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Effect of Transdiagnostic Psychological Intervention Programs on Depression and Anxiety Disorders: A Systematic Review

Tanılar Üstü Psikolojik Müdahale Programlarının Depresyon ve Anksiyete Bozuklukları Üzerindeki Etkisi: Sistematik Bir Derleme

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Abstract

By considering the etiological similarities of depression and anxiety disorders with high lifetime coexistence rates, recent research has introduced a transdiagnostic approach applicable to a range of emotional disorders with these common features. This paper reviews empirical studies examining the effects of transdiagnostic intervention programs on depression and anxiety disorders. The literature search identified 18 randomized controlled and 12 non-randomized studies. These were examined in terms of their sample characteristics, methodological approaches, and findings. Overall, the reviewed transdiagnostic psychological intervention programs treat various anxiety disorders and depression effectively. In cases where anxiety and depressive symptoms are comorbid, the transdiagnostic approach has significant advantages over diagnosis-specific protocols. Future studies should investigate the effect of the transdiagnostic approach in different diagnostic groups compared to diagnosis-specific treatments. In Turkey specifically, it is important to investigate the effectiveness of transdiagnostic interventions and potential clinical and economic advantages compared to diagnostic specific protocols.

Keywords: Cognitive behavioral therapy, unified protocol, emotional disorders, depression, anxiety disorders, transdiagnostic

Öz

Yaşam boyu birlikte görülme oranları oldukça yüksek olan depresyon ve anksiyete bozukluklarının etiyolojisindeki ortaklıklar birlikte ele alındığında, en son araştırmalar bu ortak özelliklerden hareketle geliştirilen bir dizi duygularla ilişkili bozukluğa uygulanabilen tanılar üstü bir yaklaşımı gündeme getirmiştir. Bu çalışmada tanılar üstü müdahale programlarının depresyon ve anksiyete bozuklukları üzerindeki etkilerini inceleyen görgül araştırmalar gözden geçirilmiştir. Yapılan incelemeler sonucunda ulaşılan 18 seçkisiz kontrollü ve 13 seçkisiz olmayan çalışma örneklem özellikleri, yöntemsel arka planları ve sonuçları bakımından incelenmiştir. Bu çalışma kapsamında incelenen araştırmalar genel olarak değerlendirildiğinde ilk olarak, tanılar üstü psikolojik müdahale programlarının çeşitli anksiyete bozuklukları ve depresyonun tedavisinde etkili olduğu sonucu çıkarılabilir. Anksiyete ve depresif belirtilerin bir arada olduğu durumlarda tanılar üstü yaklaşımın tanıya özgü protokollere kıyasla önemli avantajlar sağlayabileceği önerilmektedir. Gelecek çalışmalarda bu yaklaşımın farklı tanı gruplarında tanıya özgü tedavilere kıyasla etkisinin incelenmesinin önemli olduğu sonucuna varılmıştır. Ülkemizde de tanılar üstü müdahalelerin etkinliğini ve tanıya özgü protokollere kıyasla olası klinik ve ekonomik avantajlarını araştırmanın önemli olduğu düşünülmektedir.

Anahtar sözcükler: Bilişsel davranışçı terapi, bütünleşik protokol, duygularla ilişkili bozukluklar, depresyon, anksiyete bozuklukları, tanılar üstü

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ALMOST half of individuals diagnosed with any psychological problem have met more than one criterion at the same time over the past 12 months (Kessler et al. 2005). This condition reinforces the claim that comorbidity is an important problem in psychological disorders. In particular, while the lifetime prevalence of depression and anxiety disorders, which are among the most common mental disorders, is approximately 29%, their coexistence rates vary between 40-80% (Wittchen et al. 2011).

Today, the two main sources for the diagnosis and classification of psychiatric disorders are Diagnostic and Statistical Manual of Mental Disorders (DSM) and International Statistical Classification of Diseases and Related Health Problems (ICD). These sources define disorders in terms of symptom clusters and classify them categorically. The last version of DSM (APA 2013) added more conditions and determinants for defining and classifying psychiatric disorders while diagnostic categories were separated more clearly. Although the current diagnostic categories show moderate to almost perfect reliability, controversy continues over their usefulness (First et al. 2018) due to increasing evidence that some DSM disorders reflect variations in a common syndrome rather than unique structures (Brown and Barlow 2009).

The high rate of comorbidity in psychological disorders implies common vulnerabilities that contribute to the development of depression and anxiety disorders. These all share high levels of negative emotions (Mennin et al. 2005), a tendency to interpret emotional experiences more negatively (Roemer et al. 2005), and reliance on dysfunctional cognitive and behavioral strategies to diminish the effects of negative emotions (Barlow 2004). The most striking explanation of these commonalities is that the similarity of symptoms across different disorders may reflect slight differences in a higher-level syndrome called "general neurotic syndrome". Highlighting these commonalities, the term "emotional disorders" has been suggested to group related disorders, such as anxiety, depression, somatoform, and even dissociative disorders (Brown and Barlow 2009).

