

## RESEARCH ARTICLE

# Unified protocols for transdiagnostic treatment versus the Beckian's approach of cognitive behavioral therapy for medical students with emotional disorders

Cosmin O. Popa<sup>1</sup>, Peter Olah<sup>2</sup>, Cristiana Cojocaru<sup>3\*</sup>, Zsolt Jakab<sup>3</sup>, Dana V. Ghiga<sup>4</sup>, Alina Schenk<sup>3</sup>

1. Department of Ethics and Social-Sciences, George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures, Romania

2. Department of Medical Informatics and Biostatistics, Faculty of Medicine, University of Medicine and Pharmacy of Tirgu Mures, Romania

3. The Doctoral School of Medicine and Pharmacy, George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures, Romania

4. Department of Research methodology, George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures, Romania

**Background:** Emotional disorders are highly prevalent among medical students, impacting their academic performance and general quality of life. It was shown that cognitive-behavioral and emotion regulation strategies are efficient for reducing anxiety and depressive symptoms in young people. **Objective:** This study aims to compare the efficiency of standard individual Cognitive-Behavioral Therapy (CBT) to a group intervention based on the Unified Protocol for Transdiagnostic Treatment (UPTT) of emotional disorders in two groups of medical students with similar baseline characteristics. **Method:** The sample of this research was composed of 64 medical students in total, of which 34 were included in the CBT group (Mage= 19.5 years, SD= 0.96) and 30 were included in the UPTT group (Mage= 19.4 years, SD= 0.93). The level of irrational beliefs and emotional distress were measured before and after the interventions, which were carried out by certificated psychotherapists. **Results:** Statistically significant differences were observed between pre-test and post-test in both groups. The level of irrational beliefs dropped after the CBT (M=62.91, SD=21.30,  $p<0.05$ ) and the UPTT intervention (M=67.33, SD=34.89,  $p<0.05$ ), respectively. Similarly, the profile of emotional distress changed after the CBT (M=77.62, SD=16.97,  $p<0.05$ ) and the UPTT intervention (M=68.77, SD=20.06,  $p<0.01$ ). **Conclusion:** Psychological interventions relying on cognitive-behavioral approaches, including standard, individual psychotherapy and a group intervention designed according to a transdiagnostic protocol, are suitable methods for reducing emotional disorders among medical students.

**Keywords:** cognitive-behavioral therapy, unified protocols, transdiagnostic, emotional disorders, medical students

Received 15 October 2021 / Accepted 21 January 2022

## Introduction

The pursuit of the medical profession requires that students acquire superior theoretical and practical knowledge related to the medical field, but also develop psychological skills, such as empathy, compassion and unconditional acceptance towards patients. However, the academic challenges of medical students are not few, and the difficulty of exams and clinical study programs often involves the occurrence of psychological stress, anxiety and depression [1-3]. Compared to other students, medical undergraduates are more likely to present emotional disorders, including anxiety and/or depression, during academic years [4,5]. More specific, first year medical students often develop emotional disorders related to the neurocognitive academic demands (new courses, exams, etc.), contrary to medical students in the final years, who develop emotional disorders because of worrying that they can commit professional or medical errors during practical stages [6]. The prevalence of anxiety in medical students in Europe and the UK varies between 7.7% and 65% [7], while global prevalence rates were estimated at 33.9% [8].

The cognitive theory of emotional disorders states that intense negative emotions, as well as dysfunctional reactions like avoidance and re-assurance behaviors are generated/ maintained by negative automatic thoughts/ irrational beliefs, thought suppression, as well as cognitive distortions [9,10,11]. Therefore, it was demonstrated that the Cognitive-Behavioral Therapy (CBT) represents an efficient approach for treating different emotional disorders in medical students in relation to the academic context [12,13].

According to the cognitive model developed by Beck [9], our emotions and behaviors are the result of the way we interpret and signify an internal or external stimulus, defined as an activating event. The identification, disputation of the individual's automatic negative thoughts/ irrational beliefs and the generation of an alternative thought may lead to adaptive emotional and behavioral reactions.

