

# The effects of perceived psychological, educational, and financial impact of COVID-19 pandemic on Greek university students' satisfaction with life through Mental Health

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## ABSTRACT

**Background:** The purpose of this study was to provide an operating mechanism for understanding the effects of COVID-19's on satisfaction with life, subject to students' general mental health

**Methods:** A sample of 1653 Greek speaking university students (72.4% females, 65.3% undergraduate, M age=26.1) completed an online survey including measures for perceived psychological, academic, and financial impact of the COVID-19 pandemic, general mental health and satisfaction with life.

**Results:** A mediation model was tested to illuminate these relationships by considering students' general mental health as a mediator. Findings demonstrated that there were significant direct effects of perceived COVID-19 impact on participants' financial status on satisfaction with life and indirect effects of perceived COVID-19 impact on participants' financial status and academic performance respectively on satisfaction with life through general mental health.

**Limitations:** The study's cross-sectional design, self-report data and snowball sampling.

**Conclusions:** The findings add to our understanding of the relationship between perceived COVID-19 impact and life satisfaction among university students, and they shed light on the critical role of general mental health in mediating the relationship. Targeting the factors that influence general mental health can help to mitigate potential problems while also finding ways to improve mental health and well-being.

## 1. Introduction

With the discovery of a new infectious coronavirus disease (COVID-19) and the onset of the coronavirus pandemic in 2019 (World Health Organization, 2020), the changes imposed on the general population disrupted many aspects of their lives, including their mental health and well-being. The declaration of the COVID-19 pandemic resulted in several countries enforcing a variety of austerity measures to contain the spread of the infectious disease (i.e., social isolation, quarantines, curfews, and partial or nationwide complete lockdowns), significantly affecting people's way of life and resulting in a number of negative psychological outcomes and feelings (e.g., anger, confusion, distress, loneliness, and depression) (Brooks et al., 2020). The quick rising of such feelings is serious considering their link with various incapacitating

mental health illnesses and disorders (e.g., major depression and schizophrenia, obsessive compulsive, trauma-related, panic attacks) (Fiorillo and Gorwood, 2020). Additionally, the prolonged duration of the austerity measures has also increased stress and worrying concerning financial insecurity along with increased fear for supply shortages (Brooks et al., 2020). It seems therefore that the worldwide impact of the pandemic on public mental health and well-being is apparent. Psychiatry and psychiatrists can have a vital part to play in this pandemic and its long-term consequences, especially in dealing with the psychological and mental health aftermath and in solidifying health service mechanisms in reaction to COVID-19.

In conjunction with a position paper issued by the World Psychiatry Association offering ethical advice to psychiatrists on issues raised by the COVID epidemic, Stewart and Appelbaum (2020) emphasized the

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need to continue to strive to provide essential health-related services to the public during and after the pandemic as part of their human rights. Globally, psychiatric institutions have been adjusting their treatment practices in an effort to ensure that every person will receive treatment and assistance no matter if someone had preexisting mental health conditions or not (Fiorillo and Gorwood, 2020). Despite such efforts, as Fiorillo and Gorwood point out, it is highly likely that the amount of people seeking psychiatric assistance will continue to rise for the next several months, thus calling for reevaluation of ongoing approaches in dealing with the psychological cost of the pandemic.

Not surprisingly, during these challenging times, research has emphasized the importance of considering the psychological consequences of pandemics on people, as well as prioritizing the exploration and monitoring of factors that may exacerbate psychological problems among individuals (Holmes et al., 2020). Despite the age, gender or lifestyle, COVID-19 related stressors affected peoples' subjective well-being (SWB), specifically satisfaction with life (SWL), general mental health (GMH), and social and economic status (Wang et al., 2020). In the general population, women have been reported to be more prone than men to experience mental health disorders (Chang et al., 2020; Lei et al., 2020; Wang et al., 2020). Similarly, individuals under the age of 40 have been observed to have a higher rate of mental health problems than their older counterparts (Chang et al., 2020; Lei et al., 2020). Overall, belonging to a younger age group, having a poor income, experiencing more perceived stress, and being forced into mandatory isolation were significant predictors of the intensification of mental health issues and reduced well-being (Duan et al., 2020).

