



EXAMINING THE RELATIONSHIP BETWEEN DISTANCE LEARNING PROCESSES AND UNIVERSITY STUDENTS' ANXIETY IN TIMES OF COVID19

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Abstract:

Governments worldwide have implemented strict physical and social distancing measures to prevent contamination from the COVID-19 pandemic and flatten the epidemic curve. Recent findings show that university students have experienced increased anxiety and moderate-to-severe stress because of confinement measures (quarantine) (Husky et al., 2020; Islam et al., 2020). In Cyprus, universities switched to distance learning in mid-March 2020. The present research examined the social and academic challenges that university students are experiencing during the lockdown measures to contain the spread of the COVID-19 virus. We focused on assessing the students' stress levels while they were trying to adjust to distance learning and while, at the same time, balancing their jobs with their studies. We considered whether they lived with or separated from their family and friends during that time. Our study is a quantitative study with a sample of 80 students from Cyprus and Greece who attended a private university in Cyprus until November 2020. We collected our data using Beck's Anxiety Inventory and a self-report e-questionnaire, which we created especially for the purposes of our study. The instrument was generated using the Google Form, and shared through social media platforms. We analysed data with the chi-square test application to

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detect correlations between working and non-working students and students who lived with or away from their family network during the lockdown regarding their stress levels and their adaptability to distance-learning. Results indicated statistically significant positive correlations between employment, distance learning, students' anxiety and stress levels.

Keywords: Covid19, distance learning, stress, students, quarantine

1. Introduction

Cyprus implemented a nationwide lockdown to prevent further spread of the coronavirus (COVID-19) from Tuesday, March 24, through May (date) 2020. Individuals were banned from leaving their homes during the said period, except for short trips to pharmacies, supermarkets, or work requiring physical presence. However, already from March 16, 2020, universities in Cyprus (public and private) decided unanimously to implement emergency remote teaching to ensure that students would not remain idle and proceed with their studies despite confinement measures. Therefore, the conventional method (traditional face-to-face teaching) was replaced by distance, online teaching, and learning. College students, who had enrolled for conventional face-to-face courses, had to adjust rapidly to new teaching, learning, and assessment methods, as they were prohibited from attending not only classes but any university-related social activities.

Data relating to the effects of home confinement and social distancing on individuals' well-being are emerging rapidly, whereas recent findings indicate that home confinement has an initial impact on mental health, which weakens four weeks later (Wang, 2020a; Wang, 2020b). According to Auerbach et al. (2018), university students may constitute per se a vulnerable population for mental health problems due to challenges commonly associated with transitions to adulthood and the frequent economic and material difficulties of this population (Rubley, 2017). Watkins et al. (2004) proposed that even though learners may be successful in a conventional learning environment, that alone cannot guarantee a successful outcome in a distance-learning situation.

The present study examined students' levels of stress while coping with the challenges of e-learning, and while many of them were trying to balance work and online studies under extraordinary measures of confinement and physical distancing. In this scenario, our study raised questions such as (a) how do university students cope with anxiety and stress, especially if they are trying to balance online class attendance with a job? (b) how do students assess their adaptation to distance-learning classes, and what is their degree of satisfaction from this suddenly imposed mode of learning? (c) to what extent has their adaptation process to distance-learning influenced students' stress levels?

2. Literature Review

Stress is an unpleasant emotional state characterized by intense negative feelings, physical symptoms, and a feeling of anxiety for the future (APA, 1994). Most theorists agree that stress is associated with threatening or harmful events, typically characterized by unpleasant feelings and moods (Dougall & Baum, 2011). While some theorists have argued that stress could be potentially positive, most agree that it is an aversive state (Baum, 1990, Selye, 1956/1984).

On March 27, 2020, the World Health Organization warned that stress, anxiety, and fear would increase because of the COVID-19 pandemic situation (World Health Organization, 2020). The emergence and quick spread of the COVID-19 virus have disrupted practically every aspect of daily living, causing great insecurity and leaving devastating marks on people's psyches. The continuous loss of life, the restrictive physical and social distancing measures, the confusion in state protective mechanisms created unprecedented conditions of anxiety, ignorance, doubt, and uncertainty to which individuals are called to adapt to keep well (Demetriou et al., 2020).