Furthermore, the group format Unified Protocol for Transdiagnostic Treatment (UPTT) of emotional disorders aims to help patients use effective emotion regulation strategies when experiencing emotional disorders, to reduce the emotional avoidance behaviors, and to increase cognitive flexibility by addressing automatic negative thoughts/ irrational beliefs and thought suppression. The main advantages of the group format are normalizing one's emotional

\* Correspondence to: Cristiana Cojocaru  
E-mail: cristianacojocaru28@gmail.com

experience and including patients with different and multiple emotional disorders [14].

While classical Cognitive-Behavioral Therapy (CBT) is based on effective intervention protocols specific for different disorders (anxiety, depression) that intends to reduce symptoms - getting better, transdiagnostic approaches are focused more on the process of change, on identifying those common processes of emotional disorders that can co-occur, reducing the intervention duration and relapses [15].

Emotional distress, the total of negative functional and dysfunctional emotions, is the result of irrational beliefs/negative automatic thoughts and the consequence of dysfunctional behaviors that prevent students to adjust and achieve academic goals. In this case, negative emotions are experienced with clinical intensity (e.g., anxiety, depression) [16]. As main cognitive processes in emotional disorders, irrational beliefs can be divided into two categories: primary and secondary [17]. Demandingness is the primary irrational belief that formulates expectations in an absolutist manner using verbal labels like "must," "should," (e.g., "I mustn't feel anxious," "I must pass the exam"). Secondary irrational beliefs are: awfulizing, the belief that the most negative outcome of a situation will happen ("it's awful if I can't get things done"), low frustration tolerance that refers to the belief that the situation is unbearable ("I couldn't stand not being the best") and negative global evaluation of self, others and the world ("I am incapable of finishing the studies"). It was shown that students with high demandingness level have an increased level of emotional distress, as well as that secondary irrational beliefs mediate the relationship between demandingness and emotional distress [18].

## Methods

### Participants and Procedure

This study was conducted between October 2019 and May 2021 at GE Palade University of Medicine, Pharmacy, Sciences and Technology from Tirgu Mures. Each participant was informed in detail about the design of the study and signed the informed consent. This study was developed in concordance with the ethical principles mentioned in The Declaration of Helsinki (DoH). Data protection was also ensured in rapport with the American Psychological Associations (APA) ethical guidelines. This study included two samples of medical students who presented physiological and emotional anxiety symptoms, especially during academic tasks/ evaluations. The first sample (CBT group) included 34 individuals (31 females, 3 males; Mage = 19.5 years; SD = 0.96). The second sample (UPTT group) consisted of 30 individuals (23 females, 7 males, Mage = 19.4 years; SD = 0.93). The inclusion criteria were the following: 1) medical students in the first year of study; 2) students who presented physiological and emotional anxiety symptoms; 2) an overall score greater than 20 points on

the Hamilton Anxiety Rating Scale (HARS). The exclusion criteria were the following: 1) an overall score lower than 20 points on the Hamilton Anxiety Rating Scale (HARS); 2) medical students from other study years than first year; 3) students from other faculties than medical school. The first phase of the working procedure included identifying medical students with anxiety symptoms for establishing the study groups. Students included in the study were recruited from a total number of 353 students. A clinical interview based on the DSM-5 diagnosis criteria was conducted by the clinical psychologists from the research team, followed by the application of HARS. After this psychological assessment, students who met the inclusion criteria were uniformly distributed into the group in which the Unified Protocol for Transdiagnostic Emotional Disorders was applied, namely the UPTT group, and the group in which Cognitive Behavioral Therapy was performed, namely the CBT group. In the second phase, students completed the Profile of Emotional Distress (PED) and The Attitudes and Beliefs Scale-Second Edition (ABS-II) and started the therapy sessions (Pre-test). After 8 sessions of therapy, all individuals included in study both within the CBT and the UPTT group completed the PED and ABS-II again (Post-test). The Beck & Beck protocol was applied in the CBT group [11,19] and the Barlow et al. protocol was used in the UPTT group [14]. The intervention in the UPTT group consisted of group therapy sessions, each group including 4 students, whereas the CBT intervention comprised of individual therapy sessions. The frequency of the sessions was one per week. All the therapists involved in the research team were certificated as CBT practitioners by the Romanian College of Psychologists, the entire group of psychotherapists presenting, on average, 10.37 years of experience in the field. A significant part of the study was conducted during the COVID-19 outbreak. Therefore, some sessions took place online, although the interventions were initiated on-site. This permitted respecting the restrictions imposed due to the pandemic situation while ensuring the continuity of the study.

