Research Paper

Investigating the Effects of Cognitive-Behavioral-Therapy-based Psychoeducation Program on University Students' Automatic Thoughts, Perceived Stress, and Self-efficacy Levels

Veysel Kaplan[1*], Mehmet Emin Düken[1], Rabia Kaya[1], Joseph Almazan[2]

1. Department of Nursing, School of Health Sciences, Harran University, Şanlıurfa, Turkey.
2. Department of Medicine, School of Medicine, Nazarbayev University, Astana, Kazakhstan.

Use your device to scan and read the article online

Citation Kaplan V, Düken ME, Kaya R, Almazan J. Investigating the Effects of Cognitive-Behavioral-Therapy-based Psychoeducation Program on University Students' Automatic Thoughts, Perceived Stress, and Self-efficacy Levels. Journal of Research & Health. 2023; 13(2):87-98. http://dx.doi.org/10.32598/JRH.13.2.2125.1

doi: http://dx.doi.org/10.32598/JRH.13.2.2125.1

ABSTRACT

Background: University life is a special period in which students take full responsibility for their lives, especially as individuals. This period includes many positive and negative situations. As a result, they need serious psychological support to cope with the potential or real problems they experience. This study aims to determine the effects of cognitive-behavioral-therapy-based psychoeducation programs on university students' automatic thoughts, perceived stress, and self-efficacy levels.

Methods: This was a quasi-experimental study with a single group pre-test and post-test design. The research was carried out at a university in Turkey from October 1 to November 15, 2022. The sample consisted of 223 students who agreed to participate in the research. The psychoeducation program prepared within the scope of the study was conducted face-to-face for four 45-min sessions. In this study, we used an individual introduction form, automatic thought questionnaire, perceived stress scale, and general self-efficacy scale. Data analysis was done via SPSS software, version 23. To analyze the data, we used descriptive statistics along with the Pearson correlation test and the Spearman correlation test.

Results: A total of 73.4% of the students who participated in the research were female and 49.5% stayed in the student dormitory. The economic situation of 53.2% was moderate and 41.4% to 67.1% of the students had a good relationship with their families, while 63.5% had a good relationship with their friends. After the psychoeducation, a significant decrease was observed in the mean scores of students' automatic thoughts and perceived stress, while their self-perception scores increased significantly ($P<0.05$).

Conclusion: The cognitive-behavioral-therapy-based psychoeducation program positively affects university students in various aspects. After the psychoeducation, the perceived stress levels of the students decreased, their self-efficacy levels were positively affected, and their negative automatic thinking levels decreased.

Keywords: CBT, Psychoeducation, University students, Automatic thoughts, Perceived stress, Self-efficacy

Article info:
Received: 28 Nov 2022
Accepted: 15 Jan 2023
Publish: 01 Mar 2023

*** Corresponding Author:**
Veysel KAPLAN, PhD.
Address: *Department of Nursing, School of Health Sciences, Harran University, Şanlıurfa, Turkey.*
Phone: *+98 (905) 362042127*
E-mail: *vyslkpln@hotmail.com*

1. Introduction

University is an important period when many students leave their hometown and close relationships to rec higher education, become the primary responsible person for their lives, and create a serious academic background [1, 2]. While every experienced event in this period is an opportunity for maturation and development, it can also create serious difficulties [3, 4]. Various theorists maintain that the situation as the perceptions and thoughts formed in the minds of the individual about their experiences are determinative and emphasize that negative automatic thoughts are directly related to the experienced difficulties. Automatic thoughts are defined as repetitive and often negative automatic self-expressions that people say to themselves in certain situations without conscious judgment [5, 6]. Automatic thoughts occur in the form of doing the best, being fully accepted, treating everyone in the best way, reaching expectations in the fastest and most complete sense, and never focusing on accepting the possibilities of the opposite of these situations [7, 8]. Although these thoughts seem to promise a positive picture for the individual, they cause negative results. The main reason for negative results is that they cause unpleasant feelings, such as sadness, anxiety, and guilt by increasing the individual's perceived stress level [9].

Stress, which is a common problem area among university students, causes many emotional and behavioral problems when perceived at a high level. Self-efficacy level is also one of the areas where the individual has problems concerning perceived stress [10]. Self-efficacy is defined as beliefs about the capacity of the individual to take action to achieve their goals [11]. Bandura (1982) states that a person's perceptions of self-efficacy are closely related to their thoughts, behavioral choices, and emotional reactions [12]. This naturally determines how the individual thinks, feels, and acts as a result of the experienced difficulties [13, 14]. Theoretically, automatic thoughts, perceived stress, and self-efficacy, which are directly or indirectly related to each other, are of great importance for university students to cope with their academic, social, and emotional problems [10, 15-17].

