International Journal for the Advancement of Counselling (2023) 45:634–650
https://doi.org/10.1007/s10447-023-09514-3

ORIGINAL ARTICLE

Mental Health Problems Among Graduate Students in Turkey: a Cross-Sectional Study

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Accepted: 22 May 2023 / Published online: 3 June 2023

Abstract

In this study, depression/anxiety and academic distress were investigated among graduate students in Turkey. The study sample comprised 459 graduate students who voluntarily completed an online survey (294 women, 64%). Independent *t*-tests and multivariate analyses were performed to examine group differences. The results confirmed that depression/anxiety and academic distress scores varied according to sociodemographic variables. Whereas depression/anxiety and academic distress did not show significant differences in terms of gender and place of residence, students who had previously sought psychological help had higher levels of depression/anxiety and academic distress. Younger age, being a master's student, and being single increased the risk of having higher levels of depression/anxiety and academic distress. University counseling centers may benefit from these findings in efforts to identify graduate students at risk and apply appropriate prevention and intervention strategies.

Keywords Mental health · Graduate students · Depression · Anxiety · Academic distress

Introduction

The depiction of mental health problems among graduate students is challenging due to the lack of research on their mental health and limited research samples particularly involving graduate student populations (Garcia-Williams et al., 2014). However, graduate students suffering from significant psychological problems identified an increasing demand for help and support from the mental health services (Evans et al., 2018). Academic distress (Bork & Mondisa, 2019; Charles et al., 2022; Cheng et al., 2020), depression (Beiter et al., 2015; Bolotnyy et al., 2022;

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Jones-White et al., 2022; Levecque et al., 2017; Rummell & Joyce, 2010; Satinsky et al., 2021), and substance use (Allen et al., 2020; Satinsky et al., 2021) are the most common mental health problems among graduate students. Evans et al. (2018) found that depression and anxiety were experienced among graduate students at rates six times higher than those of the general population. These problems do not only represent significant mental health issues; they also impact students and universities in many areas including student health and wellbeing, safety, academic performance, and productivity (Wyatt & Oswalt, 2013).

Previous studies indicated that graduate students are at risk of various mental health problems, and a variety of factors including academic responsibilities, financial issues, stress, and isolation contribute to the development of these problems (Casey et al., 2022; Park et al., 2021). Upon graduation from university, students will face many challenges that may be overwhelming, and addressing these changes may be psychologically troublesome and play a significant role in their well-being (Cage et al., 2021). First, graduate students are more likely to be isolated from campus life and the community, remaining more limited to the circles of their graduate programs and professors for research and other opportunities (Boyle & McKinzie, 2021). Heavy demands of graduate programs such as coursework, publishing, and teaching can produce high levels of stress among graduate students (Charles et al., 2022). As a result, they may experience unpredictable durations of study, financial problems, academic hardships, and an inclination to drop out of programs (Satinsky et al., 2021; Woolston, 2018). Overall, graduate students are more likely to experience anxiety and depression compared to the general public (Becerra et al., 2021; Di Pierro, 2017). In one study, graduate students recognized that their well-being worsened over the course of their graduate work (Bernstein et al., 2021). Furthermore, graduate students appeared to be at high risk of suicidal thoughts and behaviors; according to various studies, an estimated 15% of graduate students have a lifetime history of serious suicidal ideation or self-harm, while 7.3% have a history of suicide attempts in the past 2 weeks (Becerra et al., 2021; Bernstein et al., 2021; Drum et al., 2009; Garcia-Williams et al., 2014). Similarly, Charles et al. (2022) indicated that over a third of students sought help for either anxiety or depression during graduate training. However, while trying to balance academic and professional demands on top of family and career responsibilities, these students may ignore their mental health (Allen et al., 2021). Longfield et al. (2006) indicated that the intense schedules associated with graduate school affected their participants' relationships with friends and significant others. Participants identified difficulty scheduling time to spend socially and often had to plan social events far in advance. Casey et al. (2022) indicated that graduate students limit their enjoyable professional development opportunities or hobbies outside of their research because of their various responsibilities and workload in the program. In other words, graduate students' academic responsibilities may be an obstacle to satisfying social relationships, and the lack of social relationships in turn may further increase the possibility of psychological problems. The determinants of mental health include physical and psychological characteristics as well as interpersonal and social environments (Arria et al., 2013). Good mental health entails not only the nonexistence of disease or disorder; it also includes self-respect, mastership, and the skill of maintaining meaningful

relationships with others (Turner & Brown, 2010). Finally, many graduate students face interpersonal struggles such as self-efficacy in reaching significant positions in society (Panger et al., 2014) and living in a constantly competitive environment (Okoro et al., 2022; Rummell, 2015), which might also be risk factors for students' well-being. The effects of competitive environments between individuals, which arise due to economic and social variables, are clearly seen not only in business life but also in educational life, and especially among postgraduate students. Graduate students generally think seriously, work independently, and take on heavy teaching responsibilities together with their academic studies, which can cause high levels of stress, anxiety, social isolation, and self-doubt (Allen et al., 2021). Thus, mental health in early adulthood is linked to social commitment, academic performance and maintenance, and future economic productivity (Arria et al., 2013). In sum, the personal and professional resources in graduate students' living conditions, education, income, employment, access to social resources, social support, and personal competencies (Lipson et al., 2016) can all be risk factors or protective factors for their well-being.

Mental health and stress can affect graduate and undergraduate students differently (Wyatt & Oswalt, 2013). Graduate students' stress levels may be higher and more complex than those of undergraduate students. According to Wyatt & Oswalt (2013), stress levels were found to be higher among graduate students than undergraduate students in the last 12 months, and 74% of graduate students were very likely to seek mental health care in the future compared to 65% of undergraduate students. Levecque et al. (2017) found that psychiatric problems were more common among doctoral students than in the general population with a bachelor's degree. Drum et al. (2009) explored suicidal thoughts in their research, noting that, despite the high rate of undergraduates who seriously consider suicide attempts, graduate students also think of suicide. Specifically, Drum et al. (2009) stated that 49% of those seeking psychological counseling help were graduate students while 44% were undergraduate students, and 19% of undergraduate and 21% of graduate students received help. Evans et al. (2018) found that graduate students experienced depression and anxiety at rates six times higher than those seen in the general population. Not only do graduate students experience more serious mental health problems than undergraduate students, but there are also significant differences among graduate students by discipline due to discipline-relevant risk factors. Graduate students in arts and humanities are particularly at risk for various mental health problems (Allen et al., 2020; Chirikov et al., 2020; Hyun et al., 2006). Business students reported higher rates of stress-related problems than medical school students (Dahlin et al., 2011). A significant percentage of psychology graduate students reported severe symptoms of anxiety, moderate to severe depression, and suicidal intent (Hobaica et al., 2021). Compared to other graduate students, doctoral students in economics experienced lower rates of anxiety and depression symptoms (Bolotnyy et al., 2022). Allen et al. (2021) indicated that professional doctoral students (i.e., MD, JD, etc.) experienced higher stress levels and moderate or severe anxiety symptoms than academic doctoral students. Similarly, research doctoral students experienced higher rates of major depressive disorder and generalized anxiety disorder compared to students in other types of graduate and professional programs (Chirikov et al., 2020).

