Review

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Transdiagnostic Perspective on Repetitive Negative Thinking: Theoretical Foundations, Subtypes, Assessment, and Intervention Methods

Tekrarlayıcı Olumsuz Düşünmeye Tanılar Üstü Bir Bakış: Kuramsal Temel, Alt Türler, Ölçüm ve Müdahale Yöntemleri

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ABSTRACT

Repetitive negative thinking is a transdiagnostic mechanism that includes subtypes such as rumination, worry, obsession, and pre- and post-event processing, and is associated with various psychopathologies. Findings in the literature indicate that repetitive negative thinking is a risk factor for the development and maintenance of anxiety, depression, obsessive-compulsive disorder, post-traumatic stress disorder, eating disorders, substance use disorders, somatic symptom disorders, sleep problems, and personality disorders. Factors such as neuroticism, intolerance of uncertainty, negative metacognitive beliefs, and low cognitive flexibility are identified as risk factors for repetitive negative thinking, while processes such as self-compassion, mindfulness, and psychological flexibility stand out as protective factors. Additionally, during adolescence, limitations in executive functioning and egocentric cognitive tendencies increase the risk of repetitive negative thinking; this risk tends to decrease with adulthood. An examination of the literature in Türkiye reveals that most intervention studies are diagnosis-specific; comprehensive, transdiagnostic experimental studies targeting processes such as repetitive negative thinking, cognitive flexibility, metacognition, and emotion regulation remain limited. Globally, although interventions aimed at reducing RNT are promising, comprehensive intervention programs that address repetitive negative thinking from a transdiagnostic perspective are quite rare. Overall, the present review study examines the relationship between repetitive negative thinking and psychopathologies from a transdiagnostic perspective.
Keywords: Transdiagnostic approach, repetitive negative thinking, psychopathology, psychotherapy

ÖZ

Tekrarlayıcı olumsuz düşünme, ruminasyon, endişe, obsesyon, olay öncesi ve sonrası işlemleme gibi türleri kapsayan farklı psikopatolojilerle ilişkili bir tanılar üstü mekanizmadır. Alanyazındaki bulgular tekrarlayıcı olumsuz düşünmenin anksiyete, depresyon, obsesif-kompulsif bozukluk, travma sonrası stres bozukluğu, yemek bozuklukları, madde kullanım bozuklukları, somatik belirti bozuklukları, uyku sorunları ve kişilik bozukluklarının gelişimi ve sürmesinde bir risk faktörü olduğunu göstermektedir. Nörotizm, belirsizliğe tahammülsüzlük, olumsuz üst bilişsel inançlar ve düşük bilişsel esneklik gibi faktörler tekrarlayıcı olumsuz düşünme için risk faktörüyken; öz-şefkat, bilinçli farkındalık ve psikolojik esneklik gibi süreçler koruyucu faktörler olarak öne çıkmaktadır. Ayrıca, ergenlik döneminde yürütücü işlevlerdeki sınırlılıklar ve benmerkezci bilişsel eğilimler tekrarlayıcı olumsuz düşünme riskini artırmakta; bu risk yetişkinlikle beraber azalmaktadır. Türkiye'de alanyazın incelendiğinde, çoğu müdahale çalışmasının tanıya özgü olduğu; tekrarlayıcı olumsuz düşünme, bilişsel esneklik, metakognisyon ve duygu düzenleme gibi süreçleri hedefleyen bütüncül tanılar üstü deneysel çalışmaların sınırlı kaldığı görülmektedir. Dünyada ise tekrarlayıcı olumsuz düşünmeyi azaltmaya yönelik müdahaleler umut verici olsa da; tekrarlayıcı olumsuz düşünmeyi tanılar üstü perspektiften ele bütüncül müdahale programları oldukça nadirdir. Bu bağlamda, bu çalışmada tekrarlayıcı olumsuz düşünmenin psikopatolojilerle ilişkisini tanılar üstü perspektiften incelenmiştir.
Anahtar sözcükler: Tanılar üstü yaklaşım, tekrarlayıcı olumsuz düşünme, psikopatoloji, psikoterapi

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Introduction

Psychopathologies are mental problems that lead to impairments in thoughts, emotions, and behaviors, as well as to dysfunction, disability, and maladaptation (Stein et al. 2010). These problems not only negatively affect individuals' psychological and physical health but also create significant economic and social costs for societies (McDaid et al. 2019). For this reason, understanding the mechanisms that cause the emergence and maintenance of psychopathologies has long been one of the main research areas of psychiatry and psychology. In recent years, when evaluating mental problems, transdiagnostic approaches that address common mechanisms across different psychopathologies have increasingly gained importance as alternatives to diagnosis-focused approaches (Barlow et al. 2020, Dalgleish et al. 2020). According to the results of the studies conducted by Norcross et al. (2022) with mental health professionals, interest in transdiagnostic approaches is expected to continue to increase into the 2030s.

Traditional approaches adopt a diagnosis-focused perspective in the treatment of psychopathologies. However, rather than developing separate intervention programs for each psychopathology based on a diagnosis-focused perspective, the transdiagnostic approach aims to develop common intervention programs that target shared mechanisms across psychopathologies. These common processes that function as bridges among psychopathologies are defined as transdiagnostic factors (Dalgleish et al. 2020). Transdiagnostic approaches focus on these shared transdiagnostic factors in the emergence and maintenance of mental problems (Nolen-Hoeksema and Watkins 2011). Indeed, empirical studies support the idea that high comorbidity rates may stem from shared mechanisms (Lahey et al. 2017). This holistic perspective of transdiagnostic approaches makes it possible to develop common intervention programs for individuals with different psychopathologies. For example, the "Unified Protocol for the Transdiagnostic Treatment of Emotional Disorders" developed by Barlow (2011) was tested in an experimental study by Farchione et al. (2012). As a result of the intervention, participants' anxiety and depressive symptoms decreased, and this effect was found to be maintained six months later.

Some advantages of the transdiagnostic approach contribute to its increasing prevalence among intervention practices. One of the most important advantages is that it addresses individuals' distress dimensionally rather than classifying psychopathologies in a present or absent manner (Nolen-Hoeksema and Watkins 2011). For example, in DSM-5, the diagnosis of Posttraumatic Stress Disorder (PTSD) is based on meeting a specific symptom threshold. Within this framework, individuals who meet the diagnostic criteria can receive a clinical diagnosis, whereas individuals who fall just below this threshold may remain outside the scope of diagnosis (APA 2013). At this point, the transdiagnostic approach enables a more holistic and comprehensive evaluation of mental problems by considering all symptoms and underlying mechanisms (Barlow 2011). The second important advantage of the transdiagnostic approach is its perspective on comorbidity. Because this approach focuses on the shared mechanisms underlying problems rather than solely on diagnoses, it contributes to a better understanding of complex psychopathological relationships through common processes without being constrained by the number of comorbid diagnoses (Nolen-Hoeksema and Watkins 2011). Another advantage of the transdiagnostic approach emerges as a consequence of its first two advantages. Focusing on shared mechanisms in psychological problems makes it possible to design and implement common protocols rather than developing separate treatment protocols for each problem (Bähr et al. 2025). Instead of developing separate protocols for each mental problem, it is thought that developing transdiagnostic intervention programs that adopt a more holistic perspective and focus on the mechanisms underlying problems will make the training of mental health professionals more practical and reduce costs (Sauer-Zavala et al. 2017).

Due to its contribution to the understanding of mental problems and its clear advantages, it is important to examine in depth the common factors addressed by the transdiagnostic approach. The literature indicates that there are many transdiagnostic mechanisms that operate commonly across psychopathologies. These mechanisms include intolerance of uncertainty (Einstein 2014), difficulties in emotion regulation (Cludius et al. 2020), experiential avoidance (Akbari and Khanipour 2018), metacognitive beliefs (Anderson et al. 2019), perfectionism (Egan et al. 2011), and cognitive flexibility (Morris and Mansell

2018). One of the prominent factors among transdiagnostic mechanisms is repetitive negative thinking (RNT). The aim of this review study is to examine RNT as a transdiagnostic mechanism within a holistic framework by addressing its theoretical foundations, subtypes, risk and protective factors, measurement tools, and intervention approaches. In this direction, the study aims to integrate findings in the literature by revealing the common role of RNT across different psychopathologies and to provide a theoretical basis for transdiagnostic holistic interventions.

Repetitive Negative Thinking

Definition and Conceptual Framework

Cognitive processes play an important role in the development and maintenance of psychopathologies. In this context, cognitive distortions, intermediate beliefs, automatic thoughts, and irrational beliefs, which are frequently addressed in the literature, are among the types of thoughts associated with psychopathologies (Yesilyaprak et al. 2019, Kürümlüoğlugil and Tanrıverdi 2022). A large proportion of these thoughts reflect the way individuals evaluate the content of events. However, in recent years, studies indicating that psychopathology is related not only to the content of thought but also to the thinking process itself have increased. At this point, one of the prominent factors among transdiagnostic mechanisms is repetitive thinking with negative content.

Repetitive thinking can be evaluated in two dimensions: positive and negative. When considered from the positive dimension, repetitive thinking is not inherently an entirely negative process. When repetitive thinking is purposeful, short-term, and has positive content, it may help individuals solve problems and make sense of their experiences (Segerstrom et al. 2003). Indeed, according to Wells' (2024) metacognitive perspective, individuals may engage in repetitive thinking consciously because they believe that it helps them understand themselves better, solve their problems, and be prepared for future adversities. For example, individuals may think, "Thinking about my problems prepares me for them."

In the negative dimension, RNT refers to individuals' persistent negative thinking about themselves, their environment, or their relationships (Segerstrom et al. 2003). These thoughts occur frequently and are difficult to control (Ehring and Watkins 2008). Individuals may use rumination and worry as cognitive avoidance strategies (Dickson et al. 2012). In a network analysis study examining the negative effects of RNT on individuals, RNT was identified as a central node in the relationships among generalized anxiety disorder, insomnia, perceived stress, depression, and psychosis (Zagaria et al. 2023). This finding indicates that RNT is a shared etiological transdiagnostic factor across different psychopathologies. Indeed, from a transdiagnostic perspective, RNT is not merely a symptom observed in specific psychopathologies but a fundamental factor that affects the development and maintenance of different psychopathologies. Due to this central role, RNT is considered a structure that enables transitions among symptoms in psychopathologies.

As an umbrella concept, RNT encompasses types of thinking such as rumination, obsession, worry, pre-event processing, and post-event processing. From a transdiagnostic perspective, different psychopathologies are influenced by similar repetitive negative thinking processes. Although the RNT process is common across different psychopathologies, the content and type of repetitive thinking vary in a disorder-specific manner. Rumination observed in depression, intense worry observed in generalized anxiety disorder, and pre-event and post-event processing observed in social anxiety disorder (SAD) represent content-related and temporal variations of the same RNT process (Ehring 2021). For example, while individuals with depression may experience past-oriented rumination focused on inadequacy, such as "I could not do anything right," individuals with SAD may remain occupied after an event with interpersonal thoughts such as "I wonder what people thought about me." An individual with obsessive-compulsive disorder may repeatedly circulate control-focused thoughts such as "Did I lock the door?" in their mind. These subtypes of RNT may be observed separately across various psychopathologies, as well as frequently co-occur as accompanying structures, because they share similar cognitive mechanisms and common characteristics such as being intrusive, repetitive, and difficult to control (Ehring and Watkins

2008). In addition, these different types of RNT may commonly be misinterpreted by individuals as a problem-solving strategy (Wells 2024) or may function as a cognitive avoidance strategy that serves to avoid uncertainty (Borkovec et al. 2004). Indeed, according to Ehring and Watkins (2008), individuals may use RNT to create an illusion of control aimed at reducing uncertainty, whereas according to Newman and Llera's (2011) contrast avoidance model, individuals may use RNT as an emotional buffer to avoid potential sudden emotional distress.

