

Resilience of University Students During the Coronavirus Disease 2019 Pandemic and Results of a Pilot Positive Psychotherapy Intervention Study

ABSTRACT

Objective: University students were significantly affected by the 2019 coronavirus disease pandemic, with significant impacts on their mental health, resilience skills, and life skills. The primary aim of this study was to evaluate these parameters by focusing on the experiences of 472 university students as well as examining correlations between mental states, resilience, and life skills. The secondary aim was to conduct a pilot study of a 10-week psychoeducation program that uses positive psychotherapy to improve resilience skills.

Methods: The first phase of this research project was designed as a quantitative and correlative study, while the second phase was designed as a quasi-experimental model. Data collection tools used in the first phase included the Sociodemographic Information Form, Life Skills Scale (LSS), Symptom Checklist (SCL90R), and Brief Resilience Scale (BRS). The Resilience Scale for Adults (RSA) was used in the second phase. The sample group for the first phase was 472 university students from several university institutes in Cyprus, while the quasi-experimental group consisted of 33 psychology students from the University of Cyprus.

Results: The average mental symptoms score for students based on SCL90R was 1.10 ± 0.70 , showing they have psychological symptoms and grievances. Significant negative correlations were found between the BRS general score and the LSS general and SCL90R scores (all $P = .001$). The model was found to be significant and could explain 18.5% of the effect according to the predictive status of LSS and SCL90R scores in BRS scores.

Conclusion: In conclusion, this study provides vital insights into the mental well-being of university students during the pandemic. The findings reveal a concerning prevalence of psychological symptoms and distress among students, indicating a significant impact of the COVID-19 crisis on their mental health. This research also demonstrated the effectiveness of targeted interventions. The positive changes in resilience skills and reduced mental health symptoms observed after the 10-week study period highlight the importance of proactive approaches. This study underscores the urgent need for accessible mental health resources and tailored support mechanisms for university students, especially during times of crisis. Addressing these issues is crucial for fostering a resilient and mentally healthy student population.

Keywords: COVID-19 Pandemic, life skills, psychological symptoms, resilience university students

Introduction

The contagious disease referred to as coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-Cov-2) began to emerge worldwide in December 2019, causing many people to become ill and die. Coronavirus disease 2019 was declared a “pandemic” in March 2020 by the World Health Organization in an attempt to reduce its severity and spread.¹ Between December 2019 and March 2022, the highest prevalence of COVID-19 occurred in Europe, followed by America, Asia, Africa, and Oceania. Over



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468 million confirmed cases were reported globally, and more than 6 million people died due to this disease.^{2,3}

Following the WHO declaration of a pandemic, home quarantine and curfews were implemented in many countries, airline flights were gradually stopped, and many people began to study or work from home.¹ The “normal” way of life gave way to fear and social distancing during the pandemic, with a negative impact on the mental state of individuals.^{4,5,6} The COVID-19 pandemic led to increases in disorders such as stress, anxiety, depression, and insomnia.^{7,8,9} Other psychological disorders such as suicide, behavioral problems, domestic violence, and abuse are also likely to increase.¹⁰ The groups most adversely affected by the COVID-19 pandemic are healthcare professionals, the elderly, children, university students, economically disadvantaged groups, homeless people, the rural population, and psychiatric patients, all of whom are likely to suffer emotional, behavioral, and psychological effects.¹¹

The literature on mental disorders experienced by university students due to the COVID-19 pandemic reports an increase in mental distress, especially in the levels of depression and anxiety. These studies were conducted in various countries, including Turkey, Bangladesh, China, Portugal, Italy, Philippines, and the United States.¹²⁻¹⁸ A Chinese study reported that the prevalence of depression was 47.1%, the prevalence of anxiety was 31.9%, and the prevalence of somatization was 45.9%, with a higher prevalence of depression and anxiety symptoms than in the pre-pandemic period.¹⁹ A similar study conducted in Bangladesh reported that 82.4% of students experienced moderate and severe symptoms of depression, while 87.7% experienced severe anxiety symptoms.¹⁵ Older students experienced more depression symptoms, and male students had higher depression levels than female students. The incidence of depression and anxiety in students who were already experiencing academic problems was 1.8-fold higher than in other students. The change in routine associated with the transition of the education system to an online format was reported as a factor causing psychological problems and depression in students.^{20,21} The mental distress of students continued into 2021 with the transition to face-to-face education, with 15.5% experiencing anxiety and 32.4% experiencing depressive symptoms.¹⁹ Despite their mental distress, few university students sought help, with just 12.6% stating they needed psychological counseling and 13.8% undecided about whether they needed psychological counseling. The latter group has a 2-fold higher level of depression and a 3-fold higher level of anxiety compared to students who stated they did not need help.^{19,22}