In various studies, it is maintained that university students experience intense stress because of many problem areas, such as adaptation to university, friendship relations, and academic problems [2-4, 13]. Coping with this stress is directly related to both the automatic thoughts and self-efficacy of individuals [8-10, 13, 15]. Studies in the literature show that university students have serious negative automatic thoughts (varol, duran) and have problems with self-efficacy [13, 15]. Students must develop in these areas for almost all the problems they experience in various fields. CBT, on the other hand, is a current therapy method that focuses on the relationship between emotions, thoughts, and behaviors in solving the individual's problems [18]. In the literature, the most important basis has been the lack of comparison of these concepts with university students. In this context, our study aims to examine the effects of a CBT-based psycho-education program on university students' perceived stress, self-efficacy, and automatic thoughts. In this study, the effect of a current approach, such as CBT on problem areas including perceived stress, self-efficacy, and automatic thinking will be determined, and it will contribute to the literature.

2. Methods

Study purpose and design

This research was conducted to determine the effect of CBT-based psycho-education programs on university students' automatic thoughts, perceived stress, and self-efficacy levels. This was a semi-experimental study with a single-group pre-test and post-test design.

Research population and sample

The research consists of all students who continue their education at the university, without any choice. For this situation, an announcement on September 15, 2022, was made regarding the psycho-education program to be given to all the departments in the university. A total of 412 students expressed their interest to join the psycho-education program. However, only 223 students volunteered to be a part of the research. For this reason, the data collection forms of the pre-test and post-test of the study were applied only to these 223 students, and the sample was formed from this population. The psycho-education program was carried out from October 1 to November 15, 2022, with students continuing their education at a university in Turkey.

Inclusion and exclusion criteriainclusion criteria

The inclusion criteria comprised the following items

Continuing educational activities at the relevant university on the dates of psycho-education;Having no problems in terms of hearing, speaking, and understanding that would prevent communication in filling out the data

collection tools and in the sessions to be held;Students over the age of 18 years who volunteered to participate in psycho-education programs.

Exclusion criteria

The exclusion criteria comprised the following items

Students who were not at the university because of various reasons at the time of psycho-education;Having problems in terms of hearing, speaking, and understanding that will prevent communication in filling out the data collection tools and in the sessions to be held;Those who did not volunteer to participate in psycho-education.

Data Collection Tools

Individual introduction form

In the form created by the researchers by scanning the literature. There are questions to determine the characteristics of the individual, such as age, gender, education level of parents, occupation of parents, place of residence during education, economic situation, economic situation, relationship with family and friends, and the duration of need for psychological support.

Study instruments

Automatic thought questionnaire

The automatic thoughts questionnaire (ATQ) is used to measure the thought patterns and self-related negative evaluations frequently observed in depression. ATQ was created by Hollon and Kendall (1980) [18]. The scale includes 30 items and is scored based on a 5-point Likert scale. Each item describes a thought which can automatically come to a person's mind. The individual is asked to indicate how often these statements have come to their mind within the last week by choosing the following options: 1 (never), 2 (rarely), 3 (sometimes), 4 (often), and 5 (always). The scale is scored by adding the numerical values of the chosen options. A high ATQ scale score indicates the existence of a depressive cognitive structure and a negative self-evaluation [18]. Turkish validity and reliability study of the ATQ was conducted by Aydın and Aydın (1990) and the Cronbach α coefficient was measured at 0.95; therefore, the ATQ was identified as a valid and reliable instrument [19]. In this study, the Cronbach α coefficient was measured at 0.89.

Perceived stress scale

The stress perceptions of the participants were assessed by the Perceived Stress Scale (PSS) [20]. It is a 14-item measure of perceived stress and is comprised of seven positive and seven negative items. The PSS measures the degree to which situations in one's life are perceived as stressful. The participants rate the items on a 5-point Likert scale ranging from 0 to 4. The PSS scores are obtained by reversing the positive items and then summing the 14 items. Thus, the total PSS scores range from 0 to 56 with higher scores indicating greater stress perceptions. The Turkish adaptation of the PSS was found to hold adequate reliability and validity [21]. In this study, the Cronbach α coefficient was measured at 0.77.

General self-efficacy scale

The general self-efficacy (GSE) scale was developed by Schwarzer and Jerusalem (1995). The Turkish version of the GSE scale was translated into Turkish using the back translation method [22]. As a result of the factor analysis, the internal consistency α was obtained at 0.83. The test-retest reliability scale was obtained at r=0.80 and P=0.001. These results led the author to consider the Turkish version of the GSE scale to be valid and reliable. All the items are positively scored based on a 4-point Likert scale (0=completely wrong, 4=completely true). Meanwhile, 10 to 40 scores are taken from the scale. Higher scores indicate that general self-efficacy is high [23]. In this study, the Cronbach α coefficient was measured at 0.71.

Study implementation

The psycho-education program was initiated by making announcements about the educational content, processes, and purpose to the students who accepted to participate in the research. As the training started, an informed consent letter was obtained from the participants. They completed the individual identification form, ATQ, PSS, and SSS for the pre-test phase. Our psychoeducation program was conducted in four 45-min sessions. The psychoeducational content applied in the study is provided in Table 1.

At the beginning of each session, a summary of the previous sessions was provided. After the summary, the experiences of the participants regarding the implementation of the practices were discussed. At the end of each session, homework assignments were given to transform the transferred information into behavior. At the end of the fourth session, a general evaluation was made of the participants. At the end of the sessions, the measurement tools were applied again as the post-test phase.

