



## Mindfulness: A Current Review

### Bilinçli Farkındalık: Güncel Bir Gözden Geçirme

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#### Abstract

The concept of mindfulness, defined by Kabat-Zinn, refers to a mechanism where the experiences are always at the center of attention. This concept, which dates back almost 2500 years, attracted the attention of several researchers in recent years. It was suggested that mindfulness could contribute to the treatment of psychopathologies and various intervention methods were developed. On the other hand, there are also studies on the action mechanisms of these intervention methods in the literature. The present literature review aimed to describe the concept of mindfulness, to investigate the correlations between mindfulness and psychopathologies and transdiagnostic variables, and to provide a general framework on awareness skills and techniques designed to develop these skills.

**Keywords:** Mindfulness, psychopathology, psychotherapy

#### Öz

Kabat-Zinn tarafından yılında tanımlanan bilinçli farkındalık kavramı, yaşantıların an be an dikkat odağı içerisinde gerçekleştiği bir mekanizmayı ifade eder. Yaklaşık 2500 yıllık bir kökene sahip olan bu kavram son yıllarda birçok araştırmacının dikkatini çekmeyi başarmıştır. Bilinçli farkındalığın psikopatolojilerin tedavisine katkı sunabileceği öne sürülmüş ve buna bağlı olarak çeşitli müdahale yöntemleri geliştirilmiştir. Diğer bir yandan, bu müdahale yöntemlerinin etki mekanizmaları üzerine incelemeler de alanyazında yer almıştır. Bu derleme makalesinde öncelikli amaç, bilinçli farkındalık kavramını tanımlamak, psikopatolojiler ve tanılararası değişkenler ile ilişkilerini incelemek, farkındalık becerileri ve bunları geliştirmek amacıyla düzenlenen teknikler hakkında genel bir çerçeve sunmaktır.

**Anahtar sözcükler:** Bilinçli farkındalık, psikopatoloji, psikoterapi

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**DURING** a day, we are exposed to several stimuli while eating, commuting to work, chatting with a friend, or tackling a simple or complex task, and sometimes everything happens so fast that we may not even notice several things that we experience such as the taste of the food we eat or the smell in the air we breathe. In such cases, our life is like under the control of an autopilot (Brown and Ryan 2003). In contrast, the concept of mindfulness advocates paying attention to and raising awareness about the yields of the experienced moment within a certain route, distancing ourselves from the judgments as far as possible (Kabat-Zinn 2012). Thus, the main aim of the present literature review was to introduce mindfulness, to discuss the structure of this concept and its correlation with psychopathologies, and to provide information about mindfulness-based interventions and techniques.

## **Mindfulness in historical perspective**

Although mindfulness became popular in the literature, especially in the western world in recent years, it dates back about 2500 years in its original land (Kang and Whittingham 2010). The concept is based on the word "Sati" derived from the Pali language adopted by the teachings of Buddha, and the concept corresponds to the word 'memory.' This concept was translated as mindfulness to English by Rhys Davids in 1881 (Levey and Levey 2018). Mindfulness acquired a more extensive range of meanings and applications, exceeded the original framework of the word Sati (Bodhi 2011), and became a concept that addresses various fields such as health and industry (Atalay 2019).

In the historical framework, it was observed that although mindfulness has been predominantly associated with the Buddhist tradition, it also manifested itself in various forms in other religions and traditions (Brown et al. 2007a). The transformation of mindfulness from its traditional and religious origins to a more secular and universal dimension has been the result of certain processes. One of the most prominent names in this process was Nyanaponika Thera. This Buddhist monk, who authored books that included essential practices in this field, mostly focused on concepts such as mental clarity, balance, and self-control (Thera 2008). Another important step taken in later periods on the concept of mindfulness was the pioneering work by the leader of the Tibetan Buddhists, the Dalai Lama, in the foundation of the Mind and Life Institute in Massachusetts. This institution played an important role in both the development and prevalence of the scientific mindfulness approach (Moniz and Slutzky 2015). A milestone was the establishment of the Mindfulness-Based Stress Reduction Clinic in 1979 by Jon Kabat-Zinn, when mindfulness became a popular concept in the west by crossing both borders and religious teachings of the east (Schmidt 2011). The concept quickly served as the foundation for several psychotherapeutic methods such as Mindfulness-Based Stress Reduction (MBSR), Mindfulness-Based Cognitive Therapy (MBCT), Acceptance and Commitment Therapy (ACT), and Dialectical Behavior Therapy (DBT), and utilized for the treatment of several psychiatric disorders (Davis and Hayes 2011).

