



# Comparison of Concepts of Cognitive Flexibility and Psychological Flexibility

## *Bilişsel Esneklik ve Psikolojik Esneklik Kavramlarının Karşılaştırılması*

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### ABSTRACT

Individuals need to have some abilities in order to cope with the difficulties that they may experience. Cognitive flexibility and psychological flexibility are within the scope of these abilities. Cognitive flexibility is a person's being capable of having awareness about alternative options throughout his/her life, and being able to change initial thoughts by taking into consideration these options, and behaving according to the option that they chose. Cognitive flexibility is a concept that has been frequently associated with cognitive behavioral therapies. Psychological flexibility is based on six main components (acceptance, contact with the present moment, cognitive defusion, self as context, values and committed action) and it includes one's accepting his/her feelings, thoughts and past experiences without trying to change them, living in the present moment, defusing from his/her thoughts, and living a value directed life by determining his/her values. Increasing the level of psychological flexibility is the main purpose of acceptance and commitment therapy (ACT). In this study, firstly cognitive flexibility was explained in the perspective of cognitive behavioral therapies, and related studies in literature were referred. After that, psychological flexibility was explained in the perspective of ACT, and studies related to this concept were presented in a similar way. Finally, cognitive flexibility and psychological flexibility were examined in terms of their similar and different aspects. Additionally, associated suggestions were presented for researchers and mental health professionals

**Keywords:** Cognitive flexibility, cognitive behavioral therapy, psychological flexibility, acceptance and commitment therapy

### ÖZ

Bireyin yaşadığı zorlu olaylarla baş edebilmesi için birtakım becerilere sahip olması gerekmektedir. Bilişsel esneklik ve psikolojik esneklik de bu beceriler arasında yer almaktadır. Bilişsel esneklik kişinin hayatında karşılaştığı durumlar karşısında farklı seçeneklerinin de olduğunu fark edebilmesi, bu seçenekleri de göz önünde bulundurarak gerekirse başlangıçtaki düşüncesini değiştirebilmesi ve karar verdiği seçenek doğrultusunda davranışlarda bulunabilmesidir. Bilişsel esneklik, bilişsel davranışçı terapilerle sıklıkla ilişkilendirilen bir kavramdır. Psikolojik esneklik ise altı temel öge (kabul, anda olma, bilişsel ayrışma, bağlamsal benlik, değerler ve değerler doğrultusunda yaşam) içeren ve bireyin duygularını, düşüncelerini ve geçmişte yaşadığı olayları değiştirmeye çalışmadan kabul etmesi, anda olması, düşüncelerinden ayrışabilmesi, değerlerini belirleyip onlar doğrultusunda bir yaşam oluşturabilmesini ifade eden bir kavramdır. Psikolojik esnekliğin artırılması kabul ve kararlılık terapisindeki (ACT) temel amaçtır. Bu çalışmada öncelikle bilişsel davranışçı terapiler çerçevesinden bilişsel esneklik açıklanmakta ve alan yazındaki ilgili çalışmalar aktarılmakta; sonrasında ise benzer şekilde psikolojik esneklik ACT çerçevesinden açıklanarak bu kavrama ilişkin alan yazında yapılan çalışmalara yer verilmektedir. Son olarak bilişsel esneklik ve psikolojik esneklik benzer ve farklı yönleri açısından incelenmiş, araştırmacılara ve ruh sağlığı çalışanlarına konuya ilişkin öneriler sunulmaktadır.

**Anahtar Sözcükler:** Bilişsel esneklik, bilişsel davranışçı terapi, psikolojik esneklik, kabul ve kararlılık terapisini

## Introduction

Cognitive flexibility and psychological flexibility are two concepts that have been frequently discussed for maintaining and improving individuals' mental health. Both concepts have been considered to be important for people to deal with the difficulties and suffering that they have been faced with in their

lives. In psychological studies that have been conducted during recent years, therapies are often discussed as a whole. However, the basic concepts of the therapies have not been given sufficient attention (Ciarrochi et al. 2010). Although these research have been considered to make a lot of contributions to the field of psychology, they had some limitations. For instance, research carried out with this method do not give information regarding

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which concepts of the therapy may be functional, unfunctional or even harmful. Moreover, it is not clear that which aspects of the types of therapy are similar to or different from each other (Ciarrochi et al. 2010). Although studies conducted on therapy methods as a whole are very valuable, a necessity for further studies conducted on the concepts used in these therapies has been attracting attention. Considering this necessity in the literature, in this review study, the two concepts of cognitive behavioral therapies and acceptance and commitment therapy (ACT), which is one of the 3<sup>rd</sup> wave cognitive behavioral therapies, were addressed. These two concepts, which have many similar aspects, were explained within the scope of their theories and similar and different aspects of these concepts were emphasized. These concepts are cognitive flexibility and psychological flexibility.