Recent research showed that because of the COVID-19 crisis, suicide, domestic violence, mental disorders, anxiety, and depressive disorders had increased worldwide (Sifat, 2020). Studies across the world have demonstrated that the outbreak of the pandemic has caused intense emotions such as fear, sadness, sleep problems, panic attacks, psychosomatic symptoms, severe depression, social dysfunction, and increased anxiety (Pfefferbaum & North, 2020; Wang et al., 2020, Rajkuma, 2020, Cao et al., 2020; Shah et al., 2020; Brooks et al., 2020). Health experts estimate that about 300 million people suffer from panic and anxiety disorders and warn that our mental health could be at high risk (Shah, 2020) as isolation and physical distance remain a relatively recent phenomenon for many people.

A study of the Cyprus population during the first lockdown in Spring 2020 showed that more than a third of the participants (37.4%) reported a low quality of life. Moreover, 27,7% of the subjects suffered from insomnia/anxiety symptoms, 17,7% and 17.1% of the participants reported physical symptoms and experienced social dysfunction, respectively, while another 8.7% presented severe depression (Hadjicharalambous et al., 2020). According to Mei et al. (2011), public health emergencies are associated with many psychological effects on the general population, expressed as anxiety, fear, and dysfunction.

2.2. Distant-Learning during the COVID-19 lockdown measures

From March 16, 2020, universities in Cyprus (public and private) decided unanimously to implement emergency remote teaching to ensure students would proceed with their studies despite confinement measures. Therefore, the conventional method (traditional face-to-face teaching) was replaced by distance, online teaching, and learning. This new trend demanded technological adjustments, educators changing their workplace culture, and students changing their learning modes and strategies. An essential factor to

consider while implementing e-learning is whether the learners are ready and will thrive in an online environment (Guglielmino & Guglielmino, 2003; Watkins & Corry, 2004). Even though learners may be successful in a conventional learning environment, that alone cannot guarantee a successful outcome in a distance-learning situation (Watkins, Leigh & Triner, 2004). Students may face additional challenges under the extraordinary conditions of lockdown measures and physical distancing.

According to Zaheer et al. (2013), although there are benefits in distance learning, students also face fundamental challenges: Not having formal/regular classes that they can physically attend and discuss conceptual issues of different subjects, and the lack of social and emotional connectivity presents one of these challenges. The quality of education may be assessed on several dimensions. However, one of the most critical dimensions in education is the students' perspective, i.e., how do they perceive and evaluate the quality of the education they receive? This question becomes even more critical as we are dealing with distance learning under quarantine conditions and measures that prohibit physical interaction between students and teachers or between the students themselves. Moreover, let us note that most students participating in distance learning during the lockdowns from Spring 2020 up until now are students who did not enroll in distance learning courses but in conventional learning environments. Therefore, these students had to adapt very quickly to a learning system they did not choose. Students usually invest a significant amount of time, effort, and money to obtain a high-quality education; thus, their educational experience acquires excellent value.

Several factors contribute to users' satisfaction in an e-learning environment, which may include teacher, student, course, system design, technology, and environmental aspects (Arbaugh, 2002; Arbaugh & Duray, 2002; Chen & Bagakas, 2003; Lewis, 2002; Piccoli, Ahmad, & Ives, 2001; Thurmond, Wambach, & Connors, 2002). Student satisfaction is conceptualized as students' perception developed from the perceived value of education and experience gained at an educational institute (Astin, 1993). Powers & Rossman (1985) found that student satisfaction is highly influenced by peer interaction, student-faculty interaction, and a sense of academic inspiration of both the student and the students' peers. Satisfaction influences the motivation level of students (Chute, Thompson, & Hancock, 1999; Donohue & Wong, 1997), and this motivation has always been considered as one of the most important psychological factors in academic success (American Psychological Association [APA], 1997).

