustion by increasing fatigue, also has the highest effects among demands on engagement.

While we have not distinguished between two types of demands in this paper, namely hindrance and challenge demands, a work by Crawford et al. (2010) using a meta-analytical structural equation modelling found that all demands were positively associated with burnout, but only challenge demands were positively associated with engagement. In other words, an appropriate level of demands, while still capable of exhausting people, may also have a positive effect on engagement, when paired with high resources. However, considering that in this sample the mean scores for academic self-efficacy were moderate while scores for demands were high and that the definition itself of self-efficacy includes a proactive attitude toward challenges, we can argue that even if the demand included in this study was perceived as a challenge in this study, it did not contribute to the motivation process.

Finally, H4 was supported. In line with the literature, the motivational process was highlighted as this variable showed a strong relationship with engagement. As mentioned earlier, it may have contributed to perceiving demands and distressing events as less as obstacles that consume energy and more as challenging tasks and learning opportunities.

The results suggest that special attention should be paid to strengthening students' self-efficacy, especially to the ability to cope with study load, one of the most pressing academic demands; in general, the interplay between this resource and academic demands should be further investigated, especially concerning possible moderating effects of demands and resources.

In terms of gender differences, the results showed consistency with the literature (Ghislieri et al. 2022b) although the effect sizes for all significant differences are quite small; men reported lower workloads and emotional exhaustion and higher levels of engagement. The difference in academic self-efficacy was significant but negligible, consistent with the controversial findings in the literature; furthermore, the lack of differences in the perception of reduced performance and internet addiction is consistent with the analysis conducted by Bratti and Lippo (2022).

Age deserves a separate mention; older students seem to be less exhausted and more engaged, but the interplay between age, self-efficacy and demands needs to be explored further. We cannot be sure, for example, whether older students were more engaged and able to build up their resources before the pandemic, while they had more time to understand the nature of academic work, compared to younger students who may have had to face the emergency with less experience and build up their academic expertise with fewer resources and opportunities, while also facing entirely new demands. On the other hand, gender-specific aspects could play a role for older students, related to their caring role in the family or their professional status.

More generally, the use of technology in teaching could be seen as a useful solution, but only in conjunction with specific skills that should be acquired by teachers and students. The link between e-learning and performance is mediated not only by digital readiness but

also by academic engagement: this suggests that digital learning environments should be designed to increase the level of student participation and engagement (Kim et al. 2019).

Limitations

Although this study presents new data from a large sample that allows us to explore some developing themes, future studies should include more effective ways to engage the student population to improve the response rate. The study has some limitations: first, due to the cross-sectional nature of the study, it is not possible to draw causal inferences and make comparisons in general, as there are no systematic pre-pandemic analyses on these dimensions. One of the variables that could be explored in future research is social support (Hobfoll et al. 1990), as it plays a central role in the process of maintaining resources, shaping health and well-being and enhancing a sense of identity. Social support for university students relates primarily to friendships and their effective integration into academic life and continuity of study, particularly in the early years of study (Wilcox et al. 2005), but also to adjustment and reduction of academic stress (Wilks and Spivey 2010). Although social support was a problematic dimension during the pandemic, a study by Al-Maskari et al. (2022) highlighted the role of broader institutional support from the university and faculty-level support; on the other hand, the lack of social support and isolation were found to be associated with high psychological distress (Schröpfer et al. 2021). While we had a measure asking students for their degree of satisfaction for the support received, we did not include it in the regression model for several reasons: the measure was ad-hoc, with only two items, and it asked both the degree of satisfaction and whether the students asked for support. A further limitation relates to the other measures: in order to not overburden respondents, constructs were measured through reduced scales, which were sometimes adapted to the academic context. Although these adaptations were achieved through careful discussion within the research team, it would be important for future studies to use short, carefully validated measures, in order to guarantee the possibility of repeating the survey systematically in different university settings and over time.

5. Conclusions

This study allows us to reflect on the data collected during the pandemic and design measures for the emergency context, but we should also use this data to design and implement measures with preventive value for future, less critical scenarios, but also to protect ourselves from new possible crises. In order to do this, it is paramount to collect data systematically, periodically, and in ways that guarantee comparisons between different institutions.