## **Definition and structural properties of mindfulness**

Awareness is described as being aware of things that should be seen or known, paying attention to something that should be comprehended (Türk Dil Kurumu 2011). Awareness is the conscious recording of the stimuli and our direct and closest contact with reality (Brown et al. 2007a). The degree of awareness could be discussed in 3 steps. The

first step is the basic level of awareness that is required to survive, allowing living beings to protect themselves from external factors (Mithen 1994). The second step is self-awareness, which is the ability of the individual to perceive and recognize herself or himself (Dymond and Barnes 1997). Mindfulness is at the final and the highest level of awareness. This concept refers to attention, which is free from previous stereotypes (Kabat-Zinn 2005). Various definitions have been made in the literature on mindfulness and the processes it includes. According to Marlatt and Kristeller (1999), mindfulness is the concentration on the proceeds of the moment by prioritizing acceptance and compassion, while Siegel et al. described mindfulness as the acceptance of the present experiences with compassion and without judgment. Thus, the core of mindfulness includes the observation of memories with acceptance and a courteous and curious attitude independent of the goodness or badness of the experience (Bishop et al. 2004, Ameli 2016).

The concept of mindfulness has certain significant properties. For example, the concept emphasizes a clear awareness about individuals' thoughts, emotions, actions, and the internal and external environments that they are exposed to (Brown et al. 2007b), and this clear awareness is called "pure and clear attention" (Gethin 2011). Based on another perspective, we could often experience situations where we encounter several stimuli, interpret these stimuli, and classify them in various categories in our minds. The context of non-discriminatory awareness, which is another property of mindfulness, reflects the case where we allow our experiences to penetrate our awareness without categorizing or comparing these experiences (Brown et al. 2007b). The final property of mindfulness is the flexible structure of awareness and attention. This flexible structure means the fact that awareness could move towards wider or narrower cognitive states based on the situation (Kornfield 2009).

It could be suggested that mindfulness is an umbrella term that includes various layers and components. Attention, one of these components, is our ability to focus on the stimuli we encounter. There are several stimuli around us, and since it would be difficult to focus on all these stimuli at the same time, our mind functions as a filter by blocking some and processing others (Brewer et al. 2013). Thus, strong stimuli could lead to a concentration on these stimuli. From the awareness perspective, attention is associated with observation of the current moment and functions of both internal and external processes by the individuals. It is possible to suspend all routes of various experiences and to participate in the content of consciousness by holding ourselves at present as much as possible (Shapiro et al. 2006). Another component of mindfulness that helps us choose between the stimuli which we were exposed to is our intentions (Atalay 2019). Although intentions are among the main components of attention, they are defined as the reflections of a dynamic structure open for improvement. Furthermore, they are an important step for us to rationalize our actions and to understand the whole awareness process (Shapiro et al. 2006). In a study by Shapiro (1992), it was concluded that participants' intentions were consistent with the benefits of meditation. For example, the participant who aimed self-discovery moved towards that aim after meditation, while someone who aimed self-liberalization and compassion moved towards these objectives. The final component of mindfulness is attitude. The attitude component of mindfulness could be expressed as the attitude of individuals towards their experiences (Kabat-Zinn 1990). It is possible to encounter several positive and negative events during the day, and what is important is our approach to these experiences (Atalay 2019). Within the scope of mindfulness, the approaches could be in the form of patience, compassion, acceptance,

and curiosity (Bishop et al. 2004, Shapiro et al. 2006). Thus, we could consider attention, intention, and attitude as the three main roots of mindfulness. Feeding these roots would lead the individuals towards mindfulness step by step. However, individuals' ability to introduce mindfulness components in their lives requires a particular process, acquisition of various skills, and practice.

## **Mindfulness skills**

Awareness suggests the perception and regulation of our emotions rather than suppressing or attempting to control experiences with an emotional burden. In another perspective, awareness is equivalent to "remembrance;" however, the approach is the remembrance of the awareness for a purpose instead of remembering past experiences (Siegel et al. 2009). The core of awareness was explained as the observation and paying attention to unpleasant experiences in their totality rather than attempting to change them (Kabat-Zinn 2003). The logic of mindfulness is simple; however, it is necessary to exercise and shape certain attitudes to implement mindfulness, as if developing a muscle (Ameli 2016). Thus, Kabat-Zinn (1990) stated that individual attitudes should be adopted to lay the foundations of mindfulness skills. These attitudes are discussed in the following section.

## **Non-judgmentalism**

Assessment of daily experiences and conducting various interpretations are indispensable mental acts. These assessments could often be biased and reflect judgmental attitudes. According to Kabat-Zinn (1990), when the mind is left on its own, it tends to analyze and categorize the situations and events associated with the family, environment, past experiences as good or bad. According to Raingruber (2007), the classifications usually fall outside the limit of our awareness and take place entirely automatically. This approach could prevent the recognition of the current moment objectively and transparently (Kabat-Zinn 1990), and the current well-being could be negatively affected when the judgments take control of the mind (Matchim et al. 2011). Thus, the aim of the non-judgment skill is the self-observation of the life of the individuals and the things they think, do, and feel with a third eye, and raising awareness about the mechanical reactions. Realization and minimization of the judgments is a gradual process. Efforts should be spent to get rid of stereotypes and to untie the hard knots of the mind (Ninivaggi 2019). It is essential to recognize the emotions, actions, and decisions with compassion and observe with curiosity without attempting to control the mind (Kabat-Zinn 1990). It should be remembered that non-judgmentalism does not mean to avoid criticizing or to love all experiences, but being aware of our attitudes towards all attitudes that we like or dislike and the window we utilize to look at the world and to reflect on how we can focus on present experiences without the influences of past experiences and future anxiety (Atalay 2019). As long as we possess this skill, it is expected that our capacity to be aware of momentous thoughts and to cope with negative emotions that these thoughts could create would increase.

