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Exhausting and difficult or easy: the association between psychological flexibility and study related burnout and experiences of studying during the pandemic

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Introduction: The COVID-19 pandemic caused a decline in students' well-being, but on the other hand, students' experiences of online learning and studying vary widely. The aim of this study is to examine the relationship between psychological flexibility and study-related burnout and to explore whether students with different levels of psychological flexibility have experienced burnout and online studying during COVID-19 differently.

Methods: The data was collected from first-year life-science students (N = 296) in spring 2021. The relationship between psychological flexibility and study-related burnout was explored with Pearson's correlation and linear regression. Students' open-ended responses about their experiences of online learning were analyzed with inductive content analysis and the categories were quantified. Three different groups (high, middle, and low) were made based on respondents' psychological flexibility, and the differences in their study-related burnout were analysed with ANOVA and Tukey's test, and differences in online learning experiences were analysed with a Chi-square test.

Results: The results showed that there was a negative relationship between psychological flexibility and study-related burnout. In addition, experiences of study-related burnout and online studying differed statistically significantly between the different groups.

Discussion: The results show that psychological flexibility is an important factor in enhancing students' well-being and learning during the pandemic.

KEYWORDS

psychological flexibility, study-related burnout, online learning, learning environment, higher education, pandemic

1. Introduction

It has been shown that higher education students' mental disorders and psychological distress has been in a worrying state already before the pandemic (Hunt and Eisenberg, 2010; Larcombe et al., 2016), and that students' experience of study-related burnout is high even at the beginning of their studies (Asikainen et al., 2022). The pandemic situation has further increased students' distress and has added study challenges (e.g., Huckins et al., 2020; Kaparounaki et al., 2020; Wang and Zhao, 2020; Baticulon et al., 2021) and has negatively impacted students' study engagement (Petillion and McNeil, 2020). Research

has also shown that different students have experienced studying during the pandemic differently, and for some students, studying online has even reduced study-related burnout (Parpala et al., 2021). The effects of the pandemic have been different for different students, but we still know little about what factors affect different experiences of studying in the pandemic situation.

Several studies have shown that psychological flexibility has a great influence on well-being (Hayes et al., 2006; Kashdan and Rottenberg, 2010; Räsänen et al., 2016; Puolakanaho et al., 2020). Psychological flexibility has been studied extensively in the workplace context, and it has been found to promote work well-being (Bond et al., 2006, 2012). In the university context, psychological flexibility has been studied less, especially in relation to studying, but it also has been found to have a positive relationship with studying (Asikainen, 2018; Asikainen et al., 2018). Therefore, it can be assumed that psychologically flexible individuals have coped with the challenging thoughts and emotions during the pandemic better and have also been able to protect themselves better from the risk of study-related burnout than individuals with lower psychological flexibility.

1.1. Experiences of online learning

Online learning a has been part of teaching and research also prior to the Covid-19 pandemic, and both positive and negative factors have been identified in relation to its impact on student well-being. Factors such as interactivity during learning, active teaching and studying, and communal learning have been found to positively impact students' experiences of online learning (So, 2009; Baltà-Salvador et al., 2021). Other perceived benefits of online learning include flexibility in time management, self-directed learning, and setting one's own pace. However, difficulties with technology skills, increased workload, mixing leisure time and studying, and lack of support have been identified as challenges of online learning (McVeigh, 2009).

According to research conducted during the pandemic, students have been found to suffer from loneliness and to miss interaction and connection with other students and teachers as well as on-campus learning (Baltà-Salvador et al., 2021; Nguyen et al., 2021). In addition, online learning has been found to decrease students' commitment to their studies and to increase their study fatigue (Salmela-Aro et al., 2021). There are also indications of other challenges to well-being (Huckins et al., 2020; Kaparounaki et al., 2020; Wang and Zhao, 2020; Baticulon et al., 2021). The pandemic has for example increased stress, anxiety, and mental-health problems internationally (United Nations Educational, Scientific and Cultural Organization [UNESCO], 2020).