As shown by the results, study load appears to be a critical demand both for engagement and emotional exhaustion. Furthermore, its implications in terms of remote/online learning can also increase technological overload. Considering both the high mean scores of this demand and its effect on both outcome variable, it is clear that the amount of study load that student face should be carefully monitored to understand whether it is adequate and eventually assess the necessity to offer additional support and disciplinary tutoring, which can address specific study-related issues. Furthermore, professors are encouraged to rethink their teaching methods, especially when remote learning is involved, and share useful study resources when needed. This aspect is related with academic performance, which is an important aspect to consider and that would greatly benefit from the presence of psychological support services, not only in terms of supporting students through a difficult moment in their academic careers, but also to offer a space to reflect upon, contextualise, and reconsider one's own expectations of academic performance. Furthermore, targeted trainings on study methods and soft skills such as time and space management, resilience, conflict management and self-assessment should be offered, to improve students' condition in key areas related to academic well-being and performance (Emanuel et al. 2021).

For what concerns internet addiction, as already stated universities can monitor and limit the amount of "digital load", while supporting the development of digital

competences, not only in terms of technical knowledge and skills, but also healthy attitudes, such as the ability to disconnect. Universities can encourage the development of digital competences through targeted programs, while sensibilising the academic population to the existence of various forms of technological addictions and the risks related to them.

Concerning academic self-efficacy, it is important to emphasise that its development should not be the exclusive responsibility of students or teaching staff, but rather a conjoined effort. In general, promoting positive learning relationships, whether among peers or between teachers and students, can positively influence academic self-efficacy through the experience of clear and specific feedbacks. Professors should be trained to identify specific support needs to direct students to the most appropriate services offered by the university, especially in the case of groups known to underutilise such services (Lipson et al. 2018). The presence of faculty development programmes and training for faculty could be used as a control variable for the relationship between student self-efficacy and academic outcomes in future research. The sudden and drastic changes brought about by the pandemic made it abundantly clear that there was a lack of care services, prevention measures and structures, and effective communication between universities and students. While many universities have already activated specific resources, such as health centres, counselling services, and facilities for minority or underrepresented groups of students, communicating their existence to students in a clear and informative manner is of utmost importance (Lederer et al. 2021). Furthermore, universities can influence student well-being not only through their practises and policies but also through the values shared by the entire academic community by creating a sense of belonging and providing opportunities for students, such as dedicated spaces and events (Capone et al. 2020). However, these opportunities need to provide moments of reflection, exploration, and self-discovery, not just a quick fix or a ready-made solution.

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References

- Aleman-Arrebola, Inmaculada, Gloria Rojas-Ruiz, Juan Granda-Vera, and Ángel C. Mingorance-Estrada. 2020. Influence of COVID-19 on the Perception of Academic Self-Efficacy, State Anxiety, and Trait Anxiety in College Students. *Frontiers in Psychology* 11: 570017. [CrossRef]
- Al-Maskari, Azzah, Thurayya Al-Riyami, and Siraj K. Kunjumammed. 2022. Students academic and social concerns during COVID-19 pandemic. *Education and Information Technologies* 27: 1–21. [CrossRef]
- Alsaady, Isra, Hattan Gattan, Ayat Zawawi, Maimonah Alghanmi, and Haytham Zakai. 2020. Impact of COVID-19 Crisis on Exam Anxiety Levels among Bachelor Level University Students. *Mediterranean Journal of Social Sciences* 11: 33. [CrossRef]