## **Patience**

Patience is a concept that includes various elements such as fortitude, resistance and control. Considering the speed of the times we live in, thinking about the next step

without recognizing the moment we live in such as short-term chores like waiting on a line or a long-term process like promotion demonstrate that we miss the significance of patience (Atalay 2019). Patience provides us additional time in the current moment and allows the natural flow of events. Thus, it opens a door for the mind to move from being always busy with something in a state of rest, where it could observe the events (Ninivaggi 2019). The concept of patience is described as an awareness of individual that every phenomenon waits for its time to occur. Patience is the total acceptance of the present moment and the realization that time is required of all experiences to occur (Kabat-Zinn 1990). Thus, patience is a central dimension of all aspects of awareness (Ninivaggi 2019). It is important to be patient to improve awareness skills and to know that it may take time to take steps to reach this goal (Atalay 2019). This skill leads to the key to accepting and recognizing the current moment. Furthermore, patience will play a protective role against the problems we face or the hopelessness that could be created by time-consuming processes.

### **Beginner's mind**

One of the attitudes necessary for mindfulness skills is the beginner's mind. Although all our momenta seem to resemble the other, they are substantially different. According to Tsang et al. (2012), it is necessary to possess this skill to recognize the peculiar nature of the present moment and approach it with enthusiasm and curiosity as if we were experiencing it for the first time. The beginner's mind was described as a spirit of discovery that views the world with excitement as if it were watching through a child's eye and emphasizes our senses (Ninivaggi 2019). This skill makes it easier for the individual to see new opportunities and other possibilities in life (Kabat-Zinn 1990).

Furthermore, it prepares individuals for future strange or alien experiences (Ninivaggi 2019). The daily chores and the same people we meet could lead to monotony after a while, reducing our awareness and acting as if we are on the autopilot. Thus, beginner's mind would allow us to get rid of the autopilot and experience every moment in life on our quest for mindfulness and improve our communications with the people around us (Witek-Janusek et al. 2008, Atalay 2019). However, this skill is critical for our mind, which is surrounded by bias, to be open to different analyses and different methods.

### **Confidence**

Confidence is an important component of mindfulness. According to Kabat-Zinn (1990), this concept refers to the revelation of ourselves and the improvement of our sensitivity towards it. Confidence in awareness would entail approaching mindfulness and taking responsibility for one's decisions and actions in addition to nurturing the self-confidence. This skill would trigger positive emotions that could be successfully managed via confidence, rather than feeling uneasy in a moment of anger during unpredictable and sudden events (Ninivaggi 2019). Even when an individual makes a mistake, a decision made by his own will is considered as more effective when compared to the guidance of others (Raingruber 2007). Awareness exercises would lead to individual development in listening to one's self and self-confidence and reflecting this to the environment by trusting other individuals and seeing their right sides (Kabat-Zinn 1990). Also, when individuals have a say in decisions about themselves would play a significant

role in the acquisition of further experiences in life, even when they make the wrong decision.

### **Avoiding ambition**

Humans continuously strive to achieve something. In mindfulness, it is desired that the individual should hear her or his own body by emphasizing the current state of the individual without any purpose (Kabat-Zinn 1990). There is no attempt to change a situation, and the emphasis is on staying at the moment since dealing with the past, and the future would only affect today indirectly, and the effort spent in vain would be replaced by ambition. The critical thing in mindfulness is to look at the incoming and outgoing experiences through the awareness glass and to witness these experiences (Ninivaggi 2019). Thus, we could approach the goals we set for life with healthier steps by realizing and accepting our current conditions.

### **Acceptance**

Humankind often tries to suppress undesired emotions and avoid painful experiences. However, these efforts are often in vain and could lead to higher levels of stress. Thus, acceptance was described as a surrender that we volunteer to consider ourselves in all reality (Kabat-Zinn 1990). The ability to consider the positive and negative experiences from the same distance means to accept failure as well as a success (Atalay 2019). It is to consider and realize the experiences as they are without commenting or classifying these experiences. Thus, it could be suggested that acceptance is a skill-based on non-judgmentalism (Ninivaggi 2019). It is possible that we encounter several negative situations throughout our lives. If the preferred way is to try to eliminate these negative experiences fully, this may lead to further psychological problems (Demir 2014). Therefore, it was emphasized that it would be more beneficial for the individual to let go of the efforts for change and accept her or his thoughts, emotions, and experiences that negatively affect her or his functionality and increase her or his restlessness (Kabat-Zinn 1990). Thus, acceptance would provide a more functional mechanism in coping with stress.