2.3. Student Stress during the COVID-19 lockdowns

Students are a particular population, going through a critical period of life and often experiencing stressful events (Buchanan, 2012). Whereas typically, students could be considered a healthy part of the population, due to their young age, a relatively frequent occurrence of physical and psychosomatic symptoms has been reported by students in many studies. As indicated in previous research, the academic life of tertiary education students can be quite stressful. Older studies (Uter et al., 2003) showed a high prevalence of headaches and nervousness in university students. Similarly, a study on Australian

university students reported that 53% of students suffered from psychological distress (Stallman, 2008). Three specific factors could play a role as stressors in this regard: those related to the evaluation processes, those related to work overload, and other conditions of the teaching-learning process, such as social relations, the teaching methodology, and organizational components. Recent studies show that the effect of contextual factors, such as the COVID-19 pandemic, could have aggravated students' stress, thus negatively affecting the teaching and learning process (Ruiz-Robledillo et al., 2020).

All tertiary education institutions in Cyprus have been closed to students for an unprecedented time (March to June 2020, September, mid-October to February 2020), with very brief intervals of onsite, conventional operations. In general, such closure triggers a sense of uncertainty amongst students regarding academic matters and intensifies persistent mental health challenges among the student population (Hossein et al., 2019). Difficulties in access or lack of equipment (laptop, tablet, or other devices) could cause academic stress in students who find themselves unable to access their online classes or submit their assignments on time, with the risk of falling behind their peers in their academic progress. Fegert et al. (2020) reported symptoms of depression, anxiety, and even suicidal thoughts or attempts triggered by academic stress and uncertainty regarding the future.

Even before the COVID-19 pandemic and the implementation of lockdown measures to contain the spread of the disease, researchers explored stress factors and their effects on distance-learning students, as this form of learning is characterized by the lack of physical presence and, therefore, lack of face-to-face contact with teachers and other students (Vergides, 1998). Most of the assessment is possible only by submitting written assignments, and projects, a fact that seems to escalate student stress (Leontarakis, 1998). Older studies show that stress related to distance-learning on both the cognitive and the emotional level is closely associated with student performance (Jegete & Kirkwood, 1994). The research of Petroyiannis with Greek university students (2013) showed that those enrolled in distance-learning classes faced various difficulties and expressed the need for professional support when facing the following: anxiety related to final exams, lack of time-management skills, fear of failure, fear of not achieving educational goals, difficulties in organizing study times and financial concerns, reduction of income, unemployment and professional uncertainty. On the other hand, very recent research conducted in China among medical school undergraduate students indicated that only a minority of students (2.7%) reported moderate or severe anxiety (0.9%) during the pandemic (Cao et al., 2020). Husky and associates (2020) reported that students living with their parents exhibited significantly lower rates of severe stress, while Cao et al. (2020) showed that living in rural areas and not having a steady income while having acquaintances infected with the COVID-19 virus increased the risk of severe anxiety.

3. Method

Our study was designed as a quantitative online survey. The survey took place in the Fall/November of 2020, during the second lockdown and social distancing measures imposed by the State in both Cyprus and Greece due to the outbreak of the second wave of the COVID-19 pandemic.

3.1. Sample

The participants were 80 men and women, all students at a private university in Cyprus, and all Greek-speakers. Specifically, the sample consisted of 74,3% women and 25,7% men. The overrepresentation of women might be due to the fact that the majority of our respondents came from departments where women are traditionally overrepresented, i.e. Psychology, Primary and Pre-primary Education and Social Work. The majority of the participants (75,7%) belonged to the age group 18-25 years, with 12,2% in the age groups 25-30 and over 30 years of age. Most of the students came from Cyprus (65%), 29,7% originated from Greece, and 5,4% came from other countries. The majority of the participants (58,1%) had jobs, thus combining work and studies, whereas 41,9% did not work at the time of our survey. The working students' sample was almost equally divided to those who worked full-time (28,4%) and those who worked part-time (29,7%).