Cognitive flexibility is the ability of an individual to control his/her cognitive process in order to adapt to a new and unexpected situation (Canas et al. 2003). A cognitively flexible individual employs new methods instead of trying to solve a problem by using same methods that s/he observed their effectiveness in previous situations, if these methods seem to be ineffective in the new phase. For instance, let's imagine that we are in a room and trying to open the door by pulling it but it does not open. In that case, we may try to open the door by pushing it or give up trying to open it by thinking that it is broken. At this point, cognitive flexibility can be considered as a concept that explains how individuals' behaviors and cognitions can change based on the interactions with each other (Canas et al. 2006). While high of cognitive flexibility have been associated with psychological well-being, low level of psychological flexibility has been associated with a lot of types of psychopathology (Johnson 2016). Significant relationships between psychological flexibility and post-traumatic stress disorder (Ben-Zion et al.), problem focused coping skills (Johnson, 2016), depression and anxiety (Yu 2020), self-efficacy (Esen et al. 2017), obsessive compulsive disorder (Francazio and Flessner 2015), and irrational beliefs and psychological symptoms (Gündüz 2013) were found. Therefore, it is aimed to develop cognitive flexibility in reducing stress and improving well being in clinical research and practices (Johnson 2016). Taking into account all of these, it is understood that cognitive flexibility is accepted as one of the fundamental concepts in order to prevent psychopathology and a psychological help for clients to make their cognitions more flexible is provided. By reason of the fact that cognitive flexibility's being one of the fundamental concepts of psychological health, cognitive flexibility is important.

Psychological flexibility is being able to interact fully with the present moment as a conscious individual and maintaining or changing a behaviour by considering his/her personal values (Hayes et al. 2006). Psychological flexibility includes six main components named as acceptance, contact with the present moment, cognitive defusion, self as context, values and committed action (Hayes et al. 2010). Mental health professionals who use ACT in their sessions intend to make their clients achieve psychological flexibility by using these six main

components (Ciarrochi et al. 2010). Even though the components underlying psychological health are generally accepted as positive feelings and thoughts, strengths, meeting the need to belong and self-determination, there are also other components that affect our psychological health such as psychological flexibility. Lack of psychological flexibility has a role in numerous types of psychopathology. Psychological flexibility is a concept that makes major contributions to an individual's well-being and maintaining his/her psychological health (Kashdan and Rottenberg 2010). While low level of psychological flexibility has been associated with clinical issues and problems regarding coping with life difficulties, attempts to increase psychological flexibility have been associated with recovery in lots of psychological problems (Luoma et al. 2011). The study, which includes meta-analysis of 71 studies using the Acceptance and Action Form, a measurement tool frequently used by ACT, found that ACT processes were moderately associated with psychological outcomes and that a high level of psychological flexibility was associated with higher quality of life (Hayes et al. 2006). In brief, psychological flexibility is an ability that is aimed to be increased in ACT process. While increments in the level of psychological flexibility affects psychological health positively, insufficient level of psychological flexibility may lead to psychopathology.

In the present review study, it is aimed to investigate the relationships between cognitive flexibility and psychological flexibility that have a great impact on mental health and it is also aimed to examine similar and different aspects of these two concepts. In this context, primarily, cognitive flexibility is explained within the scope of cognitive behavioral therapies and psychological flexibility is explained within the scope of ACT. Then, as a result of the findings obtained from the current study, similar and different aspects of these two concepts are emphasized. Finally, suggestions are presented for researchers and mental health professionals.

## Cognitive Flexibility

Individuals' experiencing unexpected and difficult situations is an inevitable part of the natural flow of life. Every individual faces with small or more serious problems (Bedel and Ulubey 2015). If a person can develop a flexible attitude for the problems s/he faces with and realizes that s/he has different options, s/he may be more resilient for life challenges (Toksöz 2018). For this reason, rather than facing with some challenges, individuals' ability to cope with these challenges becomes important (Bedel and Ulubey 2015).

In order for an individual to cope effectively with the difficulties in life, it is necessary for him/her to have some affective, behavioral and cognitive skills. Cognitive flexibility is one of these skills and it includes all affective, behavioral and cognitive components (Eskin 2014). For instance, an individual may be aware that there are various solutions for his/her problem. However, this awareness may not make him/her behave differently from his/her usual behavior. Then, cognitive flexibility cannot be mentioned (Martin and Anderson 1998). It is not surprising that an individual may have

various thoughts about an event because in the events in which s/he experiences, s/he has a right to select a behavior and act according to the determined behavior (Beck 1976). S/he should be aware of the existence of other options before making this determination. It is important to be able to recognize not only the right option, but all possible options. Therefore, it is necessary to have cognitive flexibility (Martin and Anderson 1998).

In the literature, there have been lots of definitions of cognitive flexibility. Martin and Anderson (1998) stated that there are three basic components of cognitive flexibility. These components are:

- Individuals' being aware that there are various ways and alternative options,
- Having a desire to adapt to new situations and be flexible,
- Believing that s/he has the competencies to be flexible.

Steven (2009) defines cognitive flexibility as individuals' ability to adapt to certain conditions, switch between one thought and another, the potential to think various methods to solve a problem. According to Martin and Rubin (1995), cognitive flexibility refers to an individual's recognizing that there are various available options and alternatives in any situation, willingness to be flexible and having self-efficacy for adapting to a situation. Denis and Vonder Val (2010) developed a cognitive flexibility scale and emphasized three aspects of cognitive flexibility for individuals to think reasonably for the stressful life events that they encountered. These aspects were tendency to perceive difficult situations as controllable, ability to understand different explanations about human behaviors and life events and come up with various solutions in difficult situations. The origin of the emphasis on cognition in psychotherapy dates back to the Greek philosopher Epiktetos. Epiktetos emphasizes that what upsets us is not the events that we live through, but the meanings that we attribute to them (Türkçapar 2018). According to Beck (1995), the basic philosophy of the cognitive model can be explained as follows: The common mechanism that affects the mental state and behavior of the client is distorted and unfunctional thoughts for all psychological disorders. Therefore, when these thoughts are realistically evaluated and changed, they lead to improvements in emotions and behaviors.