Mental health professionals' interest in transdiagnostic approaches has been increasing steadily (Norcross et al. 2013, Norcross et al. 2022). RNT is accepted as a transdiagnostic mechanism that plays a role in the development and maintenance of different psychopathologies (Harvey et al. 2003, Gökdağ and Kaçar Başaran 2023). However, the existing literature generally addresses repetitive negative thinking within the context of specific diagnoses. Therefore, there is a need for studies that examine the shared role of RNT across different psychopathologies within a transdiagnostic framework and that address its subtypes, measurement tools, and intervention options in a holistic manner. Because conceptualizing RNT as a shared transdiagnostic mechanism offers a more functional approach in terms of both developing common intervention methods and training mental health professionals, compared to examining this process separately within the context of different psychopathologies. In this context, the present study will examine the role of RNT across different psychopathologies, as well as its measurement tools and intervention approaches, in detail. In the following sections of the study, RNT types and their relationships with psychopathologies will be discussed in detail. Figure 1 presents the types of RNT addressed within the scope of the study.

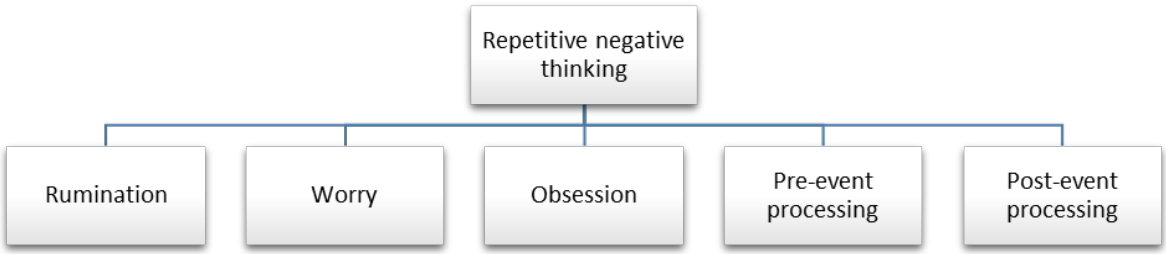

Figure 1. Types of repetitive negative thinking

Rumination

Rumination refers to individuals' repetitive thinking about negative emotions and thoughts related to past events (Nolen-Hoeksema 1991). Becoming stuck in thoughts such as "I wish I had not acted that way" or "Why do I keep making the same mistakes?" are typical examples of rumination. This type of thinking leads to a deepening of the emotional state experienced by the individual and an increase in psychological distress (Ehring and Watkins 2008). This is because rumination contributes to the intensification of negative affect and prolongs its duration. In addition, it weakens individuals' problem-solving abilities and prevents them from engaging in functional behaviors (Watkins and Roberts 2020). For example, an individual may ruminate about past events with content such as "How could I make such a mistake, what could I have done differently?" Although this mode of thinking may appear to serve a problem-solving function for the individual, it actually directs attention toward threatening and negative stimuli. Consequently, this thinking style contributes to the maintenance of anxiety, stress, and depressive affect (Ehring and Watkins 2008, Wells 2024).

In the current literature, ruminative thinking also has different subtypes, such as error rumination and self-critical rumination. Error rumination is defined as individuals' repetitive thinking about past mistakes and evaluating these mistakes in an exaggerated manner (Flett et al. 2020). Self-critical rumination, on the other hand, refers to individuals' repetitive and judgmental thinking about their inadequacies and flaws (Smart et al. 2016). Although rumination and worry share similar cognitive processes, their temporal orientation distinguishes these two concepts. While rumination is mostly past-oriented, such as "How could I make this mistake?", worry is largely future-oriented, such as "What if something happens to them?" (Ehring and Watkins 2008). McLaughlin et al. (2007) experimentally examined the emotional effects of

worry and rumination. In the study, both processes triggered in participants increased negative emotions; however, worry further intensified anxiety levels, whereas rumination further intensified depression levels.

Worry

Worry is one of the types of RNT. Transdiagnostic approaches indicate that increases in worry levels constitute a mechanism that jointly maintains different psychopathologies (McEvoy et al. 2013). Individuals' repetitive thinking in the form of "What if this happens?" represents one of the most typical examples of worry. Worry is a repetitive and difficult-to-control thinking process oriented toward negative situations that may occur in the future. It is largely verbal in content and serves individuals' efforts to be prepared for potential threats (Borkovec et al. 2004). Individuals attempt to make mental preparations for these threats by generating anticipatory predictions. Although this prediction and preparation process may increase individuals' sense of control and lead to short-term relief, it maintains anxiety and negative affect in the long term (Borkovec et al. 2004).

From the perspective of the contrast avoidance model, individuals use worry to protect themselves from the potential negative emotional impacts of situations they may encounter in the future. According to the model, by thinking about possible events, individuals attempt to prevent sudden emotional experiences that may occur when these events take place (Newman and Llera 2011). However, it is known that intense worry directs individuals' attention toward threatening stimuli, reduces problem-solving options, and prevents the reduction of negative emotions (Hirsch and Mathews 2012). Indeed, experimental and longitudinal studies have shown that worry increases the severity of anxiety disorders (McLaughlin et al. 2007, Spinhoven et al. 2018). Although worry and pre-event processing are similar, they are different types of RNT. While worry is an abstract form of thinking oriented toward predicting events that may occur in the future (McEvoy et al. 2013), pre-event processing is directed toward specific events (Mellings and Alden 2000). For example, in worry, individuals think about negative events that have not yet occurred but may possibly happen to them in the future, whereas in pre-event processing, individuals think about a presentation they are scheduled to give next week. For this reason, pre-event processing is frequently observed in social anxiety disorder (SAD) (Donohue et al. 2024), whereas worry is more prominent in generalized anxiety disorder (Baik and Newman 2025).

Obsession

Obsessions are thinking processes that arise involuntarily, are evaluated by the individual as inappropriate, yet cannot be controlled by the individual. Although individuals find the content of these thoughts to be irrational and meaningless, they experience an inability to control the thinking process itself (Rachman and Hodgson 1980). Obsessions are mental experiences that manifest not only in the form of thoughts but also as involuntary images or impulses. For example, a sudden image of harming someone or an impulse to jump in front of a train are examples of obsessions (APA 2013).

There are various types of obsessions that differ according to their content. Contamination obsessions involve themes related to germs, contamination, or cleanliness. For example, believing that one must wash their hands repeatedly after each use of the toilet in order to be convinced that their hands are clean, or believing that one must use bleach while washing their hands, can be considered examples of these obsessions. Harm obsessions, on the other hand, consist of intrusive thoughts about unintentionally harming others or oneself. Sudden thoughts such as "What if I harm my children?" or "What if I throw myself in front of the subway?" are examples of this type of obsession. Another subtype, symmetry and order obsessions, are related to maintaining a specific order in a precise and orderly manner. For example, an individual may require all items in their living and working spaces to be placed in exact locations and experience intense discomfort when these items are moved. Moral and religious obsessions involve excessive sensitivity regarding adherence to the rules of one's religion or the moral norms of the society in which one lives. For example, believing that one must perform ablution repeatedly to be certain that it has been performed correctly and has not been invalidated before prayer can be considered an example of this type of obsession. Finally, sexual obsessions encompass distressing sexual thoughts and images. Sexual obsessions are characterized by individuals perceiving involuntarily occurring sexual images and

thoughts as inappropriate and distressing, and making intense efforts to eliminate or suppress them (Abramowitz et al. 2009, APA 2013).

The main difference between rumination and obsession is that rumination is generally a process that individuals initiate voluntarily on their own but gradually lose control over (Watkins and Roberts 2020), whereas obsessions are thinking processes that arise spontaneously and are beyond the individual's control (APA 2013). For example, obsessions may appear as sudden images of harming others that intrude into the mind, whereas rumination may be seen as repetitive thinking such as "I wish I had not acted that way." In addition, during the ruminative process, individuals may generally perceive the content of their thoughts as logical and the ruminative process itself as functional. However, in obsessions, although individuals perceive the content of the thoughts as very irrational and dysfunctional, they are unable to terminate the thinking process (Rachman and Hodgson 1980).

Pre-event and Post-event Processing

Pre-event processing is a repetitive and negative thinking process oriented toward possible situations that may occur in the future. This process may emerge as a preparatory mechanism for potential negative events (Mellings and Alden 2000). Before entering a social environment, individuals may visualize various catastrophic scenarios in their minds and evaluate themselves as if they were an external observer (Hackmann et al. 2000). For example, an individual may repeatedly think about scenarios such as "What if I cannot answer the questions?" or "What if my voice trembles?" regarding a presentation scheduled for the following week. This process causes individuals to focus on the negative aspects of the potential event and its possible adverse outcomes (Hirsch et al. 2006). As a result, the catastrophizing processing of thoughts related to social evaluation contributes to the maintenance of social anxiety disorder (SAD) by increasing anxiety (Rapee and Heimberg 1997).

Post-event processing refers to the process in which individuals repetitively think about an event they have experienced and its outcomes after the event has occurred. During this process, individuals analyze their own performance and others' reactions in a detailed and repetitive manner. Particularly in social anxiety disorder (SAD), individuals engage in an intense processing process following events (Mellings and Alden 2000). For example, repeatedly thinking "Did I say something wrong during the presentation?" after giving a presentation can be considered an example of this process. These thoughts may increase physiological arousal and anxiety, thereby strengthening avoidance behaviors in social situations (Brozovich and Heimberg 2008). Findings from experimental studies indicate that this process maintains negative self-appraisals, increases the recall of negative memories, and elevates individuals' distress levels (Brozovich and Heimberg 2008). This is primarily based on the critical nature of this thinking style and individuals' beliefs that they have failed to meet their high expectations (Rapee and Heimberg 1997).

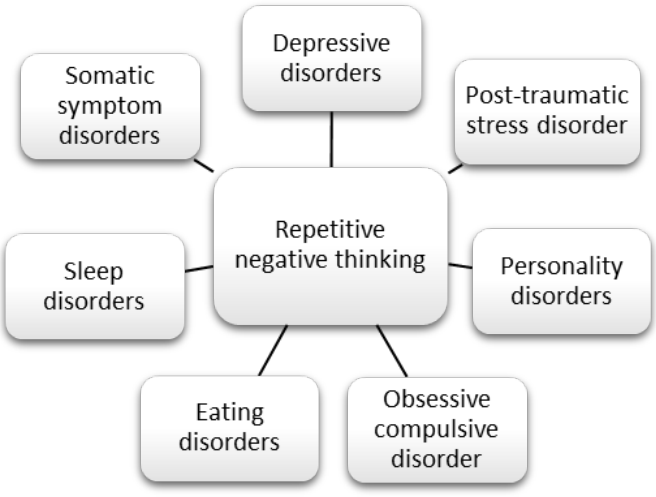

Figure 2. Repetitive negative thinking and related psychopathologies

Repetitive Negative Thinking as a Transdiagnostic Mechanism

RNT is a shared cognitive process in the development of many psychopathologies (Harvey et al. 2003). In a longitudinal study conducted by Spinhoven et al. (2018), repetitive negative thinking was identified as a mechanism that commonly maintains depression and anxiety disorders. Similarly, a network analysis study found that RNT plays a central role in the relationships among generalized anxiety disorder, insomnia, perceived stress, depression, and psychosis (Zagaria et al. 2023). These findings indicate that beyond being associated with individual psychopathologies, RNT is a transdiagnostic factor and a cognitive structure underlying many psychopathologies. Figure 2 presents the psychopathologies addressed in relation to RNT within the scope of the study.