Overall, these results present the severity of mental health problems among graduate students.

Mental health problems among both undergraduate and graduate students vary according to sociodemographic factors such as gender, age, race, employment status, relationship status, level of education, faculty, and history of seeking psychological help. Other individual features such as life satisfaction, social support from academic advisors and family, career expectations, and physical health also have impacts on their mental health and overall well-being (Panger et al., 2014). Research findings indicated that female students have higher levels of depression (Bolotnyy et al., 2022; Deng et al., 2021; Eisenberg et al., 2013), emotional distress (Hyun et al., 2006), and anxiety (Barton & Bulmer, 2017; Bolotnyy et al., 2022; Deng et al., 2021) than male students. Similarly, international students and members of minority groups are at higher risk of developing psychological problems compared to non-international and non-minority students (Eisenberg et al., 2013; Hobaica et al., 2021). While depression was common among international students, one study found rates of anxiety to be higher among US citizens (Barton & Bulmer, 2017). Being a doctoral student also increased the risk of developing a mental health problem, and undergraduate and master's students were less likely to develop severe problems than doctoral students (Chirikov et al., 2020; Guo et al., 2021; Wyatt & Oswalt, 2013). Students with previous history of seeking psychological help (Zivin et al., 2009), those of lower socioeconomic status (Chirikov et al., 2020; Hefner & Eisenberg, 2009), and those who were single (Barton & Bulmer, 2017) were reported to be more vulnerable to developing psychological problems. Overall, research findings supported the idea that students' sociodemographic characteristics might increase their possibility of developing psychological symptoms; however, further research is needed to replicate previous findings with different samples.

In the present study, we aimed to investigate mental health problems among graduate students in Turkey, comparing the prevalence of mental health problems in terms of gender, age, place of residence, level of education, relationship status, employment status, and history of seeking psychological help. Although there has been increasing research on graduate students' well-being, the majority of the studies to date were conducted in European and North American countries. Comprehensive research reviews (Satinsky et al., 2021) and meta-analyses (Guo et al., 2021) provided solid evidence that graduate students' well-being has not been examined globally. Conducting such research in developing countries where graduate students have more limited resources, support, and freedom may generate valuable and significant results. Furthermore, graduate students' mental health problems have become an important concern, but more research is still needed to describe the prevalence of mental health problems among this population (Jones-White et al., 2022). For instance, undergraduate students' well-being (Parvizi & veÖzabacı, 2022), mental health problems (Doğan, 2018), and help-seeking behaviors (Doğan, 2012; Topkaya et al., 2020) were the subject of many studies in Turkey, yet few studies examined these topics with graduate students. Unfortunately, these studies seem to be rather general and descriptive; including problems such as academic, social, and economic (Balı & Dönmez, 2018; Karadağ & Özdemir, 2017; Özmen & Güç, 2013). A larger body of literature

on the mental health problems of graduate students will provide valuable information for planning and implementing the necessary psychological services through university counseling services.

We are looking for answers to the following research questions:

1. Do graduate students' depression/anxiety levels significantly differ in terms of gender, age, place of residence, level of education, relationship status, employment status, and history of seeking psychological help?
2. Do graduate students' academic distress levels significantly differ in terms of gender, age, place of residence, level of education, relationship status, employment status, and history of seeking psychological help?

Method

Participants and Procedures

The research participants consisted of 459 graduate students (294 women, 64%) from various universities in Turkey (see Table 1). Only two students defined themselves as LGBTQ+. In terms of the level of education, 264 were master's students, 125 were doctoral students, and 70 were medical science graduate students. Regarding the fields of study, 122 were studying medical sciences, 33 natural sciences, and 304 social sciences. While master's and doctoral students were studying in various fields such as education, engineering, psychology, literature, and business, medical science graduates (doctors, dentists) were doing their residency during the data collection process. Most of the medical graduate students were doctors. The majority of the students (70%) lived in the same city where their universities were located, while the rest of the students lived in a city other than that of their institution. While 29% of the participants were working as graduate assistants for the same institution, 29% were working in government institutions, 17% were employed in the private sector, and 25% were unemployed at the time of data collection. Approximately, a quarter of the participants were married, 38% were not in a relationship, and 37% were in a relationship. In terms of ethnic diversity, 90% of the sample was Turkish and the rest consisted of other ethnic backgrounds.

Prior to data collection, ethical approval was obtained from the Institutional Review Board of (masked for blind review) University (29/09/2020-E.28915). Upon the approval of the ethical committee, the online survey was sent to the graduate institutions to share with their students. A couple of large-scale universities were chosen in this regard, and the form was shared. The online survey was also distributed on social media accounts. Participation in the study was voluntary, and data collection was performed through an online survey. The participants read an online consent form, agreeing or refusing to participate, prior to the survey. The convenience sampling method was used for this research.