Cognitive behavioral therapies are accepted as the second wave of behavioral therapy (Hayes 2004). As a result of the combining behavioral therapy with cognitive therapy, traditional behavioral therapies have evolved to the therapies that focus on cognitive processes beyond classical and operational conditioning (Hayes et al. 2006). In a way, cognitive therapies provide a content to study for behavioral therapy and increase the explanatory power of behavioral therapies (Sungur 2020). According to cognitive approaches, the factors that are effective in the occurrence of people's adaptation problems are inflexible cognitions (Canas et al. 2003). Albert Ellis and Aaron T. Beck, who are the founders of modern cognitive therapy (Köroğlu and Türkçapar 2009), developed theories based on very similar principles without knowing each other contemporaneously. The basic assumption in both Ellis's and Beck's theory is that thoughts and beliefs

have a great impact on the occurrence of people's feelings and behaviors. Cognitive therapies were founded thanks to these assumptions (Özdel 2015). Cognitive behavioral therapies include various therapy approaches. These can be listed as rational emotive behavior therapy, problem solving therapy, cognitive processing therapy, cognitive behavior analysis system, activation and cognitive behavior modification (Beck 2014). In this study, the concept of cognitive flexibility is examined from the perspective of cognitive behavioral therapy (CBT) developed by Beck.

Beck attaches great importance to cognitions and states that there are two phases in making sense of events. In the first phase, the event has an objective and universally accepted meaning. In the second phase, it has a personal meaning. Personal meaning includes interpretations, evaluations and inferences of an individual. Since people have a tendency to make mistakes in their cognitive structures, biases and distortions can be found in this personal meaning. In such cases, it is considered that the person has unfunctional thoughts (Türkçapar 2018). Beck has helped individuals with depression to identify, evaluate and respond to unrealistic and incompatible thoughts by developing the cognitive model based on depression (Beck 2014).

Beck (2001) indicated that people interpret the world based on their opinions and behave according to this framework. When individuals determine their behavior based on their unfunctional thoughts, their belief in the accuracy of their thoughts increases (Sapmaz and Doğan 2013). It is emphasized that psychological problems are mostly occurred due to generalization of negative cognitions and these cognitions' being strict and resistant to change (Beck 2001). In brief, according to Beck's cognitive therapy, it is understood that the roots of individuals' problems are unfunctional cognitions' enhancement and becoming rigid over time and their inability to be changed. In this context, it is stated that one of the most important goals of the cognitive therapy approach in the therapeutic process is to ensure that clients develop cognitive flexibility (Sapmaz and Doğan 2013). It can be stated that psychopathology is associated with cognitive inflexibility and mental health is associated with cognitive flexibility.

CBT is an evidence-based, solution focused and action oriented therapy. It aims to make unfunctional thoughts and behaviors flexible to solve problems. CBT is based on the fact that individuals distort events that they have experienced due to his/her cognitive structure. As a result of these distortions, automatic thoughts occur and then some negative emotions and unfunctional behaviors develop. It is stated that these distorted thoughts maintain an unfunctional state in emotions and behaviors (Özdel 2015). Summarily, in CBT, individuals behave based on their own views rather than what is happening around them. Emotions, thoughts and behaviors are related to each other. Therapist plays an instructive role in making thoughts more flexible (Türkçapar 2018).

According to the cognitive model of depression, negative biased cognition is the basic component in depression. Depressed people

have a negative view regarding themselves, their environment and the future. They perceive the environment as overwhelming, insurmountable obstacles that result in constant failure or loss. They also feel hopeless regarding future and believe that their own efforts to change the insatiable course of their lives will be inadequate. These negative and rigid thoughts make them constantly distort events and maintain unfunctional thoughts about themselves, their environment and future. According to this model, the thoughts of depressed individuals are extremely strict (Young et al. 2001). CBT, which was originated and developed from the depression model, is recently used to treat depression as well as a wide range of psychiatric disorders and prevent relapses (Sungur 2020). As it is seen in the depression model, overly strict thoughts cause not only occurrence of troubles for people, but also it paves the way for these problems to remain. It is assumed that mental health problems will arise when thoughts begin to repeat themselves in a stereotypical, rigid, immutable and unquestionable way (Sivrioğlu 2020). Cognitive flexibility contributes to the restructuring of the rigidity and unfunctional mindset that occurs in a person's mind (Koroğlu and Türkçapar 2009). Thus, cognitive flexibility is beneficial for people in many aspects of life. High level of cognitive flexibility supports individuals in various ways and is associated with improvements in their health and well-being (Crocker 2018).

As it is understood, the importance of thoughts and a need for making the thoughts that do not benefit the individual more flexible are issues mentioned in CBT. In this therapy, it is understood that individuals' strict beliefs are accepted as the source of psychological problems and these beliefs will be a major obstacle for managing therapy process. For all these reasons, cognitive flexibility in CBT can be expressed as the main source of psychological health.