### **Going with the flow**

Doing with the flow is another skill that complements the acceptance skill. This concept reflects the significance of attempting to perceive and comprehend the world as is instead of limiting the mind based on an idea, desire, or emotion (Kabat-Zinn 1990). Thus, excessive "dependence" on something could lead to stressful situations and improve the frequency of anxiety, stress, and fear. Because dysfunctional dependencies and suppressed emotions could lead to vicious cycles in individuals after a while and getting out of this cycle could be much harder for them (Ninivaggi 2019). Our minds could become a gateway for several assessments, expectations, and biases, and what is important at this point is the recognition of these facts and the ability to return to our present focus. Thus, we could improve the process of letting go (Ameli 2016). Going with the flow does not mean to reject or avoid the developments, but to understand the correlations between our dependencies and past experiences or future expectations, and to raise our awareness of present from an equal distance as much as possible (Atalay 2019).

The mindfulness approach allows the individual to steer the life from the "autopilot" and to exist in the present moment with attention (Germer et al. 2005). The mind may

tend to navigate in the past or in the future; however, anchoring the mind in the present is a necessary skill for mindfulness. The ability to recognize the moments where the mind breaks from the present and returns to past experiences is an important way to get rid of the chains of the future and the past and to be free from anxiety or regret (Ameli 2016). In addition to raising awareness about the present, it is also vital to fully comprehend mindfulness based on certain attitudes and experiences in our focus. Thus, a patient and curious approach without judgment to past experiences, embracing all experiences would lead to positive outcomes since it would allow the individuals to approach past experiences with a different perspective. It was suggested that the well-being of the individual would increase as the individual adopts mindfulness attitudes. The review of the studies on the topic demonstrated that in a study conducted by Al-Ghalib and Salim (2018) on college students, mindfulness training was provided for the experimental group for three weeks. After the training, it was determined that the anxiety, stress, and depression levels of the participant decreased, and the well-being and life satisfaction of the same group increased when compared to the control group. In another study conducted with employed adults, the impact of mindfulness on job-related stress and psychological well-being was investigated. In that study, the participants were given mindfulness exercises several times a day for eight weeks via a smartphone application, and the study findings demonstrated that the psychological well-being of the individuals improved, and their stress levels decreased significantly (Bostock et al. 2019). In another study conducted by Lomas et al. (2017), the effect of mindfulness applications on educators' performances and well-being was investigated. The study findings demonstrated that mindfulness applications improved the well-being, performance, sleep quality, self-compassion, and reduced negative emotions such as burnout, anxiety, and depression. The findings reported in the literature evidence that mindfulness interventions and skills could play an important role in psychological health and well-being. Thus, the knowledge of mindfulness interventions and techniques would have significant contributions to the development of basic mindfulness skills and cope with psychological problems.

## **Development of mindfulness skills**

The development of mindfulness skills is the most crucial step towards awareness. The literature review demonstrated that these skills could be developed with several techniques. According to Germer (2009), mindfulness interventions include the three layers of "stop," "observe," and "return." Stop means slowing down the fast flow of life, allowing the individual to observe and realize what is going on. This layer is also described as decreasing our speed while walking and observing the developments around us. To observe means sensing the experiences with all its dimensions. It means to feel the breath, the sensation, and emotions. Return reflects the fact that we could lose our focus from time to time, the important thing is to be able to realize this, because the moment we realize this fact, we regain our focus and we can continue to experience the present moment in full. According to Pollak et al. (2019), mindfulness is a skill that penetrates all areas of life and requires time and effort to improve. As we spend time in the gym to be more fit and exercise repeated to keep our form, mindfulness is a similar process.

Furthermore, mindfulness applications could be analyzed in three categories. The first is informal, that is, daily mindfulness applications. These applications entail doing

the things we do every day with further awareness, without changing our daily routines and without allocating a specific time for these applications, being in the moment while eating, walking, driving, and working. The second is formal applications. These are structured applications conducted at a predetermined location and time with a predetermined method such as body scanning and mindful breathing. Mindfulness interventions employ these applications. Finally, the retreat application includes behavior such as conducting daily routines with awareness for a few days, creating time for structured applications, and postponing communications with others.

From another perspective, the three primary skills required for mindfulness include focused attention that could be described as the lens of the mind and a structure required to acquire other skills, the non-judgmental observation that allows us to recognize present experiences, and compassionate acceptance that allows us to recognize and embrace possible good or bad experiences (Lutz et al. 2008). The techniques required for the development of these skills are presented based on the discussions reported by Pollak et al. (2019) and Ameli (2016).

### **Mindful listening**

In this technique, the individual is asked to notice the environmental sounds, including car horns and birdcalls. The individual is not required to classify or interpret these sounds; it is important to listen to the sounds as they are. Step by step, the individual is expected to pay attention to the fact that all these sounds have a start and an end. The aim is to raise awareness about the fact that each sound is specific to that moment and will not repeat in the same way (Pollak et al. 2019).

### **Mindful breathing**

Breathing, which is one of the basic techniques, could help recognize the present moment without judgment. Mindful breathing could be initiated by attempting to find one's breath. Thus, the individual should try to become aware of the point where the breath is felt predominantly and the sensation that each breath leads to (Pollak et al. 2019). The technique aims to concentrate on breathing. It involves awareness about all details of the process and monitoring the process with awareness. It is necessary to sense the flow of air to the lungs, the circulation of the air, and the exit of the air from the body (Ameli 2016).