Table 1 Demographic characteristics of the sample and descriptive statistics

Variables	*n*	%	Depression/anxiety		Academic distress	
			Mean	SD	Mean	SD
Gender						
Female	294	64.1	43.7	12.5	16.53	3.22
Male	165	35.9	42.44	13.2	16.03	2.92
Age						
20–24	75	16.3	46.54	14.02	17.39	3.08
25–29	216	47.1	44	12.95	16.24	3.11
30 +	168	36.6	40.82	11.46	16.03	3.07
Level of education						
Master's	264	57.5	44.33	12.69	16.77	2.98
PhD	125	27.2	43.21	13.14	16.34	3.23
Medical expertise	70	15.3	39.26	11.57	14.81	2.99
Faculty						
Social Sciences	304	66.2	44.72	12.91	16.8	3.06
Natural Sciences	33	7.2	42.17	12.2	16.03	3.12
Medical Sciences	122	26.6	39.89	11.9	15.31	3.04
Employment status						
Graduate assistantship	132	28.8	40.73	11.91	15.76	3.24
Government institution	133	29.0	41.49	12.29	16.14	2.97
Private sector	80	17.4	44.7	13.8	16.76	3.18
Unemployed	114	24.8	47.2	12.5	17	2.97
Place of residence						
The same city with the university	314	68.4	42.98	12.81	16.23	3.14
Different city	145	31.6	43.84	12.63	16.61	3.08
Relationship status						
Have a relationship	117	25.5	42.23	12.1	16.63	3.17
Married	170	37.0	40.77	12.09	15.86	3.02
Single	172	37.5	46.4	13.22	16.66	3.14
History of psychological help						
Yes	127	27.7	46.27	12.51	16.93	3.18
No	332	72.3	42.1	12.67	16.13	3.07

$N = 459$

Instrument

Counseling Center Assessment of Psychological Symptoms (CCAPS)

The Counseling Center Assessment of Psychological Symptoms (CCAPS) is a multidimensional scale developed by Locke et al. (2011) to assess psychological symptoms among university students during intake, ongoing, and termination

appointments. The CCAPS can also be used to assess general mental health problems among university students. In the original instrument, there are 62 items scored on a 5-point Likert-type scale from 0 (*not at all like me*) to 4 (*extremely like me*) and eight subscales: depression, generalized anxiety, social anxiety, eating concerns, hostility, family distress, academic distress, and substance use. The factor structure of the scale has been tested with various samples in the USA (Ghosh et al., 2022; Locke et al., 2011, 2012; McAleavey et al., 2012; Nordberg et al., 2018; Youn et al., 2015) and in other cultures as well (Börkan & Ünverdi, 2023; Horita et al., 2020; Pau et al., 2017; Ratanasiripong et al., 2015), and these studies supported the factor structure of the scale as well as its validity and reliability. The Turkish adaptation of the scale was completed by Börkan and Ünverdi (2023), and the factor structure of the scale was confirmed in the same study. The depression and anxiety subscales were combined into a single subscale, and a fear subscale was also added. Academic distress can be defined as the students' reactions (bodily, emotional, psychological, etc.) to academic demands that exceed their potential.

Data Analysis

The data were analyzed with IBM SPSS Statistics (IBM, 2019). Descriptive statistics, correlation analysis, independent samples *t*-tests, and one-way multivariate analyses (MANCOVA) were applied for the data analysis. Multivariate analysis of covariance is used to test the significance of dependent variable(s) on two or more correlated dependent variables while controlling covariates. Compared to univariate tests, the intercorrelations among dependent variables are considered and analyzed simultaneously in multivariate models (Ho, 2006). The correlation coefficient among the dependent variables in this study and past research showed that depression, anxiety, and academic distress are correlated; thus, these variables should be examined simultaneously. First, descriptive statistics were examined, and the skewness and kurtosis values in Table 2 show that the assumption of normality was satisfied. Next, missing value analysis was performed, and the missing data seemed to be completely random (χ^2 (1377) = 1416.64, $p = 0.223$). Thus, the expectation–maximization method was applied to replace the missing data. Finally, independent sample *t*-tests and one-way multivariate analyses were performed to examine whether the depression and distress levels of the participating graduate students varied according to demographic variables of gender, age, employment status, level of education, relationship status, and history of seeking psychological help. Assumptions for independent *t*-tests (normality, equality of variances) and one-way MANCOVA (normality, equality of variances, independence of covariance matrices) were satisfied.

Table 2 Correlations among variables

Variables	M	SD	Skewness	Kurtosis	
Depression/anxiety	43.25	12.75	.6	-.32	-
Academic distress	16.35	3.12	.04	-.69	.49**

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

Bonferroni correction was adjusted for each multivariate analysis. Age, the place of residence, and previous psychological help were used as covariates.

Results

Demographic characteristics of the research participants are presented in Table 1. Mean values for depression/anxiety and academic distress in relation to sociodemographic variables are also displayed. While the mean scores for depression/anxiety and academic distress were almost the same across genders and residence statuses, mean scores varied in terms of age, level of education, faculty, employment status, relationship status, and history of seeking psychological help. Differences between these mean values were analyzed by independent *t*-tests and one-way MANCOVA except for the type of faculty due to larger unequal sample sizes.

Means, standard deviations, and correlation coefficients of the variables are presented in Table 2. The skewness and kurtosis values of depression/anxiety ($M = 43.25$, SD = 12.75) and academic distress ($M = 16.35$, SD = 3.12) showed that both variables had a normal distribution. There was a moderate positive correlation ($r = 0.49$, $p < 0.001$) between depression/anxiety and academic distress.

Independent *t*-tests were performed to examine whether there were group differences in terms of mean scores for depression/anxiety and academic distress (see Table 3). Analyses showed that depression/anxiety scores did not vary in terms of gender, $t(457) = 1.02$, $p = 0.310$, with small effect size ($d = 0.099$) or residence status, $t(457) = -0.68$, $p = 0.498$, with small effect size ($d = 0.068$). However, students who had sought help in the past had higher levels of depression/anxiety, $t(457) = 3.17$, $p = 0.002$, with small effect size ($d = 0.33$). Similarly, academic distress scores did not change with regard to gender, $t(457) = 1.71$, $p = 0.089$, with small effect size ($d = 0.162$), and place of residence, $t(457) = -1.19$, $p = 0.235$, with small effect size ($d = 0.119$). On the other hand, students with a history of

Table 3 Independent *t*-test results of depression/anxiety and academic distress

	Variables		*X*	SS	*t*	*p*	Cohen's *d*
Depression/anxiety	Gender	Female	43.7	12.5	1.016	.31	. 099
		Male	42.44	13.2			
	Place of residence	The same city	42.98	12.81	− .678	.498	.068
		Different city	43.84	12.63			
	History of psychological help	Yes	46.27	12.51	3.17	.002	.33
		No	42.1	12.67			
Academic distress	Gender	Female	16.53	3.22	1.71	.089	.162
		Male	16.03	2.92			
	Place of residence	The same city	16.23	3.14	− 1.19	.235	.119
		Different city	16.61	3.08			
	History of psychological help	Yes	16.93	3.18	2.48	.014	.259
		No	16.13	3.07			

seeking psychological help had higher levels of academic distress than students who did not have such a history, $t(457) = 2.48$, $p = 0.014$, with small effect size ($d = 0.259$).