The high rate of comorbidity, similarities in treatment outcomes, and commonalities in the etiology of emotion-related disorders has encouraged a transdiagnostic intervention approach applicable to a range of problems. Several broad-spectrum treatment protocols have been intended to apply common treatment principles to many problems; these protocols are thus intended for application not only to anxiety and depressive disorders but also to many other accompanying problems (Norton et al. 2013).

Transdiagnostic treatment protocols generally adopt two main approaches (Craske 2012). The first corresponds to acceptance-based strategies applied to a

certain transdiagnostic factor (difficulty in emotion regulation, rumination, and maladaptive perfectionism), which is claimed to play a role in the sustention of various psychological disorders (Twohig et al. 2010). The second, which is the focal point of this review, involves the general application of traditional Cognitive Behavioral Therapy (CBT) strategies to various disorders in a specific diagnostic category (Norton 2012). This approach differs from traditional CBT principally in focusing on common underlying mechanisms and the strategies used to change these mechanisms. The main treatment components of transdiagnostic approaches are behavioral or experiential avoidance, cognitive restructuring, mindful awareness, and emotion regulation strategies. Scientific studies have demonstrated the effectiveness of such treatments, whether applied through individual or group therapy, or the internet (Titov et al. 2011). These findings have also been replicated by research teams independent of the developers of the treatment protocol (Sakiris and Berle 2019).

To provide an overview of the content, form, and treatment emphasis of transdiagnosis protocols, the two most prominent intervention programs (Meidlinger and Hope 2017) are included in this study. The first and more popular program is the Unified Protocol for Emotional Disorders, developed by Barlow et al. (2011). It is based on the criticism that diagnosis-specific intervention programs do not fully meet real-world conditions and leave clinicians in a difficult situation. The protocol aims to help clients understand and recognize their emotions before responding more adaptively to their disturbing negative emotions. Such an approach is believed to reduce the intensity and frequency of disturbing emotions and improve quality of life. The protocol consists of 5 basic treatment modules and 3 additional modules, ranging from 12-18 sessions in total, each lasting approximately one hour per week. One important advantage is that the number of sessions of each module can be varied depending on the client's development. The five basic treatment modules correspond to transdiagnostic structures that reflect functional relationships in emotional disorders: emotional awareness, cognitive restructuring, emotion related behaviors and emotional avoidance, awareness and endurance for physical sensations, and interoceptive and situational exposure. The second transdiagnostic protocol is the Transdiagnostic Cognitive Behavioral Group Treament, developed by Norton et al. (Norton 2012). This diagnostic group therapy has 12 sessions of 2 hours each, with the first 9 focusing on the three main CBT components: psychoeducation and self-monitoring, cognitive restructuring, and lean on feared stimuli. The focus of therapy then shifts towards underlying uncontrollability, unpredictability, and threat perceptions from the current troubles.

At this stage, cognitive restructuring is applied to the overall distress in daily life rather than the most urgent and obvious fears.

Transdiagnostic treatment approaches targeting fundamental reasons and sustaining common factors of many psychological disorders have yielded promising results (Newby et al. 2015). This study therefore systematically reviews empirical studies on the effect on depression and anxiety disorders of three approaches: Unified Protocol, Transdiagnostic Cognitive Behavioral Group Therapy, and internet-supported CBT. To be more inclusive, this review not only considers fully randomized controlled trials (RCS) but also pretest-posttest study designs, i.e. controlled studies, although they are not fully randomized. Unlike previous review studies, which have only considered individual and group-based interventions this study reviews the increasingly common internet-supported interventions. Regarding research in our own country, Turkey, we found no psychological intervention studies using the keywords "transdiagnostic" and "unified protocol" in Turkey's National Academic Network and Information Center (ULAKBIM) and other Turkish databases. Thus, our examination of the effectiveness of transdiagnostic interventions, which are thought to be important in generalizing the treatment of psychological disorders and making them more accessible, will make a unique contribution to the field.

Method

The present review study focused on transdiagnostic protocols in depressive and anxiety disorders, particularly the psychological variables measured, the sample characteristics, and the research findings. Web of Science, PubMed, SAGE Journals, and Science Direct databases were scanned using the following keywords: "unified protocol", "transdiagnostic", "depression", "anxiety disorders" and "emotional disorders".

No time limitation was imposed on the literature review since transdiagnostic protocols are relatively recent. A total of 684 studies were identified in 4 databases (PubMed =222, Web of Science =126, SAGE Journals =97, Science Direct =239). After excluding duplicate studies from the databases, the titles and summaries of the remaining 380 studies were examined. After excluding irrelevant studies (n=105), the following groups of studies were omitted in line with the inclusion-exclusion criteria: reviews and meta-analyses (n=158), studies involving interventions other than CBT, such as mindfulness or psychodynamics (n=13), studies conducted with sample groups under 18 years of age (n=36), case reports (n=9), short-term psychotherapies (n=3), studies lacking statistical analysis (n=5), qualitative studies (n=1), sample groups without depression and anxiety disorders (n=9, e.g. personality disorders, eating disorders), and studies not published in English (n=3). In addition, to

reduce heterogeneity, this study focused specifically on the effects of transdiagnostic intervention programs on depressive and anxiety disorders. Interventions developed for post-traumatic stress symptoms seen in war veterans, which are relatively recent in the literature, were also excluded because they are event-oriented and situationally specific (n=5; e.g. Common Elements Treatment Approach and Transdiagnostic Behavioral Therapy). Finally, empirical studies of internet-supported psychological intervention programs were also included to reflect the increasingly common use of technology in interventions. Therapist interaction was taken as an inclusion criterion in such studies, so studies where the therapist was not involved in any way or that were only conducted by e-mail were excluded (n=2).