The prevalence of mental health concerns, distress, and decreased psychological well-being among college students (Sood and Sharma, 2020) throughout this pandemic is empirically evidenced (Wang et al., 2020). Therefore, it is critical to investigate the stressors associated with managing mental health issues (Boyratz and Legros, 2020), as well as those factors enhancing the psychological well-being of university students (Sood and Sharma, 2020). Thus, the purpose of this study was to tackle this necessity by providing an operating mechanism for understanding the effect of COVID-19's perceived psychological, academic, and financial impact on satisfaction with life, subject to students' general mental health.

### 1.1. The effects of the perceived COVID-19 impact on university students' satisfaction with life

Being a student has been reported as a significant risk factor for developing adverse mental health issues and negatively affecting psychological well-being compared to other age groups (e.g., employed or retired) during this pandemic outbreak (Lei et al., 2020). For example, a study on general mental health problems during the COVID-19 pandemic reported high rates of acute stress, depression and anxiety among Chinese university students (Ma et al., 2020). Along the same line, a study on the impact of the pandemic on Italian university students' psychological well-being revealed that they were anxious, unhappy, and miserable because of not being able to physically attend their university classes and meet their peers (Villani et al., 2021). Finding students to be more likely to experience psychological problems could be owing to university closure, social event cancellations, lesser efficiency online courses, and exam postponements (Cao et al., 2020). It could also be justified by the increased importance that young adults and adolescents place on social engagements, particularly with their peers, which they had to forego as a result of COVID-19 austerity measures.

Additional research on how university students were affected by the COVID-19 attributed reduced academic performance for the most part due to distress (Frazier et al., 2019). The decline in student academic achievement could be due to insufficient technological knowledge, support, and equipment at home to attend online classes or difficulty/inability to concentrate on the lectures or to understand the

teaching material. Further, as university students are a special social group with active life habits based on relationships and contacts, physical and university activities, travel, and gatherings, it may be argued that the pandemic austerity measures had a substantial impact on their lifestyles, negatively affecting their psychological well-being and academic performance.

Financial stress and life stability were also recognized as significant factors affecting students' life satisfaction and quality of life. According to Bakhtiari and colleagues (2018), this stressor is the second most influential factor affecting students' contentment with their current life circumstances and well-being. Similarly, university students' happiness and life satisfaction were highly predicted by having financial security during hardships (Zuffianò et al., 2018). Rogowska and colleagues (2020) also reported that among several factors affecting students' life satisfaction due to quarantine were academic performance decrease and financial difficulties. The latter is possible, as students may be concerned about their capacity to complete their education. Many family members have lost jobs or had their salaries considerably reduced, making it impossible to support other family members and their children's education. Similarly, students pursuing academic degrees may have been adversely affected by the prolonged lockdowns and other restrictive measures.

It is not surprising, given recent findings, that there is a reduction in life satisfaction among the student population, since they are being considered as more vulnerable to external conditions that can have an impact on their current life satisfaction and subjective well-being (Tan et al., 2020). Subjective well-being, as defined by Diener (2000), is a three-part construct formed by two affective elements (positive affect, negative affect) and a cognitive element (life satisfaction) that can be studied independently (Pavot and Diener, 1993). Numerous investigations are being undertaken to determine why university students experience and evaluate their lives in the manner in which they do when the SWB cognitive component is used. In line with earlier research (e.g., Tan et al., 2020), the current study focused exclusively on the cognitive dimension, namely SWL, which has been shown to be significantly associated with the psychological, academic, and financial consequences of the COVID-19 pandemic (Sood and Sharma, 2020).