The depression/anxiety and academic distress scores of the graduate students showed statistically significant differences among groups according to the results of multivariate analyses (see Table 4). First, there was a statistically significant difference based on the age of the students (Pillai's trace = 0.002, $F(2, 454) = 4.36$, $p = 0.01$, $\eta^2 = 0.019$). One-way univariate tests showed that age had a statistically significant effect on both depression/anxiety ($F(2, 455) = 5.95$, $p = 0.003$, $\eta^2 = 0.025$) and academic distress ($F(2, 455) = 5.32$, $p = 0.005$, $\eta^2 = 0.023$). Post hoc analysis showed that graduate students older than 30 years had lower depression/anxiety scores than the youngest age group ($p = 0.003$). Similarly, graduate students in the youngest age group had higher academic distress scores than students aged between 25 and 29 ($p = 0.005$) and students older than 30 years old ($p = 0.014$). Second, there was not a statistically significant difference based on the employment status of the students (Pillai's trace = 0.025, $F(3, 451) = 1.93$, $p = 0.073$, $\eta^2 = 0.013$).

Third, there was a statistically significant difference based on the level of education of the students (Pillai's trace = 0.045, $F(2, 452) = 5.19$, $p < 0.001$, $\eta^2 = 0.022$). One-way univariate tests showed that level of education had a statistically significant effect on scores for both depression/anxiety ($F(2, 453) = 4.13$, $p = 0.017$, $\eta^2 = 0.018$) and academic distress ($F(2, 453) = 9.87$, $p < 0.001$, $\eta^2 = 0.042$). Post hoc analyses showed that students pursuing a medical sciences degree had lower depression/anxiety scores than those pursuing a master's degree ($p = 0.036$) and doctoral ($p = 0.019$) students, and also had lower academic distress scores than master's ($p < 0.001$) and doctoral ($p = 0.001$) students. Finally, there was a statistically significant difference based on the relationship status of the students (Pillai's trace = 0.028, $F(2, 452) = 3.23$, $p = 0.012$, $\eta^2 = 0.014$). One-way univariate tests showed that relationship status had a statistically significant effect on depression/anxiety scores ($F(2, 453) = 5.42$, $p = 0.005$, $\eta^2 = 0.023$), but not on academic distress scores ($F(2, 453) = 0.88$, $p = 0.414$, $\eta^2 = 0.004$). Students who were not involved in romantic relationships ($p = 0.014$) and otherwise in a romantic relationship ($p = 0.024$) had higher depression/anxiety scores than married students.

Table 4 One-way MANCOVA results for depression/anxiety and academic distress

Variable		*F*	*p*	*η*2
Age	Depression/anxiety	5.95	.003**	.025
	Academic distress	5.32	.005**	.023
Level of education	Depression/anxiety	4.13	.017*	.018
	Academic distress	9.87	.000***	.042
Relationship status	Depression/anxiety	5.42	.005**	.023
	Academic distress	.88	.41	.004

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

Discussion

This study was designed to investigate depression/anxiety and academic distress among graduate students in Turkey by comparing the prevalence of depression/anxiety and academic distress in terms of selected sociodemographic variables. Significant differences were observed among the considered groups. While depression/anxiety and academic distress did not show significant differences in terms of gender or place of residence, students who had previously sought psychological support had higher levels of depression/anxiety and academic distress. Students older than 30 had lower depression/anxiety and academic distress scores than younger students. No significant differences were observed between unemployed students and students holding graduate assistantships or working for the government in terms of depression/anxiety and academic distress. Being single also increased the risk of having a higher depression/anxiety score, but not a higher academic distress score.

This research indicated that there was no significant difference between male and female graduate students in terms of their depression/anxiety and academic distress scores. Although there are inconsistent findings in the literature on whether or not female students are more likely to experience depression and anxiety than male students, studies generally support the conclusion that being female is associated with having higher levels of depression (Chirikov et al., 2020; Evans et al., 2018) and anxiety (Barton & Bulmer, 2017; Bolotnyy et al., 2022; Wildey et al., 2022). There might be a few reasons for our failure to detect significant gender differences. First, this result could be attributed to the sample, which might not be a good representative of the population. Second, the data collection process was conducted during the pandemic and we hypothesized that a dramatic increase in depression and anxiety during the pandemic (Bueno-Notivol et al., 2021; Pieh et al., 2020) might have caused similar rates of anxiety and depression between men and women. However, a few studies found that being female during the pandemic was associated with increased levels of depression and anxiety (Hou et al., 2020; Özdin & Bayrak-Özdin, 2020). Another reason could be the diversity of the sample in terms of age, employment status, and field of education, which may have decreased the likelihood of gender differences. These factors could account for the lack of gender differences regarding academic distress, as well. Contrary to our findings, a few studies conducted with North American samples showed that female students are more likely to experience academic distress than male students (Dahlin et al., 2011; Dyrbye et al., 2006; Zakeri et al., 2021).

Our results also indicated that graduate students' depression/anxiety and academic distress levels did not differ according to their place of residence. We expected that commuting during graduate school might have indirectly had an impact on participants' well-being by requiring them to devote more time to transportation and less time to their families. In that case, it should be more likely for students to feel academic distress rather than depression/anxiety, yet there was no significant difference here in terms of place of residence. On the

contrary, similar to the results of previous studies (Eisenberg et al., 2011; Zivin et al., 2009), we found that a history of seeking psychological help was associated with depression/anxiety and academic distress. Zivin et al. (2009) reported that approximately 60% of university students with mental health problems suffered from a mental health problem over two years later. Similarly, Eisenberg et al. (2011) conducted a study with university students who had eating disorders, and 20% of the students diagnosed with eating disorders had sought mental health treatment in the last year. They also found that almost 50% of students with a diagnosed eating disorder still had a positive diagnosis after 2 years. These results indicate that mental health problems may be persistent among university students even if they sought help in the past. Our study supports these previous findings by demonstrating that graduate students with a history of treatment were more likely to have higher levels of depression/anxiety and academic distress.