Table 1. Psychoeducational content

Session	Title	Topics	Content
1	Understanding stress	Defining stress;In which situations do we feel stressed? How does stress affect us?	General acquaintance; the participants were informed about the contents of the sessions and how they would work. Then, the definition of stress and the events in which individuals experience stress were discussed. Finally, in the first session, an attempt was made to raise awareness about how stress affects us and what it causes.
2	Identifying our automatic thoughts related to stress	What are automatic thoughts? How do they affect our emotions and behaviors? How to identify automatic thoughts?	This session started with the definition of automatic thoughts. Then, it was discussed with individuals regarding what their automatic thoughts might be and how these automatic thoughts affect them.
3	Coping with stress	How to develop alternatives to negative automatic thoughts? What are problem-solving methods and how can we improve them? What are relaxation exercises and how can we use them?	In this session, techniques for developing alternative thinking were shared. In addition, discussions were made on developing and experimenting with problem-solving methods.
4	Planning for the future	How to use what has been learned to develop individual potential;Setting short-term and long-term goals.	The last session was devoted to future plans. In this session, the importance of setting realistic goals and developing plans in line with the subjects' goals was explained. Besides, a general evaluation was made.

JRH

Data analysis

Data analysis was done using the SPSS software, version 23. The evaluation of the conformity of the data to the normal distribution was made based on kurtosis and skewness values. In the analysis of the data, firstly descriptive statistics (Mean±SD, median, minimum, maximum, No. (%), etc.) were performed. The relationships between the variables were analyzed using the Pearson correlation coefficient when the data were in a normal distribution, and the Spearman correlation coefficient when the data did not follow a normal distribution. The pre-test, post-test comparison of the group was made with the paired t-test. The results were evaluated at a 95% confidence interval along with a significance level of $P<0.05$.

Ethical considerations

Before conducting this study, ethical approval was obtained (code of the meetings: 2022/156; date: 16.09.2022). The purpose of the present research, its duration, and participants' rights was explained to the subject before starting with the study.

3. Results

Of the participants, 73.4% were female and 49.5% stayed in the student dormitory. Meanwhile, 48.6% of the mothers of the students were primary school graduates while 60.4% of their fathers were primary school graduates. Also, 91% of the mothers of the students were housewives and 31.5% of the fathers were working as workers-farmers. In terms of the economic situation of the students, 53.2% had moderate and 41.4% had bad economic situations. A total of 67.1% of the students had a good relationship with their families while 63.5% had a good relationship with their friends (Table 2).

According to the results, the psychological state of the students participating in the study was moderate (55%) and a bad level (25.2%). At the same time, 34.2% of the students needed psychological support; however, 98.6% of the students did not receive any psychological support. When the students' methods of coping with stress were examined, the following values were reported for each method: 19.8% talking with others, 16.2% finding solutions, 10.4% sleeping, 9.5% not caring, 9.5% doing exercise, 7.7% praying, 6.8% being alone, 6.3% listening to music, and 5.9% crying. Meanwhile, 6.3% of the students reported that they could not cope with stress (Table 3).

No correlation was observed between students' perceived stress level, self-efficacy scale, and the automatic thoughts scale in pre-test and post-test Mean scores in the pre- and post-psychoeducational correlation table ($r=0.034$, $P=0.611$; $r=0.001$, $P=0.993$; $r=0.118$, $P=0.079$). A statistically significant relationship was found in the pre-test, post-test correlation comparisons of students' automatic thoughts scale subdimension, personal disharmony and desire for change, and loneliness and isolation subdimensions ($r=0.140$, $P=0.038$; $r=0.215$, $P=0.001$). Negative thoughts toward self, confusion/escape fantasies, and hopelessness subdimensions were not significantly different in the pre-test and post-test correlation comparison ($r=0.046$, $P=0.492$; $r=0.068$, $P=0.316$; $r=0.073$, $P=0.281$) (Table 4).

Table 2. Demographic characteristics of students

Characteristics		No. (%)
Sex	Female	163(73.4)
	Male	59(26.6)
Education status of the mother	Illiterate	83(37.4)
	Primary education graduate	108(48.6)
	High school graduate	19(8.6)
	Graduated from a university	12(5.4)
Education status of the father	Illiterate	12(5.4)
	Primary education graduate	134(60.4)
	High school graduate	36(16.2)
	Graduated from a university	40(18)
Occupation of the mother	Housewife	202(91)
	Teacher	8(3.6)
	Worker	3(1.4)
	Death	9(4.1)
Occupation of the father	Teacher	13(5.9)
	Worker-farmer	70(31.5)
	Retired	20(9)
	Craftsman-trade-self-employed	63(28.4)
	Officer	27(12.2)
	Death	18(8.1)
	Unemployed	11(5)
Place of residence	With my family	92(41.4)
	In the student dormitory	110(49.5)
	At Home with my friends	20(9)
Financial situation	Good	12(5.4)
	Moderate	118(53.2)
	Bad	92(41.4)
Relationship with parents	Good	149(67.1)
	Moderate	61(27.5)
	Bad	12(5.4)
Relationship with friends	Good	141(63.5)
	Moderate	73(32.9)
	Bad	8(3.6)