### Measures

The Hamilton Anxiety Rating Scale (HARS) [20] is a brief clinical interview composed of 14 items for the assessment of anxiety symptoms, evaluating both the physical and psychological dimensions. In this way, the severity of anxiety symptoms can be determined. When applied according to the recommendations provided in the Interview Guide, the HARS demonstrated very good internal consistency, with Cronbach alpha coefficients reaching .81 [21]. In the current research, this interview was used during the screening phase.

The Profile of Emotional Distress (PED) [22] refers to a self-report questionnaire consisting of 39 items that evaluates functional and dysfunctional negative emotions, as well as positive affect. Respondents are asked to rate the degree to which they felt each emotion over the previous

two weeks on a 5-point Likert scale (from 0=not at all to 4=extremely). In the initial validation study on the Romanian population, Cronbach's alpha coefficients of PED ranged from .75 to .94, demonstrating good internal consistency [22].

The Attitudes and Beliefs Scale-Second Edition (ABS-II) [23] is a self-report instrument composed of 72 items for the assessment of cognitive processes as conceptualized by the Rational Emotive Behavior Therapy (rational and irrational beliefs). Irrational processes include Demandingness, Awfulizing, Frustration Intolerance, and Global Evaluations. Responders had to rate the degree to which they agree with the specific attitudes stated in the items according to a 5-point Likert scale (from 0= strongly disagree to 4= strongly agree). The instrument proved very good internal consistency, as reflected in the fact that all subscales recorded Cronbach's alpha coefficients over .82 [23].

**Data analysis**

Statistical analysis was performed using the GraphPad Prism 7, Windows edition. Statistical analysis included elements of descriptive statistics (mean, median, standard deviation) and elements of inferential statistics. The Shapiro-Wilk test was applied to determine the distribution of the analyzed data series. For comparison of means, the t-Student test for unpaired data was applied, and the t-Student test for paired data, respectively. For the comparison of medians, the Mann-Whitney test and the Wilcoxon test were applied. The significance threshold chosen for p was 0.05.

**Results**

Compared with baseline (pre-test), the level of cognitive and emotional processes related to emotional disorders were reduced in the UPTT group, as can be observed in table no. 1, namely Irrational Beliefs (M=67.33, SD=34.89, p<0.05), Self-Downing Global Evaluation (M=19.43, SD=9.832, p<0.05), Low Frustration Tolerance (M=12.50,

SD=9.365, p<0.05), Awfulizing (M=18.63, SD=10.53, p<0.01), Emotional Distress Profile (M=68.77, SD=20.06, p<0.01). Based on these results the UPTT intervention can be considered highly effective. A similar effect can be observed in the CBT group, where several scores were reduced in post-test, namely Irrational Beliefs (M=62.91, SD=21.30, p<0.05), DEM (M=23.68, SD=10.62, p<0.05), Low Frustration Tolerance (M= 10.50, SD= 4.85, p<0.05), Awfulizing (M=16.71, SD=7.834, p<0.05), and the Emotional Distress Profile (M=77.62, SD=16.97, p<0.05). These outcomes indicate that the CBT intervention was also highly effective for reducing the intensity of cognitive and emotional processes related to emotional disorders. As can be seen in table no. 2, there is no significant difference between the UPTT and CBT interventions in post-test, as compared to pre-test scores.

Regarding the results at pre-test, in concordance with the data presented in table no. 2, a statistically significant difference was observed between the level of Irrational Beliefs in the UPTT group (M=103.3, SD=49.16, p<0.05) and Irrational Beliefs in the CBT Group (M=103.3, SD=49.16, p<0.05). Also, other differences were seen regarding the Self-Downing Global Evaluation scores (M=26.27, SD=11.68, p<0.05) in the UPTT intervention and the Self-Downing Global Evaluation scores (M=20.68, SD=6.549, p<0.05) in the CBT Group. The last difference was found between Awfulizing scores (M=31.00, SD=15.90, p<0.05) in the UPTT group and Awfulizing scores (M= 23.76, SD=8.91, p<0.05) in the CBT group. There were no other statistically significant differences at post-test. These results reflect that both UPTT and CBT interventions were equally effective in reducing the cognitive and emotional dysfunctional processes involved in emotional disorders.