Lower resilience was more strongly linked to higher depression levels in students experiencing lockdown conditions.²³ Resilience showed a

significant negative correlation with mental health symptomatology and played a role in mediating the mental health symptoms of college students.²⁴⁻²⁷ Life skills were also shown to be linked to enhanced resilience.²⁸

A Turkish study found that the resilience skills of students who did not need psychological support were higher than those who needed psychological support.²⁹ This emphasizes the importance of increasing resilience so that individuals can remain strong during difficult conditions and adapt quickly to new situations, thereby supporting their mental health.³⁰

Resilience was reported as the most effective basic protector of mental health during the COVID-19 pandemic.³¹ A statistically significant negative correlation was reported between resilience and psychological disorders (depression, anxiety, and somatization). Furthermore, individuals with high resilience are better able to cope when faced with unexpected negative life events or with mental disorders such as depression and anxiety.^{6,32}

University students in a Turkish study showed similar resilience before and during the pandemic, with the level reported as being moderate.³³ However, the results of an Australian study indicated that students had low resilience.³⁴ Individuals with normal and low resilience skills experienced more mental distress during the pandemic.³⁵ The results of a US study showed that individuals with low resilience skills during the pandemic period had increased symptoms of obsession, depression, and anxiety.³⁰ Similarly, another study conducted on university students in Italy found that 89.4% experienced increased stress and subsequently had difficulty in focusing and studying. This study also found that resilience was a protective factor that decreased psychological stress.³⁶

Psychotherapy is a useful method for the treatment of psychopathologic and psychosomatic disorders such as depression, anxiety, and obsessive-compulsive disorder, as well as in psychoeducational health.³⁷ A 6-week psychoeducation program developed to improve the resilience skill of university students found that this could be learned and developed.³⁸ Negative effects of the COVID-19 pandemic on psychological health may emerge in the long term. Preventive studies to protect the psychological health of university students and to increase their resilience have therefore been recommended.^{39,40}

The enhancement of well-being through positive psychology intervention is effective during pandemics.^{41,42} As a result of social distancing protocols, numerous researchers have created digital self-help intervention techniques and resources to enhance the mental health of individuals. The results showed that self-directed, self-help interventions notably improved well-being in specific areas.⁴³ An 8-week positive psychology education program conducted in Tunisia with medical students showed significant improvements in stress, anxiety, depression, emotional regulation, optimism, hope, study engagement, and well-being compared to the control group.⁴⁴ These improvements were maintained for at least 3 months. A systematic review of research conducted during the pandemic examined various therapeutic approaches applied to university students. Online cognitive-behavioral therapy and dialectical behavior therapy were found to effectively reduce anxiety symptoms. Furthermore, positive psychology and mindfulness interventions were successful in alleviating symptoms

MAIN POINTS

- Positive psychotherapy training programs were effective in reducing psychological symptoms in university students.
- Positive psychotherapy training programs had a positive impact on the psychological resilience of university students.
- The levels of psychological symptoms, life skills, and psychological resilience appear to be related.
- We recommend the use of positive psychotherapy training programs for university students.

of depression.⁴⁵ In another study, researchers developed a chatbot named Athena and provided students with evidence-based approaches and interventions twice a week for 4 weeks. At the end of 4 weeks, the posttest scores for anxiety and stress were lower than at the start.⁴⁶