### 1.2. The indirect effects of general mental health

A number of studies have advocated that general mental health (GMH) is a determining factor for life satisfaction (e.g., Irie and Yokomitsu, 2019; Keyes, 2005; Lombardo et al., 2018). In conceptualizing these terms, Keyes emphasized the essentiality in investigating GMH as defined by the World Health Organization (World Health Organization 2018), that is the current state of well-being in which every individual puts all his/her effort to maximize full potential by being productive and resourceful while dealing efficiently with various life stressors. Therefore, research indicates that GMH can be studied as a covariate of SWB. Interestingly, perceived mental health has been shown to hold a strong correlation with SWB (Siahpush et al., 2008), while Irie and Yokomitsu (2019) also alleged that SWB can be regarded as an indicator of good mental health and used well-being as an outcome to reflect college students' GMH. Prior research confirms that individuals with low GMH are more likely to report less SWL (Irie and Yokomitsu, 2019). Particularly during the recent radical changes in living conditions due to the COVID-19 outbreak, mental health has been linked to students' perceptions of various external stressors, such as psychological issues, academic performance, and financial concerns, and the degree to which such stressors affect their SWL (e.g., Garfin et al., 2020; Usher et al., 2020). GMH, which is frequently referred to as mental distress, has been associated with a decline in positive emotions, psychological well-being, and SWL (Jánošová, 2014). Based on this body of evidence, this study explored the indirect effects of GMH in the association between COVID-19 impact on the psychological and financial status, as well as academic performance and SWL in a sample of Greek university

students.

### 1.3. The present study

Several recent studies demonstrate that university students have been significantly psychologically impacted by the long-term strict measures and lifestyle adjustments that governments implemented to contain the COVID-19 disease. The high levels of anxiety and stress experienced by university students during COVID-19 necessitate prompt action to address the issue, as well as professional assistance in coping with the pandemic. The current study's findings may provide critical information that will aid in the development of appropriate education programs and interventions to better prepare university students for this pandemic.

Furthermore, many stressors in students' lives have been shown to lower their life satisfaction and quality of life. Rettie and Daniels (2021) observed a dearth of studies exploring modifiable predictors of mental distress, implying that such factors can be addressed in an effort to alleviate mental health issues. In response to the research call to continue focusing on psychological factors and potential stressors affecting the student population during these extraordinary times, this study examined stressors that may affect SWL and attempted to determine whether perceived health status could account for potential outcomes. For this reason, the study highlights the importance of exploring the COVID-19 impact on students' psychological, financial status, and academic performance on their SWL. To further explicate this association, the indirect effects of students' perceived GMH were examined (Fig. 1).

## 2. Method

### 2.1. Procedure

The current study, a large-scale project on the lives of Greek university students, was conducted nationwide from March 4<sup>th</sup> to April 3<sup>rd</sup> in 2021, through the completion of an entirely anonymous online survey via the online platform Limesurvey, which meets safety requirements and complete anonymization of the participants. The Institution's Ethics Committee approved the study. Students were informed about the goal of the study, their freedom to withdraw from participation, and how their replies would be treated entirely anonymously and confidentially. They also gave their approval to an electronic permission form at the start of the online survey. Participants were recruited via Facebook posts in various online student networks across Greece. Snowball sampling was also used to attract participants by asking them to share the survey link with their friends and classmates. Furthermore, participants were

notified that they may only complete the survey once in order to eliminate duplicate entries. The data analysed and presented in this paper was derived from 4 sections of a multi-item survey questionnaire.

### 2.2. Measures

The factor structure of the scales was examined using a series of Confirmatory Factor Analysis (CFA) using a robust maximum likelihood (MLR) estimation method with the Satorra-Bentler scaled chi-square test for non-normal data (Mplus version 8.6; Muthén and Muthén, 2010). Several fit indexes were used to evaluate model fit, including the Comparative Fit Index (CFI), the Tucker-Lewis Index (TLI), the Root Mean Square Error of Approximation (RMSEA) and the Standardized Root Mean Square Residual (SRMR) (Jackson et al., 2009). The  $\chi^2/df$  was also taken into account. The statistical significance of factor loadings was determined at the  $p < .01$  level.

**Demographics.** This section included questions related to participants' age, gender, level of university education (i.e., undergraduate or graduate), and program of study.

**Impact of COVID-19.** A three-item summary measure based on The Coronavirus Impacts Questionnaire (CIQ; Conway et al., 2020) was used to assess perceived psychological (i.e., The Coronavirus has impacted my psychological health negatively), academic (i.e., The Coronavirus has negatively affected my academic performance), and financial impacts of COVID-19 pandemic (i.e., The Coronavirus has impacted me negatively from a financial point of view) on a 7-point scale (1= totally disagree to 7= totally agree).