Depressive Disorders

Recent studies in the literature show that RNT is associated with various mental health problems. One of these psychopathologies is depression (Richardson et al. 2025). Repetitive negative thinking in depression is generally observed in the form of rumination (Aslan and Baldwin 2021). Individuals think ruminatively about negative experiences they have had in the past and about themselves. This thought content generally includes feelings of regret and guilt (Nolen-Hoeksema 2000). In an experimental study conducted by McLaughlin et al. (2007), participants' rumination and worry processes were triggered separately, and their emotional states were subsequently evaluated. As a result of the experiment, participants' negative emotions increased, while their positive emotions decreased. In addition, it is known that rumination leads to an intensification and prolongation of negative emotions and prevents the display of functional behaviors (Watkins and Roberts 2020). Indeed, repetitive negative thinking is known to be a significant risk factor for suicide (Caudle et al. 2024). In a review study conducted by Bell et al. (2023), it was also determined that reductions in RNT were associated with improvements in depressive symptoms. Taken together, these findings indicate that RNT is a central cognitive process in the emergence and maintenance of depression.

Anxiety Disorders

Other psychopathologies associated with RNT are anxiety disorders (Gustavson et al. 2018). Repetitive negative thinking maintains the panic cycle by strengthening catastrophizing interpretations of somatic sensations (Orjuela et al. 2022). Individuals with panic disorder catastrophize bodily sensations to a greater extent and tend to engage in repetitive thinking about these sensations compared to both control groups and other anxiety disorder groups (Spinhoven et al. 2015, Ohst and Tuschen-Caffier 2020). Similarly, in generalized anxiety disorder (GAD), RNT is more commonly observed in the form of worry, and individuals engage intensely in thinking about potential future threats (McLaughlin et al. 2007, Peixoto et al. 2023). By repetitively cycling "what if" thoughts in their minds, individuals increase negative affect (McLaughlin et al. 2007). According to the metacognitive approach, individuals continue to worry due to beliefs such as "If I do not keep thinking, I will be unprepared" (Wells 2024). In social anxiety disorder, pre-event and post-event processing are more prominent, and individuals engage in repetitive thinking about social situations both before and after entering them (Donohue et al. 2024, Richardson et al. 2025). Taken together, these findings indicate that RNT is a shared transdiagnostic cognitive process across different anxiety disorders and that targeting it in intervention programs is important. Therefore, addressing RNT as a transdiagnostic target in intervention programs represents an important strategy that may enhance the effectiveness of such programs.

Posttraumatic Stress Disorder (PTSD)

Network analysis studies show that RNT is a central factor in the severity of PTSD symptoms (Yang et al. 2025). This is because repetitively thinking about trauma-related memories increases individuals' levels of distress (Ehlers and Clark 2000). Following trauma, individuals may repetitively think in the form of "What if … happens?" For example, thoughts such as "What if I cannot prevent it from happening again?", "What if I lose control because these thoughts come to my mind?", or "What if I cannot cope with this?" are

frequently observed (Ehlers and Clark 2000). Such ruminative thinking is reported to be significantly associated with PTSD symptoms and to predict both the emergence and maintenance of these symptoms (Moulds and Bisby 2020). Indeed, according to Ehlers and Clark (2000), while attempting to make sense of the experience after trauma, negative cognitive schemas are activated, which leads to the continual re-experiencing of the event in the mind. From a metacognitive perspective, individuals perceive trauma-related thoughts that come to mind as dangerous and attempt to control and suppress them. However, these efforts at control and suppression cause individuals' attentional focus to remain on the traumatic event, thereby leading to the chronicity of symptoms (Wells 2024). To escape from the distress increased by repetitive thinking, individuals may engage in dysfunctional avoidance behaviors, such as avoiding trauma-related objects, locations, or stimuli, or using alcohol or substances (Moulds and Bisby 2020). Although these avoidance behaviors provide short-term relief, they lead to the maintenance of negative anxiety in the long term (Craske et al. 2014). Therefore, RNT not only causes trauma-related memories to be repeatedly re-experienced in the mind but also plays a central role in the maintenance of PTSD.

Obsessive-Compulsive Disorder (OCD)

OCD is defined as being characterized by distressing obsessions that emerge in the form of thoughts, impulses, or images, and by repetitive physical or mental actions performed to reduce the anxiety resulting from these obsessions (APA 2013). Obsessions observed in OCD may involve content such as contamination obsessions, harm obsessions, religious obsessions, somatic obsessions, or sexual obsessions (Abramowitz et al. 2009). This repetitive cognitive thinking style increases individuals' anxiety levels and intensifies compulsive behaviors (Clark and Purdon 1993). In an experimental study conducted by Wahl et al. (2021), rumination was induced in individuals diagnosed with OCD, and OCD symptoms were monitored for two days. The induced rumination increased participants' OCD symptoms and depressive mood. Therefore, RNT is considered an important cognitive factor in the maintenance of OCD symptoms (Julien et al. 2007).

Somatic Symptom Disorders

Somatic symptom disorders are defined as individuals' excessive thinking about health problems or somatic symptoms and the engagement in compensatory behaviors to control this thinking (APA 2013). In these disorders, the primary problem is not the reality of the symptoms but the cognitive and behavioral responses individuals exhibit toward these symptoms (Barsky and Borus 1995). Repetitive negative thinking may intensify individuals' anxiety levels by causing them to focus excessively on minor or transient somatic symptoms. As a result of repetitive negative thinking, these individuals experience intense anxiety related to their symptoms, frequently seek medical care in an effort to reduce their anxiety, and this situation negatively affects their daily lives and functioning (APA 2013, Seved Alitabar and Goli 2024). Research has confirmed the relationship between rumination and somatic symptoms (Garner 2016, Denovan et al. 2019). Taken together, these findings indicate that RNT is a shared transdiagnostic factor across different somatic symptom disorders.

Sleep Disorders

Sleep disorders are mental health problems associated with reductions in sleep quality and duration and that negatively affect individuals' daytime attention, energy, and functioning. The most common types include insomnia, hypersomnia, and sleep apnea (APA 2013, Morin et al. 2015). RNT is associated with sleep problems (Zhang et al. 2023). It is known that rumination increases anxiety symptoms and negative affect (McLaughlin et al. 2007, Chang et al. 2023). Increased anxiety and negative affect may reduce sleep quality (Cha et al. 2017). Indeed, research shows that heightened anxiety and negative affect increase insomnia (Oh et al. 2019). In a five-year longitudinal study, RNT was shown to be associated with sleep disorders (Richardson et al. 2025). Individuals' repetitive mental imagery of negative scenarios before sleep, such as "What if the meeting does not go well tomorrow?" or "What if I cannot finish my project on time?", may delay sleep onset and reduce sleep quality (Otto et al. 2022). This is because RNT can increase cognitive arousal, making it more difficult for individuals to fall asleep (Carney et al. 2010). Taken together, these studies

indicate that repetitive negative thinking is an important transdiagnostic component in the maintenance of sleep disorders.

Eating Disorders

RNT is a key cognitive process in the maintenance of eating disorders. In eating disorders, individuals tend to engage in repetitive negative thinking about their bodies, weight, and eating behaviors. For example, thoughts such as "I ate too much, I have no self-control" or "My body looks disgusting" may be observed. This RNT may increase negative affect and, in turn, intensify uncontrolled eating behaviors (Smith et al. 2018). In an experimental study conducted with individuals diagnosed with anorexia nervosa and bulimia nervosa, rumination was found to increase binge eating behavior (Naumann et al. 2015, Hyde-Smith et al. 2024). Similarly, in a study conducted by Kornacka et al. (2021) with overweight and healthy groups, rumination was found to be positively associated with uncontrolled eating behavior. In addition, a recent meta-analysis revealed a strong association between rumination and eating disorders (Leppanen et al. 2022). These findings indicate that RNT plays a central role in the maintenance of eating disorders by both increasing negative affect and weakening individuals' control over eating behavior.

Substance Use Disorders

RNT is an important cognitive process in understanding the development, maintenance, and relapse risk of substance use disorders. In a meta-analysis study, RNT was found to be strongly associated with alcohol use disorder (Devynck et al. 2019). In another study, RNT was shown to predict alcohol use through anxiety and depressive symptoms (Devynck et al. 2017). That is, as RNT increases, anxiety and depressive symptoms also increase, and this increase leads to a greater severity of alcohol use disorder. Indeed, alcohol use may turn into a form of avoidance that individuals use to obtain short-term relief from negative affect (Danielson et al. 2024). In a longitudinal study conducted by Ferguson et al. (2024), rumination was found to increase substance use together with avoidance. In a study conducted with individuals using methamphetamine and heroin, rumination was found to be a predictor of the use of both substances (Mao et al. 2025). These findings indicate that RNT is a key transdiagnostic mechanism not only for alcohol use disorder but also for different substance use disorders.

Personality Disorders

Another psychopathology associated with RNT is personality disorders (Spada et al. 2021). Studies show that anger rumination is positively associated with symptoms of borderline personality disorder (BPD) (Peters et al. 2014). In particular, rumination focused on anxiety, sadness, and pain has been found to be associated with BPD, and this type of rumination has shown a strong relationship with increased emotional instability (Richman et al. 2022). In another study, worry and anger rumination were found to predict symptoms of antisocial personality disorder (Kelley et al. 2021). In the study conducted by Ludwig et al. (2020), rumination was shown to contribute to the transformation of negative affect into paranoia. In a study conducted with individuals with and without a diagnosis of any personality disorder, individuals with personality disorders were found to have higher levels of rumination and worry. It has been suggested that individuals with personality disorders use worry and rumination as maladaptive coping strategies, which further intensifies their negative affect (Spada et al. 2021). Overall, all these findings in the literature indicate that RNT is a key transdiagnostic mechanism in the maintenance of personality disorders.

Measurement Tools

In the literature, there are various measurement tools used to assess RNT and its subtypes. The vast majority of these scales have Turkish adaptations; however, the pre-event processing scale does not yet have a Turkish adaptation. The selection of measurement tools was based on their reliability and validity, their frequent use in previous studies, and their ability to assess repetitive thinking processes in a holistic manner. The scales addressed within the scope of the study are presented in Table 1.

Repetitive Thinking Scale

The original version of the scale developed by McEvoy et al. (2010) consists of 31 items, and it also has a 10-item short form. The Turkish adaptation was conducted by Gülüm and Dağ (2012). In both the development and adaptation studies, the samples consisted of undergraduate students. The scale is rated on a 5-point Likert scale. The original 31-item version of the scale has a two-factor structure reflecting repetitive negative thinking and the absence of repetitive negative thinking. In the Turkish adaptation study, the items loading on the second factor in the original form were reverse scored, and the scale was reported to exhibit a single-factor structure. Therefore, the total score obtained from the Turkish form is considered a holistic indicator reflecting the general level of repetitive negative thinking. The 10-item short form was reported to have a single-factor structure in both the original and adaptation studies. Scores obtained from the 31-item scale range from 31 to 155, whereas scores from the 10-item short form range from 10 to 50. Higher scores on the scale indicate higher levels of repetitive thinking. For both versions of the scale, no cut-off scores were reported in either the development or adaptation studies. In the development study, the Cronbach's alpha coefficient of the scale was calculated as .93, whereas in the adaptation study it was calculated as .94. For the 10-item short form, the Cronbach's alpha coefficient was calculated as .89 in both the original and adaptation studies (McEvoy et al. 2010, Gülüm and Dağ 2012).