Gülüm and Dağ (2012) state that individuals with high cognitive flexibility are able to overcome and adopt to difficulties much more easily by evaluating all options that they have thanks to their ability to change their cognition according to changing environmental conditions. Briefly, people with this ability can change their challenging, unbalanced thoughts with more harmonious thoughts, find different ways and perceive difficult situations as more manageable. In fact, instead of perceiving challenges that they encounter as a threat, they may think that these challenges are opportunities for improvement so that they have less problems (Toksöz 2018). There have been studies revealing that people with high cognitive flexibility are more well-adjusted (Öz 2012), have lower levels of anger and aggression (Diril 2011), are more tolerant, bold, responsible, confident (Martin and Anderson 1998), open minded (Toksöz 2018).

Cognitive flexibility makes individuals solve their problems much more easily by recognizing alternatives under difficulties and gain lots of positive features related to their personality. In addition, cognitive flexibility has been investigated with many concepts in the literature.

In studies about cognitive flexibility, the relationships between cognitive flexibility and *gender* (Diril 2011, Altunkol 2011, Öz

2012), *five factors personality traits* (Bilgin 2017), *flexibility in interpersonal relationships* (Rubin and Martin 1994), *adapting to new situations* (Dreisbach and Goschke 2004), *being tolerant* (Martin and Anderson 1998), *anxiety* (Öz 2012), *argumentativeness, verbal aggressiveness and tolerance for disagreement* (Martin et al. 1998), *relationship satisfaction* (Toksöz 2018), *social interaction with peers* (Cairano et al. 2006), *self-compassion* (Martin et al. 2011), *insight and self-reflection* (Chung et al. 2012), *perceived stress level* (Altunkol 2011), *anger* (Diril, 2011), *irrational thoughts and psychological symptoms* (Gündüz 2013), *problem solving skills* (Çelikkaleli 2014) and *happiness* (Asıcı and İkiz 2015) have been investigated. Similarly, it is recognized that there have been some studies regarding the predictor role of *social adequacy expectation, authoritative parent attitudes, and problem solving skills* (Bilgin 2009), *critical thinking, verbal and formal creativeness, avoidance of dealing with the problem* (Çuhadaroğlu 2013), *self-efficacy and coping strategies* (Doğan-Laçın and Yalçın 2018), *early reading skills* (Cole et al. 2014), *post-traumatic stress disorder* (Ben-Zion et al. 2018), *career future* (Yıldız-Akyol and Boyacı 2020), *relationship satisfaction* (Hill 2009), *implicit and explicit racial biases in bilingual children* (Singh et al. 2021), *subjective well-being* (Muyan-Yılık and Demir 2020), *life satisfaction* (Çıkrıkci 2018) on cognitive flexibility.

Moreover, effectiveness of the implementations for increasing cognitive flexibility level on *treatment of panic disorder* (Nagata et al. 2018), *treatment of anxiety and depression among elderly people* (Johnco et al. 2014), *achievement retention of learning and attitudes in web mediated problem based learning* (Alper and Deryakulu 2010), *anorexia nervosa* (Brockmeyer et al. 2014), *increasing subjective mental functioning* (Buitenweg et al. 2019) have been examined.

In summary, cognitive flexibility is recognizing that there can be many alternatives in the new situations encountered, having a desire to adapt to new conditions and believing that s/he has the ability to adapt by considering alternative ways. This concept is fully compatible with the main purpose of CBT, which is making unfunctional rigid thoughts flexible and the recognition of alternative thoughts that may be functional. Briefly, one of the main goals of CBT is to increase the cognitive flexibility levels of clients, because if psychopathology is expressed as cognitive rigidity, cognitive flexibility can be expressed as an indicator of mental health. As individuals' ability to think flexibly by considering several choices and alternatives improves, it can be found that psychological problems decrease.

## Psychological Flexibility

Hayes (2004) states that behavioral therapies can be classified into three groups: traditional behavioral therapies, cognitive behavioral therapies and third wave behavioral therapies and acceptance and commitment therapy (ACT) is one of the third wave behavioral therapies. The word wave may evoke the thought that previous approaches have been washed away, but this is neither intended nor experienced. The waves feed on the previous ones, even if they leave some parts behind, they take

the previous ones with them (Hofmann and Hayes 2019). Wave refers to formulations, methods and purposes of some basic assumptions used in the fields of research, theory and practice. The first and second wave of cognitive behavioral therapies are mechanistic. Third wave approaches are sensitive to context, function, and language. In these approaches, therapists tend to use contextual and experiential methods rather than didactic and direct methods (Hayes 2004). The main difference between third wave approaches and CBT is that third wave approaches focus more on an individual's relation with thoughts rather than the content of his/her thoughts (Sivrioğlu 2020).

ACT, which is one of the third wave therapies, differs from other therapeutic approaches due to its lack of focus on symptom reduction and its being a transdiagnostic approach. Unlike CBT and evidence-based therapies, ACT is a process-based therapy that does not focus on symptoms (Hayes et al. 2019). According to Hayes and Hofmann (2017), the behavioral and mental health of individuals are not only the absence of psychological problems. Therefore, the basis of this therapy is based on the tendency towards value-oriented behaviors and overcoming the obstacles that arise in this process (Bennet and Oliver 2019). ACT is structured on the behavioral analysis, functional contextualism and relational framework model of traditional behavioral therapy (Hayes et al. 2012).