Peseschkian described the positive psychotherapy approach, with a focus on real and existing aspects.⁴⁷ This humanistic approach incorporates both psychodynamic and humanistic methods.⁴⁸ Based on this approach, a healthy person is someone who may have conflicts, but who knows how to deal with the conflicts, thus ensuring they learn and adopt the self-help principle.⁴⁹ Self-help consists of 5 steps: observation/distance setting, inventory, situational encouragement, verbalization, and broadening goals and therapy progresses with these phases.^{47,48} Positive psychotherapy is a transcultural approach which emphasizes the fact that behavior or symptoms can have different meanings that nourish the client. While in therapy, it makes clients realize their strong resources and raises awareness of differences by using positive interpretation or situational encouragement techniques.⁵⁰ Positive interpretation is a persons' positive reinterpretation of distress and discomfort achieved by emphasizing actual capacities.⁵¹ Two basic abilities exist according to the positive psychotherapy approach: the capacity to love (primary), and the capacity to know (secondary). These abilities should be used in a balanced manner. Since actual capacities are personality characteristics that develop throughout life, they can sometimes strengthen the interactions between people and sometimes create conflict.⁵² In a study conducted with a sample of healthy people, individuals who use time and hope as primary skills and reliability and success as secondary skills were found to have high subjective well-being.⁵³ Moreover, people who have improved love skills and who use these skills have lower scores for stress disorders and depression after trauma.⁵⁴ Eryilmaz⁵⁵ reported that the secondary ability of obedience and the primary abilities of patience, time, relationship, trust, and hope were used less by men diagnosed with depression.

In the positive psychotherapy approach, actual capacities (order, honesty, obedience, reliability, trust, patience, contact, hope, belief, and contact) are positively correlated with resilience. Significant relationships between psychological resilience, posttraumatic growth, and positive psychotherapy capacities were reported during the pandemic period, indicating that actual capacities have a positive impact on psychological resilience and posttraumatic growth.

Actual capacities of time, contact and love are factors that predict resilience and can explain 47% of the variance. The tools used in positive psychotherapy are strong factors for increasing resilience.⁵⁶ Awareness of life's meaning, understanding life goals, and belief in achieving them can strongly influence psychological well-being. Therefore, primary actual capabilities such as hope, love, trust, and time are crucial factors in an individuals' prioritization of positive life experiences, as indicated by linear regression analysis.⁵⁷ A Turkish study found that 8-session positive psychotherapy training in women undergoing infertility treatment was effective at increasing their level of psychological well-being and hope.⁵⁸

In this context and in light of the current literature, our aim was to apply a psychoeducation program whereby positive psychotherapy is used to prevent the negative effects of the COVID-19 pandemic and to develop preventive mental health measures.

The first aim of this study was to evaluate the mental state, resilience skills, and life skills of university students during the pandemic. The second aim was to determine if the Symptom Checklist (SCL-90R), Brief Resilience Scale (BRS), and Life Skills Scale (LSS) scores are correlated and also determine whether the scores for these psychological assessment tools are statistically related, thereby indicating potential interconnectedness between psychological symptoms, life skills, and psychological resilience levels in university students. The third aim was to conduct a pilot study with the positive psychotherapy approach to improve the resilience skills of university students.

Material and Methods

Participants

The study consisted of 2 phases. In the first phase, all necessary permissions were obtained from 5 universities in the Turkish Republic of Northern Cyprus. Students from the Faculty of Arts and Sciences and from the Faculty of Educational Sciences were reached via WhatsApp virtual networks through their lecturers, and the scales were administered via Google Survey between March and June 2021. In the second phase, third-year psychology students were selected by a random sampling method among volunteers for the study. The research was conducted between September and December 2021.

Eligibility Criteria and Ethics

Students were eligible for recruitment if they were at least 18 years of age. All participants provided written informed consent for the study. Incomplete response to the questions was an exclusion criterion. In the second phase, the exclusion criteria were defined as not already having participated in a similar study, currently receiving psychological or psychiatric support, having a history of psychotherapy, or undergoing any psychiatric medication treatment. This study was conducted in accordance with the Declaration of Helsinki, and necessary permits were received from the Near East University Scientific Research Ethics Committee (Approval No: YDÜ/SB/2020/833, Date: November 11, 2020) to conduct the research. All participants were required to provide written informed consent. Written informed consent was received by giving an information form and informed consent form to the participants at all phases of the study.