3.2. Procedure / Data Collection

We adopted a web-based survey design and obtained approval for this research from the Psychology and Social Sciences Department at Frederick University. The questionnaire was created through Google-forms and was posted for just two consecutive days on Social Media platforms such as Facebook and Twitter. A short, introductory note informed the participants about our study's purposes before they were asked to complete the survey itself. The introductory note also included brief instructions regarding the Likert-scales. Participants completed 49 items as follows: A Personal Information Form (PIF), Beck's BAI questionnaire (Beck, 1993) and a specially designed self-report questionnaire consisting of 10 items to assess student's adaptation to distance-learning classes.

3.3. Instruments

Our questionnaire consisted of two parts. The first part was a Personal Information Form, whereas six items (Items 1-6) regarded age, gender, place of residence, area of studies, employment and hours of work per week. Following the PIF, five items (7-10,15, 16) addressed the student's ability to adapt to the new distance learning methods of teaching and learning, the daily number of hours that they attend online classes, their workload and their general opinion on distance-learning. Items 11-14 addressed non-Cypriot student (Greek or other nationality) in regards to whether they spent the lockdown with or away from their families. In part II of the questionnaire, we assessed stress levels by applying Beck's Anxiety Inventory (BAI) (Beck, 1993). The questions used in this measure

concern the common symptoms of anxiety experienced by the subject over the past week (including the day a person takes it) (i.e. sweating not due to heat, numbness and tingling, and fear of the worst happening) (Osman et al., 2002). It is designed for 17 years of age or older and takes approximately 5 to 10 minutes to complete. Several studies have found that the Beck Anxiety Inventory is an accurate measure of symptoms of anxiety in children and adults. Respondents reported the extent to which they have experienced each of the 21 symptoms in the week preceding their BAI completion. For every symptom item there are four possible answer choices: Not at All; Mildly (It did not bother me much); Moderately (It was very unpleasant, but I could stand it), and; Severely (I could barely stand it). The researcher assigns the following values to each response: Not at All = 0; Mildly = 1; Moderately = 2, and; Severely = 3. When each item's values are summed, they give an overall or total score for all 21 symptoms, which ranges that between 0 and 63 points. A total score of 0 - 7 is interpreted as a "Minimal" level of anxiety; 8 - 15 as "Mild"; 16 -25 as "Moderate," and; 26 - 63 as "Severe." The BAI is considered a psychometrically sound instrument. Internal consistency (Cronbach's alpha) ranges from .92 to .94 for adults and test-retest (one-week interval) reliability is .75. BAI has also been shown to have acceptable reliability and convergent and discriminatory validity for both 14-18 years and for both inpatients and outpatients. (Beck, Epstein, et al., 1988).

3.4. Data Analysis

We conducted our data analysis by utilizing the SPSS 25.0 package program. Data analysis included descriptive statistics as mean, standard deviation, frequencies, percentage to describe participants' and their characteristics. For the examination of our research questions, we applied the statistical t-test analysis, one-way MANOVA, standard deviation, one-way ANOVA to compare means between working and non-working students, students who adapted or not to distance-learning methods, and students who lived with or away from their family network during the lockdown in regards to their stress levels

4. Results

The exploration of our first research question, namely the extent to which students experience stress while trying to balance attending classes online and their jobs during the COVID-19 era our data analysis showed the following significant tendencies. Results, deriving from the application of Beck's Anxiety Inventory, showed that one-third of our students (33,8%) recorded high levels, 56,8% moderate, and 9,5% low stress. Young women exhibited significantly higher levels of stress compared to the men of our sample. Of the 33,8% of the participants with acute anxiety, 76% were women, and 23,8% were men, and out of the 56,8% of the students with moderate stress, 76,2% were women, and 23% were men.