The success of online learning depends for example on students' study motivation, time-management skills and technology proficiency while insufficient digital resources and skills, lack of a learning community and difficulty in understanding the goals of teaching and courses can negatively affect the experience of online learning (Song et al., 2004; Mukuka et al., 2021). The quality of learning during online learning has been found to be related to the quality of online education, learning-environment conditions, interaction and connection between students and teachers (Baltà-Salvador et al., 2021). Maintaining a sense of

belonging and interaction and supporting students' commitment to their studies is important during online learning (Salmela-Aro et al., 2022). Therefore, online learning appears to challenge students' well-being and to pose unique challenges.

1.2. Study-related burnout

Burnout has been extensively studied in the context of the workplace (Maslach et al., 2001; Leiter and Maslach, 2016), but research on burnout in educational environments has also increased in recent decades (Schaufeli et al., 2001; Salmela-Aro et al., 2009). In studies related to burnout during elementary school, the term *school burnout* has been used (Salmela-Aro et al., 2009). The term *study-related burnout* has also been used in the higher education setting (Meriläinen, 2014). School burnout consists of three different dimensions: exhaustion, cynicism, and feelings of inadequacy (Schaufeli et al., 2001; Salmela-Aro et al., 2009). Exhaustion refers to strong emotional fatigue, influenced by excessive workload; cynicism refers to a cynical attitude towards studying and a decreased feeling of meaningfulness; while feelings of inadequacy refer to a sense of incompetence or poor performance in studying (Salmela-Aro et al., 2009). According to Schaufeli (2019), exhaustion is the core component of burnout, with feelings of inadequacy and cynicism being its consequences.

Many factors affect study-related burnout, and it has been explained by the demands-resources model (Demerouti et al., 2001). According to the model, environmental characteristics can be divided into two categories: demands and resources (Schaufeli and Bakker, 2004). Burnout is affected by an individual's experience of the balance between resources and demands and burnout is seen as a consequence of excessive demands (Demerouti et al., 2001). Motivation on the other hand is built on experiences of existing resources. The model has been developed for the workplace but students in the educational environment also experience different demands and resources and, thus, it has been found to be suitable for the school context as well (Salmela-Aro and Upadyaya, 2014).

Study-related burnout has been found to have many negative effects on studying. Study-related burnout and all of its components have a clear negative relationship with commitment and engagement in higher education studying (Salmela-Aro and Upadyaya, 2017). Study-related burnout experiences are also related to a surface approach or unreflective approach to learning (Parpala et al., 2021; Asikainen et al., 2022) as well as poorer academic achievement (Madigan and Curran, 2021). It has also been shown that study-related burnout experiences have a negative relation with experiences of the teaching-learning environment (Meriläinen, 2014). In the school context, a relationship has also been found between school burnout and disengaged studying and poorer academic performance (Tuominen-Soini and Salmela-Aro, 2014).

1.3. Psychological flexibility

Psychological flexibility is based on Acceptance and Commitment Therapy (ACT) and refers to an individual's ability to commit to actions in accordance with what is meaningful

to them, despite negative thoughts and feelings (Hayes et al., 2006). A psychologically flexible person can confront their negative thoughts and feelings and can distance themselves from them. They are able to examine their thoughts and the emotions recognising that these thoughts and feelings do not represent the truth about themselves. Being present and mindful in the moment allows for the identification and examination of one's own thoughts and emotions (Hayes et al., 2006; Hayes, 2019). Psychologically flexible individuals avoid things or actions that cause unpleasant emotions (Bond et al., 2010).

Psychological flexibility has been observed to have health-promoting effects in several studies; it has been shown to reduce depression, anxiety, pain, and stress and to promote well-being, support stress management and improve performance in the workplace (Hayes et al., 2006; Flaxman et al., 2013; Kelson et al., 2019; Puolakanaho et al., 2020). Psychological flexibility enhances an individual's ability to adapt to different situations and can also prevent different mental health problems (Kashdan and Rottenberg, 2010). Psychological flexibility has also been found to be negatively related to burnout (Frögéli et al., 2016) and interventions aimed at enhancing psychological flexibility have been shown to reduce experiences of burnout in work contexts (Lloyd et al., 2013; Puolakanaho et al., 2020). According to the demands-resources model, experiences of demands strongly influence experiences of burnout (Demerouti et al., 2001). Psychologically flexible individuals are able to see negative thoughts only as thoughts and thus take a step back from stressful thoughts, not giving them the power to dominate. Therefore, our assumption is that psychologically flexible individuals can experience demands as less stressful by regulating stressful thoughts better.