Multivariate analyses showed that students who were in their twenties, studying at the master's level, and without a romantic relationship were more likely to be distressed and depressed. These results are in line with previous research demonstrating that graduate students' well-being may vary with regard to sociodemographic variables. Younger students, who were more likely to be master's students, had slightly higher levels of distress and depression than older students. This finding can also be linked with the result that distress and depression levels were higher among master's students compared to other levels of education. In a study by Eisenberg et al. (2007), characteristics found to be associated with fewer mental health problems included being older than 25, living in a campus residence hall, and being married or in a domestic partnership. On the contrary, the Graduate Assembly Report by Panger et al. (2014) indicated that doctoral students had lower levels of life satisfaction and higher depression levels than master's students because of negative career prospects, academic workloads, lack of resources, and perceptions of being less valued by their departments. However, the findings of the current study were consistent with our expectations that older students would generally be doctoral students, have financial resources, and be involved in romantic relationships. For these reasons, older students were slightly less likely to have psychological problems compared to younger students. Second, no significant differences were observed between unemployed students and students holding graduate assistantships or working for the government in terms of depression/anxiety and academic distress. Financial insecurity might be one of the main reasons for graduate students to experience psychological problems, but this main difference did not cause any significant difference among groups. In contrast to our findings, Barton & Bulmer (2017) found that while current financial problems were predictive of anxiety, past financial problems were associated with depressive symptoms. Similarly, other studies documented financial problems as significant risk factors for graduate students' well-being (Hyun et al., 2006; Oswalt & Riddock, 2007; Panger et al., 2014). In this study, graduate assistants were slightly advantaged compared to other students in terms of their access to departmental and university resources, larger amounts of time for professional development, such as the ability to focus on publications and a higher possibility of job prospects at the university. However, these advantages did not generate any difference regarding employment status. Finally, graduate students who were not

involved in romantic relationships had higher depression/anxiety scores than students who were married or otherwise in a romantic relationship. In line with the other demographic variables considered in this study, having a romantic relationship is a significant protective factor against psychological problems. Relationship status can predict the psychological problems and help-seeking behaviors of both undergraduate and graduate students (Barton & Bulmer, 2017; Doğan, 2018; Hyun et al., 2006; Wyatt & Oswalt, 2013). Graduate education often leads to the postponement of various other life events (Pfeiffer, 2001). Being separated from one's family and experiencing delays in establishing long-term relationships, including marriage and parenthood, often occur because the individual feels that such relationships will interfere with graduate studies in some way (Arnstein et al., 1999). A lack of relationships or isolation due to the requirements of graduate education might cause the emergence of psychological problems among graduate students.

This study has several limitations. First, although the present study indicated that graduate students' depression/anxiety and academic distress levels differ regarding the examined demographic variables, these results should be cautiously interpreted due to the small effect sizes. This means that observed differences can be statistically significant, yet their practical outcome might not have as much importance as their statistical outcome. One of the limitations of the current study regarding effect sizes can be explained by gender differences. Gender differences regarding depression/anxiety and academic distress of graduate students were examined among the whole sample, yet examining these differences in different disciplines might generate greater effect sizes compared to current effect sizes. For instance, it may be hypothesized that female medicine or engineering students may experience a greater level of depression/anxiety and academic distress compared to social science students. It might also be argued that the study group of this research was relatively small and, therefore, might not be a good representative of graduate students across Turkey. There were several reasons why a larger sample size could not be obtained, including limits emplaced by the university's ethical review board, the use of online data collection, and a low level of participation. For these reasons, the study group was not large enough to represent the full diversity of graduate students. Larger sample sizes would be helpful in future research to better represent graduate students. A related limitation is that the study's independent variables were not equally distributed, which influenced the data analysis. For instance, only 33 natural sciences students participated in this research and we were thus not able to meet the data analysis requirements for comparing depression/anxiety and academic distress levels across faculties. Another limitation is that it would have been more meaningful to analyze the depression, anxiety, and distress levels of the graduate students independently. However, while the Turkish adaptation of the CCAPS has an independent distress subscale, the depression and anxiety subscales are combined. Independent analysis of depression and anxiety may produce more useful data on graduate students' psychological problems. Finally, the depression/anxiety and academic distress levels reported by these graduate students might not reflect their typical levels because of the COVID-19 pandemic. During this pandemic, people are more likely to feel depressed, anxious, and stressed than in usual times. For this reason, the findings of this research should be interpreted with caution.

University counseling centers can benefit from the implications of this study taking previous research into account as well. Although past studies focused on undergraduate students' well-being, there has been increasing demand for graduate students in recent years. First of all, the findings suggest that it is essential that counseling centers should address and identify the common mental health issues that graduate students often experience. Thus, center counselors can develop partnerships with other potential collaborators such as student affairs, career services, student organizations, and graduate education institutes to help promote awareness of mental health options for graduate students. Second, university counseling centers should allocate more resources to apply preventive counseling services and intervention strategies for graduate students, who experience severe mental health problems such as depression, anxiety, and stress. For instance, universities can increase the number of professionals at counseling centers and make counseling services more accessible to graduate students. Finally, university counseling centers and collaborators should target particular populations, including students not having romantic relationships, younger ones, and a history of psychological help. A particular group among graduate students is those who have a history of psychological help. These students have greater vulnerability than other students, thus professionals at counseling centers, departments, or advisors should be connected with these students to contribute to and maintain their overall well-being.

This study addresses an important issue, graduate students' well-being, which has been receiving increasing attention in recent decades. As previously cited in the study, past research indicated that graduate students experience higher rates of mental health problems than the general population. Moreover, the prevalence of mental health problems varies among graduate students regarding discipline, age, gender, level of education, etc. In this study, we aimed to compare the prevalence of mental health problems in terms of gender, age, place of residence, level of education, relationship status, employment status, and history of seeking psychological help. The results showed that students who had previously sought psychological support, were younger, were master's students, and were single, were at risk for developing psychological problems. Although the study had its limitations, the results can be beneficial to departments, university counseling centers, etc. to support graduate students' well-being. For instance, university counseling centers can allocate more resources for this particular group such as increasing the accessibility of the services, providing information, and collaborating with departments. Also, future research should invest more in graduate students' well-being both examining protective and risk factors.

Data Availability Data are available on request from the authors.

Declarations

Conflict of Interest The authors declare no competing interests.