Table 1. Psychometric properties of the scales mentioned in the study

Scale name	Developer	Adapter	Number of items	Likert scale	Factor structure	Cut-off score	α
Repetitive thinking scale	McEvoy et al. (2010)	Gülüm and Dağ (2010)	31	5	Single	-	.94
Repetitive thinking scale-short form	McEvoy et al. (2010)	Gülüm and Dağ (2010)	10	5	Single	-	.89
Repetitive thinking scale-10	McEvoy et al. (2014)	Kaçar-Başaran et al. (2023)	10	5	Single	32	.93
Repetitive thinking scale	Brinker and Dozois (2009)	Karatepe (2010)	20	5	Single	-	.90
The mistake rumination scale	Flett et al. (2020)	Kabadayı and Mercan (2021)	7	4	Single	-	.82
Self-critical rumination scale	Smart et al. (2016)	Erarslan İngeç et al. (2021)	10	4	Single	-	.92
Penn State worry scale	Meyer et al. (1990)	Yılmaz et al. (2008)	16	5	Single	-	.91
Post-event processing scale	Rachman et al. (2000)	Baycan (2019)	10	5	Single	-	.89
Pre-event processing scale	Vassilopoulos (2004)	-	18	5	Three	-	.91

Note. The psychometric properties presented in the table are based on the Turkish adaptation studies of the scales.

Repetitive Thinking Scale -10

The Turkish adaptation of the scale developed by McEvoy et al. (2014) was conducted by Kaçar-Başaran et al. (2023). In the development study, two separate samples were used, one consisting of undergraduate students and the other of a clinical sample. In the adaptation study, the sample consisted of adult individuals. The scale consists of 10 items and is rated on a 5-point Likert scale. In both the original and adaptation studies, the scale was reported to have a single-factor structure. Scores obtained from the scale range from 10 to 50. Higher scores on the scale indicate higher levels of repetitive thinking. In the original study, the cut-off score was determined as 32, whereas no cut-off score was reported in the adaptation study. In the development study, the Cronbach's alpha coefficient of the scale was calculated as .92 in the clinical sample and .89 in the non-clinical sample. In the adaptation study, the Cronbach's alpha coefficient was calculated as .93 (McEvoy et al. 2014, Kaçar-Başaran et al. 2023).

Ruminative Thinking Style Scale

The Turkish adaptation of the scale developed by Brinker and Dozois (2009) was conducted by Karatepe (2010). In the development study, the sample consisted of undergraduate students, whereas in the Turkish adaptation study, the sample consisted of individuals aged 18 years and older with at least a high school education. The scale consists of 20 items and is rated on a 5-point Likert scale. In both the original and adaptation studies, the scale was reported to have a single-factor structure. Scores obtained from the scale range from 20 to 100. Higher scores on the scale indicate higher levels of repetitive thinking. No cut-off scores were reported in either the development or adaptation studies. In the development study, the Cronbach's alpha coefficient of the scale was calculated as .93, whereas in the adaptation study it was calculated as .90 (Brinker and Dozois 2009, Karatepe 2010).

The Mistake Rumination Scale

The Turkish adaptation of the scale developed by Flett et al. (2020) was conducted by Kabadayı and Mercan (2021). In the development study, the sample consisted of undergraduate students, whereas in the Turkish adaptation study, the sample consisted of adults aged between 17 and 39 years. The scale consists of 7 items and is rated on a 4-point Likert scale. In both the original and adaptation studies, the scale was reported to have a single-factor structure. Scores obtained from the scale range from 7 to 28. Error rumination is defined as individuals' repetitive thinking about past mistakes and evaluating these mistakes in an exaggerated manner (Flett et al. 2020). Higher scores on the scale indicate higher levels of error rumination. No cut-off scores were reported in either the development or adaptation studies. In the development study, the Cronbach's alpha coefficient of the scale ranged between .81 and .86, whereas in the adaptation study it was calculated as .82 (Flett et al. 2020, Kabadayı and Mercan 2021).

Self-Critical Rumination Scale

The Turkish adaptation of the scale developed by Smart et al. (2016) was conducted by Erarslan İngeç et al. (2021). In both the development and adaptation studies, the samples consisted of undergraduate students. The scale consists of 10 items and is rated on a 4-point Likert scale. In both the original and adaptation studies, the scale was reported to have a single-factor structure. Scores obtained from the scale range from 10 to 40. Self-critical rumination is defined as individuals' repetitive and judgmental thinking about their mistakes, inadequacies, and flaws (Smart et al. 2016). Higher scores on the scale indicate higher levels of self-critical rumination. No cut-off scores were reported in either the development or adaptation studies. In the development study, the Cronbach alpha coefficient of the scale was calculated as .92, and in the adaptation study it was also calculated as .92 (Erarslan İngeç et al. 2021, Smart et al. 2016).

Penn State Worry Scale

The Turkish adaptation of the Penn State Worry Questionnaire developed by Meyer et al. (1990) was conducted by Yılmaz et al. (2008). In the development study, the sample consisted of undergraduate students, whereas in the Turkish adaptation study, the sample consisted of adults aged between 17 and 52 years. The scale consists of 16 items and is rated on a 5-point Likert scale. In the development study, the scale was reported to have a single-factor structure. In the Turkish adaptation study, although a two-factor structure was reported, it was stated that this distinction largely resulted from reverse-coded items and that the scale theoretically represents a unidimensional structure (Yılmaz et al. 2008). Scores obtained from the scale range from 16 to 80. Higher scores on the scale indicate higher levels of worry. No cut-off scores were reported in either the development or adaptation studies. In the development study, the Cronbach alpha coefficient of the scale ranged between .93 and .95, whereas in the adaptation study it was calculated as .91 (Meyer et al. 1990, Yılmaz et al. 2008).

Post-Event Processing Scale

The Turkish adaptation of the scale developed by Rachman et al. (2000) was conducted by Baycan (2019).

In both the development and adaptation studies, the samples consisted of undergraduate students. The scale is rated on a 5-point Likert scale. The original version of the scale consists of 10 items; however, in the adaptation study, one item was removed from the scale due to a low factor loading. In both the original and adaptation studies, the scale was reported to have a single-factor structure. Scores obtained from the Turkish version of the scale range from 9 to 45. Higher scores on the scale indicate higher levels of post-event processing. No cut-off scores were reported in either the development or adaptation studies. In the development study, the Cronbach alpha coefficient of the scale was calculated as .85, whereas in the adaptation study it was calculated as .89 (Baycan 2019, Rachman et al. 2000).

Pre-Event Processing Scale

The scale developed by Vassilopoulos (2004) consists of 18 items. The majority of the items (Items 1–16 and Item 18) are scored on a scale ranging from 0 to 100, whereas Item 17 is in a yes/no format assessing avoidance of social situations. As individuals' scores on the scale increase, their level of pre-event processing increases. No cut-off score has been reported. In the development study, factor analysis was conducted on the 17 items scored between 0 and 100. As a result of the analysis, 15 of the 17 items loaded on the anticipatory processing factor, while one item each loaded on the cognition and negativity factors. In the development study, the Cronbach alpha coefficient of the scale was calculated as .91. The Turkish adaptation of the scale has not yet been conducted.

Repetitive Negative Thinking: Protective and Risk Factors

RNT is a cognitive process associated with various individual and environmental factors. Research indicates that high levels of neuroticism lead individuals to react more intensely to negative events, thereby increasing negative affect, and that this situation may trigger repetitive negative thinking about adverse events (Roelofs et al. 2008). Another risk factor, cognitive rigidity, is considered a factor that increases both RNT and anxiety levels by weakening individuals' capacity to explore alternative thoughts and options (Altan-Atalay et al. 2022, Kara and Tolan 2025). Negative metacognitive beliefs are also associated with RNT. According to the metacognitive approach, individuals' negative metacognitive beliefs that the RNT process is uncontrollable lead to an intensification of RNT (Wells 2024). On the other hand, according to trauma theory, traumatic experiences during childhood may re-emerge in individuals' minds in adulthood and increase distress (Herman 2015). Indeed, research supports a positive relationship between adverse childhood experiences and rumination (Fox et al. 2024). In a longitudinal study conducted by Raposo et al. (2025), difficulties in emotion regulation were found to increase RNT. Finally, in the study by Koerner and Dugas (2008), individuals with high intolerance of uncertainty were found to perceive uncertain situations as more distressing, which was associated with higher levels of worry.

Some psychological resources can be considered protective factors against RNT. In this context, self-compassion stands out as a regulatory variable that prevents maladaptive thinking patterns from translating into negative outcomes. For example, a study found that self-compassion functioned as a buffer in the relationship between rumination and anxiety, such that when levels of self-compassion were high, the relationship between rumination and anxiety became nonsignificant (Yamasaki et al. 2024). A meta-analysis study showed that mindfulness-based interventions reduce the tendency toward rumination by enhancing the ability to decenter from thoughts. That is, mindfulness interventions increase individuals' ability to create distance from their thoughts, and this ability, as a mediating variable, significantly reduces levels of rumination (Gu et al. 2015). In the study conducted by Bırni et al. (2025), a strong negative relationship was found between psychological flexibility and self-critical rumination, and these two factors were identified as mediators in the relationship between adverse childhood experiences and mental well-being.

Developmental cognitive characteristics may function as both protective and risk factors for RNT. For example, during adolescence, individuals tend to display an egocentric perspective and experience difficulties in perspective-taking (Elkind 1967, Choudhury et al. 2006). This cognitively constrained perspective may constitute a risk factor for the development of RNT during adolescence. Studies in the

literature show that RNT in adolescents is associated with depression and anxiety (McEvoy et al. 2019). During the transition from adolescence to adulthood, executive functions increase markedly as a result of the development of the prefrontal cortex, and limitations in perspective-taking diminish (Choudhury et al. 2006, Durston et al. 2006, Casey et al. 2008). This increase in executive functions may serve as a protective factor against RNT in adults compared to adolescents. Indeed, research indicates that RNT increases during adolescence, peaks in young adulthood, and then consistently decreases during adulthood (Lilly et al. 2023). Taken together, these findings suggest that RNT is a multidimensional process associated with cognitive, emotional, and developmental processes.

Intervention Approaches for Repetitive Negative Thinking

Interventions aimed at reducing RNT can generally be addressed along two main axes: approaches that target thought content and approaches that target the thinking process itself and the beliefs related to this process. In classical CBT approaches, the primary aim is for individuals to become aware of their repetitive negative thoughts and to replace them with more functional alternatives. Indeed, classical CBT techniques such as cognitive restructuring and identifying automatic thoughts directly target the content structure of RNT (Curtiss et al. 2021). For example, a repetitive negative thought such as "What if I mess everything up at the meeting next week?" is quite common in social anxiety disorder (Mellings and Alden 2000). When working with this thought, CBT aims to modify its content and to generate alternative thoughts such as "I have done this before; even if there are difficulties next week, I can still manage." Similarly, when working with an RNT such as "If I embarrass myself at the meeting, my entire career will be ruined," the intended alternative thought may be "Everyone can make mistakes. Making a single mistake will not ruin my entire career." In this process, techniques such as behavioral experiments, cognitive restructuring, and evidence gathering are used to help change clients' assumptions related to the content of their RNT. Experimental studies show that these interventions reduce individuals' levels of RNT (Watkins et al. 2011). However, although this form of intervention may be effective in reducing the anxiety symptoms and depressive affect associated with RNT, the impact may be limited if the thinking process itself is not directly targeted (Stenzel et al. 2025). In other words, even if the content of thoughts changes, RNT may re-emerge with different content when individuals' metacognitive beliefs about thinking remain unchanged.