- Amerio, Andrea, Andrea Brambilla, Alessandro Morganti, Andrea Aguglia, Davide Bianchi, Francesca Santi, Luigi Costantini, Anna Odone, Alessandra Costanza, Carlo Signorelli, and et al. 2020. COVID-19 Lockdown: Housing Built Environment's Effects on Mental Health. *International Journal of Environmental Research and Public Health* 17: 5973. [CrossRef]
- Aristovnik, Aleksander, Damijana Keržič, Dejan Ravšelj, Nina Tomaževič, and Lan Umek. 2020. Impacts of the COVID-19 Pandemic on Life of Higher Education Students: A Global Perspective. *Sustainability* 12: 8438. [CrossRef]
- Aucejo, Esteban M., Jacob French, Maria P. Ugalde Araya, and Basit Zafar. 2020. The impact of COVID-19 on student experiences and expectations: Evidence from a survey. *Journal of Public Economics* 191: 104271. [CrossRef]
- Bakker, Arnold B., and Evangelia Demerouti. 2017. Job demands–resources theory: Taking stock and looking forward. *Journal of Occupational Health Psychology* 22: 273–85. [CrossRef]
- Bakker, Arnold B., Evangelia Demerouti, and Ana Sanz-Vergel. 2023. Job Demands–Resources Theory: Ten Years Later. *Annual Review of Organizational Psychology and Organizational Behavior* 10: 25–53. [CrossRef]
- Bakker, Arnold B., Evangelia Demerouti, and Willem Verbeke. 2004. Using the Job Demands-Resources Model to Predict Burnout and Performance. *Human Resource Management* 43: 83–104. [CrossRef]
- Balestra, Eleonora, Anna Uboldi, Valentina Goglio, and Alessandro Caliendo. 2021. QUALI-DAD. Una Ricerca Qualitativa sui Significati e le Pratiche Degli Accademici Italiani Riguardo la Didattica a Distanza Durante L'emergenza COVID-19. Available online: <https://www.collane.unito.it/oa/items/show/77> (accessed on 12 December 2022).
- Bandura, Albert. 1977. *Self-Efficacy: The Exercise of Control*. New York: Freeman.
- Barone, Carlo, Antonio Schizzerotto, Giovanni Abbiati, and Gianluca Argentin. 2017. Information Barriers, Social Inequality, and Plans for Higher Education: Evidence from a Field Experiment. *European Sociological Review* 33: 84–96. [CrossRef]
- Bratti, Massimiliano, and Enrico Lippo. 2022. COVID-19 and the Gender Gap in University Student Performance. In *IZA Discussion Papers No. 15456*. Amsterdam: Elsevier. [CrossRef]
- Capone, Vincenza, Daniela Caso, Anna Rosa Donizzetti, and Fortuna Procentese. 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: 7039. [CrossRef]
- Contini, Dalit, and Andrea Scagni. 2013. Social-Origin Inequalities in Educational Careers in Italy: Performance or Decision Effects? In *Determined to Succeed? Performance versus Choice in Educational Attainment*. Edited by Michelle Jackson. Redwood City: Stanford Scholarship Online. [CrossRef]
- Crawford, Ean R., Jeffery A. LePine, and Bruce L. Rich. 2010. Linking Job Demands and Resources to Employee Engagement and Burnout: A Theoretical Extension and Meta-Analytic Test. *Journal of Applied Psychology* 95: 834–48. [CrossRef]
- Datu, Jesus Alfonso D., and Ronnel B. King. 2018. Subjective Well-Being Is Reciprocally Associated with Academic Engagement: A Two-Wave Longitudinal Study. *Journal of School Psychology* 69: 100–10. [CrossRef]