Study Design

A quantitative, correlational research design was used in the first phase of the project. A single group, pretest/posttest model was employed for the second phase of the study. Since the number of participants was limited, a quasi-experimental research design was used in order to document changes in participant behavior before and after the application. This experimental design encompasses one factor: one involving repeated measurements (pretest and posttest).⁵⁹

Study procedure

Positive psychotherapy practices aimed at increasing resilience were applied for 120 minutes, once per week, for 10 weeks to third-year psychology students. The tests were administered via Google Survey and applied during the first and last days of the sessions. The content of the program was developed according to the positive psychotherapy approach and includes topics such as balanced life and time management, positive interpretation, recognizing stress, recognizing emotions, naming conflicts, developing conflict resolution skills, and strengthening resources. Sessions were structured, with 1 hour

of theory and 1 hour of practical. The administration of this technique will be supervised by a clinical psychologist, who is also a basic course trainer for positive psychotherapy. The psycho-education program consisted of the following 10 modules.

SESSION 1: Introduction, pretest introduction of the session's objectives, and an overall presentation of the study. Discussion of group ethics and listening to members' expectations about the study. Conducting pretest measurements. (Story—The Journey of the Traveler)

SESSION 2: The Balance Model and its relation to time management. A key component of positive psychotherapy (PPT, after Peseschkian) is life balance. A balance between the 4 domains of body/health, work/achievement, contacts/relationships, and future/meaning is essential for one's well-being.⁶⁰

SESSIONS 3-4: The Differentiation Analysis Inventory is utilized to assess individuals' real capabilities. During the session, participants gain insights into their family capacities that contribute to conflicts. This involves personifying conflicts and empowering available resources.⁶⁰ (Story—The Visitors and the Elephant)

SESSION 5: Using the idea of the model dimensions, the participants' lives are investigated from the start, with an emphasis on relationships to the cultural and social context in addition to the individual-centered biography.⁶¹ Working with the 4-dimensional model will help to understand the basics of conflicts and develop conflict resolution skills to help strengthen resources.

SESSION 6: Creating a list of positive and negative life events. (Story—The Man Standing on One Leg)

SESSION 7: Developing Positive Interpretation Capacity. It makes clients realize their strong resources and raises awareness of differences by using positive interpretation or situational encouragement techniques.⁵⁰ Positive reinterpretation will decrease distress and discomfort achieved by emphasizing actual capacities.⁵¹

SESSION 8: Sessions have been implemented to enhance skills in recognizing and regulating emotions.⁶² (Story—The Courage to Dare)

SESSION 9: Recognizing and properly utilizing stress. Stress Surfing appeals to individuals who are proactive in understanding their emotions, thoughts, and stress, and utilizing this knowledge for personal benefit and enjoyment.⁶² (Story—The Flawless Camel or How a Camel Should Be)

SESSION 10: Goal Setting—evaluation and measurement. Receiving feedback on the study and conducting the posttest application.

Tools

Brief Resilience Scale: The BRS was developed by Smith et al to measure the resilience of individuals.⁶³ It was adapted into Turkish by Doğan et al⁶⁴ and is a 5-point Likert-type scale consisting of 6 questions. BRS has a single factor structure based on exploratory and confirmatory factor analysis. The internal consistency coefficient for BRS was reported as 0.83. For this scale, the second, fourth, and sixth items are coded in reverse. Cronbach's alpha internal consistency coefficient of the whole scale of BRS is 0.751 for this study.

Life Skills Scale: The LSS is a Likert-type scale developed by Bolat and Balaman⁶⁵ and consists of 30 questions in total. As a consequence of the Exploratory Factor Analysis performed with the scale, LSS consists of 5 factors including Coping with Emotions and Stress (CES), Empathy and Self-Awareness Skills (ESAS), Decision Making and Problem-Solving Skills (DMPSS), Creative Thinking and Critical Thinking Skills (CTCTS), and Communication Interpersonal Relationship Skills (CIRS). The Cronbach's alpha internal consistency coefficient for the LSS was 0.90, for the CES factor it was 0.82, for the ESAS factor it was 0.77, for the DMPSS factor it was 0.72, for the CTCTS factor it was 0.73, and for the CIRS factor it was 0.66. The Cronbach's alpha internal consistency coefficient for the whole scale was 0.932 for this study.