Having excluded 244 studies that did not meet the inclusion-exclusion criteria, there were 18 randomized controlled trials (RCTs) and 13 non-random controlled trials left to evaluate the effect of transdiagnostic protocol interventions. Further explanation is also needed here about defining anxiety and depressive disorders: although there have been some changes in the classifications of disorders in recent years, the earlier classifications were used to make the study more inclusive. That is, in the studies reviewed here, unipolar mood disorders refer to dysthymic disorder, major depressive disorder and depression not otherwise specified; anxiety disorders refer to generalized anxiety disorder, panic disorder with or without agoraphobia, specific phobia, post-trauma stress disorder, social phobia, obsessive-compulsive disorder, and anxiety disorder not otherwise specified. The following section presents the 31 included studies in detail. Summary information about their general characteristics and research findings were demonstrated in Table 1.

Results

Individually applied protocols

Some of the studies included investigated the effects of the Unified Protocol, which was applied individually and developed by Barlow and his team, on depression and anxiety disorders alone, while others focused on depression and anxiety disorders as comorbidities. Therefore, this section first presents the results of these two groups of studies.

Effects on depression and anxiety disorders

The first study evaluating the effectiveness of the Unified Protocol for emotional disorders was conducted in 2012 with 37 participants with prinsiple diagnosis of anxiety disorder being randomly assigned to the treatment or the waiting list-control groups

Table 1. Basic characteristics and findings of the research studies included in the review study

Study	Design	Included disorder	Control Group	Participant number	Follow-up	Main findings
Farchione et al. 2012	RCT, individual	GAD, social phobia, panic disorder, OCD, PTSD	Yes	37	6 months	Significant change in anxiety symptoms in Unified Protocol group compared to control group
Bullis et al. 2014	Pretest-Posttest, individual	GAD, social phobia, panic disorder, OCD	-	15	12 months	Treatment gains of Unified Protocol group significantly maintained in the 12-month follow-up measurement results
Barlow et al. 2017	RCT, individual	Panic disorder with/without agoraphobia, GAD, OCD, social phobia	Yes	223	6 months	No statistically significant difference between Unified Protocol and standard protocol groups.
Khakpoor et al. 2019	RCT, individual	GAD, social phobia, panic disorder, OCD, depression	Yes	26	-	Anxiety and depressive symptoms reduced significantly in intervention group in comparison with control group
Mohajerin et al. 2019	RCT, individual	Body dysmorphic disorder	Yes	128	3 months	Unified Protocol significantly reduced depression, dysmorphic disorder and body-related anxiety symptoms compared to the control group
Ellard et al. 2017	RCT, individual	Bipolar disorder	Yes	29	-	Significantly greater reduction in anxiety and depressive symptoms in the intervention group than control group
Bentley et al. 2017	RCT, individual	Suicidal attempt or suicidal ideation	Yes	12	6 months	Combined Unified Protocol plus standard treatment is feasible and acceptable.
Ciraulo et al. 2013	RCT, individual	Alcohol use disorder + panic disorder, social phobia, GAD	Yes	81	3, 6, 9 and 12 months	Significant decrease in daily alcohol consumption of Placebo + Integrated Protocol group compared to control group
Vand et al. 2018	Pretest-Posttest, individual	Insomnia + depression, GAD, OCD, panic disorder, social phobia	-	6	3 months	Significant improvement in outcome after treatment compared to pre-treatment
Mohsenabadi et al. 2018)	RCT, individual	IBS + depression or anxiety symptoms	Yes	64	-	Significant reductions in depression, anxiety, and digestive symptoms; significant progress in emotion regulation post-intervention scores
Weihs et al. 2019	Pretest-post test, individual	Breast cancer + depression	-	15	-	Unified Protocol can prevent depression in individuals recently been diagnosed with breast cancer.