Table 3. Psychological status of students and styles of coping with stress

Variables		No. (%)
Psychological status	Good	44(19.8)
	Medium	122(55.0)
	Bad	56(25.2)
Receiving psychological support	Yes	3(1.4)
	No	219(98.6)
Psychological support need	Yes	76(34.2)
	No	146(65.8)
Styles of coping with stress	Listening to music	14(6.3)
	Exercise	21(9.5)
	Pray	17(7.7)
	Talking to others	44(19.8)
	Trying to find a solution	36(16.2)
	Sleeping	23(10.4)
	Do not care	21(9.5)
	Cry	13(5.9)
	Being alone	15(6.8)
	Smoking or drinking alcohol	2(0.9)
	Eating	2(0.9)
	Cannot Cope with	14(6.3)

JRH

While the average of students' perceived stress levels before the psychoeducation was 43.55±5.56, the value was decreased to 30.6±7.73 after the education, and there was a statistically significant difference between the mean scores of the perceived stress levels (P<0.001). A decrease of 12.95±9.36 was also observed in the perceived stress levels of the students after the education. While the self-efficacy scores of the students were 19.2±1.77 before the education, the value was 26.96±6.43 after the education and there was a significant difference between the mean scores (P<0.001). Students' self-efficacy scores increased after the education and the difference was equal to -7.77±6.67. Students' scores on the automatic thoughts scale before the education were 65.96±23.59 and 61.16±18.02 after the education. A statistically significant difference was also detected between students' automatic thought scale mean scores and a decrease of 4.81±31.33 was seen in the negative thoughts and expressions of the students after the training (P=0.023). While the value was 21.27±8.97 before the education, it decreased from students' automatic thoughts scale subdimension to 20.44±7.36 after the education; however, no statistically significant difference was observed between the mean scores (P=0.296). The subdimensions of the automatic thoughts scale scored 15.52±5.98 on confusion/escape fantasies, 8.97±3.1 on personal dissonance and desire for change, and 10.49±3.56 on loneliness and isolation before the intervention. After the training, it was found that confusion/escape fantasies were 14.05±4.82, personal dissonance and change desires were equal to 8.32±3.2, and loneliness and isolation were obtained at 8.73±3.69. A significant difference was also observed (P=0.006, P=0.042, P<0.001). In hopelessness, which is another subdimension of the automatic thoughts scale, students' mean scores before the education were 9.71±4.02 while

Table 4. Pre-test and post-test correlation based on students' scores from study scales

	Correlation	P
Perceived stress level scale pre-test and perceived stress level scale post-test	0.034	0.611
Self-efficacy scale pre-test and self-efficacy scale post-test	0.001	0.993
Automatic thoughts scale pre-test and automatic thoughts scale post-test	-0.118	0.079
Negative self-thoughts pre-test and negative self-thoughts post-test	-0.046	0.492
Confusion/escape fantaisies pre-test and confusion/escape fantaisies post-test	-0.068	0.316
Personal dissonance and change requests pre-test and personal dissonance and change requests post-test	-0.140	0.038
Loneliness and isolation pre-test and loneliness and isolation post-test	-0.215	0.001
Hopelessness pre-test and hopelessness post-test	-0.073	0.281

JRH

they were 9.62±2.55 after the education. A decrease was also detected in the hopelessness average scores of the students, but the decrease was not significant (P=0.795) (Table 5).

4. Discussion

This study determined the effect of CBT (psychoeducation program) on undergraduate university students' automatic thoughts, perceived stress, and self-efficacy levels. Several findings were found in this study.

More than half of the students reported a moderate psychological state. This result is in line with other previous studies wherein moderate results in terms of students' psychological states were reported in China [24], Spain, and Chile [25]. The reason might be that the survey was conducted during the post-COVID-19 pandemic, wherein many schools have made some academic adjustments. For instance, according to the Turkish Ministry of National Education (2022), a roadmap was created to return to face-to-face education, as well as precautions for keeping students and school personnel safe to prevent infection (such as mandatory mask-wearing, temperature check testing before entering the school, etc.) [26]. This is worth noting since negative psychological impacts were reported among students during the pandemic because of high-stress levels and anxiety fear of infection [27]. Another study showed that during the post-pandemic period, several flexible teach-

Table 5. Comparison of students' perceived stress level, self-efficacy, automatic thoughts, and subdimensions