This limitation has paved the way for the development of intervention options referred to as third-wave approaches. Metacognitive therapy is one of these approaches. Metacognitive therapy intervenes not in the thoughts themselves but in beliefs about the thinking process. This approach targets beliefs that repetitive negative thinking is either useful or a process that must be controlled in the maintenance of RNT. In this direction, individuals' perceived control over RNT and their relationship with thinking are addressed through interventions such as attention training techniques and detached mindfulness techniques. Similarly, Acceptance and Commitment Therapy (ACT) aims for individuals to accept their thoughts and engage in action rather than struggling with or attempting to change them. In ACT, the main goal is to enable clients to accept these cognitive processes in a nonjudgmental manner and to transform their relationship with these processes in order to take action (Harris 2019). For this purpose, interventions such as cognitive defusion, values clarification, and values-based action are used to promote the continuation of functional action despite the presence of RNT. This is because these approaches are based on the assumption that struggling with the content of thoughts may paradoxically increase the frequency and intensity of thoughts (Wells 2024).

However, traditional approaches adopt a diagnosis-focused perspective in the treatment of psychopathologies, which leads to the development of separate intervention programs for each psychopathology, resulting in increased complexity in therapist training and higher therapy costs. In contrast, transdiagnostic approaches offer more holistic and generalizable interventions by focusing on the shared mechanisms underlying psychopathologies. For example, the transdiagnostic unified protocol developed by Barlow (2011) for depression and anxiety disorders is one such approach. The Unified Protocol is a transdiagnostic CBT method developed to be applicable to psychopathologies with emotional components, such as all anxiety disorders, unipolar mood disorders, somatoform disorders, and

dissociative disorders. This protocol targets common mechanisms shared across different psychopathologies. The intervention phase is based on modules such as emotion awareness, emotion regulation strategies including coping with emotions, cognitive restructuring, exposure exercises, and behavioral activation. In this way, the Unified Protocol aims to increase intervention effectiveness by targeting maintaining processes that are common across different diagnoses. Randomized controlled trials have shown that following the intervention, there were significant reductions in the severity of both anxiety and comorbid psychopathologies, that 59% of clients benefited from the intervention, and that the effects were maintained six months later (Farchione et al. 2012).

While transdiagnostic approaches such as the Unified Protocol (Barlow 2011) provide a similar sequence of interventions for all clients, more flexible intervention approaches have also been developed in which clients' predominant problem areas may differ. These modular transdiagnostic approaches allow intervention components to be selected according to clients' needs. For example, one prominent example of this approach is the Common Elements Treatment Approach (CETA; Murray et al. 2014), which differs from standard transdiagnostic approaches in that it structures the intervention process through individualized modules rather than a standardized protocol. The core assumption of CETA is that psychopathologies such as anxiety, depression, and behavioral disorders are largely maintained through shared psychological mechanisms. In line with this assumption, the Common Elements Treatment Approach proceeds through modules selected according to the client's needs from a set of adaptable modules. The first module of the protocol involves the initial interview and assessment with the client. Subsequently, depending on the client's needs, the intervention continues by selecting one of the anxiety, depression, or behavioral disorder processes, each of which consists of three modules.

Finally, unlike classical CBT, approaches targeting shared processes across psychopathologies and therefore referred to as "transdiagnostic CBT" have been developed (Andersen et al. 2016). A meta-analysis examining transdiagnostic CBT intervention studies showed that the transdiagnostic CBT approach was effective in reducing individuals' levels of anxiety and depression. The same study also demonstrated that transdiagnostic CBT was more successful in reducing anxiety symptoms compared to diagnosis-based interventions (Newby et al. 2015). In conclusion, when CBT, third-wave approaches, and transdiagnostic protocols are considered together, it is observed that interventions targeting RNT enhance individuals' well-being by working with thought content and/or thinking processes.

Discussion

In this study, RNT was addressed multidimensionally and examined in a holistic manner. Overall, the findings indicate that there are multiple subtypes of RNT and that these subtypes play a role in the emergence and maintenance of various psychopathologies. Numerous RNT-related psychopathologies were examined. Risk factors and protective factors for RNT were also discussed. In addition, various intervention approaches targeting RNT were reviewed. In this respect, the present study offers a holistic transdiagnostic perspective on RNT. When the findings in the literature are evaluated, past-oriented rumination in depressive disorders, future-oriented worry in anxiety disorders, obsessions in OCD, and pre- and post-event processing in social anxiety disorder reflect the manifestations of RNT subtypes across different disorders. Moreover, RNT has been reported to show significant associations with sleep disorders, substance use disorders, personality disorders, eating disorders, somatic symptom disorders, and PTSD. These findings indicate that RNT functions both as a shared maintaining mechanism across various disorders and, considering the high comorbidity rates, as a transdiagnostic process that bridges different psychopathologies.

In light of these findings, the transdiagnostic approach offers a different framework for psychotherapeutic processes by focusing on the thinking process itself rather than the content of thoughts, in contrast to traditional methods. Indeed, recent meta-analysis studies indicate that approaches directly targeting the RNT process are more effective in reducing RNT compared to content-focused interventions (Stenzel et al. 2025). Moreover, while traditional approaches lead to limitations in clinical practice by developing separate intervention methods for each diagnosis, the transdiagnostic approach focuses on shared

mechanisms and allows for the development of more holistic intervention strategies (Bähr et al. 2025). This is considered to both make specialist training more practical and render the therapy process more economical, as well as to increase the generalizability of clinical practices (Sauer-Zavala et al. 2017). In line with the findings of this study and the existing literature, these results indicate that RNT is not a process specific to a single psychopathology. Based on the findings of this study and literature-based explanations, a conceptual and theoretical hypothetical model can be developed to explain how RNT reduces individuals' functioning and increases the severity of psychopathologies. This model is presented in Figure 3.

Figure 3 presents the hypothetically developed model of how RNT strengthens psychopathology. The explanation of this model is as follows. In the literature, the relationships between RNT and psychopathologies have mostly been examined from an outcome-oriented perspective. The information and findings presented in this study indicate that the relationships between RNT and psychopathology should also be examined as processes. The effects of RNT on psychopathologies occur through multiple pathways. First, RNT maintains individuals' attentional focus on negative and threatening situations (Wells 2024). This consumes individuals' cognitive resources, increases psychological distress, and reduces problem-solving capacity by blocking potential solutions (Segerstrom et al. 2003, Ehring and Watkins 2008, Raposo et al. 2025). As a result, negative affect intensifies, and individuals experience anxiety and depressive symptoms more severely (Harvey et al. 2004, Rezaei et al. 2025). For example, in PTSD, individuals' worry leads to heightened sensitivity to threats, thereby preventing a reduction in anxiety (Moulds and Bisby 2020). Similarly, in panic disorder, individuals' repetitive worries about experiencing panic attacks contribute to the persistence of panic symptoms and the chronicity of the disorder (Wells 2024). In social anxiety disorder, RNT leads individuals to maintain behavioral avoidance in an effort to escape negative outcomes, thereby reducing learning opportunities. Individuals who avoid confronting the situations they think about lose the opportunity to experience the actual outcomes of these situations (Brockmeyer et al. 2015). Indeed, in the study conducted by Seah et al. (2020), rumination was found to increase social avoidance in both individuals with social anxiety disorder and healthy controls. Although this avoidance reinforced by rumination provides short-term relief by reducing anxiety, it functions as negative reinforcement in the long term and leads to the maintenance of anxiety (Craske et al. 2014). Network analysis studies have also identified RNT as a central node in the connections among different psychopathologies (Zagaria et al. 2023).

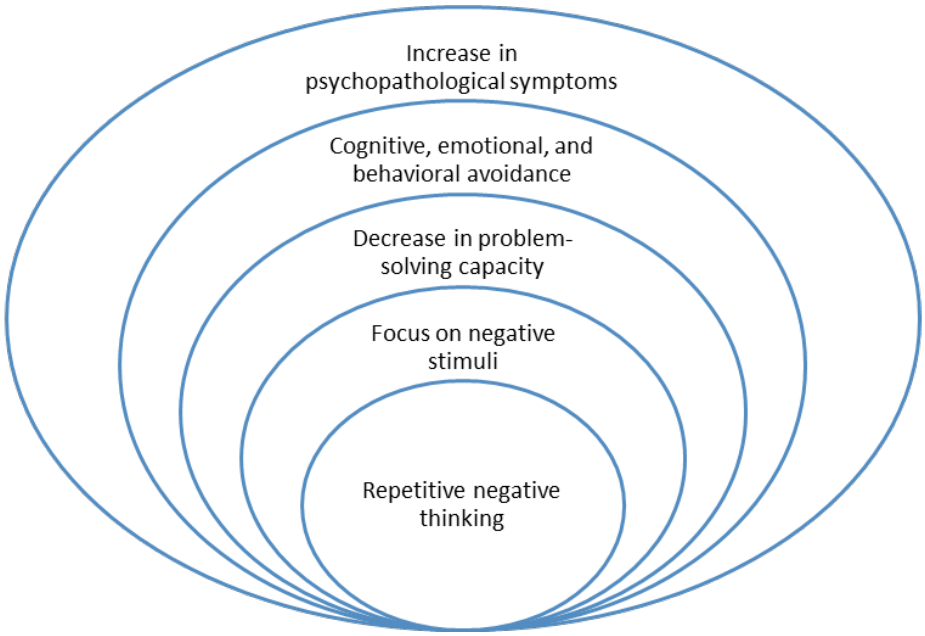

Figure 3. Model of repetitive negative thinking strengthening psychopathology

In the literature, RNT has not been addressed within the framework of time orientation. However, humans are beings who display time orientation (Zimbardo and Boyd 2014). The types of RNT discussed in this study can also be examined in terms of time orientation. In this context, RNT subtypes such as rumination, worry,

obsession, pre-event processing, and post-event processing have different time orientations. Therefore, these thinking styles can be classified as past-, present-, or future-oriented. Examples of past-oriented RNT types include rumination and post-event processing. In rumination and post-event processing, individuals repetitively think about events that have already occurred (Hirsch et al. 2006, Ehring and Watkins 2008). Obsessions, on the other hand, emerge involuntarily in the present moment (APA 2013). Pre-event processing and worry are future-oriented subtypes of RNT. In pre-event processing, individuals repetitively think about possible future scenarios (Mellings and Alden 2000), whereas in worry, individuals focus on uncertain future threats (Borkovec et al. 2004). Classifying RNT subtypes according to time orientation may provide an important framework for understanding the nature of their cognitive processes. In this study, based on findings and information from the literature, the differentiation of RNT subtypes according to time orientation is visualized in Figure 4.

In this study, RNT was examined primarily at the psychopathological level. However, neurophysiological processes are also considered to be important for RNT. Brain imaging studies in the literature have aimed to identify neural differences in individuals associated with psychopathologies. In depression, reduced activation has been detected in neural regions such as the dorsolateral prefrontal cortex and the orbitofrontal cortex (Disner et al. 2011). In anxiety disorders, fMRI findings indicate dysregulation particularly in the amygdala and the anterior cingulate cortex (Etkin and Wager 2007). Structural MRI studies have shown hippocampal volume loss and gray matter reductions in various regions of the prefrontal cortex in both depression and anxiety disorders (Serra-Blasco et al. 2021). The transdiagnostic perspective emphasizes shared neural differences across various psychopathologies rather than disorder-specific neural differences. In a meta-analysis examining brain imaging studies, individuals with depression, anxiety, and comorbid depression and anxiety were found to share a common neural profile. The study identified shared alterations in the orbitofrontal cortex, dorsolateral prefrontal cortex, middle frontal cortex, cingulate cortex, amygdala, and hippocampus. In contrast, findings related to disorder-specific neural differences were found to be weak and inconsistent (Sindermann et al. 2021). These findings indicate that focusing on shared neural mechanisms is necessary for understanding psychopathologies. Taken together, these results reveal that studies examining neurophysiological processes according to RNT subtypes are limited. In future research, the relationships between RNT subtypes and neurophysiological processes may be investigated.