One of the theoretical basis of ACT is relational framework theory (Bond et al. 2006). According to relational framework theory, language has a great impact on human behavior. As individuals reach cognitive maturation, they perceive the environment not according to what it actually is, but according to the results they obtain by passing through the language and cognition filter. This leads us not only to an environment where inter-stimulus relationships are defined according to the concrete and physical characteristics of objects, but to an increasingly abstract world of language in which these relationships can occur in an unplanned way. We see this world in the way that our relational frameworks make us perceive (Bennet and Oliver 2019).

It is very difficult to avoid the relational frameworks that occur and it may sometimes result in issues such as rumination and anxiety. For instance, Charlie may hear Mabel being bitten by a small dog and be afraid. As a result of the invitations of Joel, who always invites him to his house and has a dog, we can observe that Charlie express his fear behaviorally or perhaps by avoiding it. Although Charlie has never been bitten by a dog, it is very difficult to explain this fear with operational conditioning because the learning that takes place is completely symbolic. It is understood that Charlie established a relation between 'dog', 'pain' and 'fear'. (Bennet and Oliver 2019). When unfunctional and rigid behaviors occur, ACT interferes in the process in which relational responses to stimuli associated with problematic behaviors occur. This intervention is usually carried out by using cognitive defusion techniques (Flaxman, et al. 2011).

In summary, relational framework theory states that most problematic psychological processes may occur even just because of language, and these processes may cause psychological

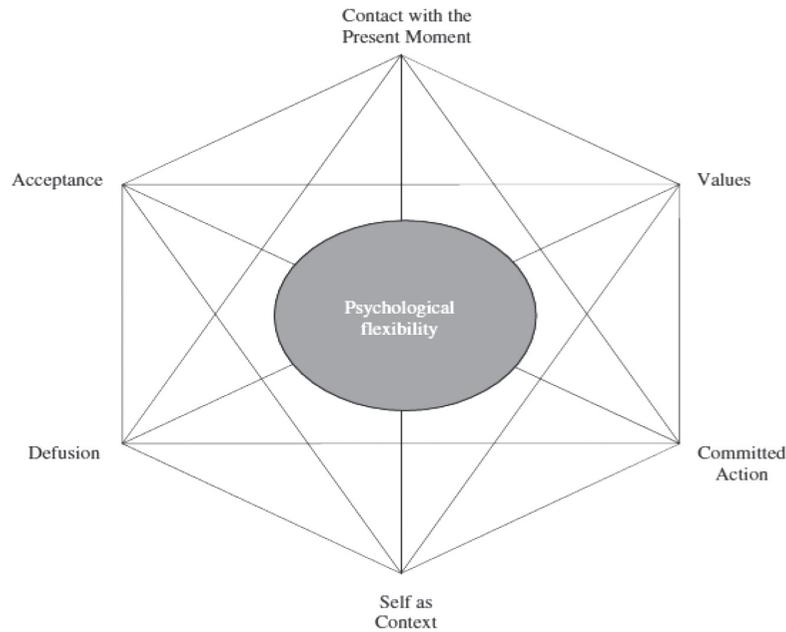
inflexibility among individuals. Research show that ACT, an implementation field of relational framework theory, creates new implementations that increase psychological flexibility. Therefore, it provides improvements in the health of individuals (Bond et al. 2006). Psychological flexibility is one of the unique concepts that ACT has brought to the psychology literature. Psychological flexibility also represents the main purpose of ACT. In ACT, it is aimed to increase psychological flexibility, which includes six basic structures, by ensuring acceptance without trying to change emotions, thoughts and past events, being aware of the present moment and exhibiting behaviors in line with values (Hayes and Lillis 2012).

These basic components that create psychological flexibility are presented in Figure 1, in the corners of the ACT hexagon. As shown in the ACT hexagon, each concept is associated with each other and is effective in people's having psychological flexibility (Hayes et al. 2010).

The acceptance dimension of the ACT hexagon represents experiencing events with awareness and interest, rather than trying to change them by being defensive (Aydın 2017). Clients' thoughts, feelings or experiences are not considered as the main problem in ACT; however, the main problem is considered as focusing too much on them rather than accepting them. When people do not want something, they usually seek ways to get rid of it (Hayes 2004); however, trying to control it paradoxically leads to problems rather than solutions. In other words, attempts for control-based change have become a part of the problem eventually (Bennet and Oliver 2019). The acceptance dimension does not mean that individuals endure, indulgence, enjoy or approve internal experiences such as stress. Individuals may interpret any experience negatively; however, those who realize the acceptance dimension do not regulate their behaviors according to these interpretations. For instance, individuals who achieve the acceptance dimension do not experience mental or physical avoidance (Bond et al. 2010).

The importance and function of the acceptance dimension can be better explained with a metaphor frequently used in ACT. Imagine that you fall into a swamp and begin to sink. You start to feel panicked and try to get one of your legs out of the swamp, but you sink deeper as your weight starts to gather on your other leg. You panic even more and try to get your other leg out of the swamp desperately. As a result of these efforts, you sink deeper and deeper into the swamp. This is the case in many situations that put us in trouble in life. Just like when we try to save our legs in the swamp metaphor, it seems perfectly reasonable to try to save ourselves from the events that cause us trouble; however, this effort worsens the situation by creating unintended consequences. This is similar to pouring gas into the fire to put out the fire (Bennet and Oliver 2019).