### **Mindful walking**

The objective of this technique is to become aware of the automatic actions we perform during the day. It begins as the weight of the body is felt evenly on both legs and relaxation of the arms. The sensation of the foot, fingers, and heels on the floor should be perceived, and the evenly distributed weight could be changed to perceive this better. Then, the individual starts to amble. The individual should try to be aware of the environment where the main focus is on the experience of each step (Pollak et al. 2019).

### **Body scanning**

Focusing awareness on different parts of the body and paying attention to sensations in these parts is the essence of this technique. The main objective of the technique is to raise the awareness of individuals about the body. Initially, the technique should be ap-



plied in a quiet space. The individual should pay attention to each part of the body, starting from the left foot. The sensations in the focused part, for example, if there are contractions, pressures, or pain, should be focused on, and the individual should not rush the process. It is also important to remain in each part for sufficient time (Ameli 2016).

### **Labeling the emotions**

It is one of the techniques applied based on awareness about emotions. Labeling emotions helps us to distance ourselves from reactions and achieve a perspective about the related emotion. This technique begins with a deep breath at a comfortable sitting position. Labeling could be initiated by raising awareness through emotions such as anxiety, anger, or happiness. Attention should also be paid to the location of the emotion in the body and its magnitude when labeling the emotion. During this application, the emotion should not be analyzed, and the individual should not focus on related past experiences. The individual should only label the emotion with acceptance and move on (Pollak et al. 2019).

### **Mindful eating**

Most of the time, we can use our phone, check e-mail inbox, or perhaps pay attention to a television show we love while eating. All these activities could prevent us from paying attention to what we eat and how much we eat. Mindful eating could be a useful practice, especially for individuals with eating disorders (Slyter 2012). In this technique, generally, raisins are used. The individual first holds the raisin between the fingers and examines the raisin in detail with curiosity as if it was the first time—the individual attempts to perceive the color, texture, smell, softness or hardness of the raisins. Then, the individual puts the raisins into the mouth and attempts to feel their texture without chewing them. Then, the individual starts to chew the raisins slowly and as long as possible, focusing on momentary experiences and the taste. Finally, the individual is required to swallow the raisins with awareness (Ameli 2016).

### **Self-courtesy with love**

The technique is initiated by relaxing a part of the body where there is pain or tension, and the individual tries to calm down via breathing. Then the individual determines a self-comforting expression such as "I am safe," or "I am at peace." The selected expression is repeated silently, and the sentence is expected to create an image that could make the individual feel mentally good by imagining that the body will provide everything it needs, such as a vitamin (Pollak et al. 2019).

### **Compassionate existence**

This technique could have significant effects in cases where individuals blame themselves and adopt a firm critical attitude. First, a comfortable position is taken, and mindful breathing and listening techniques could be used to focus on the present time. Then, the individual is asked to imagine a safe place in her or his mind. The individual could be asked to imagine a person she or he knows to be of wisdom and compassion. The individual also imagines the reactions and recommendations of this entity to the negativity that compels the individual. Absorbing the compassionate state of this entity is an important objective. Emphasis should also be placed on the re-application of the same

image, which is preferred in cases where assistance is required during the follow-up period (Pollak et al. 2019).

In short, focused attention, which plays an important role in the reduction of the possible regrets about past experiences, could help by focusing the attention on breathing and recognizing the sounds in the environment. It could contribute to resting and slowing down the flow of life. Focused attention allows us to experience the passage of the sounds and breath through our perception. Non-judgmental observation teaches to identify thoughts and emotions that emerge in the mind from the same distance. Thus, it could be suggested that techniques such as body scanning and emotion labeling is important for the development of this skill. Acceptance of our thoughts and emotions with all possible flaws and mistakes could be a significant complement to the mindfulness process. It was considered that self-courtesy with love and compassionate existence techniques could be effective in the development of this skill.

Previous studies reported that mindfulness skills significantly contributed to the psychological well-being of the individual, improved life satisfaction (Şahin 2019), and played an important role in the treatment of several psychological disorders (Baer et al. 2004, Kristeller and Wolever 2011, LePera 2011). To improve mindfulness skills, several standardized therapeutic procedures such as MBSR, MBCT, ACT, and DBT were proposed, and their positive effects were demonstrated in various studies. In the next section, these therapeutic approaches are discussed.

## **Mindfulness-based interventions**

Mindfulness-based therapies were christened by Hayes (2016) as third-wave cognitive-behavioral therapies, and it was emphasized that these therapies assigned a new form and re-synthesis to the previous generation behavioral and cognitive therapies. Although these therapies have a novel set of techniques, their objectives are similar to those of the first and second wave therapies. Their underlying mechanisms involve increasing the desire to adopt and regulate the experiences rather than suppressing them (Khoury et al. 2013).