Psychological flexibility has been studied less in the context of higher education than in the workplace. However, studies conducted with higher education students have shown that it is related to positive experiences and emotions in learning as well as integration into the university studies (Asikainen, 2018; Asikainen et al., 2018; Hailikari et al., 2022). It has been shown to be related to smooth progression in studies (Asikainen et al., 2018; LeJeune and Luoma, 2019; Hailikari et al., 2022), self-regulation skills (Eisenbeck et al., 2019) and prevention of procrastination (Gagnon et al., 2016). In addition, psychological flexibility has been found to predict academic progress (Asikainen et al., 2018).

The importance of psychological flexibility during the pandemic has not been extensively studied. However, recent research has shown that interventions aimed at developing psychological flexibility can improve students' positive experiences of studying (Asikainen et al., 2019; Katajavuori et al., 2021). It has been shown that even during the pandemic, such interventions can have a positive effect on students' well-being and can also reduce their risk of study-related burnout (Räihä et al., 2021). Based on previous evidence (Asikainen et al., 2019; Katajavuori et al., 2021), we expect that psychological flexibility is also an important factor in how the challenges of studying are perceived.

1.4. The present study

The aim of this study is to investigate with a mixed-method design the relationship between psychological flexibility

and students' experiences of different aspects of academic burnout, as well as to examine whether students with different levels of psychological flexibility differ in their experiences of academic burnout and remote learning during the Covid-19 pandemic. The participants of the study are first-year Finnish life science students at a research-intensive university xx during the pandemic when most of the teaching was online.

Research questions:

1. How are psychological flexibility and academic burnout related to each other?
2. How do students experience online studying?
3. How do experiences of academic burnout and online learning and studying differ among students with different levels of psychological flexibility?

2. Materials and methods

2.1. Procedure

This study was made following the ethical principles and guidelines of National Advisory Board on Research Ethics. The data of this study was collected using HowULearn feedback system (Parpala and Lindblom-Ylänne, 2012). HowULearn is part of a feedback system for all students, where students respond to research-based questions and receive feedback on their studies and well-being (Parpala and Lindblom-Ylänne, 2012). Participation in the study was voluntary, and participants gave consent to their data being used in the research.

2.2. Participants

The data for this study consists of responses from first-year students (N = 296) in different fields of life sciences [Biology and Environmental Sciences (N = 98), Veterinary Medicine (N = 55), Pharmacy (N = 108), and Agricultural Sciences (N = 35)] collected in April 2021. The survey was sent to a total of 403 students in life sciences, of which 296 responded and gave permission to use their responses in the study (response rate 73%). Of these 296 participants, 229 responded to an open-ended question about online studying: "How has online learning affected your studies? How have you experienced online studying?'"

2.3. Materials

This study was a descriptive study comprising both quantitative and qualitative data. The measurement of study-related burnout was carried out using the School Burnout Inventory (SBI-9) (Salmela-Aro et al., 2009) which was further developed for the higher education context (Salmela-Aro and Read, 2017). The survey is Likert-scaled (0 = completely disagree, 6 = completely agree) and consists of three dimensions of study burnout: exhaustion (M = 3.24, SD = 1.15, α = 0.816, e.g., *I feel overwhelmed*

by the workload related to my studies), inadequacy (*M* = 3.78, *SD* = 1.41, α = 0.754, e.g., *I often feel inadequate in my studies)* and cynicism (*M* = 2.41, *SD* = 1.29, α = 0.885, e.g., *I feel like I'm losing interest in studying).*

Psychological flexibility (*M* = 3.10, *SD* = 0.75, α = 0.871) was measured using the Work-related Acceptance and Action Questionnaire (WAAQ) (Bond et al., 2012) which was developed for the workplace context and adapted to the university context (Asikainen et al., 2018). The survey consists of seven questions and is Likert-scaled (1 = completely disagree, 7 = completely agree), including one dimension that assesses psychological flexibility (e.g., "*My thoughts and feelings are not an obstacle for my studying).*