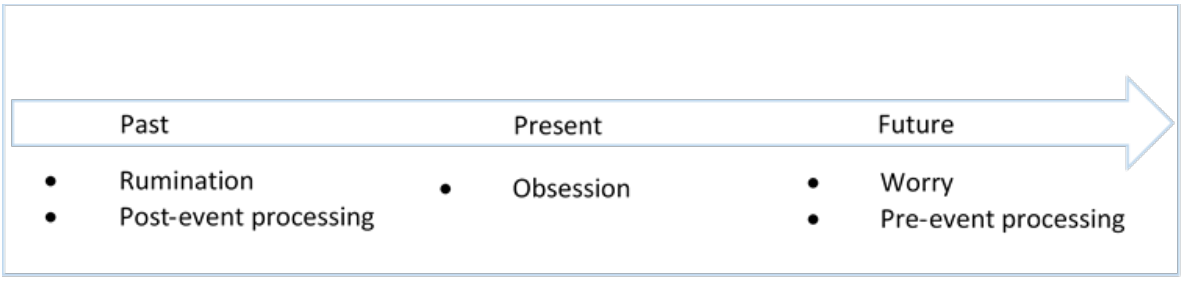

Figure 4. Classification of repetitive negative thinking types according to time orientation

The findings of this study indicate that RNT-based interventions are limited in nationally conducted intervention studies. However, the transdiagnostic approach facilitates understanding the shared mechanisms of mental health problems and developing intervention programs targeting these mechanisms (Nolen-Hoeksema and Watkins 2011, Barlow et al. 2020). The role of RNT in the emergence and maintenance of many psychopathologies increases the importance of this concept from both theoretical and clinical perspectives. This is because selecting RNT as an intervention target makes it possible to develop and implement common intervention protocols for different psychopathologies. Examples of such protocols include the Transdiagnostic Unified Protocol (Barlow 2011), the Common Elements Treatment Approach (Murray et al. 2014), and Transdiagnostic CBT Protocols (Andersen et al. 2016). One of the most fundamental benefits of transdiagnostic interventions is that they address psychiatric disorders dimensionally rather than categorically. In this way, individuals' distress can be evaluated more sensitively by considering the severity and persistence of symptoms (Nolen-Hoeksema and Watkins 2011). Moreover, because transdiagnostic interventions focus not only on diagnoses but also

on the shared processes underlying these diagnoses, they offer a more holistic intervention opportunity in cases where comorbidity rates are high (Barlow 2011). This approach reduces the need to develop disorder-specific protocols, thereby facilitating therapist training and providing advantages in terms of time and cost in clinical practice (Sauer-Zavala et al. 2017, Bähr et al. 2025). In conclusion, transdiagnostic interventions provide a more flexible, accessible, and practical framework for intervention by targeting the shared mechanisms of mental disorders.

In this context, experimental studies conducted in Türkiye have generally focused on specific diagnoses and symptom clusters. For example, Yılmaz (2023) examined the effects of CBT on episodic memory and metacognition in individuals diagnosed with OCD. Avşar (2019) evaluated the effects of individual CBT on social anxiety, self-efficacy, and psychological well-being. In another experimental study conducted by Anarat (2023), a short-term, self-help–oriented, internet-based CBT intervention aimed at reducing generalized anxiety symptoms was implemented. Similarly, Şanal Güngör (2025) aimed to reduce post-traumatic symptoms by applying trauma-focused CBT in a group intervention with mothers who had experienced an earthquake. Kayahan (2020) developed and implemented an internet-based CBT program specifically for panic disorder. Finally, Aldoğan (2024) tested the effectiveness of online CBT in individuals experiencing anxiety and depression using an experimental design. Although all of these studies have made important contributions to the literature, they did not focus on the shared processes and multiple psychopathologies that form the basis of the transdiagnostic approach. One of the limited studies in Türkiye, Erarslan İngeç (2021), demonstrated the experimental applicability of transdiagnostic interventions in the country by achieving reductions in shared mechanisms such as cognitive avoidance, difficulties in emotion regulation, and relationships with internal experiences through a transdiagnostic intervention program applied to individuals with anxiety and depressive symptoms. However, holistic experimental studies based on RNT of this kind remain quite rare. Therefore, in order to facilitate the development of transdiagnostic intervention approaches, the present review study makes an important contribution to the literature by explaining RNT from a transdiagnostic perspective and providing content to inform future experimental studies.

Conclusion

In conclusion, RNT is a shared cognitive process underlying many psychopathologies, including depression, anxiety disorders, PTSD, OCD, sleep disorders, personality disorders, and substance use disorders. Conceptualizing RNT as a transdiagnostic mechanism allows for the simplification of intervention strategies and facilitates the delivery of mental health services in a more holistic and cost-effective manner. In this context, considering RNT as a central target in future research and clinical practice holds significant potential for the prevention and treatment of psychopathologies. Future research should examine the causal aspects of RNT, its transdiagnostic mechanisms, and the processes that mediate intervention outcomes. In addition, increasing cross-sectional and longitudinal studies that address the effects of cultural factors on RNT may contribute to the literature by testing the universality of this process.

References

Abramowitz JS, Taylor S, McKay D (2009) Obsessive-compulsive disorder. Lancet, 374:491-499.

Akbari M, Khanipour H (2018) The transdiagnostic model of worry: The mediating role of experiential avoidance. Pers Individ Dif, 135:166-172.

Aldoğan DÖ (2024) Depresyon ve anksiyete yaşayan bireylerde bilişsel davranışçı terapinin etkinliği (Yüksek lisans tezi). İstanbul, İstanbul Nişantaşı Üniversitesi.

Altan-Atalay A, Kaya-Kızılöz B, İlkmen YS, Kozol E (2022) Impact of abstract vs. concrete processing on state rumination: An exploration of the role of cognitive flexibility. J Behav Ther Exp Psychiatry, 74:101691.

APA (2013) Diagnostic and Statistical Manual of Mental Disorders, 5th ed.(DSM-5). Washinmton DC, American Psychiatric Association.

Anarat C (2023) A short-term, self-help, internet-based cognitive behavioral therapy intervention for decreasing symptoms of generalized anxiety (Masters thesis). İstanbul, Koç Üniversitesi.

Andersen P, Toner P, Bland M, McMillan D (2016) Effectiveness of transdiagnostic cognitive behaviour therapy for anxiety and depression in adults: a systematic review and meta-analysis. Behav Cogn Psychother, 44:673-690.

Anderson R, Capobianco L, Fisher P, Reeves D, Heal C, Faija CL, Wells A (2019) Testing relationships between metacognitive beliefs, anxiety and depression in cardiac and cancer patients: Are they transdiagnostic? J Psychosom Res, 124:109738.

Aslan IH, Baldwin DS (2021) Ruminations and their correlates in depressive episodes: Between-group comparison in patients with unipolar or bipolar depression and healthy controls. J Affect Disord, 280:1-6.

Avşar V (2019) Bilişsel davranışçı terapiye dayalı bireysel psikolojik danışmanın sosyal kaygı, özyeterlik ve psikolojik iyi oluş üzerindeki etkisi (Doktora tezi). Ankara, Ankara Üniversitesi.

Bähr C, Phan D, Murawska N, Gerber J, Jordan A, Hoffmann K, Calvano C (2025) Together and beyond: A systematic review on characteristics and efficacy of transdiagnostic psychotherapeutic group-based interventions for children and adolescents. Clin Psychol Rev, 121:102642.

Baik SY, Newman MG (2025) Why do individuals with generalized anxiety disorder and depression engage in worry and rumination? A momentary assessment study of positive contrast enhancement. J Anxiety Disord, 111:102982.

Barlow DH (2011) Unified Protocol for Transdiagnostic Treatment of Emotional Disorders: Workbook. New York, Oxford University Press.

Barlow DH, Allen LB, Choate ML (2020) Toward a unified treatment for emotional disorders. In The Neurotic Paradox, Volume 1: Progress in Understanding and Treating Anxiety and Related Disorders (Ed DH Barlow):141-166. London, Routledge.

Barsky AJ, Borus JF (1995) Somatization and medicalization in the era of managed care. JAMA, 274:1931-1934.

Baycan C (2019) A Turkish adaptation of the Revised Post-Event Processing Questionnaire (Master thesis). İstanbul, Boğaziçi Üniversitesi.

Bell IH, Marx W, Nguyen K, Grace S, Gleeson J, Alvarez-Jimenez M (2023) The effect of psychological treatment on repetitive negative thinking in youth depression and anxiety: A meta-analysis and meta-regression. Psychol Med, 53:6-16.

Bırni G, Erus SM, Satıcı SA, Deniz ME (2025) Psychological flexibility and self-critical rumination: A serial mediation between adverse childhood experiences and mental well-being in adulthood. Pers Individ Dif, 232:112861.

Borkovec TD, Alcaine OM, Behar E (2004) Avoidance theory of worry and generalized anxiety disorder. In Generalized Anxiety Disorder: Advances in Research and Practice (Eds RG Heimberg, CL Turk, DS Mennin):77-108. New York, Guilford Press.

Brinker JK, Dozois DJ (2009) Ruminative thought style and depressed mood. J Clin Psychol, 65:1-19.

Brockmeyer T, Holtforth MG, Krieger T, Altenstein D, Doerig N, Zimmermann J, Bents H (2015) Preliminary evidence for a nexus between rumination, behavioural avoidance, motive satisfaction and depression. Clin Psychol Psychother, 22:232-239.

Brozovich F, Heimberg RG (2008) An analysis of post-event processing in social anxiety disorder. Clin Psychol Rev, 28:891-903.

Carney CE, Harris AL, Moss TG, Edinger JD (2010) Distinguishing rumination from worry in clinical insomnia. Behav Res Ther, 48:540-546.

Casey BJ, Getz S, Galvan A (2008) The adolescent brain. Dev Rev, 28:62-77.

Caudle MM, Dugas NN, Patel K, Moore RC, Thomas ML, Bomyea J (2024) Repetitive negative thinking as a unique transdiagnostic risk factor for suicidal ideation. Psychiatry Res, 334:115787.

Cha KM, Chung YK, Lim KY, Noh JS, Chun M, Hyun SY, Kim NH (2017) Depression and insomnia as mediators of the relationship between distress and quality of life in cancer patients. J Affect Disord, 217:260-265.

Chang X, Guo C, Zhou H, Liu L (2023) Impact of rumination on sleep quality among patients with non alcoholic fatty liver disease: a moderated mediation model of anxiety symptoms and resilience. BMC Psychiatry, 23:84.

Choudhury S, Blakemore SJ, Charman T (2006) Social cognitive development during adolescence. Soc Cogn Affect Neurosci, 1:165-174.

Clark DA, Purdon C (1993) New perspectives for a cognitive theory of obsessions. Aust Psychol, 28:161-167.

Cludius B, Mennin D, Ehring T (2020) Emotion regulation as a transdiagnostic process. Emotion, 20:37-42.

Craske MG, Treanor M, Conway CC, Zbozinek T, Vervliet B (2014) Maximizing exposure therapy: An inhibitory learning approach. Behav Res Ther, 58:10-23.