MBSR was developed in the early 1980s by Jon Kabat-Zinn. MBSR is both the first and the most popular among the mindfulness interventions (Kabat-Zinn 1982). It should be mentioned that MBSR, which was developed to treat individuals with chronic pain, has gone further and played an effective role in the treatment of several psychopathologies (Serpa et al. 2014). This intervention includes about eight weeks long 2-hour instruction sessions to develop various awareness skills and further skills that individuals would practice at home (Atalay 2019). The general aim for the acquisition of these skills is to learn how physical sensations could be perceived through mindfulness and how these skills could be transferred to daily life to effectively tackle the daily stressors (Hoffman and Gomez 2017).

MBCT approach was developed by Teasdale et al. (1995). This intervention program was designed for the treatment of major depression and especially to prevent a major relapse and has been shown to achieve successful results (Teasdale et al. 2000). The approach aims to combine mindfulness training and cognitive therapy. This intervention program emphasizes self-management and self-development, as well as self-responsibilities (Simkin and Black 2014). Thus, the intervention program includes both mindfulness applications that would improve the sensations about an experience before

judging the same experience and the desire to experience the moment and cognitive principles that would contribute to the recognition of possible discordant schemes that could trigger depressive mood (Hoffman and Gomez). 2017).

ACT is an approach developed by Hayes and Wilson (1994) to convey that individuals could achieve a more serene life by changing their thinking styles; in other words, achieving psychological flexibility. It was reported that meditation applications were not included in the therapy; however, it was identified with mindfulness applications based on therapeutic strategies (Hoffman and Gomez 2017). It was suggested that psychological flexibility could be achieved through six basic processes. These include acceptance that indicates the ability to embrace emotions before reacting, the cognitive separation that reflects the changes in the connections with thoughts, living the moment that allows us to discover the current moment, the observer self that proposes to simply observe the internal phenomena without analysis, explanation of the values that reflect the important issues for the individuals and the values that they desire to represent, and finally, decisive action that reflects developing objectives based on the values and taking the responsibility to pursue these objectives (Harris 2016).

DBT approach was developed by Linehan (1993) to contribute to the treatment of individuals with a borderline personality disorder. The therapy aims the acquisition of mindfulness, communication skills, tolerance against problems, and emotional regulation by the individuals (Üstündağ-Budak and Özeke-Kocabaş 2019). The contribution of mindfulness is that it allows observation without internal judgment. DBT includes several exercises, similar to MBSR, but unlike MBSR, exercises to improve mindfulness skills are just one section of the skills instructed in DBT training that includes several skills (Baer 2003, Hoffman and Gomez 2017). It was emphasized that this approach has significant effects, primarily on suicide and impulsivity (Linehan et al. 2000). In brief, it was observed that approaches such as MBSR, MBCT, ACT, and DBT had been widely used in both practice and research during recent years.

## **Mindfulness and psychopathology**

Mindfulness-based interventions could appeal to a wide audience and could be used in the treatment of various psychological disorders (Kocovski et al. 2009, Mandal et al. 2012). The literature review demonstrated that mindfulness-based interventions played a role in the improvement of positive affection (Falkenström 2010) and reduction of the stress level (Astin 1997, Chiesa and Serretti 2009). A detailed review of the impact of mindfulness on psychopathologies would reveal that it had an essential impact on prevalent psychological problems such as depression and anxiety (Lomas et al. 2017, Al-Ghalib and Salim 2018). A study was conducted on Iranian soccer players by Norouzi et al. (2019) to determine the impact of MBSR on stress, anxiety, and depression. Participants were divided into experimental and control groups, and 8-week MBSR was implemented with the participants in the experimental group. Similar to previous study findings, no changes were observed in the control group, while it was determined that the stress, anxiety and depression levels of the participants in the experimental group decreased, and their psychological well-being increased. In another study, Atia and Sallam (2019) analyzed the effect of mindfulness technique training on depression, stress, and anxiety with the semi-experimental method. In this training, techniques such as mindful breathing, mindful eating were instructed to individuals diagnosed with depres-

sion. The pre-test and post-test findings revealed that mindfulness techniques led to a significant decrease in depression, stress and anxiety levels of the individuals. In another study conducted by Song and Lindquist (2015) where the impact of MBSR on anxiety, stress and depression was investigated, the participants were divided into experimental and control groups, and after 8 weeks long intervention program, it was determined that the anxiety and stress and depression levels of the participants decreased when compared to the control group and a significant increase was observed in their mindfulness levels.

In addition to experimental research, the impact of mindfulness on anxiety, stress and depression was investigated in descriptive studies in the literature. In a study by Medvedev et al. (2018), a high mindfulness trend was associated with low levels of depression, stress and anxiety. In a study conducted by LePera (2011), it was determined that anxiety, depression and substance abuse decreased as mindfulness level increased, while low mindfulness levels were associated with depression, anxiety, and insomnia in a study conducted by Schneider et al. (2019). Furthermore, in a study conducted by Valikhani et al. (2020) that aimed to determine the mechanism underlying the positive effects of mindfulness on psychopathologies, the mediating role of perceived stress in mindfulness, quality of life and mental health was investigated.