**Discussion**

The present study confirmed the hypothesis that cognitive-behavioral therapies, namely the Beckian's approach of CBT and the UPTT developed by Barlow et al., are effi-

Table 1. Intra-group differences before and after the UPTT and CBT interventions

| UPTT (30) | Pretest Mean±SD (Median) | Post-test Mean±SD (Median) | p value | CBT (34) | Pretest Mean±SD (Median) | Post-test Mean±SD (Median) | p value |
|-----------|--------------------------|----------------------------|---------|----------|--------------------------|----------------------------|---------|
| IB        | 103.3±49.16 (104.5)      | 67.33±34.89 (64.00)        | 0.0003  | IB       | 82.41±19.90 (80.00)      | 62.91±21.30 (65.50)        | 0.0002  |
| DEM       | 38.70±20.76 (38.50)      | 30.50±18.33 (31.00)        | 0.0607  | DEM      | 31.76±11.39 (31.00)      | 23.68±10.62 (22.50)        | 0.0011  |
| SDGE      | 26.27±11.68 (25.50)      | 19.43±9.832 (17.50)        | 0.0071  | SDGE     | 20.68±6.549 (22.00)      | 17.76±7.624 (18.00)        | 0.0677  |
| LFT       | 19.43±13.72 (15.50)      | 12.50±9.365 (10.00)        | *0.0234 | LFT      | 15.06±8.517 (13.00)      | 10.50±4.857 (10.00)        | 0.0099  |
| AWF       | 31.00±15.90 (33.50)      | 18.63±10.53 (17.50)        | <0.0001 | AWF      | 23.76±8.911 (21.50)      | 16.71±7.834 (16.50)        | 0.0008  |
| PED       | 88.93±19.94 (86.50)      | 68.77±20.06 (66.50)        | 0.0001  | EDP      | 84.24±15.45 (81.50)      | 77.62±16.97 (74.00)        | 0.0183  |

Table 2. Inter-group differences between UPTT and CBT

| Pretest | UPTT (30) Mean±SD (Median) | CBT (34) Mean±SD (Median) | p value | Post-test | UPTT (30) Mean±SD (Median) | CBT (34) Mean±SD (Median) | p value |
|---------|----------------------------|---------------------------|---------|-----------|----------------------------|---------------------------|---------|
| IB      | 103.3±49.16 (104.5)        | 82.41±19.90 (80.00)       | 0.0358  | IB        | 67.33±34.89 (64.00)        | 62.91±21.30 (65.50)       | 0.5501  |
| DEM     | 38.70±20.76 (38.50)        | 31.76±11.39 (31.00)       | 0.1111  | DEM       | 30.50±18.33 (31.00)        | 23.68±10.62 (22.50)       | 0.0800  |
| SDGE    | 26.27±11.68 (25.50)        | 20.68±6.549 (22.00)       | 0.0251  | SDGE      | 19.43±9.832 (17.50)        | 17.76±7.624 (18.00)       | 0.4481  |
| LFT     | 19.43±13.72 (15.50)        | 15.06±8.517 (13.00)       | 0.1380  | LFT       | 12.50±9.365 (10.00)        | 10.50±4.857 (10.00)       | *0.8662 |
| AWF     | 31.00±15.90 (33.50)        | 23.76±8.911 (21.50)       | 0.0327  | AWF       | 18.63±10.53 (17.50)        | 16.71±7.834 (16.50)       | 0.4059  |
| EDP     | 88.93±19.94 (86.50)        | 84.24±15.45 (81.50)       | 0.2932  | PDAtot    | 68.77±20.06 (66.50)        | 77.62±16.97 (74.00)       | 0.0604  |

cient for alleviating emotional symptoms among emerging adults, representing flexible interventions with multiple delivery modalities, like traditional or online, as well as individual and group formats [24-26]. Also, our exploration is in line with the research showing that programs based on cognitive-behavioral therapy can significantly reduce anxiety and depressive symptoms among university students [27].