Table 1. Continued

Study	Design	Included disorder	Control Group	Participant number	Follow-up	Main findings
Norton and Hope 2005	RCT, group	OCD, social phobia, GAD, panic disorder with/without agoraphobia	Yes	23	-	Greater improvements for diagnostic measures and fear-avoidance hierarchies in intervention group than control group
Norton 2008	Pretest-post test, group	Anxiety disorders (mostly panic disorder and social phobia)	-	52	-	Improvement trend throughout the treatment
Norton 2012	RCT, group	GAD, social phobia, specific phobia, ADNOS	Yes	87	-	No significant difference between groups but higher rate of treatment discontinuation in relaxation group
Norton and Barrera 2012	RCT, group	Panic disorder, social phobia, GAD	Yes	46	-	Significant improvements during both disorder-specific CBT group therapy and transdiagnostic group therapy; no difference in interventions' effectiveness
Bullis et al. 2015	Pretest-post test, group	Depression and/or social phobia, panic disorder with/without agoraphobia, GAD, OCD, ADNOS	-	11	-	Reduced anxiety and depressive symptoms, functional deterioration, and improved life quality and emotion regulation skills following Unified Protocol
Reinholt et al. 2017	Pretest-post test, group	Panic disorder with agoraphobia, social phobia, GAD	-	47	-	Clinically significant decreases in symptom severity, anxiety, and improved psychological well-being
De Ornelas Maia et al. 2015	Pretest-post test, group	Depression, GAD, panic disorder, PTSD, social phobia	Yes	48	-	Unified Protocol highly effective in improving depressive and anxiety symptoms compared to pharmacotherapy
Mohammadi et al. 2013	RCT, group	Depression and anxiety symptoms	Yes	33	-	No significant differences in effect of Unified Protocol and standard CBT except for significantly greater reduction in anxiety reduction with transdiagnostic group therapy
De Ornelas Maia et al. 2017	RCT, group	Sexual dysfunction + depressive and anxiety symptoms	Yes	48	-	Significant improvement in all symptoms of sexual function, quality of life, anxiety, and depression in Unified Protocol group

Table 1. Continued

Study	Design	Included disorder	Control Group	Participant number	Follow-up	Main findings
Tulbure et al. 2018	RCT, internet-based	Depressive and anxiety symptoms	Yes	105	-	Greater reduction in anxiety and depressive symptoms, anxiety sensitivity and quality of life in Unified Protocol group in comparsion with control group.
Titov et al. 2010	RCT, internet-based	GAD, panic disorder, social phobia	Yes	86	3 months	Significant reduction in anxiety symptoms in treatment group in comparison with control group
Titov et al. 2011	RCT, internet-based	Depression, GAD, panic disorder, social phobia	Yes	77	3 months	Greater reductions in reported anxiety and depression symptoms in intervention group than control group
Dear et al. 2011	Pretest-post test, internet-based	Depression GAD, panic disorder, social phobia	-	32	3 months	Significant improvements in depressive and anxiety symptoms
Mullin et al. 2015	RCT, internet-based	Depressive and anxiety symptoms	Yes	55	3 months	Significant improvements in anxiety and depressive symptoms of intervention group compared to control group
Newby et al. 2017	Pretest-post test, internet-based	GAD, depression	Yes	1005	-	Similar effects for depression and generalized anxiety disorder in Unified Protocol and diagnosis-specific intervention groups
Johnston et al. 2011	RCT, internet-based	Social phobia, panic disorder with/without agoraphobia, GAD	Yes		3 months	Larger improvements in anxiety and depression for therapist and trainer group than control group; improvements better in therapist-supported group, including follow-up measures
Johnston et al. 2013	Pretest-post test, internet-based	GAD, social phobia, panic disorder with/ without agoraphobia	Yes	129	3 months	Higher reported symptoms from participants with comorbidity before, during and after treatment; problems of participants with comorbidities more significant after the intervention program
Hadjistavropoulos et al. 2016	Pretest-post test, internet-based	Depressive and anxiety symptoms	Yes	458	-	No significant outcome differences between the groups with mental health or general health worker
Owens et al. 2018	Pretest-post test, internet-based	Health anxiety	-	72	3 months	Significant post-treatment reductions in health anxiety, depression, and generalized anxiety symptoms

Table 1. Continued

Study	Design	Included disorder	Control Group	Participant number	Follow-up	Main findings
Dear et al. 2018	Pretest-post test, internet-based	Digestive disorders	-	27	3 months	Significant reductions in digestive system complaints, anxiety, and depression symptoms

RCT: Randomized controlled trial, GAD: Generalized anxiety disorder, OCD: Obsesive-compulsive disorder, PTSD: Post traumatic stress disorder, ADNOS: Anxiety disorder not otherwise specified, IBS: Irritable bowel syndrome

(Farchione et al. 2012). The group receiving the Unified Protocol showed significant improvement in clinical severity, depression, and anxiety symptoms, positive and negative emotion levels, and daily functionality measurements compared to both pretest scores and the control group. The effects of the intervention were sustained during the 6-month follow-up measurements. To evaluate long-term effects of the Unified Protocol, 12-month follow-up measurements were taken from 15 participants who had completed their treatment in the previous study (Bullis et al. 2014). The treatment gains observed at the end of 6 months in clinical severity, depression and anxiety symptoms, positive and negative emotion levels, and daily functionality measurements were significantly maintained in the 12-month follow-up measurements. This study provided the first supportive findings regarding the continuity of treatment gains.