Working students experienced more anxiety than those who did not combine studies with work. Specifically, 41,5% of the employed students reported high anxiety levels compared to 24.2% of those who were unemployed at the time. We detected a statistically significant difference between working and non-working students regarding three variables of Beck's Anxiety Inventory, namely: "Difficulty in breathing" [$F(2,79) = 16.352, p < 0.001$]; data showed that students working full-time jobs ($M=1.83, SD=1.04$) felt more stressed out, and experienced more frequent difficulty in breathing than those who did not work at all ($M=1.36, SD=0.54$). Another statistically significant difference between working and non-working students appeared in the variable "Feeling Nervous" ($F(2,79) = 2.233, p < 0.05$). Working students reported more nervousness ($M=1.89, SD=0.99$) than those who did not work ($M=1.33, SD=0.58$). Additionally, working and non-working students showed a statistically significant difference in the variable "Inability to relax" [$F(2,79) = 2.345, p < 0.05$]. Working students had more frequent difficulty relaxing ($M=1.81, SD=0.82$) than those not working ($M=1.22, SD=0.45$) while pursuing their studies.

Moreover, the number of work hours seems to have significantly affected the students' level of stress: In our sample of students working full-time jobs, 47,6% experienced higher anxiety levels than those working only part-time (31,8%). We also detected a statistically significant difference between students working full-time and those working part-time jobs in four variables of the BAI, namely: "Feeling of choking" [$F(2,45) = 2.866, p < 0.05$]; indeed, students in full-time employment ($M=1.95, SD=1.11$) seemed to experience more frequently the feeling of choking than those working fewer hours per week ($M=1.45, SD=0.80$). Furthermore, students holding full-time jobs reported feeling significantly more "Terrified" [$F(2,45) = 4.463, p < 0.05$] and even more "Afraid" ($M=1.86, SD=0.91$) than part-timers ($M=1.31, SD=0.56$). Similarly, we found another significant difference between full- and part-time working students in the variable "(feeling) Dizzy or lightheaded" [$F(2,45) = 3,21, p < 0.05$], whereas full-timers ($M=1.91, SD=0.99$) experienced more symptoms of anxiety, such as dizziness than part-timers ($M=1.40, SD=0.79$). The fourth symptom of anxiety, which appeared to be more frequent amongst working students, was "Numbness or Tingling" [$F(2,45) = 6.322, p < 0.05$]. In this case, fully employed students displayed the symptom more frequently ($M=1.76, SD=0.83$) than part-timers ($M=1.31, SD=0.56$).

For exploring our second research question, namely the students' degree of satisfaction from distance-learning classes and their ability to adapt to distance learning, we analysed data from items 7-16 in our questionnaire. Item 16 assessed their overall opinion on distance learning. More than half of our students (55%) stated that "distance learning is not always easy, but I am adapting to it," 25% took an opposing stand to it by choosing the option "It is impersonal and tiring," and 20% of our sample took a positive stand by responding with the option "I prefer it to physical presence." Item 15 addressed issues regarding the subject matter, i.e., whether students felt that distance-learning covered the entire subject matter of their courses. The majority of our students (58,3%) chose the option "rather yes, but I prefer classes with a physical presence," and 26,7% stated that they found no difference between the two alternative teaching and learning

methods. However, 15% of our subjects gave an utterly negative response by choosing the option "not at all, I have deficiencies with online learning." Item 10 explored whether adaptation to distance-learning was related to students' perceptions of their workload. We detected statistically significant differences between students who had adapted quickly to online classes and those who had difficulties with distance learning teaching methods in the variables "Increase in academic obligations" [$F(2,79) = 4.586, p < 0.05$], and "Deficiencies in subject matter" [$F(2,79) = 1.598, p < 0.001$]. Students who had adapted quickly to online teaching and assessment methods felt that their academic obligations had not increased because of distance-learning ($M=2.13, SD=58$) and that they had no deficiencies in the subject matter of their courses ($M=2.38, SD=0.69$) in comparison to those with adaptation difficulties ($M=2.66, SD=0.51$) who felt that their load of work had increased and that the subject matter had not been covered ($M=1.70, SD=0.58$).