Curtiss JE, Levine DS, Ander I, Baker AW (2021) Cognitive-behavioral treatments for anxiety and stress-related disorders. Focus, 19:184-189.

Dalgleish T, Black M, Johnston D, Bevan A (2020) Transdiagnostic approaches to mental health problems: Current status and future directions. J Consult Clin Psychol, 88:179-195.

Danielson CK, Hahn AM, Bountress KE, Gilmore AK, Roos L, Adams ZW, Amstadter AB (2024) Depressive symptoms, avoidant coping, and alcohol use: differences based on gender and posttraumatic stress disorder in emerging adults. Curr Psychol, 43:24518-24526.

Denovan A, Dagnall N, Lofthouse G (2019) Neuroticism and somatic complaints: Concomitant effects of rumination and worry. Behav Cogn Psychother, 47:431-445.

Devynck F, Kornacka M, Sgard F, Douilliez C (2017) Repetitive thinking in alcohol-dependent patients. Subst Use Misuse, 52:108-118.

Devynck F, Rousseau A, Romo L (2019) Does repetitive negative thinking influence alcohol use? A systematic review of the literature. Front Psychol, 10:1482.

Dickson KS, Ciesla JA, Reilly LC (2012) Rumination, worry, cognitive avoidance, and behavioral avoidance: Examination of temporal effects. Behav Ther, 43:629-640.

Disner SG, Beevers CG, Haigh EA, Beck AT (2011) Neural mechanisms of the cognitive model of depression. Nat Rev Neurosci, 12:467-477.

Donohue HE, Modini M, Abbott MJ (2024) Psychological interventions for pre-event and post-event rumination in social anxiety: A systematic review and meta-analysis. J Anxiety Disord, 102:102823.

Durston S, Davidson MC, Tottenham N, Galvan A, Spicer J, Fossella JA, Casey BJ (2006) A shift from diffuse to focal cortical activity with development. Dev Sci, 9:1-8.

Egan SJ, Wade TD, Shafran R (2011) Perfectionism as a transdiagnostic process: A clinical review. Clin Psychol Rev, 31:203-212.

Ehlers A, Clark DM (2000) A cognitive model of posttraumatic stress disorder. Behav Res Ther, 38:319-345.

Ehring T (2021) Thinking too much: rumination and psychopathology. World Psychiatry, 20:441-442.

Ehring T, Watkins ER (2008) Repetitive negative thinking as a transdiagnostic process. Int J Cogn Ther, 1:192-205.

Einstein DA (2014) Extension of the transdiagnostic model to focus on intolerance of uncertainty: a review of the literature and implications for treatment. Clin Psychol (New York), 21:280-300.

Elkind D (1967) Egocentrism in adolescence. Child Dev, 38:1025-1034.

Erarslan İngeç Ö (2021) Depresif ve kaygı belirtilerine yönelik bütünleşik tanılar üstü bir müdahalenin uyarlanması ve etkisinin değerlendirilmesi (Doktora tezi). İzmir, Dokuz Eylül Üniversitesi.

Erarslan İngeç Ö, Akyüz Z, Yılmaz AE (2021) Öz-eleştirel Ruminasyon Ölçeğinin Türkçeye uyarlanması ve psikometrik özelliklerinin incelenmesi. Klinik Psikoloji Dergisi, 5:39-51.

Etkin A, Wager TD (2007) Functional neuroimaging of anxiety: a meta-analysis of emotional processing in PTSD, social anxiety disorder, and specific phobia. Am J Psychiatry, 164:1476-1488.

Farchione TJ, Fairholme CP, Ellard KK, Boisseau CL, Thompson-Hollands J, Carl JR, et al (2012) Unified protocol for transdiagnostic treatment of emotional disorders: A randomized controlled trial. Behav Ther, 43:666-678.

Flett GL, Nepon T, Hewitt PL, Zaki-Azat J, Rose AL, Swiderski K (2020) The Mistake Rumination Scale: Development, validation, and utility of a measure of cognitive perfectionism. J Psychoeduc Assess, 38:84-98.

Fox SW, Morgan VR, Strait GG, Strait JE, Ranton K (2024) Childhood maltreatment, mindfulness, and the mediating role of rumination in college students. Curr Psychol, 43:35872-35888.

Ferguson E, Busch AM, Anderson B, Abrantes AM, Pinkston MM, Baker JV et al. (2024) Avoidance and rumination as predictors of substance use, mental health, and pain outcomes among people living with HIV. Behav Ther, 55:1015-1025.

Garner MJ (2016) Stress and somatic symptoms: Rumination and negative affect as moderators (Doctoral thesis). Seattle, Seattle Pacific University.

Gökdağ C, Kaçar Başaran S (2023) Tanılar Üstü Yaklaşım: Psikopatolojilerin Ötesine Bakmak. İstanbul, Nobel Yayıncılık.

Gu J, Strauss C, Bond R, Cavanagh K (2015) How do mindfulness-based cognitive therapy and mindfulness-based stress reduction improve mental health and wellbeing? A systematic review and meta-analysis of mediation studies. Clin Psychol Rev, 37:1-12.

Gustavson DE, du Pont A, Whisman MA, Miyake A (2018) Evidence for transdiagnostic repetitive negative thinking and its association with rumination, worry, and depression and anxiety symptoms: A commonality analysis. Collabra Psychol, 4:13.

Gülüm IV, Dağ İ (2012) Tekrarlayıcı Düşünme Ölçeği ve Bilişsel Esneklik Envanterinin Türkçeye uyarlanması, geçerliliği ve güvenilirliği. Anadolu Psikiyatri Derg, 13:216-223.

Hackmann A, Clark DM, McManus F (2000) Recurrent images and early memories in social phobia. Behav Res Ther, 38:601-610.

Harris R (2019) ACT Made Simple: An Easy-To-Read Primer on Acceptance and Commitment Therapy. Oakland, CA, New Harbinger.

Harvey AG, Watkins E, Mansell W (2004) Cognitive Behavioural Processes across Psychological Disorders: A Transdiagnostic Approach to Research and Treatment. New York, Oxford University Press.

Herman JL (2015) Trauma and Recovery: The Aftermath of Violence--From Domestic Abuse to Political Terror. London, UK, Hachette UK.

Hirsch CR, Mathews A (2012) A cognitive model of pathological worry. Behav Res Ther, 50:636-646.

Hirsch CR, Clark DM, Mathews A (2006) Imagery and interpretations in social phobia: Support for the combined cognitive biases hypothesis. Behav Ther, 37:223-236.

Hyde-Smith C, Carey H, Steward T (2024) Intolerance of uncertainty and repetitive negative thinking: transdiagnostic moderators of perfectionism in eating disorders. J Eat Disord, 12:173.

Julien D, O'Connor KP, Aardema F (2007) Intrusive thoughts, obsessions, and appraisals in obsessive–compulsive disorder: A critical review. Clin Psychol Rev, 27:366-383.

Kabadayı F, Mercan O (2023) Reliability and validation of the Turkish adaptation of the Mistake Rumination Scale. Curr Psychol, 42:6429–6438.

Kaçar-Başaran S, Gökdağ C, McEvoy PM (2023) Trait repetitive negative thinking: Psychometric properties of the Turkish version of the Brief Repetitive Thinking Questionnaire (RTQ-10). Int J Cogn Ther, 16:416-431.

Kara BC, Tolan ÖÇ (2025) Genç yetişkinlerde olumsuz değerlendirilme korkusu ve sosyal yeterlik ile sosyal kaygı arasındaki ilişkide bilişsel esnekliğin aracı rolü. Dokuz Eylül Üniversitesi Buca Eğitim Fakültesi Dergisi, 64:1286-1302.

Karatepe HT (2010) Ruminatif düşünme biçimi ölçeği'nin Türkçe uyarlaması, geçerlik ve güvenirlik çalışması (Tıpta uzmanlık tezi). İstanbul, İstanbul Bakırköy Prof. Dr. Mazhar Osman Ruh Sağlığı ve Sinir Hastanesi Eğitim ve Araştırma Hastanesi.

Kayahan A (2020) Panik bozukluğunun bilişsel davranışçı terapisinin internet ortamına uyarlanması ve uygulanması (Tıpta uzmanlık tezi). İzmir, Ege Üniversitesi.

Kelley K, Walgren M, DeShong HL (2021) Rumination as a transdiagnostic process: The role of rumination in relation to antisocial and borderline symptoms. J Affect Disord, 295:865-872.

Koerner N, Dugas MJ (2008) An investigation of appraisals in individuals vulnerable to excessive worry: The role of intolerance of uncertainty. Cogn Ther Res, 32:619-638.

Kornacka M, Czepczor-Bernat K, Napieralski P, Brytek-Matera A (2021) Rumination, mood, and maladaptive eating behaviors in overweight and healthy populations. Eat Weight Disord, 26:273-285.

Kürümlüoğlugil R, Tanrıverdi D (2022) The effects of the psychoeducation on cognitive distortions, negative automatic thoughts and dysfunctional attitudes of patients diagnosed with depression. Psychol Health Med, 27:2085-2095.

Lahey BB, Krueger RF, Rathouz PJ, Waldman ID, Zald DH (2017) A hierarchical causal taxonomy of psychopathology across the life span. Psychol Bull, 143:142-177.

Leppanen J, Brown D, McLinden H, Williams S, Tchanturia K (2022) The role of emotion regulation in eating disorders: a network meta-analysis approach. Front Psychiatry, 13:793094.

Lilly KJ, Howard C, Zubielevitch E, Sibley CG (2023) Thinking twice: examining gender differences in repetitive negative thinking across the adult lifespan. Front Psychol, 14:1239112.

Ludwig L, Mehl S, Schlier B, Krkovic K, Lincoln TM (2020) Awareness and rumination moderate the affective pathway to paranoia in daily life. Schizophr Res, 216:161-167.

Mao Y, Li D, Wang D, Tian Y, Chen J, Jia L, Zhang XY (2025) Rumination and drug craving scores in Chinese male patients with methamphetamine and heroin use disorders: a cross-sectional study. Subst Abuse Treat Prev Policy, 20:14.

McDaid D, Park AL, Wahlbeck K (2019) The economic case for the prevention of mental illness. Annu Rev Public Health, 40:373-389.

McEvoy PM, Mahoney AE, Moulds ML (2010) Are worry, rumination, and post-event processing one and the same?: Development of the Repetitive Thinking Questionnaire. J Anxiety Disord, 24:509-519.

McEvoy PM, Salmon K, Hyett MP, Jose PE, Gutenbrunner C, Bryson K, Dewhirst M (2019) Repetitive negative thinking as a transdiagnostic predictor of depression and anxiety symptoms in adolescents. Assessment, 26:324-335.

McEvoy PM, Thibodeau MA, Asmundson GJ (2014) Trait repetitive negative thinking: A brief transdiagnostic assessment. J Exp Psychopathol, 5:382-398.

McEvoy PM, Watson H, Watkins ER, Nathan P (2013) The relationship between worry, rumination, and comorbidity: Evidence for repetitive negative thinking as a transdiagnostic construct. J Affect Disord, 151:313-320.

McLaughlin KA, Borkovec TD, Sibrava NJ (2007) The effects of worry and rumination on affect states and cognitive activity. Behav Ther, 38:23-38.

Mellings TM, Alden LE (2000) Cognitive processes in social anxiety: The effects of self-focus, rumination and anticipatory processing. Behav Res Ther, 38:243-257.

Meyer TJ, Miller ML, Metzger RL, Borkovec TD (1990) Development and validation of the Penn State Worry Questionnaire. Behav Res Ther, 28:487-495.