Based on these promising results, a randomized controlled study supported by the American National Institute of Mental Health examined whether the Unified Protocol is as effective as the diagnosis-specific protocols in treating anxiety disorders. The Unified Protocol was compared with standard treatment manuals specific to diagnoses for generalized anxiety disorder, panic disorder with or without agoraphobia, obsessive compulsive disorder, and social anxiety disorder, and a waiting list control group. Randomly assigned participants in the Unified Protocol group (n=88) were more likely to complete the intervention than those receiving the standard protocol (n=91). Participants in all treatment groups showed a significant improvement in acute outcomes compared to those on the waiting list (n=44). There were no statistically significant differences between the Unified Protocol and the standard protocols for decreases in clinical severity in the post-test and 6-month follow-up measurements compared to the pretest measures. This showed that the Unified Protocol provides an equal improvement in the treatment of anxiety disorders compared to standard evidence-based psychological interventions while losing fewer participants. These findings indicate that a single protocol can treat comorbid anxiety and depressive disorders more effectively than multiple standard protocols (Barlow et al. 2017). In accordance with this

recommendation, Steele et al. (2018) evaluated whether the Unified Protocol was more effective in treating psychological disorders accompanying the primary diagnosis than standard protocols by excluding the control group participants in the previous study. The average diagnosis of participants in both intervention groups decreased significantly at the end of treatment and at the 12-month follow-up compared to baseline. This indicated that both interventions were equally effective in reducing the symptoms of comorbid psychological disorders. However, although there was no difference in symptom improvement between the Unified Protocol and standard protocols, this study noted the clinical, practical, and economic advantages of transdiagnostic treatment (outlined earlier in this review).

The applicability of the Unified Protocol in a non-Western culture has also been demonstrated. For example, Khakpoor et al. (2019) selected 26 participants according to depression and anxiety measurements and randomly assigned them to control and intervention groups in a double-blind RCT conducted in Iran. Anxiety and depressive symptoms decreased more in the intervention group than the control group. Khakpoor et al. (2019) concluded that this positive effect of the Unified Protocol was achieved through improved emotion regulation.

Effects on comorbid depression and anxiety disorders

Because the Unified Protocol targets emotion regulation processes, which play an crucial role in the development and maintenance of many emotional disorders, it can be studied in different sample groups, such as comorbid emotional disorders. For example, while CBT is an effective treatment of body dysmorphic disorder, which is associated with high comorbidity and functional deterioration, many studies have shown that emotion regulation is a fundamental deficiency in this disorder. Mohajerin et al. (2019) randomly assigned 128 patients who met the diagnostic criteria for body dysmorphic disorder to the Unified Protocol or the usual treatment condition while 30 other participants in the control group continued their medication and were interviewed by their psychiatrists weekly about their medication continuity. Compared to the control group, the Unified Protocol significantly reduced depression levels, body dysmorphic disorder symptoms, and body-related anxiety by significantly improving emotion regulation. This recovery was sustained in the 3-month follow-up evaluation. While this was the first study examining the use of the Unified Protocol for treating body dysformic disorder, other research indicates that this disorder and other emotional disorders share common mechanisms, making the Unified Protocol a potentially effective additional treatment for this condition.

Ellard et al. (2017) evaluated the effectiveness of the Unified Protocol for treating 29 patients having bipolar disorder and at least one comorbid anxiety disorder, who were randomly assigned to pharmacotherapy or the Unified Protocol with pharmacotherapy groups. Patients in the Unified Protocol intervention group with pharmacotherapy reported a significantly greater reduction in anxiety and depression symptoms. Bentley et al. (2017) added the Unified Protocol to the usual treatment for 12 patients having a recent suicide attempt or active suicidal thoughts, who were randomly assigned to the usual treatment or the Unified Protocol group. The findings indicated that adding the Unified Protocol to the usual treatment was feasible and acceptable. The results also demonstrated that cognitive-behavioral and emotion-oriented therapy may be a promising intervention for treating individuals who have attempted suicide or have suicidal thoughts.

Ciraulo et al. (2013) used a blind, random, placebo-controlled design to study four treatment conditions. Participants were randomly assigned to the following groups: venlafaxine + Unified Protocol (n=24), Placebo + Unified Protocol (n=21), venlafaxine + Relaxation (n=14), Placebo + Relaxation (n=22). They found more decrease in daily alcohol consumption in the placebo + Integrated Protocol group than the placebo + relaxation group, but no significant differences between the other groups and the comparison group. In the 11th week the proportion of participants in the placebo + Unified Protocol group who showed a 50% decrease daily alcoholic beverage consumption from the first measurement was significantly higher than in the control group. This suggests that Barlow and colleagues' transdiagnostic intervention may be effective in managing excessive alcohol consumption in individuals with comorbid alcoholism and anxiety disorders.

Based on the view that insomnia shares common factors with emotional disorders, and increases depressive and anxiety symptoms, Vand et al. (2018) studied the effects of the Unified Protocol on behavioral inhibition / behavioral activation, anxiety sensitivity, difficulty in emotion regulation, cognition and behaviors in insomnia as transdiagnostic factors, in a small sample with insomnia and accompanying emotional disorder. Using multiple initiation patterns between subjects, 3-month follow-up measurements were taken from 6 participants after 14 weeks of individual Unified Protocol sessions. The outcome measures were scales evaluating behavioral inhibition / behavioral activation, anxiety sensitivity, difficulty in emotion regulation, non-functional beliefs about sleep, attitudes and sleep-related behaviors. The participants showed significant changes in the post-treatment outcome measurements compared to the pre-treatment, which was maintained in the 3-month follow-up measurements. While this was a preliminary study, it provides empirical support of the benefit of the Unified Protocol in chronic insomnia with other emotional problems.