- Demerouti, Evangelia, Karina Mostert, and Arnold B. Bakker. 2010. Burnout and work engagement: A thorough investigation of the independency of both constructs. *Journal of Occupational Health Psychology* 15: 209–22. [CrossRef]
- Ding, Yani, Xueying Du, Qinmei Li, Miao Zhang, Qingjun Zhang, Xiaodong Tan, and Qing Liu. 2020. Risk perception of coronavirus disease 2019 (COVID-19) and its related factors among college students in China during quarantine. *PLoS ONE* 15: e0237626. [CrossRef]
- Dodek, Peter M., Anna Culjak, Elaine O. Cheung, Maria M. Hubinette, Cheryl Holmes, Brett Schrewe, Katherine Wisener, and Philip Crowell. 2019. Active Coping in Medical Students Is Associated with Less Burnout and Higher Resilience. In *C21. Determinants of Burnout and Wellness among Physician and Trainees*. New York: American Thoracic Society, vol. 1–296, p. A4300. [CrossRef]
- Elmer, Timon, Kieran Mephram, and Christoph Stadtfeld. 2020. Students under lockdown: Comparisons of students' social networks and mental health before and during the COVID-19 crisis in Switzerland. *PLoS ONE* 15: e0236337. [CrossRef]
- Emanuel, Federica, Paola Ricchiardi, Domenico Sanseverino, and Chiara Ghislieri. 2021. Make soft skills stronger? An online enhancement platform for higher education. *International Journal of Educational Research Open* 2: 100096. [CrossRef]
- Fioravanti, Giulia, and Silvia Casale. 2015. Evaluation of the Psychometric Properties of the Italian Internet Addiction Test. *Cyberpsychology, Behavior, and Social Networking* 18: 120–28. [CrossRef]
- Fumero, Ascensión, Rosario J. Marrero, Dolores Voltés, and Wenceslao Peñate. 2018. Personal and social factors involved in internet addiction among adolescents: A meta-analysis. *Computers in Human Behavior* 86: 387–400. [CrossRef]
- Gavurova, Beata, Samer Khouri, Viera Ivankova, Martin Rigelsky, and Tawfik Mudarri. 2022. Internet Addiction, Symptoms of Anxiety, Depressive Symptoms, Stress Among Higher Education Students During the COVID-19 Pandemic. *Frontiers in Public Health* 10: 893845. [CrossRef]
- Ghigi, Rossella, and Mauro Piras. 2021. Se la pandemia fa scuola. Disuguaglianze, partecipazione e inclusione dal banco allo schermo. *Il Mulino* 70: 78–87. [CrossRef]
- Ghislieri, Chiara, Domenico Sanseverino, Tindara Addabbo, Vincenzo Bochicchio, Rosy Musumeci, Ilenia Picardi, Patrizia Tomio, Gloria Guidetti, and Daniela Converso. 2022a. The Show Must Go On: A Snapshot of Italian Academic Working Life during Mandatory Work from Home through the Results of a National Survey. *Social Sciences* 11: 111. [CrossRef]
- Ghislieri, Chiara, Valentina Dolce, Domenico Sanseverino, Sophie Wodociag, Anne-Marie Vonthron, Émilie Vayre, Marianna Giunchi, and Monica Molino. 2022b. Might insecurity and use of ICT enhance internet addiction and exhaust people? A study in two European countries during emergency remote working. *Computers in Human Behavior* 126: 107010. [CrossRef] [PubMed]