The modern world brings with it a fast-paced and action-oriented life. Therefore, our mind becomes a structure that focuses on thinking, planning, problem solving, analysis and constant movement. In addition to the advantages they bring, these elements also make us to have ruminative thoughts on our past



**Figure 1.** ACT Hexagon (Hayes et al. 2006)

mistakes and to be concerned about the future (Segal et al. 2013). The past is full of events that cannot be changed. The future is shaped by what is happening now. The dimension of present moment is to focus your attention on present moment and be fully aware of the moment. Therefore, the structure that can develop flexibility is to focus on present moment (Hayes and Lillis 2012). Individuals can use some techniques to ensure that they are at the present moment. One of these techniques is choosing an object in the room as a reminder and remembering to get rid of thoughts about past and future and to focus on present when the reminder is seen (Bennet and Oliver 2019).

Cognitive defusion, which remains in another corner of the ACT hexagon, is defined as putting distance between one's thoughts and his/her self. If an individual realizes that thoughts are just ideas that come and go from time to time and that the thoughts are the products of language rather than reality, s/he does not allow his/her thoughts to control his/her life (Hayes, et al. 2010). For instance, perceiving a critical thought regarding yourself, such as "I am useless" as a temporary idea rather than accepting it as a factor that should control your behavior is an indicator of defusion. Bond and Hayes (2002) state that thoughts, such as "I'm useless in my work" would not directly cause a mental health problem or poor performance unless the individual got stuck in that context. If an individual believes that s/he is really useless because s/he thinks that s/he is useless, that is a problem (Bond and Hayes 2002). If this individual thinks that s/he has the idea that s/he is useless and that is just a thought, it is not going to be a problem. Briefly, in order for a thought not to cause problems, individuals must defuse from the thought.

Another concept that is important for psychological flexibility is self-as-context. Individuals have a physical self that they perceive through their sense organs. They also have an intellectual self

that they use processes such as thinking, judging, remembering and perceive by using their mental abilities (Harris, 2016). Self as context is the self that observes the events in life, separate from these two selves (Hayes et al. 2011). In the self-as-context, an individual perceives his/her self by going beyond his/her current experiences (Terzi and Tekinalp 2013). When self is defined contextually, a person is not considered as just a variety of emotions, thoughts and sensations that come and go. On the contrary, s/he is considered as an individual who looks at these experiences from outside and recognizes them (Flaxman et al. 2011). Various metaphors, and experiential acceptance and self-consciousness exercises are used in the development of the self-as-context. An important exercise in the development of the contextual self is asking clients to identify the disturbing emotions experienced in session and then to find out who was the person who identified these feelings (Yavuz 2015).

Another concept in the ACT hexagon is values. Values mean what a well-lived life means to an individual, what s/he wants to be doing when s/he has a well-lived life, what kind of person s/he aspires to be, and what kind of life s/he wishes s/he had when his/her life came to an end (LeJeune and Luoma 2019). The therapist may lead the client to explore his/her values by asking him/her what s/he would like to be written on his or her tombstone (Hayes 2004). Value directed life is to create a lifestyle that consists of behaviors that comply with these values after finding out personal values in the therapy process (Hayes et al. 2011). Undoubtedly, it is not always easy for an individual to live a value directed life. Some difficulties arise inevitably. ACT suggests some methods to ensure that clients can take a flexible stance rather than holding on to the ideas strictly, when challenges regarding living a value directed life arise in his/her life (Bennet and Oliver 2019). Values are maintained throughout life and an individual can behave by considering his/her values almost every moment of his/her life.

In this context, it is considered that the values differ from the goals. Goals end at a certain point; however, values always exist for a person. (Yavuz 2015). For instance, while a person who has the value of living a healthy life pays attention to his/her nutrition throughout his/her life, a person whose goal is to lose weight may not maintain his/her former attention to his/her nutrition when s/he reaches his/her desired weight.

To summarize, in ACT, it is aimed to achieve psychological flexibility by applying six basic concepts. These basic concepts that create psychological flexibility are acceptance, contact with the present moment, cognitive defusion, self as context, values and committed action. All these concepts are related to each other and work collaboratively. The aim of ACT is individuals' achieving psychological flexibility and staying in the middle of the ACT hexagon (Hayes et al. 2010).

In the literature, there have been studies that investigate the relationships between psychological flexibility and some variables and which mental health problems psychological flexibility practices may be effective. The relationship between psychological flexibility and *emotion regulation* (Biron and Veldhoven 2012), *psychological health* (Masuda et al. 2010), *mental health and life satisfaction* (Lucas and Moore 2020), *emotional schema* (Silberstein et al. 2012), *cognitive exam anxiety* (Aydın 2017), *intolerance to uncertainty and trait anxiety* (Özkan 2020), *parenting stress and spousal support in single-child families* (Çalışkan 2020), *marital adjustment* (Kuşçu 2019), *substance abuse* (Albal 2019), *shame in substance use disorders* (Luoma et al. 2012), *type of online gaming* (İnce 2020), *authenticity and life satisfaction* (Karakuş 2020), *depression and anxiety* (Masuda and Tully 2012, Davis et al. 2020), *posttraumatic stress and depression* (Bryan et al. 2015), *health anxiety in Covid-19 lockdown* (Pakenham et al. 2020), *generalized anxiety disorder* (Curtiss and Klemanski 2014), *chronic pain* (Scott and McCracken 2015) were examined. Similarly, predictive research have been carried out between psychological flexibility and *depression* (Leahy et al. 2012), *treatment-resistant depression* (Yasinski et al. 2020), *chronic pain* (Wallace et al. 2016, Davey et al. 2020), *mental health and well being* (Dawson and Golijjani-Moghaddam 2020), *job burnout* (Ruiz and Gonzalez 2017), *self compassion* (Marshall and Brockman 2016) were examined.