The literature also includes evaluations of the effectiveness of the Unified Protocol in reducing the severity of some physical disorders and problems in functionality caused by these disorders. In an RCT, Mohsenabadi et al. (2018) focused on Irritable Bowel Syndrome (IBS), which is accompanied by various psychological problems, by assigning 64 patients diagnosed with IBS to a 12-week Unified Protocol treatment group or a waiting list control group. Significant changes were reported in the treatment group's post-intervantion depression, anxiety, stress, and digestive symptoms, and their emotion regulation scores. The findings also indicated that improvements in emotion regulation mediate the effect of the Unified Protocol on improvements in gastrointestinal and emotional symptoms. Finally, Weihs et al. (2019) evaluated an adaptation of the original Unified Protocol for preventing post-cancer depression in 15 patients recently diagnosed with breast cancer. The results supported the applicability of this individual preventive intervention program.

Group-based protocols

Unified or transdiagnostic intervention programs can also be implemented in a group format. One such program is the Transdiagnostic Cognitive Behavioral Group Therapy developed specifically for anxiety disorders. Some empirical studies based on this approach were included in the literature review. For example, Norton and Hope (2005) randomly assigned 23 participants with different anxiety disorders to an intervention group or waiting list control group. They found more significant improvements in the diagnostic measures and fear-avoidance hierarchies of the participants in the intervention group. Participants who received treatment also displayed a significant reduction in depressive symptoms compared to the control group. Norton (2008) also compared the effects of this treatment on two anxiety disorders, panic disorder and social phobia, finding that the participants tended to improve during the treatment. This supports the assumption that different anxiety disorders can be handled with the same treatment protocol.

In an RCT comparing relaxation treatment with the Unified Protocol in group format, Norton (2012) found that participants in the relaxation group were more likely to discontinue the treatment the two groups. In another RCT comparing disorder-specific 12-week CBT group therapy with Transdiagnostic Group Therapy, Norton and Barrera (2012) found that participants in both groups showed significant improvements during the treatment with no difference in the effectiveness of the interventions. Thus, Transdiagnostic Group Therapy can increase access to evidence-based therapies for anxiety disorders without giving up effectiveness.

While the Unified Protocol has shown promising results in individuals having anxiety

and depressive disorders when applied individually, the question remains whether it can show positive results in group format applications. In one of the first studies conducted with 11 participants with various psychological disorders in a group format, Bullis et al. (2015) showed that this protocol reduced anxiety and depressive symptoms, and functional impairment, and improved quality of life and emotion regulation skills. The results from the intervention in group format were almost equivalent to individual intervention results. The participants also reported a high level of satisfaction with the protocol. In another study evaluating the effect of the Integrated Protocol, clinically significant changes in the severity of the disorder, anxiety, and psychological well-being were reported in 47 participants with anxiety disorders. In addition, significant changes were observed in comorbid depressive symptoms and levels of positive and negative emotions after treatment. The findings showed that the Unified Protocol can be successfully applied in group format in mental health services with positive effects on anxiety and depressive symptoms in cases of very high comorbidity (Reinholt et al. 2017).

De Ornelas Maia et al. (2015) evaluated the effect of the Unified Protocol applied in a group format on depression and anxiety disorders with 48 participants divided into two groups: 12 sessions of the Unified Protocol versus only medication. The Unified Protocol was highly effective in the participants' recovery from depressive and anxiety disorders compared to the participants in the pharmacotherapy group. Although the small sample size and non-random assignment to groups limit the generalizability of these results, this study encouraged RCTs with larger samples regarding the use of transdiagnostic intervention in group format. Mohammadi et al. (2013) used an RCT to compare the Unified Protocol with standard CBT group therapy. They found significant changes in depression, anxiety, stress, work, and social adaptation in both groups but no significant difference other variables except for anxiety. Thus, both methods worked, although the transdiagnostic group therapy also reduced anxiety symptoms significantly more than standard CBT therapy.

People with comorbid psychological disorders often experience problems in functionality and a serious decrease in their quality of life. The4 Unified Protocol may be able to alleviate the additional distress caused by psychological disorders through improved emotion regulation. In an RCT designed to test this assumption, de Ornelas Maia et al. (2017) evaluated the effects of the Unified Protocol applied in a group format on comorbid psychological disorders, sexual dysfunction, and low quality of life compared to a pharmacotherapy group. Significant improvements were reported in all symptoms of quality of life, anxiety, and depression in the Unified Protocol group. This group also experienced an improvement in sexual function.

Internet-based protocols

In the screening for this review, empirical studies examining the effect of internet-based protocols on adult participants with anxiety and/or depression were also encountered. Tulbure et al. (2018) randomly assigned 105 participants to an active treatment group or a waiting list control group to evaluate the effectiveness of the Internet-supported Unified Protocol. Compared to the control group, the Unified Protocol reduced anxiety and depressive symptoms, and anxiety sensitivity, and improved quality of life. This indicates that such online interventions can be an effective treatment option.