Morin CM, Drake CL, Harvey AG, Krystal AD, Manber R, Riemann D, et al (2015) Insomnia disorder. Nat Rev Dis Primers, 1:15026.

Morris L, Mansell W (2018) A systematic review of the relationship between rigidity/flexibility and transdiagnostic cognitive and behavioral processes that maintain psychopathology. J Exp Psychopathol, 9:2043808718779431.

Moulds ML, Bisby MA, Wild J, Bryant RA (2020) Rumination in posttraumatic stress disorder: A systematic review. Clin Psychol Rev, 82:101910.

Murray LK, Dorsey S, Haroz E, Lee C, Alsiary MM, Haydary A, Bolton P (2014) A common elements treatment approach for adult mental health problems in low-and middle-income countries. Cogn Behav Pract, 21:111-123.

Naumann E, Tuschen-Caffier B, Voderholzer U, Caffier D, Svaldi J (2015) Rumination but not distraction increases eating-related symptoms in anorexia and bulimia nervosa. J Abnorm Psychol, 124:412-420.

Newby JM, McKinnon A, Kuyken W, Gilbody S, Dalgleish T (2015) Systematic review and meta-analysis of transdiagnostic psychological treatments for anxiety and depressive disorders in adulthood. Clin Psychol Rev, 40:91-110.

Newman MG, Llera SJ (2011) A novel theory of experiential avoidance in generalized anxiety disorder: A review and synthesis of research supporting a contrast avoidance model of worry. Clin Psychol Rev, 31:371-382.

Nolen-Hoeksema S (1991) Responses to depression and their effects on the duration of depressive episodes. J Abnorm Psychol, 100:569-582.

Nolen-Hoeksema S (2000) The role of rumination in depressive disorders and mixed anxiety/depressive symptoms. J Abnorm Psychol, 109:504-511.

Nolen-Hoeksema S, Watkins ER (2011) A heuristic for developing transdiagnostic models of psychopathology: Explaining multifinality and divergent trajectories. Perspect Psychol Sci, 6:589-609.

Norcross JC, Pfund RA, Cook DM (2022) The predicted future of psychotherapy: A decennial e-Delphi poll. Prof Psychol Res Pract, 53:109-115.

Norcross JC, Pfund RA, Prochaska JO (2013) Psychotherapy in 2022: A Delphi poll on its future. Prof Psychol Res Pract, 44:363-370.

Oh CM, Kim HY, Na HK, Cho KH, Chu MK (2019) The effect of anxiety and depression on sleep quality of individuals with high risk for insomnia: a population-based study. Front Neurol, 10:849.

Ohst B, Tuschen-Caffier B (2020) Are catastrophic misinterpretations of bodily sensations typical for patients with panic disorder? An experimental study of patients with panic disorder or other anxiety disorders and healthy controls. Cogn Ther Res, 44:1106-1115.

Orjuela DJT, Henao Á, Vargas MAS, Ruiz FJ (2022) A multiple-baseline evaluation of acceptance and commitment therapy focused on repetitive negative thinking in panic disorder. Rev Psicoter, 33:47-66.

Otto MW, Lubin RE, Rosenfield D, Taylor DJ, Birk JL, Espie CA, Zvolensky MJ (2022) The association between race-and ethnicity-related stressors and sleep: the role of rumination and anxiety sensitivity. Sleep, 45:zsac117.

Peixoto MM, Ribeiro V, Cunha O (2023) Generalized anxiety symptoms and life satisfaction: The mediator role of repetitive negative thinking. Psychologica, 66:e066005.

Peters JR, Geiger PJ, Smart LM, Baer RA (2014) Shame and borderline personality features: the potential mediating role of anger and anger rumination. Personal Disord, 5:1-9.

Rachman S, Hodgson RJ (1980) Obsessions and Compulsions. Saddle River, NJ, Prentice Hall.

Rachman S, Grüter-Andrew J, Shafran R (2000) Post-event processing in social anxiety. Behav Res Ther, 38:611-617.

Rapee RM, Heimberg RG (1997) A cognitive-behavioral model of anxiety in social phobia. Behav Res Ther, 35:741-756.

Raposo CF, Nobre PJ, Rosa PJ, Pascoal PM (2025) Difficulties in emotion regulation, repetitive negative thinking, and sexual and psychological distress: a two-wave longitudinal mediation study using a transdiagnostic approach. Sex Med, 13:qfaf052.

Rezaei M, Samadieh H, Bagheri MMS, Ghadamour E (2025) The role of meta-cognitive and emotional beliefs, and negative repetitive thinking in the relationship between emotional abuse and psychological distress in psychiatric outpatients: A serial multiple mediation model. Pers Med Psychiatry, 49:100146.

Richardson C, Magson NR, Oar E, Fardouly J, Johnco C, Freeman J, Rapee RM (2025) Repetitive negative thinking mediates the relationship between sleep disturbance and symptoms of generalized anxiety, social anxiety, depression, and eating disorders in adolescence: Findings from a 5-year longitudinal study. Clin Psychol Sci, 13:104-127.

Richman Czégel MJ, Unoka Z, Dudas RB, Demetrovics Z (2022) Rumination in borderline personality disorder: a meta-analytic review. J Personal Disord, 36:399-412.

Roelofs J, Huibers M, Peeters F, Arntz A, van Os J (2008) Rumination and worrying as possible mediators in the relation between neuroticism and symptoms of depression and anxiety. Cogn Behav Ther, 37:267-275.

Sauer-Zavala S, Gutner CA, Farchione TJ, Boettcher HT, Bullis JR, Barlow DH (2017) Current definitions of "transdiagnostic" in treatment development: A search for consensus. Behav Ther, 48:128-138.

Seah TS, Aurora P, Coifman KG (2020) Emotion differentiation as a protective factor against the behavioral consequences of rumination: A conceptual replication and extension in the context of social anxiety. Behav Ther, 51:135-148.

Segerstrom SC, Stanton AL, Alden LE, Shortridge BE (2003) A multidimensional structure for repetitive thought: what's on your mind, and how, and how much? J Pers Soc Psychol, 85:909.

Serra-Blasco M, Radua J, Soriano-Mas C, Gómez-Benlloch A, Porta-Casteràs D, Carulla-Roig M, Cardoner N (2021) Structural brain correlates in major depression, anxiety disorders and post-traumatic stress disorder: A voxel-based morphometry meta-analysis. Neurosci Biobehav Rev, 129:269-281.

Seved Alitabar SH, Goli F (2024) Exploring the predictive role of body image and rumination on Somatic Symptom Severity: a quantitative analysis. Int J Body Mind Culture, 11:193-200.

Sindermann L, Redlich R, Opel N, Boehnlein J, Dannlowski U, Leehr EJ (2021) Systematic transdiagnostic review of magnetic-resonance imaging results: depression, anxiety disorders and their co-occurrence. J Psychiatr Res, 142:226-239.

Smart LM, Peters JR, Baer RA (2016) Development and validation of a measure of self-critical rumination. Assessment, 23:321-332.

Smith KE, Mason TB, Lavender JM (2018) Rumination and eating disorder psychopathology: A meta-analysis. Clin Psychol Rev, 61:9-23.

Spada MM, Nikčević AV, Kolubinski DC, Offredi A, Giuri S, Gemelli A, Caselli G (2021) Metacognitions, rumination, and worry in personality disorder. J Affect Disord, 293:117-123.

Spinhoven P, Drost J, van Hemert B, Penninx BW (2015) Common rather than unique aspects of repetitive negative thinking are related to depressive and anxiety disorders and symptoms. J Anxiety Disord, 33:45-52.

Spinhoven P, van Hemert AM, Penninx BW (2018) Repetitive negative thinking as a predictor of depression and anxiety: A longitudinal cohort study. J Affect Disord, 241:216-225.

Stein DJ, Phillips KA, Bolton D, Fulford KWM, Sadler JZ, Kendler KS (2010) What is a mental/psychiatric disorder? From DSM-IV to DSM-V. Psychol Med, 40:1759-1765.

Stenzel KL, Keller J, Kirchner L, Rief W, Berg M (2025) Efficacy of cognitive behavioral therapy in treating repetitive negative thinking, rumination, and worry–a transdiagnostic meta-analysis. Psychol Med, 55:e31.

Şanal Güngör B (2025) Deprem yaşamış koruyucu annelere yönelik travma odaklı bilişsel davranışçı terapi temelli grupla psikolojik danışma (Doktora tezi). Ankara, Hacettepe Üniversitesi.

Vassilopoulos SP (2004) Anticipatory processing in social anxiety. Behav Cogn Psychother, 32:303-311.

Wahl K, van den Hout M, Heinzel CV, Kollárik M, Meyer A, Benoy C, Lieb R (2021) Rumination about obsessive symptoms and mood maintains obsessive-compulsive symptoms and depressed mood: An experimental study. J Abnorm Psychol, 130:435-442.

Watkins ER, Roberts H (2020) Reflecting on rumination: Consequences, causes, mechanisms and treatment of rumination. Behav Res Ther, 127:103573.

Watkins ER, Mullan E, Wingrove J, Rimes K, Steiner H, Bathurst N, Scott J (2011) Rumination-focused cognitive–behavioural therapy for residual depression: Phase II randomised controlled trial. Br J Psychiatry, 199:317-322.

Wells A (2024) Kaygı ve depresyonda metakognitif terapi (3. Baskı, Çev. Ed. Yavuz KF, Bebek H, Uygur AE). Litera Kitap.

Yamasaki K, Sampei A, Miyata H (2024) Relationship between rumination, self-compassion, and psychological health among Japanese university students: A cross-sectional study. PLoS One, 19:e0297691.

Yang L, Liang Y, Huang Q, Wu Y, Guan Z, Ju K, Xi J (2025) Network structure of rumination and resilience in adolescents with traumatic experiences: A comparison of PTSD and non-PTSD groups. Int J Soc Psychiatry, 71:00207640251361657.

Yesilyaprak N, Batmaz S, Yildiz M, Songur E, Akpinar Aslan E (2019) Automatic thoughts, cognitive distortions, dysfunctional attitudes, core beliefs, and ruminative response styles in unipolar major depressive disorder and bipolar disorder: A comparative study. Psychiatry Clin Psychopharmacol, 29:854-863.

Yılmaz AE, Gençöz T, Wells A (2008) Psychometric characteristics of the Penn State Worry Questionnaire and Metacognitions Questionnaire-30 and metacognitive predictors of worry and obsessive–compulsive symptoms in a Turkish sample. Clin Psychol Psychother, 15:424-439.

Yılmaz İ (2023) Obsesif Kompulsif Bozukluğu olan bireylerde bilişsel ve üstbilişsel süreçlerin incelenmesi: BDT'nin olaysal bellek ve ileriye yönelik üstbellek üzerindeki rolü (Yüksek lisans tezi). İstanbul, Bahçeşehir Üniversitesi.

Zagaria A, Ballesio A, Vacca M, Lombardo C (2023) Repetitive negative thinking as a central node between psychopathological domains: A network analysis. Int J Cogn Ther, 16:143-160.

Zimbardo PG, Boyd JN (2014) Putting time in perspective: A valid, reliable individual-differences metric. In Time perspective theory; review, research and application: Essays in honor of Philip G. Zimbardo (Eds M Stolarski, N Fieulaine, W van Beek):17-55. Cham, Springer International Publishing.

Zhang Z, Tang H, Li X, Chen H, Chen X, Liu J, Zhou J (2023) The influence of neuroticism on insomnia: The chain mediating effect of mind wandering and symptom rumination. Sleep Med, 112:197-202.

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