- Giusti, Laura, Silvia Mammarella, Anna Salza, Sasha Del Vecchio, Donatella Ussorio, Massimo Casacchia, and Rita Roncone. 2021. Predictors of academic performance during the COVID-19 outbreak: Impact of distance education on mental health, social cognition and memory abilities in an Italian university student sample. *BMC Psychology* 9: 142. [CrossRef]
- Goglio, Valentina. 2022. *The Diffusion and Social Implications of MOOCs. A Comparative Study of the USA and Europe*. New York: Routledge.
- Hobfoll, Steven E., John Freedy, Carol Lane, and Pamela Geller. 1990. Conservation of social resources: Social support resource theory. *Journal of Social and Personal Relationships* 7: 465–78. [CrossRef]
- Ibrahim, R. Zirwatul Aida R., Wan. Z. M. Zalam, Bon Foster, Teuku Afrizal, Muhamed D. Johansyah, Jumadil Saputra, Azlina A. Bakar, Mazidah M. Dagang, and Siti N. M. Ali. 2021. Psychosocial Work Environment and Teachers' Psychological Well-Being: The Moderating Role of Job Control and Social Support. *International Journal of Environmental Research and Public Health* 18: 7308. [CrossRef]
- Kim, Hye J., Ah J. Hong, and Hae-Deok Song. 2019. The roles of academic engagement and digital readiness in students' achievements in university e-learning environments. *International Journal of Educational Technology in Higher Education* 16: 21. [CrossRef]
- Kim, Sunhee, and Jaesun Wang. 2018. The Role of Job Demands–Resources (JDR) between Service Workers' Emotional Labor and Burnout: New Directions for Labor Policy at Local Government. *International Journal of Environmental Research and Public Health* 15: 2894. [CrossRef]
- Křeménková, Lucie, Jan S. Novotný, and Jana Kvintová. 2021. Two Waves of COVID-19 in University Setting: Mental Health and Underlying Risk Factors. *Frontiers in Psychology* 12: 780071. [CrossRef]
- Lederer, Alyssa M., and Sara B. Oswalt. 2017. The value of college health promotion: A critical population and setting for improving the public's health. *American Journal of Health Education* 48: 215–18. [CrossRef]
- Lederer, Alyssa M., Mary T. Hoban, Sarah K. Lipson, Sasha Zhou, and Daniel Eisenberg. 2021. More Than Inconvenienced: The Unique Needs of U.S. College Students During the COVID-19 Pandemic. *Health Education & Behavior* 48: 14–19. [CrossRef]
- Lederer, Alyssa M., Sarah E. I. Menefee, Cynthia B. Burwell, and Sara B. Oswalt. 2019. Improving faculty engagement in college health initiatives: Insights from current faculty with a college health background. *Journal of American College Health* 69: 340–44. [CrossRef] [PubMed]
- Lee, Raymond T., and Blake E. Ashforth. 1996. A meta-analytic examination of the correlates of the three dimensions of job burnout. *The Journal of Applied Psychology* 81: 123–33. [CrossRef] [PubMed]
- LeViness, Peter, Kim Gorman, Lynn Braun, Linda Koenig, and Carolyn Bershad. 2019. The Association for University and College Counseling Center Directors Annual Survey. Available online: <https://www.aucccd.org/assets/documents/Survey/2019%20AUCCCD%20Survey-2020-05-31-PUBLIC.pdf> (accessed on 12 December 2022).
- Lipson, Sarah K., Adam Kern, Daniel Eisenberg, and Alfiere M. Breland-Noble. 2018. Mental health disparities among college students of color. *Journal of Adolescent Health* 63: 348–56. [CrossRef] [PubMed]
- Lozano-Blasco, Raquel, Albert Q. Robres, and Albert S. Sánchez. 2022. Internet addiction in young adults: A meta-analysis and systematic review. *Computers in Human Behavior* 130: 107201. [CrossRef]
- Lubbadeh, Tareq. 2020. Job Burnout: A General Literature Review. *International Review of Management and Marketing* 10: 7–15. [CrossRef]
- Mamun, Mohammed. A., Md. Sharif Hossain, Abu B. Siddique, Md. Tajuddin Sikder, Daria J. Kuss, and Mark D. Griffiths. 2019. Problematic internet use in Bangladeshi students: The role of socio-demographic factors, depression, anxiety, and stress. *Asian Journal of Psychiatry* 44: 48–54. [CrossRef]
- Matos Fialho, Paula M., Franca Spatafora, Lisa Kühne, Heide Busse, Stefanie M. Helmer, Hajo Zeeb, Christiane Stock, Claus Wendt, and Claudia R. Pischke. 2021. Perceptions of study conditions and depressive symptoms during the COVID-19 pandemic among university students in Germany: Results of the international COVID-19 student well-being study. *Frontiers Public Health* 9: 674665. [CrossRef]
- Ministero Dell'istruzione. 2020. Dati Della Didattica. Portale dei Dati Dell'istruzione Superiore. Available online: <http://ustat.miur.it/dati/didattica/italia/atenei> (accessed on 12 December 2022).
- Molino, Monica, Valentina Dolce, Claudio G. Cortese, and Chiara Ghislieri. 2018. Personality and social support as determinants of entrepreneurial intention. Gender differences in Italy. *PLoS ONE* 13: e0199924. [CrossRef]
- Musumeci, Rosy, and Chiara Ghislieri. 2020. Some Voices from Italian Youth on Well-Being: How to Cope with Job Insecurity? *Social Sciences* 9: 58. [CrossRef]
- Naylor, Ryan. 2022. Key factors influencing psychological distress in university students: The effects of tertiary entrance scores. *Studies in Higher Education* 47: 630–42. [CrossRef]
- Olmedo, Gabriela Narváez, Miguel P. Yépez, Funny G. Flores, and Solange V. Gordillo. 2018. Autoeficacia académica: Un factor determinante para el ajuste académico en la vida universitaria. *SATHIRI* 13: 59–69. [CrossRef]
- Pan, Yuan-Chien, Yu-Chuan Chiu, and Yu-Hsuan Lin. 2020. Systematic review and meta-analysis of epidemiology of internet addiction. *Neuroscience & Biobehavioral Reviews* 118: 612–22. [CrossRef]
- Pohl, Marietta, Gergely Feher, Krisztián Kapus, Andrea Feher, Gabor D. Nagy, Julianna Kiss, Éva Fejes, Lilla Horvath, and Antal Tibold. 2021. The Association of Internet Addiction with Burnout, Depression, Insomnia, and Quality of Life among Hungarian High School Teachers. *International Journal of Environmental Research and Public Health* 19: 438. [CrossRef] [PubMed]
- Poon, Kai-Tak. 2018. Unpacking the mechanisms underlying the relation between ostracism and Internet addiction. *Psychiatry Research* 270: 724–30. [CrossRef] [PubMed]