Variables		Pre-test		Post-test		Differences	t	P*
		Mean±SD	Median (Min-Max)	Mean±SD	Median (Min-Max)	Mean±SD		
Perceived stress level scale		43.55±5.56	45 (15-68)	30.6±7.73	30 (8-49)	12.95±9.36	-20.605	<0.001
Self-efficacy scale		19.2±1.77	20 (10-20)	26.96±6.43	27 (10-40)	-7.77±6.67	17.351	<0.001
Automatic thoughts scale		65.96±23.59	64 (27-130)	61.16±18.02	57.5 (37-127)	4.81±31.33	2.286	0.023
Automatic Thoughts Scale's Subscales	Negative thoughts about oneself	21.27±8.97	19 (10-48)	20.44±7.36	18 (9-42)	0.83±11.86	1.047	0.296
	Confusion/escape fantasies	15.52±5.98	15 (6-30)	14.05±4.82	14 (8-30)	1.48±7.93	2.777	0.006
	Personal dissonance and desire for change	8.97±3.1	9 (3-15)	8.32±3.2	7 (4-15)	0.65±4.75	2.047	0.042
	Loneliness and isolation	10.49±3.56	10 (4-20)	8.73±3.69	7 (6-20)	1.76±5.65	4.629	<0.001
	Hopelessness	9.71±4.02	9 (4-20)	9.62±2.55	9 (6-20)	0.09±4.91	0.260	0.795

*Paired t-test.

JRH

ing modes were conducted to balance students' studies and families' responsibilities to keep the students and teachers safe [28]. However, there is a need for further research to make a strong claim on the reasons for this. Further studies could attempt to uncover the factors that affect their psychological state.

Additionally, our findings showed that almost the majority of the students did not receive any psychological support as the psychological support need status. This result is in line with other previous studies which reported no psychological student support from two studies from the UK [29, 30], one study from China [31], the US [32], and France [33]. Broglia et al. (2017) reported that without psychological support, the risk for psychological distress is higher [30]. Nevertheless, college students have a higher risk of mental health problems if they do not receive psychological care [34, 35]. Some reasons for not receiving any psychological support for instance, for examination tests [36], are students' reluctance in seeking guidance counselors' help because of the stigma associated with mental issues [37-39]. Hence, addressing some of the help-seeking barriers, and investigating other alternative psychological intervention delivery methods is needed and warranted. However, caution should be made in interpreting the result as the reason why most of the respondents did not receive psychological help was not measured. Nevertheless, actively reaching out to students and offering psychological intervention may overcome many of the treatment barriers.

Several styles of coping with stress were reported in the study, but the coping style of "talking to others" garnered almost half of the students reported. Accordingly, experiencing school stress demands can affect academic performance and psychological health while talking with classmates alleviate the feeling of loneliness and reduces stress [40]. Klein et al. (2020) discussed that simply verbalizing negative emotions with someone can build trust, and reduce stress and emotional distress [41]. Additionally, Vago and Silbersweig (2012) and Pouthier (2017) describe labeling a person improves emotion or self-regulation, reducing stress, and increasing awareness [42, 43]. Hence, talking to someone in the university promotes bonding and trust and might be great for students' mental health.

Other important findings were significant positive associations and differences from the pre-test and post-test results of the psychoeducation to participants' "personal dissonance and change request pre-test and personal dissonance and change requests post-test" and "loneliness and isolation pre-test and loneliness and isolation post-test" scores. This result is in line with one systematic review of interventions, such that CBT through psychoeducation improves socialization, isolation prevention, and psychological correction of personal dissonances while minimizing negative emotions [44]. In one systematic review conducted by Nakao, Shirotsuki, and Sugaya (2021) about several randomized controlled trials articles during 1987–2021 regarding recent advances in CBT-psychoeducation techniques found that CBT reduces anxiety and depression, and also improves personal dissonance, loneliness, and isolation. It is also effective for various mental problems, physical conditions, and behavioral problems in the short-term [45]. Consequently, another systematic review reported that psychoeducation is effective in reducing social isolation among people with mental health problems [44]. According to Motlova et al. (2017), via psychoeducation therapy, patients are instructed on the importance of automatic thoughts, cognitive biases, and beliefs, so that they can greatly see the importance of paying attention to their mental cognition as one means of modifying the current problem [46]. It may be explained why psychoeducation promotes positive socialization by modifying negative beliefs into positive ones.

Finally, our findings reported that psychoeducation therapy improves students' automatic thoughts and self-efficacy while it reduces perceived stress and confusion. Several reports [40, 45] have shown how psychoeducation therapy improves students' automatic thoughts, and self-efficacy while reducing perceived stress and confusion. For instance, one study reported that people undergoing CBT-based psychoeducation have fewer interpersonal cognitive distortions, dysfunctional attitudes, and lower negative automatic thoughts [47].

Zlomuzica, Preusser, Schneider, and Margraf, (2015) further support the idea that CBT improves adaptive emotional and behavioral responding anxiety and stress-provoking behavior. Moreover, an increased self-efficacy cognitively improves emotional learning after conducting CBT [48]. The findings also are in line with the experimental study of Shahrokhian et al. (2021) which showed that CBT is effective in improving and reducing perceived stress in adolescents with low academic performance [49]. In a recent study, Stächele et al. (2020) explained a CBT stress management program on stress, increased coping skills, and better-quality sleep [50]. One controlled randomized clinical trial conducted in Iran on CBT among 56 pregnant women found that CBT-based group counseling is effective in reducing perceived anxiety and stress and improves their quality of life [51]. This is worth noting since students generally

face some academic stressors from the adjustment to a new social environment, living independently, and academic pressure, which high risk of mental health issues. Hence, conducting CBT with psychoeducation helps students reduce their stress and confusion and avoid them with coping strategies.