References

Allen, H. K., Lilly, F., Green, K. M., Zanjani, F., Vincent, K. B., & Arria, A. M. (2020). Substance use and mental health problems among graduate students: Individual and program-level correlates. *Journal of American College Health, 70*(1), 65–73. https://doi.org/10.1080/07448481.2020.1725020

Allen, H. K., Barrall, A. L., Vincent, K. B., & Arria, A. M. (2021). Stress and burnout among graduate students: Moderation by sleep duration and quality. *International Journal of Behavioral Medicine, 28*(1), 21–28. https://doi.org/10.1007/s12529-020-09867-8

Arnstein, R., Backus, V., Eddy, H., Liptzin, M., Notman, M., Reich, P., Reid, E., Siggins, L., Silber, E., Silverman, M., Wenger, R., & Stauffer, T. (1999). Helping students adapt to graduate school: Making the grade. *Journal of College Student Psychotherapy, 14*, 5–96.

Arria, A. M., Caldeira, K. M., Vincent, K. B., Winick, E. R., Baron, R. A., & O'Grady, K. E. (2013). Discontinuous college enrollment: Associations with substance use and mental health. *Psychiatric Services, 64*(2), 165–172. https://doi.org/10.1176/appi.ps.201200106

Balı, O., & Dönmez, B. (2018). Problems of PhD students in educational sciences department and their suggestions for solutions. *Inonu University Journal of the Faculty of Education, 19*(3), 284–309. https://doi.org/10.17679/inuefd.399079

Barton, B. A., & Bulmer, S. M. (2017). Correlates and predictors of depression and anxiety disorders in graduate students. *The Health Educator, 49*(2), 17–26.

Becerra, M., Wong, E., Jenkins, B. N., & Pressman, S. D. (2021). Does a good advisor a day keep the doctor away? How advisor-advisee relationships are associated with psychological and physical well-being among graduate students. *International Journal of Community Well-Being, 4*(4), 505–524. https://doi.org/10.1007/s42413-020-00087-2

Beiter, R., Nash, R., McCrady, M., Rhoades, D., Linscomb, M., Clarahan, M., & Sammut, S. (2015). The prevalence and correlates of depression, anxiety, and stress in a sample of college students. *Journal of Affective Disorders, 173*, 90–96. https://doi.org/10.1016/j.jad.2014.10.054

Bernstein, E. E., LeBlanc, N. J., Bentley, K. H., Barreira, P. J., & McNally, R. J. (2021). A single-session workshop to enhance emotional awareness and emotion regulation for graduate students: A pilot study. *Cognitive and Behavioral Practice, 28*(3), 393–409. https://doi.org/10.1016/j.cbpra.2020.09.008

Bolotnyy, V., Basilico, M., & Barreira, P. (2022). Graduate student mental health: Lessons from american economics departments. *Journal of Economic Literature, 60*(4), 1188–1222. https://doi.org/10.1257/jel.20201555

Bork, S., & Mondisa, J. L. (2019, June 16–19). *Science, engineering, and mathematics graduate student mental health: Insights from the healthy minds network dataset* [Paper presentation]. ASEE Annual Conference & Exposition Proceedings, Tampa, FL, United States. https://doi.org/10.18260/1-2--33255

Börkan, B., & Ünverdi, B. (2023). Adapting the counseling center assessment of psychological symptoms into Turkish. *Counselling Psychology Quarterly*, *36*(1), 134–152. https://doi.org/10.1080/09515070.2022.2068505

Boyle, K. M., & McKinzie, A. E. (2021). The prevalence and psychological cost of interpersonal violence in graduate and law school. *Journal of Interpersonal Violence, 36*(13–14), 6319–6350. https://doi.org/10.1177/0886260518816329

Bueno-Notivol, J., Gracia-García, P., Olaya, B., Lasheras, I., López-Antón, R., & Santabárbara, J. (2021). Prevalence of depression during the COVID-19 outbreak: A meta-analysis of community-based studies. *International Journal of Clinical and Health Psychology, 21*(1), 100196. https://doi.org/10.1016/j.ijchp.2020.07.007

Cage, E., Jones, E., Ryan, G., Hughes, G., & Spanner, L. (2021). Student mental health and transitions into, through and out of university: Student and staff perspectives. *Journal of Further and Higher Education, 45*(8), 1076–1089. https://doi.org/10.1080/0309877X.2021.1875203

Casey, C., Harvey, O., Taylor, J., Knight, F., & Trenoweth, S. (2022). Exploring the wellbeing and resilience of postgraduate researchers. *Journal of Further and Higher Education, 46*(6), 850–867. https://doi.org/10.1080/0309877X.2021.2018413

Charles, S. T., Karnaze, M. M., & Leslie, F. M. (2022). Positive factors related to graduate student mental health. *Journal of American College Health, 70*(6), 1858–1866. https://doi.org/10.1080/07448481.2020.1841207

Cheng, H. L., McDermott, R. C., Wong, Y. J., & McCullough, K. M. (2020). Perceived discrimination and academic distress among Latinx college students: A cross-lagged longitudinal investigation. *Journal of Counseling Psychology, 67*(3), 401–408. https://doi.org/10.1037/cou0000397

Chirikov, I., Soria, K. M., Horgos, B., & Jones-White, D. (2020). *Undergraduate and graduate students' mental health during the COVID-19 pandemic*. California Digital Library, University of California.

Dahlin, M., Nilsson, C., Stotzer, E., & Runeson, B. (2011). Mental distress, alcohol use and help-seeking among medical and business students: A cross-sectional comparative study. *BMC Medical Education, 11*(1), 92. https://doi.org/10.1186/1472-6920-11-92

Deng, J., Zhou, F., Hou, W., Silver, Z., Wong, C. Y., Chang, O., Drakos, A., Zuo, Q. K., & Huang, E. (2021). The prevalence of depressive symptoms, anxiety symptoms and sleep disturbance in higher education students during the COVID-19 pandemic: A systematic review and meta-analysis. *Psychiatry Research, 301*, 113863. https://doi.org/10.1016/j.psychres.2021.113863

Di Pierro, M. (2017). Mental health and the graduate student experience. *Journal for Quality and Participation, 40*, 24–27.