2.4. Analyses

The sum scores and their reliabilities for the three dimensions of study burnout and psychological flexibility were calculated. After analysing the normality of the scales with Kolmoronov–smirnov test as well as visual analysis, we decided to use parametric tests for the analyses. Pearson's correlation analysis was used to examine the quantitative relationships between psychological flexibility and the sub-dimensions of study burnout. Based on psychological flexibility sum score, three score groups were formed (high, medium, and low). The groups were formed using the mean and standard deviation (medium group: mean ± half standard deviation). Similar kind of grouping has been done also in previous studies (Hailikari et al., 2021) There were three score groups based on the level of psychological flexibility: low (*N* = 95), medium (*N* = 102), and high (*N* = 99). The groups differed significantly in terms of psychological flexibility (*p* < 0.001). The differences between these groups in the sub-dimensions of study-related burnout were analysed using one-way ANOVA and Tukey's test and differences in remote-learning experiences were analysed using the Chi-square test.

The open responses of students' experiences of online studying were analysed using a qualitative content analysis approach (Elo and Kyngäs, 2008). All the students' experiences were classified into categories containing similar expressions (Graneheim and Lundman, 2004). One student may have had several different experiences with online studying and thus, one student's comment could include many different classifiable experiences. The entire material was first classified as accurately as possible by coding the expressions with codes that described them. After this, all the codes describing similar experiences or issues were grouped into the same category, resulting in a total of 14 subcategories. These subcategories were then combined into four upper-level categories that described similar experiences. Each upper-level category contained both positive and negative experiences related to the category's theme. Finally, the resulting upper and subcategories were quantified. During the analysis, the authors had continuous discussions during which they refined the classification. Based on the categories agreed upon, the second author classified the remaining responses according to the agreed-upon classification, after which the authors again discussed the subcategories that emerged and their classification into main categories.

3. Results

The results showed that psychological flexibility was related to all components of study-related burnout (see Table 1). Psychological flexibility was negatively and significantly correlated with exhaustion (*r* = -0.514, *p* < 0.001), cynicism (*r* = -0.435, *p* < 0.001), and inadequacy (*r* = -0.552, *p* < 0.001). The components of burnout also correlated significantly with each other (*r* = 0.380–0.667, *p* < 0.001).

3.1. Students' experiences of online studying

Students had both positive and negative experiences of online studying. Of the respondents, a total of 123 students had generally positive experiences of online studying, while 193 students had negative experiences. 92 students reported both positive and negative experiences. Students' experiences of online studying could be divided into four main categories: (1) Teaching, (2) Learning and Studying, (3) Experiences of Well-being, and (4) Experiences of Interaction (see Table 2). Each category included both positive and negative experiences.

The first category, **Teaching**, included students' experiences about teaching arrangements, teaching quality and the implementation of teaching. Negative comments focused on Poor teaching quality (*N* = 21) which included experiences of technical problems with online studying, poor or variable teaching quality, excessive workload and ineffective group work during online studying. Five students commented on the Difficulties in practical courses and addressed that practical work should be taught in person. Here is an example of a category describing poor teaching quality:

> "*Online learning works well when the courses are also arranged well, with clear instructions and peer-reviewed tasks, etc. At the moment, everything is completely the opposite, and online learning feels more like non-learning." (Student no. 90)*

Positive experiences, on the other hand, were related to students' favourable experiences with the usefulness of lecture recordings (*N* = 31) which allowed them to study and listen to the lectures in their own time and repeatedly. The use of lecture recordings as a common tool in teaching was therefore hoped for, as the following comment describes:

TABLE 1 Correlations between psychological flexibility and study-related burnout.

	PF	EX	CY	IN
Psychological flexibility (PF)	1			
Exhaustion (EX)	−0.514***	1		
Cynicism (CY)	−0.435***	0.380***	1	
Inadequacy (IN)	−0.552***	0.677***	0.574***	1

***p < 0.001.

TABLE 2 Students' experiences of online learning.