Study Limitations

The research has several limitations, of which the results are evaluated only at the level of the scores obtained from the scales and the study is conducted in a single group.

5. Conclusion

As a result of the study, which was conducted to determine the impact of CBT-based psychoeducation programs on university students' automatic thoughts, perceived stress, and self-efficacy level, it has been observed that students show positive developments in all areas that were measured in this research.

Considering the obtained results, students with psychosocial problems, such as negative automatic thoughts, high levels of perceived stress, and low-level self-efficacy should be identified and supported with programs that are organized within the university. Moreover, to determine the sustainability of the effectiveness of the practices, conducting research with repeated measurements could contribute considerably to the literature.

Ethical Considerations

Compliance with ethical guidelines

Before conducting this study, ethical approval was obtained (code of meetings 2022/156; date: 16.09.2022). The purpose of the present study, its duration, and the participants' rights were explained to the participants before the study.

Funding

This research received no grants from any funding agency in the public, commercial, or social-profit sectors.

Authors' contributions

All authors contributed equally to preparing this article.

Conflict of interest

The authors declared no conflict of interest.

References

[1] Bülbül T, Acar Güvendir M. Üniversite birinci sınıf öğrencilerinin yükseköğretim yaşamına uyum düzeylerinin incelenmesi. Journal of Educational Sciences Researches. 2014; 4(1):397-418. [DOI:10.12973/jesr.2014.41.21]

[2] Donat A, Bilgiç B, Eskiocak A, Koşar D. Problems of university students and suggestions for solutions. Journal of Higher Education and Science. 2019; (3):451-9. [DOI:10.5961/jhes.2019.345]

[3] Demirbilek M. Friendship relations of students living in dormitories, problems related to friendship relations and a model proposal to solve friendship problems. Journal of Ankara Health Sciences. 2012; 1(3):1-24. [Link not found]

[4] Erkan S, Özbay Y, Çankaya ZC, Terzi S. University students' problem areas and psychological help-seeking willingness. Egitim ve Bilim. 2012; 37(164):94. [Link]

[5] Beck AT. Thinking and depression: II. Theory and therapy. Archives of General Psychiatry. 1964; 10:561-57. [DOI:10.1001/archpsyc.1964.01720240015003] [PMID]

[6] Ellis A. Reason and Emotion In Pschotherapy. Secaucus, NJ: LyleStuart, 1963. [Link]

[7] Köroğlu E. Düşünsel duygulanımcı davranış terapisi. Ankara: HYB Publication, 2012. [Link]

[8] Varol R, Karakaş S, Bedel A. The effect of stress coping education on university students' coping styles and automatic thoughts. International Journal of Eurasia Social Sciences. 2015; 6(19):76-91. [Link]

[9] Duran S, Karadaş A, Kaynak S. The relationship between automatic thoughts and academic achievement of nursing students. Kocaeli Medical Journal. 2017; 6(2):30-7. [Link]

[10] Asıc, E, Uygur SS. The role of emotional self-efficacy and forgiveness in predicting of perceived stress level. Journal of Human and Soical Sciences Researches. 2017; 6(3):1353-75. [Link not found]

[11] Locke EA. Self-efficacy: The exercise of control. Personnel Psychology. 1997; 50(3):801. [Link]

[12] Bandura A. The assessment and predictive generality of selfpercepts of efficacy. Journal of Behaviour Therapy and Experimental Psychiatry. 1982; 13:195-199. [DOI:10.1016/0005-7916(82)90004-0] [PMID]

[13] Charoensukmongkol P. Benefits of mindfulness meditation on emotional intelligence, general self-efficacy and perceived stress: evidence from Thailand. Journal of Spirituality in Mental Health. 2014; 16:171-192. [DOI:10.1080/19349637.2014.925364]

[14] Choi S, Kluemper DH, Sauley KS. Assessing emotional selfefficacy: evaluating validity and dimensionality with cross-cultural samples. Applied Psychology: An International Review. 2013; 62(1):97-123. [DOI:10.1111/j.1464-0597.2012.00515.x]

[15] Can M, Cantez KE. Investigation of happiness, resilience and self efficacy levels in university students. Aydın Toplum ve İnsan Dergisi. 2018; 4(2):61-76. [Link]

[16] Parmaksiz İ. Effects of automatic thoughts and coping with stress mechanisms on intolerance to uncertainty in adult period. Psikiyatride Guncel Yaklasimlar. 2021; 13:1-11. [Link]

[17] Yarar F, Telci EA, Şekeröz S. Investigation of the effects of physical activity level on academic self-efficacy, anxiety and stress in university students. Pamukkale Medical Journal. 2020; 14(3):548-54. [Link not found]

[18] Hollon SD, Kendall PC. Cognitive self-statements in depression: Development of an automatic thoughts questionnaire. Cognitive Therapy and Research. 1980; 4(4):383-95. [DOI:10.1007/BF01178214]

[19] Aydın G, Aydın O. Otomatik düşünceler ölçeğinin geçerlik ve güvenirliği. Psikoloji Dergisi. 1990; 7(24):51-5. [Link]