Moreover, coherent with our findings, previous investigations indicated the effectiveness of using cognitive and behavioral techniques for improving stress management among medical undergraduates in particular [28,29,30]. In addition, we found a significant decrease of irrational beliefs for both students who received standard cognitive-behavioral therapy and those who attended the group intervention, which was also reflected in another study that compared two cognitive-behavioral approaches in a sample of medical students [31].

Therefore, besides the impact of the individual psychological treatment, our findings also highlighted the efficiency of a group protocol. In this light, it has been shown that a group cognitive behavioral program may help decrease anxiety, while increasing the resilience and self-efficacy levels among female medical students [32]. More precisely, the intervention we implemented was designed according to a validated transdiagnostic unified protocol to be used in a group format, with beneficial effects on anxiety and depressive symptoms [33]. Providing important resources for dealing with stressful situations, the unified protocol typically focuses on the development of adaptive emotional regulation skills, including the application of cognitive reappraisal strategies and techniques for increasing emotional awareness [34]. Our findings are further reinforced by data indicating that this approach was associated with successful results in terms of acceptability and feasibility among university freshmen [35].

Our study revealed that both the individual cognitive behavioral therapy and transdiagnostic group intervention provided similar positive effects for medical students' wellbeing. This conclusion is concordant to other investigations emphasizing that either transdiagnostic and those concentrated on singular diagnoses or problems are linked to equivalent outcomes [36]. Also similar to our results, there is evidence suggesting that standard and group-based cognitive-behavioral interventions are associated to comparable efficiency for reducing emotional symptoms [37]. Nevertheless, some important disparities could be observed between the study groups following these programs. Specifically, Demandingness scores decreased following standard cognitive-behavioral therapy, whereas Self-Downing Global Evaluation levels reduced more after the transdiagnostic procedure. We believe that these interesting outcomes could point to the fact that these types of interventions have a different perspective. Concretely, while cognitive-behavioral therapy focuses more on the cognitive domain, efficiently modifying irrational thoughts that

generate psychological suffering, the transdiagnostic protocol directly addresses the field of emotional functioning. Future research should clarify the way all these processes correlate and contribute to the development of certain emotional difficulties.

### Limitations

Our findings could be biased by several important limitations. First of all, the small sample size could distort the outcomes of this study. Secondly, the pandemic situation and the online conduction of several psychotherapeutic sessions could have an influence on the results, especially on the outcomes of the group intervention.

### Conclusions

This research proved that individually delivered standard Cognitive-Behavioral Therapy and a group intervention based on the Unified Protocol for Transdiagnostic Treatment are equally successful and reliable strategies for the management of emotional disorders in medical students. Both interventions use efficient techniques, providing the possibility of developing tailored programs for reducing stress that accompany performance in academic contexts.

### Abbreviations

CBT – Cognitive-Behavioral Therapy

UPTT – Unified Protocol for Transdiagnostic Treatment

### Acknowledgments

This research was funded by grants awarded to Cosmin Popa and Peter Olah from the World Bank through Romanian Ministry of Education – Project Management Unit with External Financing (grant numbers 49/SGU/NC/1 ROSE and AG 85/SGU/CI/I ROSE).

### Authors' contribution

COP - Conceptualization, Project administration, Supervision, Writing -original draft, Writing – review & editing

PO - Conceptualization, Project administration, Supervision, Writing – review & editing

CC - Investigation, Resources, Visualization, Writing -original draft, Writing – review & editing

ZsJ - Data curation, Validation, Writing -original draft, Writing – review & editing

DG - Formal Analysis, Visualization, Software, Supervision

AS - Data curation, Methodology, Investigation, Resources, Writing – original draft, Writing – review & editing

### References

1. Aktekin M, Karaman T, Senol YY, Erdem, S, Erengin H, Akaydin M. Anxiety, depression and stressful life events among medical students: A prospective study in Antalya, Turkey. *Med. Educ.* 2001;35:12–17.
2. Mirza AA, Baig M, Beyari GM, Mohammed AH, Mirza AA. Depression and Anxiety Among Medical Students: A Brief Overview. *Advances in Medical Education and Practice.* 2021;12:393-398.
3. Ji HY, Hye JC, Soon SK, et al. Effects of high-fidelity simulation education on medical students' anxiety and confidence. *PLoS One.* 2021;16(5).