Doğan, T. (2012). A long-term study of the counseling needs of Turkish university students. *Journal of Counseling & Development, 90*(1), 91–96. https://doi.org/10.1111/j.1556-6676.2012.00012.x

Doğan, T. (2018). Problem areas of students at a university psychological counselling centre: A 16-year analysis. *British Journal of Guidance & Counselling, 46*(4), 429–440. https://doi.org/10.1080/03069885.2018.1437255

Drum, D. J., Brownson, C., Burton Denmark, A., & Smith, S. E. (2009). New data on the nature of suicidal crises in college students: Shifting the paradigm. *Professional Psychology: Research and Practice, 40*(3), 213–222. https://doi.org/10.1037/a0014465

Dyrbye, L. N., Thomas, M. R., & Shanafelt, T. D. (2006). Systematic review of depression, anxiety, and other indicators of psychological distress among U.S. and Canadian medical students. *Academic Medicine, 81*(4), 354–373. https://doi.org/10.1097/00001888-200604000-00009

Eisenberg, D., Gollust, S. E., Golberstein, E., & Hefner, J. L. (2007). Prevalence and correlates of depression, anxiety, and suicidality among university students. *American Journal of Orthopsychiatry, 77*(4), 534–542. https://doi.org/10.1037/0002-9432.77.4.534

Eisenberg, D., Nicklett, E. J., Roeder, K., & Kirz, N. E. (2011). Eating disorder symptoms among college students: Prevalence, persistence, correlates, and treatment-seeking. *Journal of American College Health, 59*(8), 700–707. https://doi.org/10.1080/07448481.2010.546461

Eisenberg, D., Hunt, J., & Speer, N. (2013). Mental health in American colleges and universities: Variation across student subgroups and across campuses. *Journal of Nervous & Mental Disease, 201*(1), 60–67. https://doi.org/10.1097/NMD.0b013e31827ab077

Evans, T. M., Bira, L., Gastelum, J. B., Weiss, L. T., & Vanderford, N. L. (2018). Evidence for a mental health crisis in graduate education. *Nature Biotechnology, 36*(3), 282–284. https://doi.org/10.1038/nbt.4089

Garcia-Williams, A. G., Moffitt, L., & Kaslow, N. J. (2014). Mental health and suicidal behavior among graduate students. *Academic Psychiatry, 38*(5), 554–560. https://doi.org/10.1007/s40596-014-0041-y

Ghosh, A., Niileksela, C. R., & Janis, R. (2022). Military background and gender identity in psychological assessment among college students: Factorial invariance of the Counseling Center Assessment of Psychological Symptoms–62 (CCAPS-62). *Assessment, 29*(5), 1045–1060. https://doi.org/10.1177/1073191121998768

Guo, L., Fan, H., Xu, Z., Li, J., Chen, T., Zhang, Z., & Yang, K. (2021). Prevalence and changes in depressive symptoms among postgraduate students: A systematic review and meta-analysis from 1980 to 2020. *Stress and Health, 37*(5), 835–847. https://doi.org/10.1002/smi.3045

Hefner, J., & Eisenberg, D. (2009). Social support and mental health among college students. *American Journal of Orthopsychiatry, 79*(4), 491–499. https://doi.org/10.1037/a0016918

Ho, R. (2006). *Handbook of univariate and multivariate data analysis and interpretation with SPSS*. Chapman and Hall/CRC.

Hobaica, S., Szkody, E., Owens, S. A., Boland, J. K., Washburn, J. J., & Bell, D. J. (2021). Mental health concerns and barriers to care among future clinical psychologists. *Journal of Clinical Psychology, 77*(11), 2473–2490. https://doi.org/10.1002/jclp.23198

Horita, R., Kawamoto, A., Nishio, A., Sado, T., Locke, B. D., & Yamamoto, M. (2020). Development of the Counseling Center Assessment of Psychological Symptoms-Japanese version: Pilot study. *Clinical Psychology & Psychotherapy, 27*(1), 97–105. https://doi.org/10.1002/cpp.2412

Hou, F., Bi, F., Jiao, R., Luo, D., & Song, K. (2020). Gender differences of depression and anxiety among social media users during the COVID-19 outbreak in China: A cross-sectional study. *BMC Public Health, 20*(1), 1648. https://doi.org/10.1186/s12889-020-09738-7

Hyun, J. K., Quinn, B. C., Madon, T., & Lustig, S. (2006). Graduate student mental health: Needs assessment and utilization of counseling services. *Journal of College Student Development, 47*(3), 247–266. https://doi.org/10.1353/csd.2006.0030

IBM Corp. (2019). *IBM SPSS Statistics for Windows* [Computer software]. IBM Corp.

Jones-White, D. R., Soria, K. M., Tower, E. K. B., & Horner, O. G. (2022). Factors associated with anxiety and depression among U.S. doctoral students: Evidence from the gradSERU survey. *Journal of American College Health, 70*(8), 2433–2444. https://doi.org/10.1080/07448481.2020.1865975

Karadağ, N., & Özdemir, S. (2017). The views of faculty members and PhD students on the processes of doctoral education in Turkey. *Journal of Higher Education and Science, 7*(2), 267–281. https://doi.org/10.5961/jhes.2017.206

Levecque, K., Anseel, F., De Beuckelaer, A., Van der Heyden, J., & Gisle, L. (2017). Work organization and mental health problems in PhD students. *Research Policy, 46*(4), 868–879. https://doi.org/10.1016/j.respol.2017.02.008

Lipson, S. K., Zhou, S., Wagner, B., Beck, K., & Eisenberg, D. (2016). Major differences: Variations in undergraduate and graduate student mental health and treatment utilization across academic disciplines. *Journal of College Student Psychotherapy, 30*(1), 23–41. https://doi.org/10.1080/87568225.2016.1105657

Locke, B. D., Buzolitz, J. S., Lei, P. W., Boswell, J. F., McAleavey, A. A., Sevig, T. D., ..., & Hayes, J. A. (2011). Development of the Counseling Center Assessment of Psychological Symptoms-62 (CCAPS-62). *Journal of Counseling Psychology*, *58*(1), 97–109. https://doi.org/10.1037/a0021282

Locke, B. D., McAleavey, A. A., Zhao, Y., Lei, P. W., Hayes, J. A., Castonguay, L. G., Li, H., Tate, R., & Lin, Y. C. (2012). Development and initial validation of the Counseling Center Assessment of Psychological Symptoms–34. *Measurement and Evaluation in Counseling and Development, 45*(3), 151–169. https://doi.org/10.1177/0748175611432642

Longfield, A., Romas, J., & Irwin, J. D. (2006). The self-worth, physical and social activities of graduate students: A qualitative study. *College Student Journal, 40*(2), 282–293.