[20] Cohen S, Kamarck T, Mermelstein R. A global measure of perceived stress. Journal of Health and Social Behavior. 1983; 385-96. [DOI:10.2307/2136404] [PMID]

[21] Eskin M, Harlak H, Demirkıran F, Dereboy Ç. Algılanan stres ölçeğinin Türkçeye uyarlanması: güvenirlik ve geçerlik analizi. InNew/Yeni Symposium Journal. 2013; 51(3):132-40. [Link]

[22] Schwarzer R, Jerusalem M, Weinman J, Wright S, Johnston M. Measures in health psychology: A user's portfolio. Causal and control beliefs. Causal and Control Beliefs. 1995; 1:35-7. [DOI:10.1037/t00393-000]

[23] Aypay A. Genel öz yeterlik ölçeği'nin (GÖYÖ) Türkçe'ye uyarlama çalışması. İnönü Üniversitesi Eğitim Fakültesi Dergisi. 2010; 11(2):113-32. [Link]

[24] Ren Z, Xin Y, Ge J, Zhao Z, Liu D, Ho RC, et al. Psychological impact of COVID-19 on college students after school reopening: a cross-sectional study based on machine learning. Frontiers in Psychology. 2021; 12:641806. [DOI:10.3389/fpsyg.2021.641806] [PMID] [PMCID]

[25] Reverté-Villarroya S, Ortega L, Raigal-Aran L, Sauras-Colón E, Ricomà-Muntané R, Ballester-Ferrando D, et al. Psychological Well-Being in nursing students: a multicentric, cross-sectional study. International Journal of Environmental Research and Public Health. 2021; 18(6):3020. [DOI:10.3390/ijerph18063020] [PMID] [PMCID]

[26] Turkey's Education Vision 2023. Turkish Ministry of National Education (MoNE). 2022. [Link]

[27] Alsolais A, Alquwez N, Alotaibi KA, Alqarni AS, Almalki M, Alsolami F, et al. Risk perceptions, fear, depression, anxiety, stress and coping among Saudi nursing students during the COVID-19 pandemic. Journal of Mental Health. 2021; 30(2):194-201. [DOI:10.1080/09638237.2021.1922636] [PMID]

[28] Rasmussen B, Hutchinson A, Lowe G, Wynter K, Redley B, Holton S, et al. The impact of covid-19 on psychosocial well-being and learning for australian nursing and midwifery undergraduate students: a cross-sectional survey. Nurse Education in Practice. 2022; 58:103275. [DOI:10.1016/j.nepr.2021.103275] [PMID] [PMCID]

[29] Brewster L, Jones E, Priestley M, Wilbraham SJ, Spanner L Hughes G. "Look after the staff and they would look after the students" cultures of wellbeing and mental health in the university setting. Journal of Further and Higher Education. 2021; 46(4):548-560. [DOI:10.1080/0309877x.2021.1986473]

[30] Broglia E, Millings A, Barkham M. "challenges to addressing student mental health in embedded counselling services: a survey of UK higher and further education institutions." British Journal of Guidance and Counselling. 2017; 46(4):441-5. [DOI:10.1080/03069885.2017.1370695]

[31] Cao W, Fang Z, Hou G, Han M, Xu X, Dong J, et al. The psychological impact of the COVID-19 epidemic on college students in China. Psychiatry Research. 2020; 287:112934. [DOI:10.1016/j.psychres.2020.112934] [PMID] [PMCID]

[32] Batra K, Sharma M, Batra R, Singh TP, Schvaneveldt N. Assessing the psychological impact of COVID-19 among college students: An evidence of 15 countries. In Healthcare. 2021; 9(2):222. [DOI:10.3390/healthcare9020222] [PMID] [PMCID]

[33] Bourion-Bédès S, Tarquinio C, Batt M, Tarquinio P, Lebreuilly R, Sorsana C. et al. Psychological impact of the COVID-19 outbreak on students in a French region severely affected by the disease: results of the PIMS-CoV 19 study. Psychiatry Research. 2021; 295:113559. [DOI:10.1016/j.psychres.2020.113559] [PMID] [PMCID]

[34] Alshehry AS, Cruz JP, Alquwez N, Alsharari AF, Tork HMM, Almazan JU, et al. Predictors of nursing students' intention to receive COVID-19 vaccination: A multi-university study in Saudi Arabia. Journal of Advanced Nursing. 2021; 78(2):446-57. [DOI:10.1111/jan.15002] [PMID] [PMCID]

[35] Cheng HL, Lam SC, Cruz JP, Almazan JU, Machuca-Contreras FA, Cecily HSJ, et al. Willingness to care for older people and associated factors in pre-registered student nurses: A multi-country survey study. Nurse Education Today. 2022; 110:105279. [DOI:10.1016/j.nedt.2022.105279] [PMID]

[36] Cuijpers P, Karyotaki E, Ciharova M, Miguel C, Noma H, Furukawa TA. The effects of psychotherapies for depression on response, remission, reliable change, and deterioration: A meta-analysis. Acta Psychiatrica Scandinavica. 2021; 144(3):288-99. [DOI:10.1111/acps.13335] [PMID] [PMCID]