The findings demonstrated that mindfulness was effective on decreasing the perceived stress and increasing the quality of life and psychological health. In a study conducted by Zhong et al. (2019), the correlations between the ability to make sense of life and dispositional mindfulness and psychological symptoms were investigated in a group of cancer patients. The study findings demonstrated that there was a negative correlation between the level of dispositional mindfulness and psychological symptoms such as anxiety, depression, social dysfunction and confidence loss. The analysis of experimental and descriptive research findings strikingly demonstrated that mindfulness applications played a significant role in the treatment of psychological symptoms such as anxiety, stress and depression.

### **Relationship between depression and mindfulness**

The fact that mindfulness applications improve the well-being of individuals and reduce the negative effects of stressors suggest that these applications may be effective in the treatment of various psychopathologies. Thus, initially, the impact of mindfulness on chronic depression could be investigated. While chronic and recurrent depression negatively affects the functionality of individuals, these patients may be less likely to respond to treatment (Thase et al. 1994). In this context, MBCT is as an approach developed to prevent recurrent depression episodes (Teasdale et al. 1995). In a study conducted by Barnhofer et al. (2009) on individuals with chronic and recurrent depression, it was determined that depression levels decreased when MBCT was implemented with the participants. In another study conducted with individuals between 65-85 years of age and diagnosed with major depression, it was determined that after 4 weeks of mindfulness training, participants' depression symptoms significantly decreased and they retained these levels for 4 weeks after training (Ahmadpanah, 2017). A study conducted by Lönnberg et al. (2019) with pregnant women revealed that MBCT applications reduced the participants' perceived stress levels and prevented prenatal and postnatal depression. In another study, it was found that mindfulness-based group counseling reduced depression symptoms in women diagnosed with infertility (Kalhari et al. 2020). In another study,

Winnebeck et al. (2017) investigated the effectiveness of mindfulness training on depression symptoms among individuals with acute depression and a history of chronic-recurrent depression. The pre- and post-intervention data demonstrated an increase in mindfulness levels and a decrease in rumination and cognitive responsiveness levels of individuals who received mindfulness training. Thus, it was concluded that mindfulness-based interventions acted as a buffer against dysfunctional responses. In a study conducted by Anastasiades et al. (2017), it was concluded that depression had a mediating effect on the correlation between perceived stress and suicidal ideation and mindfulness reduced this mediating effect. Experimental studies conducted on mindfulness applications with various sample groups revealed improvement in depression symptoms. In addition to experimental studies, the positive effect of mindfulness applications on the treatment of depression symptoms was evidenced in descriptive studies as well.

### **Relationship between chronic pain and mindfulness**

In the related literature, the impact of mindfulness-based interventions on chronic pain has also been studied. In a study conducted with migraine and tension headache patients, certain subjects participated in MBSR, while others were included in the control group. The study findings demonstrated that the pain intensity perception of the participants in the MBSR group was significantly lower when compared to the control group (Bakhshani et al. 2015). Thus, it was reported that mindfulness-based interventions had a moderate effect on the treatment of pain disorders. It was suggested that these treatment procedures may be effective in the treatment of comorbid disorders with chronic pain such as anxiety and depression and would benefit by reducing unnecessary medication intake to relieve pain (Majeed and Sudak 2017). In a study conducted by Lee et al. (2017), the correlations between mindfulness, quality of life, pain, and psychological symptoms were investigated in individuals diagnosed with osteoarthritis. The findings demonstrated that there were positive correlations between mindfulness level and quality of life and self-efficacy and negative correlations between mindfulness level and depression and stress. Furthermore, it was determined that mindfulness had a regulatory role in the correlation between pain and stress. Another study by Xu et al. (2018) reported that individuals with a high level of mindfulness employed functional coping methods better in PTSD. Thus, recent studies demonstrated that mindfulness-based interventions had positive effects on chronic pain and comorbid depression and stress symptoms.

### **Relationship between eating disorders and mindfulness**

Psychological eating disorders are generally characterized by eating much more than daily nutritional requirements or excessive avoidance of eating (Godsey 2013). It was determined that mindfulness-based interventions had positive effects on individuals in the treatment of bulimia and anorexia nervosa with permanent and effective results, as well as healthy food consumption and balanced nutrition (Hepworth 2010). Furthermore, the destruction of cognitions associated with eating could lead to negative psychological consequences and low mindfulness levels (Masuda and Wendeell 2010). In a study conducted by Kristeller and Wolever (2011), the effects of mindfulness-based eating training on individuals diagnosed with binge eating were investigated. It was found that this training had significant contributions to issues such as controlling compulsive eating patterns associated with eating disorders, raising awareness in food selec-

tion, prevention of starting to eat, stopping eating, and regulation of satiety signals. In a descriptive study that supported this finding, the correlations between mindfulness and eating, binge eating, and moods were studied. It was concluded that as the eating attitude decreased with mindfulness, the binge eating pattern and the mood imbalances increased (Giannopoulou et al. 2020).