McAleavey, A. A., Nordberg, S. S., Hayes, J. A., Castonguay, L. G., Locke, B. D., & Lockard, A. J. (2012). Clinical validity of the Counseling Center Assessment of Psychological Symptoms-62 (CCAPS-62): Further evaluation and clinical applications. *Journal of Counseling Psychology, 59*(4), 575–590. https://doi.org/10.1037/a0029855

Nordberg, S. S., McAleavey, A. A., Duszak, E., Locke, B. D., Hayes, J. A., & Castonguay, L. G. (2018). The Counseling Center Assessment of Psychological Symptoms Distress Index: A pragmatic exploration of general factors to enhance a multidimensional scale. *Counselling Psychology Quarterly, 31*(1), 25–41. https://doi.org/10.1080/09515070.2016.1202809

Okoro, C., Owojori, O. M., & Umeokafor, N. (2022). The developmental trajectory of a decade of research on mental health and well-being amongst graduate students: A bibliometric analysis. *International Journal of Environmental Research and Public Health, 19*(9), 4929. https://doi.org/10.3390/ijerph19094929

Oswalt, S. B., & Riddock, C. C. (2007). What to do about being overwhelmed: Graduate students, stress and university services. *College Student Affairs Journal, 27*(1), 24–44.

Özdin, S., & Bayrak-Özdin, Ş. (2020). Levels and predictors of anxiety, depression and health anxiety during COVID-19 pandemic in Turkish society: The importance of gender. *International Journal of Social Psychiatry, 66*(5), 504–511. https://doi.org/10.1177/0020764020927051

Özmen, Z. M., & Güç, F. A. (2013). Challenges in doctoral education and coping strategies: A case study. *Journal of Higher Education and Science, 3*(3), 214–219.

Panger, G., Tryon, J., & Smith, A. (2014). *Graduate student happiness & well-being report*. The Graduate Assembly at UC Berkeley. http://ga.berkeley.edu/wpcontent/uploads/2015/04/wellbeingreport_2014.pdf

Park, K., Sibalis, A., & Jamieson, B. (2021). The mental health and well-being of master's and doctoral psychology students at an urban Canadian university. *International Journal of Doctoral Studies, 16*, 429–447. https://doi.org/10.28945/4790

Parvizi, G., & veÖzabacı, N. (2022). The role of cognitive flexibility as a predictor of university students' psychological well-being and life satisfaction. *Adnan Menderes Üniversitesi Eğitim Fakültesi Eğitim Bilimleri Dergisi, 13*(1), 65–81.

Pau, K., Jusoh, A. J., Perveen, A., Yusof, H., & Tang, H.-Y. (2017). The Malay Version of CCAPS-62: A preliminary investigation of translation, validity, and reliability. *International Journal of Academic Research in Business and Social Sciences*, *7*(3), 635–652. https://doi.org/10.6007/IJARBSS/v7-i3/2765

Pfeiffer, D. (2001). *Academic and environmental stress among undergraduate and graduate college students: A literature review* [Unpublished doctoral dissertation]. Department of Guidance and Counseling-Mental Health, University of Wisconsin-Stout.

Pieh, C., Budimir, S., & Probst, T. (2020). The effect of age, gender, income, work, and physical activity on mental health during coronavirus disease (COVID-19) lockdown in Austria. *Journal of Psychosomatic Research, 136*, 110186. https://doi.org/10.1016/j.jpsychores.2020.110186

Ratanasiripong, P., Wang, C. D. C., Ratanasiripong, N., Hayes, J. A., Kaewboonchoo, O., & Kathalae, D. (2015). Counseling Center Assessment of Psychological Symptoms—Thai Version. *American Psychological Association*. https://doi.org/10.1037/t40200-000

Rummell, C. M. (2015). An exploratory study of psychology graduate student workload, health, and program satisfaction. *Professional Psychology: Research and Practice, 46*(6), 391–399. https://doi.org/10.1177/0011000014566991

Rummell, C. M., & Joyce, N. R. (2010). "So wat do u want to work on 2day?": The ethical implications of online counseling. *Ethics & Behavior, 20*(6), 482–496. https://doi.org/10.1080/10508422.2010.521450

Satinsky, E. N., Kimura, T., Kiang, M. V., Abebe, R., Cunningham, S., Lee, H., Lin, X., Liu, C. H., Rudan, I., Sen, S., Tomlinson, M., Yaver, M., & Tsai, A. C. (2021). Systematic review and meta-analysis of depression, anxiety, and suicidal ideation among Ph.D. students. *Scientific Reports, 11*(1), 14370. https://doi.org/10.1038/s41598-021-93687-7

Topkaya, N., Albayrak, K. E., Bozkurt, İ, & Yurdusever, N. (2020). The predictors of help-seeking intentions among university students. *Inonu University Journal of the Faculty of Education, 21*(2), 503–517. https://doi.org/10.17679/inuefd.467128

Turner, R. J., & Brown, R. L. (2010). Social support and mental health. In T. Scheid & T. Brown (Eds.), *A handbook for the study of mental health: Social contexts, theories, and systems* (pp. 200–212). Cambridge University Press.

Wildey, M. N., Fox, M. E., Machnik, K. A., & Ronk, D. (2022). Exploring graduate student mental health and service utilization by gender, race, and year in school. *Journal of American College Health*, 1–9. https://doi.org/10.1080/07448481.2022.2145898

Woolston, C. (2018). Why mental health matters. *Nature Careers, 557*, 129–131.

Wyatt, T., & Oswalt, S. B. (2013). Comparing mental health issues among undergraduate and graduate students. *American Journal of Health Education, 44*(2), 96–107. https://doi.org/10.1080/19325037.2013.764248

Youn, S. J., Castonguay, L. G., Xiao, H., Janis, R., McAleavey, A. A., Lockard, A. J., Locke, B. D., & Hayes, J. A. (2015). The Counseling Center Assessment of Psychological Symptoms (CCAPS): Merging clinical practice, training, and research. *Psychotherapy, 52*(4), 432–441. https://doi.org/10.1037/pst0000029

Zakeri, M., De La Cruz, A., Wallace, D., & Sansgiry, S. S. (2021). General anxiety, academic distress, and family distress among doctor of pharmacy students. *American Journal of Pharmaceutical Education*, *85*(10), 1031–1036. https://doi.org/10.5688/ajpe8522

Zivin, K., Eisenberg, D., Gollust, S. E., & Golberstein, E. (2009). Persistence of mental health problems and needs in a college student population. *Journal of Affective Disorders, 117*(3), 180–185. https://doi.org/10.1016/j.jad.2009.01.001