Our findings regarding our third research question, namely whether the process of adaptation to online classes contributed to increased stress levels, yielded significant differences in the stress symptoms between students who had adapted to distance learning and those who were still struggling with it [$F(2,79) = 15.976, p < 0.000$]. Those who reported a more straightforward adaptation to distance-learning methods reported fewer stress symptoms ($M=27.44, SD=8.17$) than those who were still experiencing difficulties ($M=43.25, SD=15.55$), who stated that they had more fear, difficulty in breathing, sweating, dizziness, and the feeling of asphyxia.

However, we found that students' stress experience was significantly related to the number of hours they participated daily in online classes. I.e., students with 0-2 hours online classes reported 28,6% high and 14,3% low anxiety; those with 3-5 hours of online classes per day reported 32,1% high and 10,7% low stress. Students who participated in online classes for more than five hours per day showed the highest stress levels; namely, 45,5% reported high-stress levels. The differences became more apparent in the frequency of specific stress symptoms; students who participated in online classes for only 0-2 hours daily showed significant differences regarding "Difficulty in breathing" [$F(2,79) = 2.545, p < 0.05$] and "Feeling faint" [$F(2,79) = 5.223, p < 0.01$]. Students who had two or fewer online hours had less frequent episodes of difficulty breathing ($M=1.38, SD=0.44$) and feeling faint ($M=1.35, SD=0.52$) than those with five or more hours of online presence daily.

A factor that appeared to moderate stress levels and the adaptation to distance-learning appeared to be the students' place of residence. Indeed, the differences in general stress levels between non-Cypriot students who were unable to return to their home and family and those who went home were significant [$F(2,31) = 2.890, p < 0.018$]. Students who went back to their families during the lockdown reported percentages of 35,3% high, 58,8% medium, and 5,9% low-stress levels. Those who stayed away from their home and family during the lockdown showed 21,4% high, 64,3% medium, and 14,3% low-stress levels. We detected significant differences between the two groups in regards to their "Feelings of terror" [$F(2,31) = 3.668, p < 0.005$]. Students who resided with their families felt less terror ($M=1.35, SD=0.49$) than those who stayed away from family networks

($M=1.88$, $SD=0.90$). Similarly, students who during the lockdown resided with their families experienced a more painless adaptation process to distance-learning [$F(2,31) = 2.255$, $p < 0.01$] as opposed to those who did not. Students who could return to their families adjusted to distance learning with more ease ($M=1.86$, $SD=0.86$) than those who did not ($M=1.22$, $SD=0.52$).

5. Discussion

While still mostly undocumented, the Covid-19 pandemic may impact mental health through direct threats to the individual's health and the indirect effects of public health policies and containment efforts (Husky, 2020). Imposed quarantine requires separation of the person from friends and significant others and avoiding usual everyday routines with other people. In another context, like in a correctional setting, this practice is a form of punishment that can cause psychological problems. Some of the identified aspects that trigger this problem include loss of freedom, boredom, physical movement constraints, and other factors limiting individual liberty (Brook et al. 2020, Sahu et al. 2020; Li et al. 2020; Altena et al. 2020). Although physical distancing/quarantine measures were deemed necessary from a public health standpoint, understanding their impact on various populations requires extensive investigation. Our study contributes to this issue by examining the stress levels during COVID-19 lockdown among Cypriot and Greek university students while they were, and still are, trying to adjust to distance learning and, while at the same time, balancing their jobs with their academic studies.

We compared the stress levels between groups of students who had jobs at the time with those who did not and students who experienced the COVID-19 lockdown separated from their familiar networks. Our findings from the application of Beck's Anxiety Inventory showed that one-third of our students experienced high stress levels while more than half of the participants experienced medium stress during the lockdown time and the quarantine. Our participating working students experienced significantly more anxiety and stress than those who did not have to juggle studies with work, manifested in somatic symptoms, such as difficulty in breathing and general nervousness. At the same time, working students reported an inability to relax. Female participants reported higher levels of anxiety in comparison to the male students of our sample. In an older study in Greece, Georgas and his associates (1984) (Georgas & Giakoumaki, 1984; Georgas et al., 1984) focused on the effects of stress and anxiety of potentially stressful events in Greece on psychosomatic and psychological reactions. Regarding college students, psychosocial stress was related to physical symptoms and manifested anxiety only in females (Georgas & Giakoumaki, 1988). Findings by Kounenou and associates (2005) reported that students' general anxiety level revealed differences between males and females in terms of trait anxiety, whereas female students scored higher than males in trait anxiety. Jones et al. (2003) also claimed that women, compared to men, appeared to react more anxiously in situations that evoked an anxious response (Jones, Zachariae, & Arendt-Nielsen, 2003). Our findings of high stress levels