**Satisfaction with life.** The Greek adaptation of the Satisfaction with Life Scale (SWLS; Diener et al., 1985; Lyraeos et al., 2013), a 5-item short scale about an individual's life circumstances cognitive evaluation (e.g., The conditions of my life are excellent) rated on a 7-point Likert scale, ranging from 1 (*Strongly disagree*) to 7 (*Strongly agree*) was used. A CFA testing structure of the scale fits the data acceptably and confirmed its uni-dimensionality,  $\chi^2/df=47.274/21$ , CFI=.99, TLI=.98, SRMR=.02, RMSEA=.072(.054-.091).

**General mental health.** The 12-Item General Health Questionnaire (GHQ-12) (Goldberg and Williams, 1988) assessed participants' psychological distress over the past few weeks on a 4-point Likert-type response format (from 0 to 3). It consists of six positively and six negatively phrased questions. It is generally used as a unidimensional measure producing a summated score used as an indicator of severity of psychological distress. CFA suggested that the one-factor model for this scale fits the data well,  $\chi^2/df=490.449/220$ , CFI=.95, TLI=.92, SRMR=.045, RMSEA=.077(.071-.084).

### 2.3. Data analysis

For all variables, preliminary analyses (means, standard deviations, bivariate correlations using Pearson's  $r$  coefficient, Cronbach's alphas) were performed first. Gender differences in GMH, SWB, and COVID-19 impacts were examined using independent samples t-tests. The indirect effects of COVID-19 impacts on SWL through GHQ were tested using PROCESS (model 4; Hayes, 2013). In each model, gender was entered as control variable (i.e., covariate). With this method, significance is tested by calculating bias-corrected 95% bootstrap confidence intervals (CI) for the direct and indirect effects, while significance is inferred if the resultant interval does not contain zero (Hayes, 2013). All data analyses were performed using SPSS 27.0 (IBM).

## 3. Results

### 3.1. Participants

A sample of 1654 Greek speaking university students ( $M=26.10$  years,  $SD=8.02$ ) participated in the study. Males made up 27.1% of the respondents (442), while females the rest 72.9% (1190). The majority of

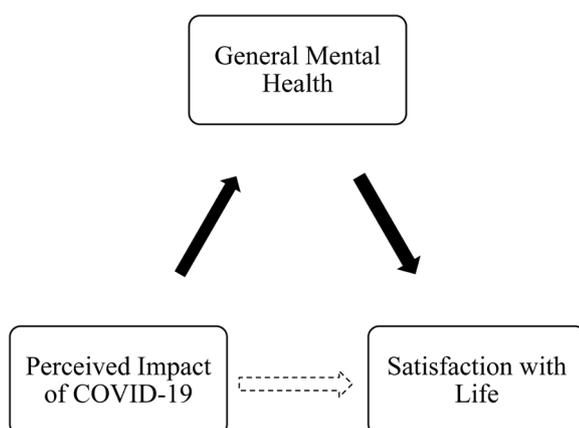


Fig. 1. Suggested model of the direct and indirect effects of perceived psychological, academic, and financial impact of COVID-19 during the pandemic on SWL, subject to students' general mental health.

participants (n = 1076, 65.9%) were undergraduates, while the rest were graduate and doctoral students. Of them, 62.6% (n=1036) were between 18 and 25 years, 32.4% (n=537) were between 26 and 50, and 3.5% (n=59) were 50+. Approximately half of the participants attended Greek public universities (n=802, 48.5%) and the other half attended Greek - Cypriot universities (n=830, 50.2%), while 21 students (1.3%) had missing data. A post hoc power analysis was conducted using G\*Power (Faul et al., 2009). With an alpha level of 0.05, a sample size of 1653, and a small-to-medium-sized effect of 0.29 (Cohen, 1992), achieved power for the study was 80%.

### 3.2. Descriptive statistics

Table 2 reports the descriptive statistics, the Cronbach's alphas, and the correlations among the study's variables. As shown in Table 1, GMH was positively correlated with all COVID-19 impacts (i.e., psychological, financial, academic), while negatively with SWL. Further, SWL showed negative correlations with all three COVID-19 impacts.