Category	Negative experiences (N = 193)	N	Positive experiences (N = 123)	N
Teaching	26 students		31 students	
	Poor teaching quality	21	Usefulness of lecture recordings	31
	Difficulties in practical courses	5		
Learning & Studying	128 students		107 students	
	Problems in learning	64	Improved studying	55
	Decrease in study motivation	44	Flexibility in studying	72
	Time management problems	36		
	Concentration difficulties	28		
	Studying at home	12		
Wellbeing	58 students		7 students	
	Decreased wellbeing	58	Increased wellbeing	7
Interaction	106 students		4 students	
	Lack of interaction	106	Good interaction	4

"Online studying has enabled following lectures and studying far from the university. I have enjoyed online studying and would like online lectures to be an option that students can choose even after the pandemic, in addition to on-site lectures." (Student no. 44)

The second category, **Learning and Studying**, included all the students' comments related to learning and studying. The category contained several subcategories of both negative and positive experiences. In total, 128 students mentioned one or more negative experiences related to studying and learning. Students experienced Problems in Learning ($N = 64$), in which they described different kind of difficulties in learning. The Concentration difficulties ($N = 28$) category included comments in which students reported difficulties in concentrating on studying and reported that their concentration was better during on-site teaching. Decrease in study motivation ($N = 44$) as well as Time management problems ($N = 36$) comprising experiences describing time-management and productivity problems in online studying were also experienced by the students. Studying at home ($N = 12$) and not being able to study in places like the library was also experienced as a challenge. The following student's comment describes a negative experience related to learning and studying very well:

"The first year of studying is almost over, and I still haven't found a study rhythm, which significantly complicates my studies. I lack self-discipline, and it feels like I'm not getting anything done even though I have motivation and skills. I feel like I can't succeed as well as I have the potential for. I would hope to find a study rhythm. I believe this would help me succeed better." (Student no. 21)

Nearly half of the students ($N = 107$) reported Positive experiences related to studying and learning. Of these students, one-quarter ($N = 55$) reported Improved studying, meaning that they liked online studying and felt that their studies had progressed

better. Many students appreciated the Flexibility of studying ($N = 72$) and the freedom it brought to scheduling and planning their studies as well as the possibility of not having to travel to the university to study. The following comments describe these positive experiences related to learning and studying:

"Studying online has suited me quite well. It is easier to plan my studies, and I may even be more efficient." (Student no. 23)

"Online studying has been pleasant and has suited my life situation well." (Student no. 56)

The third category, **Experiences of Well-being**, included all mentions related to students' well-being. One-quarter ($N = 58$) of students felt that their well-being had decreased during online studying. These students found online studying to be difficult and some students experienced anxiety and depression. However, a few students ($N = 7$) reported that their well-being had increased during online studying. They felt that due to time saving, they had more time to sleep and take care of their well-being. Following excerpts describe this category:

"Online studying has been lonely, exhausting, inefficient, and discouraging" (Student no. 62) *"Online studying has generally caused a lot of extra burden on my well-being, and as a result, it has also taken away a lot of motivation for studying."* (Student no. 84)

The fourth category, *Experiences with Interaction*, included all mentions from students related to interaction. Almost half of the students ($N = 106$) reported a Lack of interaction, meaning they missed interaction and support from other students and from teachers. The absence of a learning community was also mentioned. On the other hand, four students mentioned the importance of peer support in a positive way reporting that interaction and communication with fellow students had helped and promoted

their learning. The following comments from students describe negative experiences related to a lack of interaction:

> *"Social support from fellow students is practically non-existent because we don't meet them." (Student no. 103)*

> *"Studying online has produced many challenges in terms of group cohesion and obtaining peer support. It's also easy to fall behind when you don't get to exchange ideas with other students, so I've missed one lecture, for example, and then been completely lost during the next lecture, but there aren't really people I can ask for help." (Student no. 104)*

3.2. Experiences of online studying and study-related burnout in relation to levels of psychological flexibility

Different score groups based on psychological flexibility differed statistically significantly from each other regarding study-related burnout and its components (see **Table 3**). According to Tukey's test, all groups differed statistically significantly regarding all three components. The results showed that the low-psychological-flexibility group experienced more exhaustion, cynicism and inefficacy compared to the medium and high psychological flexibility groups. Additionally, the high psychological flexibility group experienced less study-related burnout comprising all the components compared to the medium and low psychological flexibility groups.

Some students' experiences of online studying differed according to their level of psychological flexibility (see **Table 4**). The high-psychological-flexibility group had more positive experiences overall when considering all categories. They also had more positive experiences related to studying compared to other groups. The low-psychological-flexibility group had significantly more negative experiences of studying than other groups. Additionally, the low-psychological-flexibility group experienced statistically significantly less smoothness in online studying and more problems with time management than the other groups. The high-psychological-flexibility group also had fewer experiences of decreased well-being during online studying compared to other groups.