Symptom Checklist: The SCL-90R symptom checklist is a 90-item self-assessment scale developed by Derogatis and colleagues.^{66,67} The Turkish adaptation, reliability and validity study for this scale was published by Dağ et al.⁶⁸ The internal consistency coefficients of the scale range between 0.77 and 0.90 depending on the subscales. A reliability and validity study was carried out by Koğar et al.⁶⁹ The Cronbach's alpha and Molenaar–Sijtsma reliability coefficients for the entire scale were 0.97. Upon analyzing the reliability coefficients of the scale's dimensions, it was found that the Cronbach's alpha reliability coefficient ranged from 0.72 to 0.89, and the Molenaar–Sijtsma reliability coefficient ranged from 0.73 to 0.90. The SCL-90R adapted by Koğar consists of 79 items and 9 dimensions: somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism. Items are scored between 0 and 4 (none = 0, few = 1, moderate = 2, quite a lot = 3, advanced = 4). The subscale scores for individuals are calculated by summing up the points for each item and then dividing by the number of items in that subscale. This process is carried out for all subscales.⁶⁹ When determining each subdomain and the General Symptom score for SCL-90R, the score limits for the groups are 0.00 (none) to 1.00 (considered as "low psychological symptom level" and within the normal range), to > 1.00 (considered as "high psychological symptom level").^{70,71} Cronbach's alpha internal consistency coefficient for the entire SCL-90R scale was 0.979 for this study.

Resilience Scale for Adults

The Resilience Scale for Adults (RSA) developed by Friborg et al consists of 33 questions in total.⁷² As the score obtained from the scale increases, the level of resilience also increases. The Cronbach alpha coefficient for RSA was set as 0.86. The validity and reliability of the scale were reported by Basım and Çetin.⁷³ The items in the scale consist of 5 dimensions: social competence, family harmony, structural style, personal power, and social resources. The internal consistency coefficients of the subdimensions ranged between 0.66 and 0.81, while the test-retest reliability ranged between 0.68 and 0.81.

Statistical Analysis

The Statistical Package for the Social Sciences Statistics software, version 26.0 (IBM SPSS Corp.; Armonk, NY, USA), was used for analysis of this research data. Descriptive analysis was utilized to examine the sociodemographic features of the participants. These characteristics were subsequently presented in the form of frequencies and percentages. The normality of the data in the first phase of the study was assessed using the Kolmogorov–Smirnov test. The Pearson correlation coefficient was utilized to examine relationships between scales, while a multivariable linear regression model (enter method)

Table 1. Life Skills Scale, Brief Resilience Scale, and Symptom Checklist Scores of Students

	n	\bar{x}	s
Coping with emotions and stress	472	3.18	0.68
Empathy and self-awareness	472	3.78	0.71
Decision-making and problem-solving	472	3.73	0.69
Creative and critical thinking	472	3.87	0.75
Communication and interpersonal relationships	472	3.93	0.79
Life Skills Scale	472	3.66	0.58
Brief Resilience Scale	472	3.13	0.70
Somatization	472	1.02	0.91
Obsession	472	1.61	0.83
Interpersonal sensitivity	472	1.37	0.90
Depression	472	1.46	0.92
Anxiety	472	1.17	0.87
Anger/hostility	472	1.10	1.01
Phobic anxiety	472	0.83	0.83
Paranoid ideation	472	1.47	0.91
Psychoticism	472	0.95	0.91
Symptom Checklist-90-Revised	472	1.10	0.70

was conducted for predictive analysis. The normality of the data was assessed using the Shapiro–Wilk test. Due to the nonparametric distribution of data, the Wilcoxon test was used to compare pre- and posttest scores in the experimental study. The type I error rate of the study was 5%.

Results

A total of 491 university students participated in the first phase of the study, with 19 excluded from analysis because of incomplete or incorrect survey results. The final analyses were therefore conducted on a total of 472 participants. Of these, 301 (63.77%) were female and 171 (36.23%) were male. In addition, 358 (75.85%) attended Near East University, and 114 (24.15%) attended other universities. Only a small minority, 32 (6.78%) contacted the psychological counseling center at the university and 440 (93.22%) did not.

The second phase of the study included 38 participants, of whom 3 students later withdrew and 2 students were excluded due to having received psychological or psychiatric support. Therefore, 33 participants completed the study, of whom 21 (63.64%) were female and 12 (36.36%) were male. In addition, 22 (66.67%) were aged between 18 and 21 years, and 11 (33.33%) were between the ages of 22 and 25.