4. Erschens R, Herrmann-Werner A, Bugaj TJ, Nikendei C, Zipfel S, Junne F. Methodological aspects of international research on the burden of anxiety and depression in medical students. *Ment Health Prev.* 2016; 4(1): 31–35.
5. Begdache L, Kianmehr H, Sabounchi N, Marszalek A, Dolma N. Principal component regression of academic performance, substance use and sleep quality in relation to risk of anxiety and depression in young adults. *Trends Neurosci Educ.* 2019; 15:29-37.
6. Bruffaerts R, Mortier P, Kiekens G, et al. Mental health problems in college freshmen: Prevalence and academic functioning. *J Affect Disord.* 2018; 225:97-103.
7. Hope V, Henderson M. Medical student depression, anxiety and distress outside North America: a systematic review. *Med Educ.* 2014;48(10):963-979.
8. Quek TT, Tam WW, Tran BX, et al. The Global Prevalence of Anxiety Among Medical Students: A Meta-Analysis. *Int J Environ Res Public Health.* 2019;16(15):2735.
9. Beck AT. *Cognitive Therapy and the Emotional Disorders.* New York, NY: Meridian, 1976.
10. Bullis JR, Boettcher H, Sauer Zavala S, Farchione TJ, Barlow DH. What is an emotional disorder? A transdiagnostic mechanistic definition with implications for assessment, treatment, and prevention. *Clin Psychol Sci Pract.* 2019;26:e12278.
11. Beck J. *Cognitive Behavior Therapy, Third Edition: Basics and Beyond Third Edition,* New York: Guilford Press, 2021.
12. Popa OC, Predatu R, The effect of an integrative CBT/REBT intervention in improving emotional functioning and emotional stability in Romanian medical students. *J Evid Based Psychother.* 2019; 19(1):59-72.
13. Schenk A, Popa OC, Olah P, Suci N, Cojocaru C. The Efficacy of Rational Emotive Behavior Therapy Intervention in Generalized Anxiety Disorder, 2020, *Acta Med Marisiensis.* 2020; 66(4):1-1.
14. Barlow D, Farchione TJ, Sauer-Zavala S, Latin HM. *Unified Protocol for Transdiagnostic Treatment of Emotional Disorders: Therapist Guide (Treatments That Work),* 2nd edition, Oxford:Oxford University Press., 2017.
15. Hofmann SG, Hayes SC. The Future of Intervention Science: Process-Based Therapy. *Clin Psychol Sci.* 2019;7(1):37-50.
16. David D, Cramer D. Rational and Irrational Beliefs in Human Feelings and Psychophysiology, in David D, Lynn SJ, Ellis A (eds): *Rational and Irrational Beliefs. Research, Theory, and Clinical Practice.* Oxford University Press, NY, 2010, 96-112
17. Ellis A. *Reason and emotion in psychotherapy.* New York, Blich Lane Press, 1994
18. Dilorenzo T, David D, Montgomery G. The interrelations between irrational cognitive processes and distress in stressful academic settings. *Pers Individ Dif.* 2007; 42:765–776.
19. Beck A, Emery G, Greenberg RL. *Anxiety Disorders and Phobias: A Cognitive Perspective,* New York: Basic Books, 2005.
20. Hamilton M. The assessment of anxiety states by rating. *Br J Psychiatry.* 1959;32:50–55.
21. Bruss GS, Gruenberg AM, Goldstein RD, Barber JP. Hamilton anxiety rating scale interview guide: Joint interview and test-retest methods for interrater reliability. *Psychiatry Research.* 1994;53(2):191–202.
22. Opreș D, Macavei B. The Profile of Emotional Distress; Norms for the Romanian population. *Journal of Cognitive and Behavioral Psychotherapies.* 2007;7:139–58.
23. DiGiuseppe R, Leaf R, Gorman B, Robin MW. The development of a measure of irrational/rational beliefs. *Journal of Rational-Emotive & Cognitive-Behavior Therapy.* 2018;36(1):47–79.