- Procentese, Fortuna, Vincenza Capone, Daniela Caso, Anna Rosa Donizzetti, and Flora Gatti. 2020. Academic Community in the Face of Emergency Situations: Sense of Responsible Togetherness and Sense of Belonging as Protective Factors against Academic Stress during COVID-19 Outbreak. *Sustainability* 12: 9718. [CrossRef]
- Prowse, Rebecca, Frances Sherratt, Alfonso Abizaid, Robert L. Gabrys, Kim G.C. Hellemans, Zachary R. Patterson, and Robyn J. McQuaid. 2021. Coping with the COVID-19 pandemic: Examining gender differences in stress and mental health among university students. *Frontiers in Psychiatry* 12: 650759. [CrossRef]
- Rivera Heredia, María Elena, Miriam Martínez Fuentes, Fabiola González Betanzos, and Miriam Anahí Salazar García. 2016. Self-Efficacy, Social Participation, and Perception Regarding University Services by Sex. *Revista de Psicología* 25: 1–16. [CrossRef]
- Ryan, Richard M., and Edward L. Deci. 2000. Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist* 55: 68–78. [CrossRef]
- Salanova, Marisa, José M. Peiró, and Wilmar B. Schaufeli. 2002. Self-efficacy specificity and burnout among information technology workers: An extension of the job demand-control model. *European Journal of Work and Organizational Psychology* 11: 1–25. [CrossRef]
- Salimi, Nahal, Bryan Gere, William Talley, and Bridget Iriooogbe. 2021. College Students Mental Health Challenges: Concerns and Considerations in the COVID-19 Pandemic. *Journal of College Student Psychotherapy* 37: 1–13. [CrossRef]
- Sánchez-Teruel, David, María Auxiliadora Robles-Bello, and Nieves Valencia-Naranjo. 2021. Do psychological strengths protect college students confined by COVID-19 to emotional distress? The role of gender. *Personality and Individual Differences* 171: 110507. [CrossRef]
- Schaufeli, Wilmar B., and Toon W. Taris. 2014. A Critical Review of the Job Demands-Resources Model: Implications for Improving Work and Health. In *Bridging Occupational, Organizational and Public Health: A Transdisciplinary Approach*. New York: Springer Science + Business Media, pp. 43–68. ISBN 978-94-007-5639-7.
- Schaufeli, Wilmar B., Isabel B. Martínez, Alexandra Marques Pinto, Marisa Salanova, and Arnold B. Bakker. 2002. Burnout and Engagement in University Students: A Cross-National Study. *Journal of Cross-Cultural Psychology* 33: 464–81. [CrossRef]
- Schröpfer, Kristina, Nicole Schmidt, Sandra Kus, Clemens Koob, and Michaela Coenen. 2021. Psychological stress among students in health-related fields during the COVID-19 pandemic: Results of a cross-sectional study at selected Munich universities. *International Journal of Environmental Research Public Health* 18: 6611. [CrossRef]
- Schwartz, Victor, and Jerald Kay. 2009. The crisis in college and university mental health. *Psychiatric Times* 26: 32.
- Son, Changwon, Sudeep Hegde, Alec Smith, Xiaomei Wang, and Farzan Sasangohar. 2020. Effects of COVID-19 on College Students' Mental Health in the United States: Interview Survey Study. *Journal of Medical Internet Research* 22: e21279. [CrossRef]
- Tadić, Maja, Arnold B. Bakker, and Wido G. M. Oerlemans. 2015. Challenge versus hindrance job demands and well-being: A diary study on the moderating role of job resources. *Journal of Occupational and Organizational Psychology* 88: 702–25. [CrossRef]