Preliminary analyses revealed that for the perceived COVID-19 impacts on participants' financial status there were no gender differences, while males scored higher on perceived COVID-19 impact on academic performance than females. Moreover, females scored higher on perceived COVID-19 impact on psychological functioning, GMH and SWL compared to males (Table 3).

### 3.3. Indirect effects of GMH

The analysis to examine the indirect effects of GMH showed that there were significant direct [ $b = -.071, SE = .015, 95\% CI (-.099, -.043)$ ] and indirect effects [ $b = .059, SE = .009, 95\% CI (-.077, -.042)$ ] of perceived COVID-19 impact on participants' financial status on SWL through GMH. The analysis also demonstrated that there was a significant indirect effect [ $b = -.165, SE = .012, 95\% CI (-.188, -.143)$ ] of perceived COVID-19 impact on psychological functioning on SWL through GMH. The direct effect of perceived COVID-19 impact on psychological functioning on SWL was not significant. Perceived COVID-19 impact on academic performance had a significant indirect [ $b = -.123, SE = .015, 95\% CI (-.143, -.104)$ ], but not a direct effect on SWL through GMH. All the indirect effects are summarized in Table 4.

## 4. Discussion

The present study assessed the association of the effects of perceived psychological, academic, and financial impact of COVID-19 during the pandemic on SWL, subject to students' GMH. Overall, the findings revealed that there were significant direct and indirect effects of perceived COVID-19 impacts on SWL through GMH.

Analyses showed significant bivariate correlations between perceived COVID-19 impacts, SWL, and GMH. Specifically, the correlations suggest a significant negative relationship between

**Table 1**  
Participants' socio-demographic data.

	Greece		Cyprus	
	N	%	N	%
Total	802	49.1	830	50.9%
Age				
18-25	424	25.9	612	37.5
26-50	335	20.5	202	12.4
50+	43	2.6	16	0.9
Gender				
Females	570	34.9	620	39.9
Males	232	14.2	210	12.9
Level of Studies				
Undergraduate	376	23	700	42.9
Graduate/Doctoral/Post-Doc	426	26.1	130	8

**Table 2**

Descriptive statistics, Cronbach's alphas (in parentheses) and bivariate correlations between perceived COVID-19 impact, SWB, GMH.

	COV_FIN	COV_MENT	COV_ACAD	GMH	SWL
COV_MENT	.30**				
COV_ACAD	.29**	.36**			
GMH	.17**	.42**	.36**	(.88)	
SWL	-.19**	-.26**	-.25**	-.54**	(.84)
Descriptive statistics					
Means	4.45	5.06	3.74	1.29	4.22
SD	1.92	1.74	1.98	.60	1.33

Note. Factor correlation matrix was estimated using maximum likelihood with robust standard errors and full information maximum likelihood (FIML) (N = 1653). SWB = Subjective Well-Being, GMH = General Mental Health, COV\_FIN = Covid Financial, COV\_MENT = Covid\_Mental, COV\_ACAD = Covid\_Academic. \*\* p < .01

**Table 3**

Means and standard deviations across gender and gender differences.

Variables	Male		Female		T	Df	P
	M	SD	M	SD			
COV_FIN	4.46	1.88	4.45	2.04	13.57	1651	.87
COV_MENT	4.75	1.84	5.18	1.68	11.14	1651	<.001
COV_ACAD	3.91	1.99	3.67	1.98	.29	1651	<.05
GMH	1.22	.59	1.31	.60	.42	1651	<.01
SWL	4.07	1.31	4.27	1.33	.09	1651	<.01

Note. SWB = Subjective Well-Being, GMH = General Mental Health, COV\_FIN = Covid\_Financial, COV\_MENT = Covid\_Mental, COV\_ACAD = Covid\_Academic.

**Table 4**

Indirect effects of Covid -19 impacts on SWL through GMH.

	COVID-19 impact as predictors of GMH	GMH as predictor of SWL	COVID-19 impact as predictors of SWL
COV_FIN	.17**	-.52**	-.10**
COV_MENT	.42**	-.52**	-.04
COV_ACAD	.36**	-.51**	-.06

Note 1. SWB = Subjective Well-Being, GMH = General Mental Health, COV\_FIN = Covid\_Financial, COV\_MENT = Covid\_Mental, COV\_ACAD = Covid\_Academic.