24. Attridge MD, Morfitt RC, Roseborough DJ, Jones ER. Internet-Based Cognitive-Behavioral Therapy for College Students With Anxiety, Depression, Social Anxiety, or Insomnia: Four Single-Group Longitudinal Studies of Archival Commercial Data and Replication of Employee User Study. *JMIR Form Res.* 2020;4(7):e17712.
25. Salza A, Giusti L, Ussorio D, Casacchia M, Roncone R. Cognitive behavioral therapy (CBT) anxiety management and reasoning bias modification in young adults with anxiety disorders: A real-world study of a therapist-assisted computerized (TACCBT) program Vs. “person-to-person” group CBT. *Internet Interventions.* 2020;19:100305.
26. Molla Jafar H, Salabifard S, Mousavi SM, Sobhani Z. The Effectiveness of Group Training of CBT-Based Stress Management on Anxiety, Psychological Hardiness and General Self-Efficacy Among University Students. *Glob J Health Sci.* 2015;8(6):47–54.
27. Mullin A, Dear BF, Karin E, Wootton BM, Staples LG, Johnston L, et al. The UniWellbeing course: A randomised controlled trial of a transdiagnostic internet-delivered cognitive behavioural therapy (CBT) programme for university students with symptoms of anxiety and depression. *Internet Interventions.* 2015; 2(2):128–36.
28. Regehr C, Glancy D, Pitts A. Interventions to reduce stress in university students: A review and meta-analysis. *Journal of Affective Disorders.* 2013 ;148(1):1–11.
29. Buizza C, Ciavarra V, Ghilardi A. A Systematic Narrative Review on Stress-Management Interventions for Medical Students. *Mindfulness.* 2020;11(9):2055–66.
30. Sinaiko V, Korovina L, Radchenko T. CBT of Anxiety and Depressive Disorders in Foreign Medical Students. *Psychological Counseling and Psychotherapy.* 2020;(13):38–42.
31. Fasihi R, Asadi J, Hassanzadeh R, Derakhshanpour F. Effectiveness of cognitive behavioral therapy, acceptance and commitment therapy on irrational beliefs of medical students. *J Gorgan Univ Med Sci.* 2019;20(4):61–8.
32. Jafar H, Salabifard S, Mousavi S, Sobhani Z. The Effectiveness of Group Training of CBT-Based Stress Management on Anxiety, Psychological Hardiness and General Self-Efficacy Among University Students. *Global Journal of Health Science.* 2015;8:47.
33. Bullis JR, Sauer-Zavala S, Bentley KH, Thompson-Hollands J, Carl JR, Barlow DH. The unified protocol for transdiagnostic treatment of emotional disorders: preliminary exploration of effectiveness for group delivery. *Behavior Modification.* 2015;39(2):295–321.
34. Carlucci L, Saggino A, Balsamo M. On the efficacy of the unified protocol for transdiagnostic treatment of emotional disorders: A systematic review and meta-analysis. *Clinical Psychology Review.* 2021;87:101999.
35. Sauer-Zavala S, Tirpak JW, Eustis EH, Woods BK, Russell K. Unified protocol for the transdiagnostic prevention of emotional disorders: Evaluation of a brief, online course for college freshmen. *Behavior Therapy.* 2021;52(1):64–76.
36. Barlow DH, Farchione TJ, Bullis JR, et al. The Unified Protocol for Transdiagnostic Treatment of Emotional Disorders Compared With Diagnosis-Specific Protocols for Anxiety Disorders: A Randomized Clinical Trial. *JAMA Psychiatry.* 2017;74(9):875–84.
37. Pozza A, Dèttore D. Drop-out and efficacy of group versus individual cognitive behavioural therapy: What works best for Obsessive-Compulsive Disorder? A systematic review and meta-analysis of direct comparisons. *Psychiatry Research.* 2017;258:24–36.