In the literature, there have also been studies examining the effect of implementations that aim to increase psychological flexibility on *social anxiety* (Azadeh et al. 2016), *depression and anxiety* (Fledderus et al. 2013), *depression symptoms in women with breast cancer* (Najvani et al. 2015), *eating disorders* (Bluett et al. 2016), *symptoms of obsessive compulsive disorder* (Twhig et al. 2015), *decreasing burnout level* (Puolakanaho et al. 2020), *maintaining observed social functionality and mental health in adults aged 65 and over* (Scott et al. 2017).

In summary, psychological flexibility, which is one of the basic concepts of ACT, consists of six main components (acceptance, contact with the present moment, cognitive defusion, self as context, values and committed action) that interact with each other and affect each other. All six concepts are required for the

development of psychological flexibility. An individual can only achieve psychological flexibility by making progress in all of the six components. In the literature review, predictive, relational and experimental studies showing the relationship between psychological flexibility and mental health draw attention, and it is understood that increasing psychological flexibility has important contributions to mental health.

## Discussion

The concepts of cognitive flexibility and psychological flexibility, which are important in maintaining and improving an individual's mental health, include similar and different aspects. In the literature, there have not been any studies regarding the overlapping aspects of their theoretical features. While cognitive flexibility has a deep-rooted history, it is known that psychological flexibility, which has arisen from acceptance-based therapies, is a more contemporary concept (Whiting et al. 2017).

Psychological flexibility is one of the basic concepts of ACT and at the same time ACT's main aim to be achieved (Hayes et al. 2011). Although cognitive flexibility is a concept that can be explained by many theories such as learning theories and cognitive theories, it is closely related to CBT (Toksöz 2018). In this regard, cognitive flexibility is a concept that its importance is emphasized especially in cognitive and cognitive behavioral therapies and it is a concept that aimed to be increased during these therapy processes. Considering that ACT is accepted as one of the third wave cognitive behavioral therapies in the literature (Forman and Herbert 2009), it can be expressed that both cognitive flexibility and psychological flexibility are concepts developed from cognitive approaches and include cognitive behavioral components.

Both cognitive flexibility and psychological flexibility give importance to thoughts. Cognitive flexibility is being able to lean to different thoughts in order to adapt to changing situations by realizing the existence of alternative options (Bilgin 2009). On the other hand, psychological flexibility includes recognizing and accepting thoughts as they are (Harris 2016). Although this aspect is considered as a similarity between these two concepts, it is also seen that they differ from each other because cognitive flexibility includes changing thoughts when it is required, and psychological flexibility includes not trying to change thoughts in the mind. According to CBT, it is essential that in cognitive flexibility an individual recognizes his/her unfunctional thoughts, restructures them, and makes the thoughts, which s/he considers rigid and unchangeable, flexible (Beck 1995). In psychological flexibility, especially in the cognitive defusion process, the aim is to distance an individual from his/her thought (Hayes et al. 2011). As a result, although thoughts are important in both concepts, while the content of thoughts is important in cognitive flexibility, the relationship established between thoughts and an individual is essential in psychological flexibility.

In order for both concepts to occur, some events or challenges, which were brought by life, must be experienced (Hayes et al. 2006, Çuhadaroğlu 2011). These two concepts are a description

of how an individual reacts to difficulties. For instance, while an individual needs cognitive flexibility for being able to recognize that there are different options for solving an issue and thinking in a multilateral way, s/he needs psychological flexibility in situations such as accepting thoughts and staying in the moment (Stevens 2009, Hayes et al. 2010). In addition, as it was mentioned before, since analyses have been made on a new event that occurs in psychological flexibility and cognitive flexibility, both concepts are focused on the present moment. However, the past and the future are not emphasized. Nevertheless, it should be noted that the acquisition of these skills can be beneficial for the person in each future event.

The concepts of cognitive and psychological flexibility include affective, cognitive and behavioral components. For instance, a person's not only being aware of options but also his/her making a difference in his/her usual behaviors represent cognitive flexibility (Martin and Anderson 1998, Ionescu 2012). On the other hand, psychological flexibility is based not only on the conscious awareness processes in which individuals become aware of their feelings and thoughts, but also on acting in accordance with their values (Biglan 2009).

Cognitive flexibility includes being able to pay regard to different thoughts, create options, and choose the most appropriate one, rather than entangling with a thought and accepting it as the reality (Anderson 2002). The first thought that comes into mind may not be the reality. Similarly, in cognitive defusion, which is one of the components of psychological flexibility, situations such as recognizing thoughts, disentangling from them and understanding that these thoughts may not be unquestioning reality gain importance (Luoma and Hayes 2009). In addition, while more importance is given to the content of cognitions in cognitive flexibility, how to respond to these cognitions becomes more important in psychological flexibility.