Note2. \*p < .05; \*\*p < .01.

psychological, academic, and financial impacts and SWL. Similarly, a significant negative association was found between GMH and SWL, a finding that is consistent with the existing literature that depicts SWL as an important component when studying GMH (McKee-Ryan et al., 2005). In terms of gender, males scored significantly higher on perceived COVID-19 impact on academic performance than females. Moreover, females scored higher on perceived COVID-19 impact on psychological functioning, GMH and SWL compared to males. These findings are consistent with previous research indicating that female students and women in general are more likely than their male counterparts to have significantly more anxiety, more mental health difficulties, and lower psychological well-being as a result of the COVID-19 pandemic (Chang et al., 2020; Villani et al., 2021; Wang et al., 2020). One possible explanation is that social support and interactions with peers, which they had to forfeit owing to austerity measures to restrict the spread of COVID-19, are a major source of females' positivity and pleasure with life.

While, no significant direct effects of the perceived COVID-19 impact on participants' psychological functioning and academic performance on SWL were identified, except for the case of the COVID-19 impact on financial status, the observed indirect effects of GMH clearly demonstrate how the perceived psychological, academic and financial impact of COVID-19 can significantly trigger negative feelings, leading to reduced life satisfaction. The direct effect of perceived COVID-19 impact

on participants' financial status is in line with several studies identifying financial stress/insecurity during hardships as a crucial and significant stressor influencing students' SWL (Bakhtiari et al., 2018; Rogowska et al., 2020; Zuffianò et al., 2018).

Overall, the results suggest that a person's mental health may be linked to how they interact with their current environment and how well they manage their mental distress and numerous stressors. Thus, a positive interaction between a university student and his or her environment is predicated on the alignment of the student's perceptions and behaviors toward a variety of external stressors, such as psychological functioning, academic performance, and financial concerns, as well as the extent to which the student's overall mental health affects their level of life satisfaction (i.e., the cognitive component of well-being).

The findings of this study contribute to the current body of knowledge by providing an operating process for determining the antecedents of SWL by taking into account the indirect effects of GMH. Additionally, the findings corroborate earlier research indicating that anticipated stressors will have a detrimental influence on an individual's SWL as a result of the recent radical changes in living conditions following the COVID-19 pandemic (e.g., Garfin et al., 2020; Usher et al., 2020). Demonstrating the indirect effects of GMH conforms to postulates defining GMH as the current state of well-being in which each individual strives to be her best through productivity and success while coping with ordinary life challenges (e.g., psychological functioning, academic performance, and financial concerns). Additionally, GMH has been linked to a reduction in positive emotions, psychological well-being, and life satisfaction (Jánošová, 2014). Similarly, it has been observed that mental distress among college students has an effect on their social relationships and academic performance, which is something the current study confirmed in terms of academic performance. Thus, one possible interpretation of the results is that when university students' reported GMH is considered, the perceived COVID-19 effects (psychological, academic, and financial) become a significant source of concern for their SWL (Irie and Yokomitsu, 2019).

#### 4.1. Implications

This research has several theoretical and practical implications. Findings extend current knowledge in the relationship between perceived COVID-19 impact, SWL, and GMH among university students. Insight is provided on the pivotal role of the indirect effects of GMH in the relationship between perceived COVID-19 impacts and SWL.

The way university students perceive and interpret the radical changes in their lives due to the pandemic can be vital to further our understanding about their perceived mental health and psychological well-being based on their beliefs and feelings. GMH-related issues have a damaging effect on university students' academic achievement, social psychological functioning, and societal engagement (Irie et al., 2019). Following that, another significant result of this study is that the psychological, academic, and financial implications of COVID-19 had an adverse effect on students' SWL, depending on their GMH. The findings indicate that SWL is associated with an individual's response to environmental stressors and the degree to which that individual would adapt and prosper in a social setting based on GMH.