Under the LSS, the score for the subdimension of coping with emotions and stress was medium, with an average of 3.18 ± 0.68 (Table 1). The score for empathy and self-awareness skills was high, with an average of 3.78 ± 0.71 . The score for decision-making and problem-solving skills was high, with an average of 3.73 ± 0.69 . The score for creative and critical thinking skills was high, with an average of 3.87 ± 0.75 . Communication and interpersonal relationship skills were also scored as high, with an average of 3.93 ± 0.79 . For the entire LSS, the score for participants was medium, with an average of 3.66 ± 0.58 . According to BRS, resilience levels of students were measured as medium level, with an average score of 3.13 ± 0.70 . For SCL-90R, the mean general symptom level score was 1.10 ± 0.70 , indicating a high level of psychiatric symptoms and complaints. For the subdimensions, the average score for obsession was 1.61 ± 0.83 , for

paranoid ideation it was 1.47 ± 0.91 , for depression it was 1.46 ± 0.92 , for interpersonal sensitivity it was 1.37 ± 0.90 , for anxiety it was 1.17 ± 0.87 , for anger/hostility it was 1.10 ± 1.01 , and for somatization it was 1.02 ± 0.91 . The psychiatric symptom levels for psychoticism (0.95 ± 0.91) and phobic anxiety (0.83 ± 0.83) were normal, with both having an average of <1.00 .

As shown in Table 2, a significant negative correlation was found between the general scores for the LSS and SCL-90R ($P < .001$). In other words, higher general scores in the LSS correlated with lower SCL-90R scores. Scores for the subdimensions of coping with emotions and stress, empathy and self-awareness, decision-making and problem-solving, creative and critical thinking, and communication and interpersonal relationships under the LSS were negatively correlated with scores for the subdimensions of somatization, obsession, interpersonal sensitivity, depression, anxiety, anger/hostility, phobic anxiety, paranoid ideation, and psychoticism ($P < .001$). Higher scores for the subdimensions of coping with emotions and stress, empathy and self-awareness, decision-making and problem-solving, creative and critical thinking, and communication and interpersonal relationships were correlated with significantly lower scores for somatization, obsession, interpersonal sensitivity, depression, anxiety, anger/hostility, phobic anxiety, paranoid ideation, and psychoticism ($P < .001$). Higher resilience scale scores were significantly associated with lower scores for somatization, obsession, interpersonal sensitivity, depression, anxiety, anger/hostility, phobic anxiety, paranoid ideation, and psychoticism, and SCL-90R.

Table 3 presents the results from a multivariable linear regression analysis of the LSS and SCL-90R scores as predictors of BRS scores. This was found to be statistically significant, with 18.5% variance. LSS scores were found to be statistically significant and positive predictors of BRS scores ($\beta = 0.195$; $P < .001$). SCL-90R scores were significant negative predictors of BRS scores ($\beta = -0.336$; $P < .001$). Thus, higher LSS scores positively affected BRS scores, while higher SCL-90R scores negatively affected BRS scores.

Table 4 compares pre- and posttest scores for the RSA using the Wilcoxon test. Statistically significant differences were found for the general RSA score ($P = .013$), as well as for the subdimensions of personal structure ($P = .018$), future perspective ($P = .001$), family coherence ($P = .001$), personal competence ($P = .001$), social competence ($P = .001$), and social support ($P = .001$). The posttest scores were all significantly higher than the pretest scores.

Discussion

The primary aim of this study was to analyze the psychiatric symptom levels, life skills, and resilience skills of university students during the COVID-19 pandemic. In addition, this study identified predictive factors for resilience skills and examined the effect of a pilot study on resilience.

The SCL-90R scores revealed high levels of psychiatric symptoms and complaints in students. These were studied in terms of the subdimensions of obsession, paranoid ideation, depression, interpersonal

Table 2. Correlation Analysis Results for Life Skills Scale, Brief Resilience Scale, and Symptom Checklist Scores of Students