- Tasso, Anthony F., Nesrin Hisli Sahin, and Gabrielle San Roman. 2021. COVID-19 disruption on college students: Academic and socioemotional implications. *Psychological Trauma: Theory, Research, Practice, and Policy* 13: 9–15. [CrossRef]
- Toth, Gabor, Krisztián Kapus, David Hesszenberger, Marietta Pohl, Gabor Kosa, Julianna Kiss, Gabriella Pusch, Éva Fejes, Antal Tibold, and Gergely Feher. 2021. Internet Addiction and Burnout in A Single Hospital: Is There Any Association? *International Journal of Environmental Research and Public Health* 18: 615. [CrossRef]
- Van De Velde, Sarah, Veerle Buffel, Claudia Van Der Heijde, Sami Çoksan, Piet Bracke, Thomas Abel, Heide Busse, Andreas Chatzittofis, Joel Ladner, Fatemeh Rabiee-Khan, and et al. 2021. Depressive symptoms in higher education students during the first wave of the COVID-19 pandemic. An examination of the association with various social risk factors across multiple high-and middle-income Countries. *Ssm-Population Health* 16: 100936. [CrossRef]
- Wang, Dongfang, Jingbo Zhao, Brendan Ross, Zijuan Ma, Jinfang Zhang, Fang Fan, and Xianchen Liu. 2022. Longitudinal trajectories of depression and anxiety among adolescents during COVID-19 lockdown in China. *Journal of Affective Disorders* 299: 628–35. [CrossRef] [PubMed]
- Widyanto, Laura, and Mary McMurrin. 2004. The Psychometric Properties of the Internet Addiction Test. *CyberPsychology & Behavior* 7: 443–50. [CrossRef]
- Wilcox, Paula, Sandra Winn, and Marylynn Fyvie-Gauld. 2005. 'It was nothing to do with the university, it was just the people': The role of social support in the first-year experience of higher education. *Studies in Higher Education* 30: 707–22. [CrossRef]
- Wilks, Scott E., and Christina A. Spivey. 2010. Resilience in undergraduate social work students: Social support and adjustment to academic stress. *Social Work Education* 29: 276–88. [CrossRef]
- World Medical Association. 2013. World Medical Association Declaration of Helsinki: Ethical Principles for Medical Research Involving Human Subjects. *JAMA* 310: 2191–94. [CrossRef] [PubMed]
- Xanthopoulou, Despoina, Arnold B. Bakker, Maureen F. Dollard, Evangelia Demerouti, Wilmar B. Schaufeli, Toon W. Taris, and Paula J. G. Schreurs. 2007. When do job demands particularly predict burnout?: The moderating role of job resources. *Journal of Managerial Psychology* 22: 766–86. [CrossRef]
- Yang, Chunjiang, Aobo Chen, and Yasuo Chen. 2021. College students' stress and health in the COVID-19 pandemic: The role of academic workload, separation from school, and fears of contagion. *PLoS ONE* 16: e0246676. [CrossRef]
- Younes, Farah, Ghinwa Halawi, Hicham Jabbour, Nada El Osta, Latife Karam, Aline Hajj, and Lydia Rabaa Khabbaz. 2016. Internet Addiction and Relationships with Insomnia, Anxiety, Depression, Stress and Self-Esteem in University Students: A Cross-Sectional Designed Study. *PLoS ONE* 11: e0161126. [CrossRef]

- Young, Kimberly S. 1998a. *Caught in the Net: How to Recognize the Signs of Internet Addiction and a Winning Strategy for Recovery*. New York: Wiley.
- Young, Kimberly S. 1998b. Internet Addiction: The Emergence of a New Clinical Disorder. *CyberPsychology & Behavior* 1: 237–44. [[CrossRef](#)]
- Zhu, Kaiheng, Xinyan Xie, Qi Liu, Heng Meng, and Ranran Song. 2022. Internet addiction: Prevalence and relationship with academic burnout among undergraduates during widespread online learning. *Perspectives in Psychiatric Care* 58: 2303–9. [[CrossRef](#)]

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