are similar to those of a recent study conducted in Pakistan. Asif and her associates (2020) found that the frequencies of depression, anxiety, and stress among university students were 75%, 88.4%, and 84.4%, respectively. Their findings revealed that anxiety was the most prevalent issue with the highest percentage, 88.4%, followed by stress as the second most prevalent problem, with 84.4% among university students in Sialkot. A significant factor in student's stress levels might be the number of hours they invested in their jobs. Indeed, students working full-time jobs exhibited significantly higher stress levels than those working only a few hours per week. Fully employed students reported a more frequent appearance of fear, dizziness, and numbness than those that were not employed or worked part-time during the lockdown. On the other hand, Islam et al. (2020) have pointed to the disruption of regular income and employment as a critical factor in understanding the increased prevalence of depression and anxiety in university students. Since a significant number of students work part-time jobs to finance their tuition fees, prolonged unemployment, leading to financial insecurity, seems to be one of the most significant stressors contributing to the increased rates of depression and anxiety.

The COVID-19 pandemic accelerated the education sector's shift toward online learning as students' gathering was forbidden. The situation has been a challenge for teachers and students, and the implementation of online methodologies may have harmed teaching-learning processes, increasing students' stress levels. The exploration of our second research question regarding the students' adaptation to and satisfaction from distance-learning classes showed that although more than half of the population we examined found online classes difficult, they were on the way to adjusting to them. At the same time, 25% of our participants either completed rejected or accepted distance-learning, respectively. Students who reported a relatively quick adaptation to online teaching and assessment methods felt that their academic obligations had not increased because of distance-learning. In fact, they reported no deficiencies in their courses' subject matter, contrary to those with adaptation difficulties, who felt that their load of work had increased and that the subject matter had not been covered. Our findings are similar to a longitudinal study by Roblettillo et al., (2020) indicating that the most stressor domains influenced by the COVID-19 lockdown measures have been those related to the methodological characteristics of teacher, students' feelings of overload, and beliefs about academic performance.

It seems that the process of student adaptation to online classes contributed to the increase in their stress levels. We found significant differences in the stress symptoms between students who had adapted to distance-learning and those who were still struggling with it. Those who reported a more straightforward adaptation to distance-learning methods reported fewer stress symptoms than those still experiencing difficulties. They also reported the more frequent appearance of psychosomatic symptoms such as fear, difficulty in breathing, sweating, and dizziness, and the feeling of asphyxia. Previously, increased exposure to smart devices and screens has been reported to increase stress and burnout levels (Mheidly et al., 2020). It is often argued that exposure to computer and smartphone screens is associated with many stress-related

symptoms, while age and exposure time also seem to play a role. Electronic media usage at night among adolescents was associated with decreased sleep duration and increased depressive symptoms (Lemola et al., 2015). Additionally, according to Visnjic et al. (2018), the duration of exposure further impacts stress and anxiety levels. Indeed, participating students who had more than five (5) hours of online classes daily reported higher stress levels and the more frequent appearance of symptoms such as difficulty in breathing. Visnjic's results have shown that mobile devices' intensity and modality can influence the development of mental health problems in the university student population. Madhav and associates also showed that increased online activity amongst a cohort of 3,201 US students was associated with moderate-to-severe depression (2017).