	Coping with Emotions and Stress		Empathy and Self-Awareness		Decision-making and Problem-Solving		Creative and Critical Thinking		Communication and Interpersonal Relationships		Life Skills Scale		Resilience Scale	
	r	P	r	P	r	P	r	P	r	P	r	P	r	P
Somatisation	-0.237	<.001***	-0.232	<.001***	-0.178	<.001***	-0.209	<.001***	-0.138	.003**	-0.249	<.001***	-0.321	<.001***
Obsession	-0.239	<.001***	-0.203	<.001***	-0.177	<.001***	-0.176	<.001***	-0.113	.014*	-0.229	<.001***	-0.326	<.001***
Interpersonal sensitivity	-0.325	<.001***	-0.251	<.001***	-0.212	<.001***	-0.210	<.001***	-0.124	.007*	-0.285	<.001***	-0.400	<.001***
Depression	-0.306	<.001***	-0.223	<.001***	-0.195	<.001***	-0.172	<.001***	-0.112	.015*	-0.257	<.001***	-0.440	<.001***
Anxiety	-0.273	<.001***	-0.226	<.001***	-0.161	<.001***	-0.215	<.001***	-0.157	.001*	-0.257	<.001***	-0.382	<.001***
Anger/Hostility	-0.246	<.001***	-0.204	<.001***	-0.146	<.001***	-0.217	<.001***	-0.186	<.001***	-0.245	<.001***	-0.330	<.001***
Phobic anxiety	-0.247	<.001***	-.255	<.001***	-0.185	<.001***	-0.233	<.001***	-0.159	<.001***	-0.268	<.001***	-0.288	<.001***
Paranoid ideation	-0.240	<.001***	-0.199	<.001***	-0.160	<.001***	-0.175	<.001***	-0.125	.001*	-0.225	<.001***	-0.271	<.001***
Psychoticism	-0.214	<.001***	-0.230	<.001***	-0.176	<.001***	-0.232	<.001***	-0.175	.007*	-0.253	<.001***	-0.294	<.001***
Symptom Checklist-90-Revised	-0.299	<.001***	-0.259	<.001***	-0.204	<.001***	-0.236	<.001***	-0.166	<.001***	-0.291	<.001***	-0.392	<.001***

*p < .05.
 **P < .01.
 ***p < .001.

Table 3. Life Skills Score and Symptom Checklist Scores of Students as Predictor of Brief Resilience Scale Scores

	Not Standard		Standard	t	P	P	Adjusted R ²
	B	Standard Error	Beta				
Constant	99.867	4.882		12.382	<.001***	<.001*	0.185
Life Skills Scale	0.235	0.052	0.195	4.481	<.001***		
Symptom Checklist-90-Revised	-0.338	0.044	-0.336	-7.718	<.001***		

***P < .001.

sensitivity, anxiety, anger/hostility, somatization, psychoticism, and phobic anxiety. The levels for each of these were identified as being high. The present results concur with those of Kurt et al,⁷⁴ who conducted a study on general psychiatric symptom levels and those of subdimensions in a similar aged group. In both studies, higher scores were observed for the subdimensions of obsession, depression, and paranoid ideation compared to other subdimensions. An Italian study compared the SCL-90R scores of university students before and during the pandemic.⁷⁵ This found higher scores for the subdimensions of obsession, depression, anxiety, interpersonal sensitivity, and paranoid ideation compared to other subdimensions. Another Italian study also made similar findings to the current study, with students showing psychiatric symptoms and complaints such as obsession, paranoid ideation, depression, interpersonal sensitivity, anxiety, anger/hostility, and somatization, but with a low tendency to seek psychological help.¹⁷ The students had high level obsession, depression, and anxiety symptoms, and 14% of participants met at least one of the mental disorder criteria. The psychiatric symptom levels of female students assessed by SCL-90 subdimension scores for somatization, interpersonal sensitivity, depression, and anxiety levels were significantly higher than for male students. Several other studies in the literature have reported similar results, with males showing lower psychiatric symptom levels for the subdimensions of obsession, interpersonal sensitivity, depression, anxiety, anger/hostility, phobic anxiety, paranoid ideation, psychoticism, and somatization than females.^{17,74,76}

The present research found medium-level resilience and life skills among students, medium-level skills for coping with emotions and

stress (one of the subdimensions of life skills), and high levels for empathy and self-awareness skills, decision-making and problem-solving skills, creative and critical thinking skills, and communication and interpersonal relationship skills. Moreover, male students showed higher skill levels for coping with emotions and stress than females. A Chinese study reported that female students had higher psychological stress and lower coping skills.⁷⁷ Although no significant gender difference was observed for resilience skills, male students showed higher average scores for resilience skills than female students. Yıldırım et al⁷⁸ also found a significant gender difference for resilience, with males showing higher average resilience scores. These results agree with the findings of our study.