4. Discussion

The aim of this study was to investigate the relationship between psychological flexibility and students' experiences of online studying and study-related burnout during the pandemic. Our results showed that psychological flexibility was negatively related to experiences of study burnout; high psychological flexibility was associated with lower levels of study-related burnout and all it's components. This finding was in line with our hypotheses and previous research (Frögéli et al., 2016; Räihä et al., 2021). Accordingly, it appears that psychological flexibility is an important

factor in promoting student well-being. Previous research has also shown that interventions aimed at enhancing psychological flexibility can lead to a more forgiving attitude towards oneself and a greater awareness of what is important in life (Katajavuori et al., 2021). It is conceivable that these factors could reduce feelings of inadequacy and the sense of meaninglessness brought on by cynicism. Our findings support our assumption that psychological flexibility influences students' perception of the demands in their environment and in their studies. Thus, psychological flexibility could serve as a resource for meeting the demands and challenges of studying, including online learning.

According to our study, students experienced online studying differently during the pandemic. Some students had positive experiences, some had negative experiences and some recognised both positive and negative effects of online studying. Earlier research on first-year students' experiences of the studying during the pandemic has shown similar results (Ruhalahti et al., 2021). Studies have shown that different students may have different experiences of the learning environment: for example, an unreflective approach to learning is associated with negative experiences of the learning environment while an approach that emphasises reflection and understanding (deep approach) is associated with positive experiences (e.g., Parpala et al., 2010, 2021). According to a study on students' experiences of online studying which was conducted at the beginning of the pandemic in the spring of 2020, the change in perceptions of the learning environment before and after the pandemic was negative for all student profiles (Parpala et al., 2021). In other words, the experience of the learning environment was more negative for all student profiles during the pandemic than it was before. However, the experiences of different student profiles differed in that students belonging to the unreflective and unorganised profile perceived the learning environment more negatively than students of other profiles (Parpala et al., 2021).

According to the results of this study, a large proportion of students experienced challenges in their studies. Students reported, among other things, a decrease in motivation, scheduling problems and difficulty concentrating while studying at home. Learning was also perceived as more difficult. Previous research during the pandemic among first-year students has shown that students experienced challenges with time management, productivity and concentration (Ruhalahti et al., 2021). On the other hand, some students perceived online studying positively. The flexibility and freedom in scheduling their studies were seen as the most positive aspects of online studying. Additionally, some students reported that their studying had been more effective during the period of online studying. Independent learning and self-regulation became more important during the pandemic as students are more responsible for their learning in their home environment. Previous research has shown that students who scored lower in organised studying reported more challenges in time management, concentration and motivation than students who scored higher (Rytkönen et al., 2012).

The results show that many students experienced a decrease in interaction with both classmates and teachers. This finding was expected, as most of the teaching has shifted to online platforms during the pandemic, which has reduced interaction between students. Previous research has shown that students perceive a lack of interaction as the biggest disadvantage of

TABLE 3 Differences in study-related burnout according to the psychological flexibility groups.

	Low (N = 95) M (sd)	Middle (N = 102) M(sd)	High (N = 99) M (sd)	F	p	Eta-squared
Exhaustion	3.88 (1.07)	3.26 (1.04)	2.59 (1.03)	37.47	<0,001	0.204
Cynicism	3.12 (1.44)	2.35 (1.11)	1.78 (0.92)	31.76	<0.001	0.178
Inadequacy	4.60 (1.08)	3.81 (1.32)	2.95 (1.30)	42.81	<0.001	0.226
Tukey's test						
Exhaustion 1 < 2 < 3 = p < 0.001						
Cynicism 1 < 3 = p < 0.001, 2 < 3 = p = 0.002						
Inadequacy 1 < 2 < 3 = p < 0.001						

TABLE 4 Differences in distance learning experiences according to the psychological flexibility groups.