Our findings, based on the correlations and indirect effects discussed, argue for the enhancement of academic institutions and government agencies' capacity to deal with the psychological and mental health consequences. As Marazziti and Tahl (2020) proposed, a wide array of health care professionals, including psychiatrists, should be recruited by national or even international health organizations to systematically deliver to students accurate scientific evidence along with useful strategies to effectively deal with their psychological burdens. On a more global scale, Adhanom Ghebreyesus (2020) pointed out that such initiatives already exist (e.g., by Inter-Agency Standing Committee, WHO, Red Cross) and need to be constantly spread across the nations. These strategies could reinforce national mental healthcare systems during and

after the pandemic, achieved by bringing together national healthcare agencies in providing general information to the public, developing a sustainable mental healthcare plan and investing on the healthcare personnel, safeguarding good collaborations among these healthcare providers, and examining existing mental healthcare policies in view of potential reformation.

For instance, healthcare practitioners such as psychiatrists, collaborating with governmental bodies and policy makers, can partake in various health initiatives involving teleconsultations and instructional activities via social media and platforms (Unützer et al., 2020) in providing health services to students to alleviate some of the psychosocial and mental health strain caused by the pandemic. In their review, Sheldon et al. (2021) proposed for the development of such intervention programs targeting factors that can be modified in order to avert students' mental health deterioration. Particularly, they should target all university students and take proactive measures in aiding them to deal with psychological issues, academic pressure, and/or financial concerns caused by this pandemic and/or by any other hardships in general.

Practically, our results give support for university student interventions directed on the development of socio-emotional skills, which considered being valuable for these youngsters' psychological well-being (Alegre, 2011). Results additionally render support for developing alternative methods or programs (i.e., online workshops, seminars, student counseling) through digital platforms for students to acquire or develop skills, which can result in helping them becoming more resourceful in gaining financial security during pandemics. Commissioning such initiatives can result in a more pleasant interaction between the student and the environment, assisting students in maintaining a good attitude on life despite potential problems associated with drastic lifestyle changes. Another additional approach to assist university students with their SWL, particularly during these challenging times, is through the university's health service center, which can provide screening and counseling to all students.

#### 4.2. Limitations and conclusion

In spite of the potential useful contributions, some limitations must be taken into account in the interpretation of the results. The study's cross-sectional design prevents determining causality. Consequently, the present findings should be strengthened by studies utilizing longitudinal research designs to help establishing causality between COVID-19 impact, GMH, and SWL. Also, self-report may introduce misleading replies due to social desirability bias, impression management, or inaccurate memory recall (Kouchaki and Gino, 2016). Moreover, despite our thorough data collection, online and snowball sampling present difficulties in comparison to random sampling. Snowball samples should not be considered to be representative of the population being studied. Therefore, further research using probability sampling techniques is necessary in generalizing findings in different sociocultural environments despite the fact that our findings add to the existing research to a legitimately large sample of Greek students, which is by no means representative of the actual student population (the present sample is biased in favor of females) and hence the findings' generalizability is compromised. A final limitation is that information was not collected concerning the participants' pre-existing mental health or physical disorders. These factors are relevant and could have had an impact on the study's findings. It is suggested in future studies to assess these factors also. Along with that, another potential limitation was the absence of medical students in the current study. Medical students are reported being in a higher risk compared to other student majors and the general population in developing depressive disorders (Rotenstein et al., 2016), anxiety disorders and substance abuse (Sampogna et al., 2020).

Given the enormity of this pandemic, its negative effects on mental health and well-being have become a pressing research topic, particularly the possible factors that result in undesirable psychological outcomes that may affect mental health, as well as potential approaches to

dealing with the impact (Giallonardo et al., 2020; Liu et al., 2020). In conclusion, in response to the need to continue researching potential stressors on the student population during this unprecedented period, this study carefully identified stressors that could possibly influence SWL and attempted to evaluate this association by examining the indirect effects of GMH.

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## CRedit authorship contribution statement

**Constantinos M. Kokkinos:** Conceptualization, Resources, Writing – review & editing, Project administration, Supervision. **Costas N. Tsouloupas:** Methodology, Writing – original draft. **Ioanna Voulgaridou:** Formal analysis, Visualization.

## Declaration of Competing Interest

All the authors declare that there is no conflict of interest.

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