The student scores for life skills were positively correlated with BRS scores, whereas the SCL-90R scores related to psychiatric symptom levels were negatively correlated with resilience scores. Hence, resilience increases with fewer psycho-pathological symptoms and more life skills. A study performed by Cevizci et al⁷⁹ during the pandemic reached similar conclusions to the present study. Increased resilience with fewer psycho-pathological symptoms is the prevailing view in the literature.^{64,80,81}

The results of the present research showed a statistically significant difference between pre- and posttest scores for the RSA in general and for the subdimensions, with the posttest results being significantly higher. Hence, the conclusion from this pilot study is that the positive psychotherapy approach results in improved resilience, personal structure, future perspective, family coherence, self-perception, social competence and social support skills, with an overall effect of increased resilience. However, Yılmaz⁸² reported that a psychoeducation program designed to improve resilience skills in adolescents resulted in no significant difference between the experimental and control groups. Although the pre- and posttest results showed no statistically significant differences for the SCL-90R and subdimension scores, the posttest results were lower and a downward trend was observed in the psychiatric symptom level. Ambrosio and Adiletta reported similar results to the current study, with a significant difference observed in the resilience, SCL-90R and anxiety scores for students who participated in training programs aimed at improving resilience. Posttest results for SCL-90R and anxiety were found to be lower than the pretest results.

Limitations

There are several limitations with this study. First, it was a single group design for the pre- and posttest with pilot activities. Since there was no control group, it was not possible to comment on whether the observed results were due solely to the intervention. The second limitation was the lack of follow-up among students; hence, it could not be determined whether the effect continued after the program. The participants in this study were drawn from a specific university and third-year psychology students, which could influence the

Table 4. Comparison of Student Scores from Pretest and Posttest Resilience Scale for Adults

	Evaluation	n	Median	P
			(IQR)	
Personal structure	Pretest	33	14 (3)	.018*
	Posttest	33	15 (3)	
Future Perspective	Pretest	33	12 (2)	<.001***
	Posttest	33	15 (3)	
Family coherence	Pretest	33	18 (3)	<.001***
	Posttest	33	22 (7)	
Personal competence	Pretest	33	20 (2)	<.001***
	Posttest	33	23 (5)	
Social competence	Pretest	33	19 (3)	<.001***
	Posttest	33	23 (6)	
Social support	Pretest	33	19 (2)	<.001***
	Posttest	33	28 (5)	
Resilience scale for adults	Pretest	33	21 (3)	.013*
	Posttest	33	22 (3)	

IQR, interquartile range.

*P < .05.

***P < .001.

interpretation and generalizability of the results. This narrow sample might not fully represent the diversity of university students across different institutions or regions.

In conclusion, while the results of this study offer valuable contributions to the understanding of positive psychotherapy interventions among university students, the limitations in sampling methods and generalizability must be taken into account. Future research endeavors should aim to address these limitations, employing more diverse and representative samples and considering various demographic variables to ensure a comprehensive and nuanced understanding of the topic.

Recommendations

Based on the findings of this study, good long-term outcomes may be achieved by integrating training programs into the education system to improve individual resilience. This should enhance resilience levels and reduce psychiatric symptoms in students who were negatively affected by COVID-19. We recommend compulsory psycho-education programs, preferably in the first year of all university courses, aimed at increasing the resilience of university students who continued their education during the pandemic.

Availability of Data and Materials: The corresponding author may provide researchers with the information and resources utilized in this work upon request. Researchers can email Çise Onur at psk.ciseonur@gmail.com if they are interested in accessing the dataset and supporting materials for additional analysis or validation.

Ethics Committee Approval: This study was approved by the Ethics Committee of Near East University (Approval No: YDÜ/SB/2020/833, Date: November 11, 2020)

Informed Consent: Informed consent was obtained from participants who participated in the study.

Peer-review: Externally peer-reviewed.

Author Contributions: Concept – Ç.O., M.K.; Design – Ç.O., M.K.; Supervision – M.K; Resources – Ç.O.; Materials – Ç.O.; Data Collection and/or Processing – Ç.O.; Analysis and/or Interpretation – Ç.O., M.K.; Literature Search – Ç.O.; Writing – Ç.O.; Critical Review – M.K.

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