In the literature, these two concepts have examined in terms of their relationships with similar variables. For instance, there have been studies investigating the relationships between psychological flexibility and depression (Leahy et al. 2012), anxiety (Özkan 2020), marital adjustment (Kuşçu 2019), mental health and well being (Dawson and Golijani-Moghaddam 2020). Likewise, there have been studies investigating the relationships between cognitive flexibility and anxiety (Öz 2012), depression (Johnco et al. 2014), relationship satisfaction (Toksöz 2018), subjective well-being (Muyan-Yılık and Demir, 2020). Therefore, it can be stated that both concepts have an important role on preventing mental health problems and improving preventive mental health. Despite not being very comprehensive, since cognitive flexibility requires one's recognizing his/her own thoughts it may be stated in cognitive flexibility that one's being able to observe him/her self externally.

Cognitive flexibility scales often provide more clear results because they focus on measuring a single structure. However, it can be indicated that since psychological flexibility scales include many sub-scales such as cognitive defusion, contact with the present moment and values, it gets harder to clarify the results of

the measurement. It can be considered that this situation requires measuring the components in the ACT hexagon in a balanced way, creating sub-scales, or evaluating scores obtained from various scales together while measuring psychological flexibility. For instance, in the literature, there are some scales that aim to measure sub-dimensions of psychological flexibility such as experiential avoidance and cognitive defusion separately. These scales may be exemplified as the Multidimensional Experiential Avoidance Scale-30 and the Drexel Defusion Scale (Ekşi et al. 2018, Aydın and Güneri 2018).

ACT, which is the basis of the concept of psychological flexibility, uses a transdiagnostic and process-oriented approach, instead of a psychopathology-oriented approach (Hayes et al. 2006). However, CBT, which is an evidence-based therapy, has specific cognitive formulations for each psychological problem (Madewell and Shaughnessy 2009). In cognitive flexibility, it is important that a person can evaluate his/her thoughts flexibly, regardless of what the problem is. Therefore, it is considered important that a person has high cognitive flexibility in any circumstances. This point is considered important for third wave therapies because it is important to improve cognitive flexibility instead of symptom reduction. Therefore, cognitive flexibility, which is derived from one of the second wave approaches CBT, paves the way for psychological flexibility, which is derived from one of the third wave approaches ACT.

There has not been any study that fully clarifies which of these two concepts is broader. Although the importance given to thoughts in cognitive flexibility is inarguable, psychological flexibility includes determining thoughts that an individual cares about in his/her life and creating a life suitable for these thoughts (Ciarrochi et al. 2010). Therefore, it can be said that psychological flexibility is a more planned and comprehensive structure that goes beyond cognitions. Similarly, cognitive flexibility is not a precondition for psychological flexibility, however; it is a concept that can contribute to the development of psychological flexibility (Whiting et al. 2017). Therefore, there is a need for further studies regarding the relationships between the concepts of cognitive flexibility and psychological flexibility. Within the scope of relational research, it is considered that investigating whether individuals with high cognitive flexibility also have high psychological flexibility will contribute to the literature. The strength of the relationship between these two concepts will shed light on future research.

## Conclusion

It is known that cognitive flexibility and psychological flexibility, which are two concepts that are important in the field of mental health, have been investigated many times in terms of their relationships with different concepts in separate studies. However, in the literature review, it has been found that there has not been any research that examines these two concepts in a single study by focusing on their similarities and differences in detail. Therefore, the current review study is considered to be unique. In this review study, cognitive flexibility is examined within the scope of CBT,

and psychological flexibility is examined within the scope of ACT. It can be indicated that although psychological flexibility and cognitive flexibility were developed in different waves, both concepts are included in the scope of cognitive behavioral therapies. This inevitably brings with it many similarities and differences. Briefly, these two concepts, which are described together with similar and different aspects, are considered to be closely related. Although there is no agreement in the literature, in this study it is considered that psychological flexibility may include cognitive flexibility. In previous studies, it was found that both cognitive flexibility and psychological flexibility were significantly and positively related to the variables regarding improving mental health; however, both cognitive flexibility and psychological flexibility were significantly and negatively related to variables that include psychopathology. Accordingly, it can be considered that high levels of cognitive and psychological flexibility will contribute positively to many areas of an individual's life. Carrying out future studies that include comparisons of these two concepts are viewed significant. It is also considered that such comparisons will contribute to a better understanding of concepts. In the literature, cognitive and psychological flexibility has been found associated with individuals' psychological problems. Similarly, the relationships of both concepts with mental health (subjective well-being, psychological well-being, life satisfaction and quality of life) were examined. However, it is considered that studies in which both concepts are examined together and compared with each other will make important contributions to the literature. In future studies, it is important to examine to what extent cognitive flexibility and psychological flexibility affect mental health and mental health problems.

Being aware of the flexibility levels of clients in the therapy process is considered important in terms of the structure and functioning of the therapy process. For this reason, in therapy sessions, it is recommended to include practices, which aim to recognize and improve cognitive and psychological flexibility of clients, Thus, it will be possible to observe the benefits of both concepts for clients during the therapy process.

Despite the process-oriented nature of ACT, psychological flexibility, which is one of its basic concepts, has been frequently examined in terms of its relationships with concepts that may include pathology such as depression, chronic pain, substance abuse, and stress. However, there have been limited number of studies examining the relationships between psychological flexibility and concepts such as life satisfaction and subjective well-being. For this reason, it can be suggested for the researchers, who will study about psychological flexibility, that they should determine their variables by considering this situation. It is important to address and assess ACT and psychological flexibility in the context of preventive mental health.

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