Titov et al. (2010) conducted an RCT to evaluate the effectiveness of an Internet-based transdiagnostic CBT program (the Anxiety Program), developed to treat multiple anxiety disorders, involving participants with different anxiety disorders. 75% of the participants in the treatment group completed the 8-week intervention consisting of CBT-based online lectures and assignments, weekly e-mails, or telephone communication with a clinical psychologist, entree to online forum, and automated e-mails. Compared to the control group, the participants in the treatment group had a significant reduction in anxiety symptoms, and significantly preserved treatment gains in follow-up measurements.

Titov et al. (2011) conducted a randomized study evaluating the effectiveness of another 10-week Internet-based transdiagnostic CBT program (the Wellbeing Program), developed to treat both anxiety disorders and depression. Compared to the control group, participants in the intervention group showed a significant reduction in anxiety and depression symptoms, which they sustained in the 3-month follow-up measurements. Dear et al. (2011) evaluated the effect of the short version of this program. They found a significant change in depressive and anxiety symptoms in 32 participants diagnosed with major depression, generalized anxiety disorder, panic disorder, and/or social phobia. This improvement was also preserved in 3-month follow-up measurements. Similarly, Mullin et al. (2015) randomly assigned 53 participants to another internet-based transdiagnostic intervention or a control group. The intervention significantly decreased anxiety and depression symptoms compared to the control group, and this decrease was maintained after 3 months. Finally, Newby et al. (2017) compared internet-based transdiagnostic and diagnostic-specific intervention programs. They found that both programs had similar effects on depression and generalized anxiety disorder.

The therapist features in transdiagnostic internet-based treatment programs have also been a matter of research. Johnston et al. (2011) randomly assigned 131 participants diagnosed with generalized anxiety disorder to groups supported by therapist and

instructor, and control groups. While participants in the groups supported by the therapist and the instructer showed greater reduction in anxiety and depression than those in the control group, the results were better in the therapist-supported group, including follow-up measures. When the same sample was examined in terms of comorbidity, although the participants with comorbid disorders reported higher symptoms before and after treatment, and during the follow-up period, their symptoms decreased significantly more after the intervention program (Johnston et al. 2013). Similarly, Hadjistavropoulos et al. (2016) assigned 458 participants to groups supported by therapists working in mental health clinics or general health clinics. Both groups experienced significant changes in treatment completion rates, satisfaction levels, and anxiety and depression levels. Because there was no significant difference between the groups, they concluded that, since such programs are structured and standardized, the therapist effect may be relatively low.

Owens et al. (2019) investigated changes in the symptoms of health anxiety using data obtained from an 8-week transdiagnostic internet-supported CBT program conducted by Hadjistavropoulos et al (2017). There were significant reductions in symptoms of health anxiety, depression, and generalized anxiety after treatment in the sub-sample group with high pre-treatment scores on the Short Health Anxiety Inventory. Finally, Dear et al. (2018) evaluated an Internet-supported transdiagnostic CBT intervention (the Chronic Conditions Course) for digestive system disorders without a physical origin. They reported that participants had significant improvements in digestive system complaints, and anxiety and depression symptoms. These improvements were maintained at the 3-month follow-up measurement.

Discussion

The primary purpose of this study was to systematically review empirical studies on the effects of transdiagnostic treatments for two emotional disorders, depression and anxiety. Initially it could be reported that a search of the relevant literature identified 31 studies meeting the inclusion-exclusion criteria. These studies were reviewed in terms of research purpose, sampling characteristics, methodological background, and research findings.

In general, empirical studies have been conducted for two main programs, with strong empirical findings regarding the effectiveness of the Unified Protocol in treating various emotional disorders. The results of many controlled studies conducted since 2004 have shown that the Unified Protocol applied individually significantly reduces the symptom severity of various anxiety disorders when compared with a control group. In addition, these improvements contionue for 3-18 months in follow-

up measurements. Moreover, similar improvements have been reported in both the Unified Protokol and diagnosis-specific protocol groups. On the other hand, while both treatments significantly reduce the severity of primary diagnosis after treatment, fewer treatment interruptions were reported in the Unified Protocol than diagnosis-specific protocols. The Unified Protocol also offers significant benefits regarding comorbid disorders and sustaining post-treatment improvements for at least one year. Since transdiagnostic cognitive-behavioral interventions like the Unified Protocol use many elements of traditional CBT, they can provide significant advantages in cases where anxiety and depressive symptoms are comorbid (Bell et al. 2016).

The Unified Protocol has also been applied and examined in a group format because of its specific advantages (reaching more people simultaneously and using the experiences of other participants through interaction). The findings obtained from 6 studies, including 2 RCTs, show that the Unified Protocol has positive effects on anxiety and depressive symptoms, functional deterioration, life quality, and skills of emotion regulation. In addition, individuals receiving the Unified Protocol in a group format report similar satisfaction levels as those participating in individual interventions (Bullis et al. 2015). Similar findings were obtained from 5 studies in this study, including 4 RCTs, in which the effect of Transdiagnostic Cognitive-Behavioral Group Therapy (Norton and Hope 2005) developed for anxiety disorders in a group therapy format was evaluated. The waiting list control group was used as the comparison group in all studies evaluating the implementation of both protocols in a group format. Only one RCT (Norton and Barrera 2012) compared the effectiveness of Transdiagnostic Cognitive-Behavioral Group Therapy with diagnosis-specific CBT protocols. This study found that the effect of Transdiagnostic Cognitive-Behavioral Group Therapy on anxiety symptoms was not lower than the effect of diagnosis-specific CBT protocols. Due to the restricted number of studies comparing the Unified Protocol or Transdiagnostic Cognitive-Behavioral Group Therapy with diagnosis-specific protocols, there is a clear need for future RCTs that allow these comparisons.