[37] Conceição V, Rothes I, Gusmão R. The association between stigmatizing attitudes towards depression and help seeking attitudes in college students. Plos One. 2022; 7(2):e0263622. [DOI:10.1371/journal.pone.0263622] [PMID] [PMCID]

[38] Noma H, Furukawa TA, Maruo K, Imai H, Shinohara K Tanaka S, et al. Exploratory analyses of effect modifiers in the antidepressant treatment of major depression: Individual-participant data meta-analysis of 2803 participants in seven placebo-controlled randomized trials. Journal of Affective Disorders. 2019; 250:419-24. [DOI:10.1016/j.jad.2019.03.031] [PMID]

[39] Bruffaerts R, Mortier P, Auerbach RP, Alonso J, Hermosillo De la Torre AE, Cuijpers P, ... & WHO WMH-ICS Collaborators. Lifetime and 12-month treatment for mental disorders and suicidal thoughts and behaviors among first year college students. International Journal of Methods in Psychiatric Research. 2019; 28(2):e1764. [DOI:10.1002/mpr.1764] [PMID] [PMCID]

[40] Freire C, Ferradás MD, Regueiro B, Rodríguez S, Valle A, Núñez JC. Coping strategies and self-efficacy in university students: A person-centered approach. Frontiers in Psychology. 2020; 11:841. [DOI:10.3389/fpsyg.2020.00841] [PMID] [PMCID]

[41] Klein CJ, Dalstrom MD, Weinzimmer LG, Cooling M, Pierce L, Lizer S. Strategies of advanced practice providers to reduce stress at work. Workplace Health & Safety. 2020; 68(9):432-42. [DOI:10.1177/2165079920924060] [PMID]

[42] Vago DR, Silbersweig DA. Self-awareness, self-regulation, and self-transcendence (S-ART): a framework for understanding the neurobiological mechanisms of mindfulness. Frontiers in Human Neuroscience. 2012; 6:296. [DOI:10.3389/fnhum.2012.00296] [PMID] [PMCID]

[43] Pouthier V. Griping and joking as identification rituals and tools for engagement in cross-boundary team meetings. Organization Studies. 2017; 38(6):753-74. [DOI:10.1177/0170840616685358]

[44] Ma R, Mann F, Wang J, Lloyd-Evans B, Terhune J, Al-Shihabi A, et al. The effectiveness of interventions for reducing subjective and objective social isolation among people with mental health problems: a systematic review. Social Psychiatry and Psychiatric Epidemiology. 2019; 55(7):839-76. [DOI:10.1007/s00127-019-01800-z] [PMID] [PMCID]

[45] Nakao M, Shirotsuki K, Sugaya N. Cognitive–behavioral therapy for management of mental health and stress-related disorders: Recent advances in techniques and technologies. BioPsychoSocial Medicine. 2021; 15(1):1-4. [DOI:10.1186/s13030-021-00219-w] [PMID] [PMCID]

[46] Motlova LB, Balon R, Beresin EV, Brenner AM, Coverdale JH, Guerrero AP, et al. Psychoeducation as an opportunity for patients, psychiatrists, and psychiatric educators: why do we ignore it? Academic Psychiatry. 2017; 41:447-51. [DOI:10.1007/s40596-017-0728-y] [PMID]

[47] Kürümlüoğlugil R, Tanrıverdi D. The effects of the psychoeducation on cognitive distortions, negative automatic thoughts and dysfunctional attitudes of patients diagnosed with depression. Psychology, Health & Medicine. 2022; 27(10):2085-95. [DOI:10.1080/13548506.2021.1944654] [PMID]

[48] Zlomuzica A, Preusser F, Schneider S, Margraf J. Increased perceived self-efficacy facilitates the extinction of fear in healthy participants. Frontiers in Behavioral Neuroscience. 2015; 9:270. [DOI:10.3389/fnbeh.2015.00270] [PMID] [PMCID]

[49] Shahrokhian N, Hassanzadeh S, Hashemi Razini H, Ramshini M. The Effects of Cognitive-Behavioral Therapy (CBT) in well-being and perceived stress in adolescents with low academic performance during the COVID-19 Pandemic. International Journal of Sport Studies for Health. 2022; 4(2):e122504. [DOI:10.5812/intjssh.122504]

[50] Stächele T, Domes G, Wekenborg M, Penz M, Kirschbaum C, Heinrichs M. Effects of a 6-week internet-based stress management program on perceived stress, subjective coping skills, and sleep quality. Frontiers in Psychiatry. 2020; 11:463. [DOI:10.3389/fpsyt.2020.00463] [PMID] [PMCID]

[51] Golshani F, Hasanpour S, Mirghafourvand M, Esmaeilpour K. Effect of cognitive behavioral therapy-based counseling on perceived stress in pregnant women with history of primary infertility: a controlled randomized clinical trial. BMC Psychiatry. 2021; 21:1-1. [DOI:10.1186/s12888-021-03283-2] [PMID] [PMCID]

This Page Intentionally Left Blank