	N	Low (N = 76)	Middle (N = 82)	High (N = 71)	χ^2	p	CV
Overall positive experience	124	29 (23.4%)	47 (37.9%)	48 (38.7%)	13.34	< 0.001	0.241
Categories							
Negative experience of studying	128	53 (41.4%)	46 (35.9%)	29 (22.7%)	12.43	0.002	0.233
Positive experience of studying	107	27 (25.2%)	36 (33.6%)	44 (41.4%)	10.72	0.005	0.216
Sub-categories							
Improved studying	55	12 (21.8%)	19 (34.5%)	24 (43.6%)	6.58	0.037	0.169
Decreased wellbeing	58	20 (34.5%)	27 (46.6%)	11 (19.0%)	8.26	0.016	0.164
Time management problems	36	19 (52.8%)	10 (27.8%)	7 (19.4%)	7.55	0.023	0.182

CV, Cramer's V.

online learning (Cole et al., 2014), and that social relationships and interaction affect students' satisfaction in online learning environments (Richardson et al., 2017). During the pandemic, reduced interaction can also be expected in other aspects of life. Many students reported feeling tired of the limited social interaction with classmates and being stuck at home. Research has shown that social isolation can have many negative effects on well-being (Brooks et al., 2020). Peer support has also been found to be an important factor in students' studies (Rytkönen et al., 2012) and a factor that affects their well-being (Weidlich and Bastiaens, 2018). Lack of peer support has been associated with loneliness (Sun et al., 2020), negative emotions (Gariepy et al., 2016) and poorer well-being (e.g., Wang et al., 2018). In this study, however, only a few students mentioned that keeping in touch with their classmates was an important factor in supporting their studying online. One reason for this could be that the students did not have a proper chance to get to know each other because they had studied the whole first year mostly online.

Students' experiences of online studying also differed between different score groups of psychological flexibility. Clearly, the group with low psychological flexibility had the most negative experiences of online studying while the group with high psychological flexibility had the most positive experiences. Previous research has shown that psychological flexibility is associated with positive academic emotions (Asikainen et al., 2018) and academic success (Hailikari et al., 2022). Courses aimed at developing psychological flexibility have also had positive effects on students' learning experiences, motivation, efficiency and meaningfulness of learning

(Katajavuori et al., 2021). Based on the results, it can be suggested that psychologically flexible students have more positive experiences of studying. The ability to face one's own negative thoughts and act according to one's own values appear to be important factors also in online studying during the pandemic.

Our study also had limitations. It focused on first-year students in life sciences at one university. Thus, we cannot assume that our results are generalisable to all university students. Students in different fields of study or those who have studied for a longer time may have different experiences of studying during the pandemic. However, our sample was representative of the target group (response rate 73%) and we were able to analyse a large amount of students' experiences of online studying. In addition, our data consisted solely of students' experiences and objective measurements of their stress levels or well-being were not used. The data was also collected at a single point in time. Therefore, based on the data, we cannot assume causality, i.e., assume that psychological flexibility explains the experience of study burnout. However, based on previous research, we can assume that psychological flexibility affects well-being and burnout (e.g., Asikainen et al., 2019; Katajavuori et al., 2021; Räihä et al., 2021).

Further research should be conducted on the impact of psychological flexibility on studying and well-being using longitudinal data. This would enable more accurate investigation of causal relationships. It would also be interesting in further research to examine the connection between psychological flexibility and physical stress using biophysical measurements. Based on our research findings and previous studies, it can be

suggested that psychological flexibility affects how a person relates to resources and demands in their learning environment. In further research, it would be possible to theorise the impact of psychological flexibility on the Demands-resources model and to test the theoretical model based on longitudinal data.

5. Conclusion

The results demonstrate that psychological flexibility is an important skill for university students and can prevent experiences of study-related burnout as well as act as an important factor in promoting well-being and positive study experiences even during the pandemic. The ability to face one's negative thoughts and act in accordance with one's values has been found to be important in university studies and in promoting well-being (Hayes et al., 2006; Katajavuori et al., 2021). Therefore, well-being and stress management should be emphasised more in higher education as part of employment skills and support should be provided for students to develop their psychological flexibility. Psychological flexibility has also been developed through a separate well-being and study-skills course for university students (Asikainen and Katajavuori, 2021). Such a course has been found to be effective in developing psychological flexibility, well-being and study skills in multiple ways (Asikainen et al., 2019; Katajavuori et al., 2021). Similar effects have been shown for the course during the pandemic (Räihä et al., 2022).

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

Ethical review and approval was not required for the study on human participants in accordance with the local legislation and institutional requirements. The patients/participants provided their written informed consent to participate in this study.

Author contributions

Both authors listed have made a substantial, direct, and intellectual contribution to the work, and approved it for publication.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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