Research has shown that diagnosis-specific internet-based CBT treatments, one of the methods used to increase access to evidence-based treatments, is effective in anxiety and depressive disorders and produces similar results to face-to-face treatments (Cuijpers et al. 2009). Recent studies on whether the same results can be obtained from internet-based transdiagnostic CBT protocols support the effectiveness of internet-based transdiagnostic treatments for depression and anxiety disorders (Dear et al. 2011, Johnston et al. 2011, Titov et al. 2010, Titov et al. 2011). Thus, these internet-based programs have a positive effect on primary diagnoses of depression and anxiety

disorders, or comorbid problems. It is also important to note that progress seen in participants with or without comorbid disorders were achieved by relatively few expert contacts, as well as the economic and practical advantages of this approach. Nevertheless, these results raise several important issues that future research should focus on. First, comparisions of the effects of internet-based transdiagnostic interventions in studies were generally made with a waiting list control group. Therefore, future studies comparing transdiagnostics protocols with diagnosis-specific treatment protocols will contribute to the discussion and knowledge about the fundamental mechanisms of change, which is an important goal of research in psychological interventions (Kazdin 2007). Second, there are also important questions about which primary or comorbid disorders react to transdiagnostic treatment. Although the findings support the effectiveness of internet-based transdiagnostic CBT protocols on common anxiety disorder, social anxiety, panic disorder, and depression symptoms (Titov et al. 2011), it is still unclear whether other disorders, such as obsessive-compulsive disorder and post-traumatic stress disorder can be treated with internet-based transdiagnostic interventions. Thus, future studies should compare internet-supported diagnostic protocols with diagnosis-specific protocols, and also evaluate the effectiveness of transdiagnostic approach in different groups.

It should be noted that many of the studies evaluating individual, group-based, or internet-supported formats compared these treatemtns with a waiting list control group or the usual treatment group while a few used a small number of participants. Moreover, there very few RCTs have comapred unified or transdiagnostic protocols with diagnosis-specific ones. Although we have concluded that transdiagnostic protocols are as effective as diagnostic ones, additional studies are needed to ascertain who could potentially benefit most from the transdiagnostic approach. Interventions such as the Unified Protocol and Transdiagnostic Cognitive-Behavioral Group Therapy encompass many practical advantages for both clients and therapists. As mentioned earlier, the high rates of comorbidity among psychological disorders and the inadequacy of diagnosis-specific interventions to address comorbid conditions make treatment difficult. In addition, applying separate treatment protocols for almost every disorder creates an economic burden on therapists. For this reason, the importance of investigating the efficacy of transdiagnostic interventions and their potential clinical and economic advantages compared to diagnosis-specific protocols are obvious, especially because diagnosis-specific protocols are difficult to apply or bring to people who have difficulties in getting treatment (Reinholt and Krogh 2014).

Overall, most studies on the impact of transdiagnostic approaches for anxiety or depressive disorders have been directed in Western countries, which is an important

limitation in terms of generalizing study findings to different cultural contexts. Therefore, it is necessary to examine the effectiveness of transdiagnostic protocols in other cultures than Western countries. Ito et al. (2016) reported promising results from examining the effectiveness of the Integrated Protocol on anxiety and depressive symptoms in one Asian culture. No study has yet evaluated the effectiveness of transdiagnostic approaches in our country, Turkey. Therefore, it is important to examine the culture of Turkey in terms of advantages in comorbidities and access to treatment

Conclusion

When the studies reviewed here were evaluated in general, transdiagnostic CBT interventions were particularly effective in treating certain anxiety disorders, such as social phobia, panic disorder, GAD and agoraphobia. In cases where anxiety and depressive symptoms occur together, the transdiagnostic approach may provide significant advantages for both clients and therapists compared to diagnosis-specific protocols. As mentioned earlier, the rate of comorbidity among emotional disorders is very high while diagnosis-specific protocols are not well equipped to address this condition. In addition, high comorbidity is an important problem in the treatment decision. If therapists can learn a single protocol that is efficient for comorbid disorders, the training and cost burden of a wide variety of diagnosis-specific protocols can be reduced. On the other hand, the transdiagnostic approach can improve access to the treatment, and reduce reliability and validity disabilities (such as heterogeneity within diagnostic categories, difficulty in distinguishing between disorders, and the high proportion of diagnoses not otherwise specified) of the diagnostic classification on which diagnosis-specific therapies are based. Future studies should therefore examine the effects of the transdiagnostic approach in different groups (obsessive-compulsive disorder, post-traumatic stress disorder) compared to diagnosis-specific treatments. In our country, it is important to examine the effectiveness of transdiagnostic interventions and their possible clinical and economic advantages compared to diagnosis-specific protocols.

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