A possible moderating factor to students' stress during the lockdown(s) seems to be related to whether students resided with their families or away from them. For the last decades, several studies have shown that perceived social support contributes to health by protecting individuals against the adverse effects of various stressors (Lakey & Cohen, 2000; Uchino, 2004). Indeed, students who resided with their families during the lockdown had significantly lower stress levels than those who did not; in fact, the students who were surrounded by family reported less frequent terror symptoms than the students who were living alone during that time. Furthermore, students who were able to return to their families adjusted to distance learning with more ease. Several studies indicate that contextual factors influence perceptions of support, with actual helping behaviors linked to higher levels of perceived support (Kaul & Lakey, 2003) and high levels of stress linked to lower perceived support levels (Norris & Kaniasty, 1996). Recent findings by Husky and associates (2020) with a French university student sample are similar to our results. While 60.2% of their sample reported that their stress levels had increased from the beginning of the confinement period, students who remained at their dorms were more likely to report such increases than those who stayed with their parents. Moderate to severe life stress was increased in the overall sample (61.6%). In contrast to those who did, an exceptionally high percentage of students who did not move back with their families (71.6%) reported general stress at moderate or extreme levels. University students who did not move also reported higher stress levels in the financial and personal health domains for particular life domains. It seems that positive family environments often benefit the vulnerable youth's mental health experiencing depression or anxiety (Blustein, 2019).

6. Conclusion

The Covid19 pandemic is still an ongoing challenge for public health all over the world. Apart from the high mortality rate, research shows a spike in psychological outcomes such as anxiety and depression among people of all ages. University students are no exception as tertiary institutions have closed for a prolonged time both during the first and during this second "wave" and consequent lockdown. In general, such closure creates a sense of uncertainty about academic issues and may exacerbate mental health

challenges among university students. Issues may intensify mental health challenges among university students (Hossain, 2019; Mei, 2011). Social distancing, especially for such prolonged periods as we are currently experiencing, brings fear and uncertainty, physical discomfort, loneliness, depression, anxiety, and stress (Leite et al., 2020, Karen and Cathy, 2020, Xiang, 2020) that may have a detrimental effect on the teaching-learning process in tertiary education. Under these circumstances, our primary goal in this study was to investigate the stress levels of university students in Cyprus and explore factors such as employment and family support on students' anxiety and their adaptability to distance-learning methods of teaching, learning, and assessment. Based on the results we obtained, the extraordinary measures of quarantine and social distancing have taken a toll on undergraduates' stress levels in the university context. University students trying to balance work and academic responsibilities displayed higher stress levels than their non-working peers. Higher levels of stress were also reported by students who experienced the lockdown away from their families than those who had the reassurance of their family network. More than half of our students expressed difficulties adjusting to the imposed distance-learning, with stress levels rising among students who spent more than five hours a day on online learning activities and those who were not supported by positive family environments. The information gained by this study adds initial insight to the stressor domains of students indicating feelings of anxiety and overload due to social distancing and the inevitable implementation of distance-learning. It clearly shows the need to investigate further the psychological effects of the lockdown measures on university students. However, at the same time, it evidences the need to adapt academic tasks to prevent overload and negative beliefs regarding academic performance in distance-learning.

6.1 Limitations

The first limitation regards the number of participants, as this study has a sample of 80 students. Data was obtained in a brief period of time while students were in the midst of experiencing intense feelings following the second wave of the pandemic and the second period of the state-imposed physical distancing measures. In this respect, results cannot be generalized unless they are confirmed by applying the instruments to a larger sample. A second limitation in our research is that, similar to other studies, our research pool is overrepresented by women. The majority of students who responded to our questionnaire, came from areas of study that traditionally attract more women than men (Psychology, Primary and Pre-primary Education and Social Work). A third limitation to our research might be that apart from the PIF, one of the instruments we applied was a self-report questionnaire. As with any research using quantitative data and measures, it was assumed that participants' responses were reliable and honest, but this cannot be confirmed. Last but not least, our study was conducted exclusively with the students of one private university. It should be better understood as representing a selected group of students' experiences but cannot be generalized to all Cypriot university students.

Acknowledgements

The authors are grateful to the students who took part in this project.

Conflict of interest

The authors declare no conflicts of interest.

Authors' contribution

All authors contributed equally to the conception and writing of the manuscript.

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