### **Relationship between borderline personality disorder and mindfulness**

In the context of personality disorders, borderline personality disorder, characterized by symptoms such as impulsive patterns, mood imbalances, and interpersonal problems (Leichsenring et al. 2011), is one of the disorders where the patients are likely to abandon treatment (Tull and Gratz 2012). It was reported that individuals with borderline personality disorder exhibit lower mindfulness traits when compared to those without this disorder and this may be an underlying factor for vulnerability (Baer et al. 2004). Furthermore, it was found that as the mindfulness level increased, the borderline personality disorder symptoms and suicidal ideation decreased in individuals (Sharey, 2016). Thus, it was suggested that mindfulness-based approaches may play an important role in the treatment of borderline personality disorder. In another study conducted by Soler et al. (2011), one group of participants diagnosed with borderline personality disorder received DDT-mindfulness training and another group received only general psychiatric guidance. The findings demonstrated that the participants in the first group exhibited higher improvement levels in attention and impulsivity dimensions when compared to the other group. In another study conducted with individuals with borderline personality disorder, it was found that those who received DDT exhibited a significant decrease in borderline personality disorder symptoms, depression and stress levels (Mitchell et al. 2019). Furthermore, in a study conducted by Farrés et al. (2019), a group of individuals with borderline personality disorder were included in the mindfulness module of DDT, and another group was included in the interpersonal activeness skill module of DDT. At the end of the 10-week program, it was determined that the emotional regulation of the individuals in the mindfulness module improved and their impulsivity levels decreased. Thus, it was reported that only the emotional regulation of the individuals in the interpersonal activeness skill module improved.

### **Relationship between schizophrenia and mindfulness**

It was observed in the literature that the impact of the mindfulness-based approach on schizophrenia was also investigated. The mindfulness-based interventions focused on how people diagnosed with schizophrenia relate to their psychotic experiences and how they react to them, rather than attempting to directly suppress their thought and belief processes (Dannahy et al. 2011). In a study by Langer et al. (2012), the adequacy and impact of mindfulness-based intervention on schizophrenia was tested. Unlike the control group, it was determined that the participants in the experimental group responded to stressful internal processes with mindfulness after the intervention. It was determined in the literature that mindfulness-based interventions played a protective role in the reduction of negative symptoms that lead to mood and behavioral problems in individuals with schizophrenia (Lee 2019) and in symptoms such as loss of working memory functions, and in the improvement of individual well-being (Langer et al. 2017). In a study conducted by Khoury et al. (2013), the effect of mindfulness on schizophrenia was

investigated in a meta-analysis. The findings demonstrated that mindfulness-based interventions were effective on the negative schizophrenia symptoms and positively affected the prognosis when used in combination with drug therapy.

### **Impact of mindfulness on children and adolescents**

Mindfulness training cannot have positive effects only on adults but also on children (Burke 2010). In a study by Liehr and Diaz (2010), the impact of mindfulness training on the depression and anxiety levels of minority children was investigated. In the above-mentioned mindfulness training, techniques such as mindful breathing and body scanning were implemented daily for two weeks. It was concluded that there was a decrease in depression and anxiety levels of the children. Zoogman et al. (2015) investigated the effect of mindfulness-based interventions on individuals under the age of 18 in a meta-analysis. Their analyses revealed that mindfulness interventions had positive effects. In another study conducted by Yang et al. (2019), the mediating role of mindfulness in the correlation between smartphone dependency and anxiety and depression was investigated in adolescents. The findings demonstrated that smart phone dependency was lower in adolescents with high mindfulness. Furthermore, it was revealed that mindfulness played a moderator role in the correlation between smartphone dependency and anxiety and depression and reduced the correlation.

### **Mindfulness studies in Turkey**

It could be observed that the number of studies on mindfulness have been increasing in Turkey in recent years. In this context, the impact of mindfulness on various psychopathologies and concepts such as emotional regulation and well-being has been studied. A study conducted by Kısmetoğlu (2019) aimed to analyze the correlations between mindfulness, emotional regulation and anxiety levels among adolescents. The study findings demonstrated that low mindfulness was associated with exacerbated anxiety levels and dysfunctional emotional regulation, while high mindfulness led to opposite findings. Another study conducted by Aydın (2019) aimed to investigate the impact of low or high mindfulness levels on perceived stress or somatization disorders. The study findings demonstrated that low mindfulness levels could increase both somatization disorders and perceived stress. In a study conducted by Şehidoğlu (2014), the correlation between mindfulness and problematic internet use was analyzed among 15-17 years old adolescents. The study findings demonstrated that there was a negative correlation between the increase in mindfulness levels and problematic internet use. In a study by Dönmez (2018) where the correlations between online game dependency, mindfulness and life satisfaction were investigated in 12-55 years old individuals, it was concluded that as the level of mindfulness increased, online game dependency decreased, and life satisfaction increased. Furthermore, it was determined in the study that mindfulness exhibited a partial intermediary role between the two variables. Another study on mobile phone dependency and mindfulness reported that mobile phone dependency and daily mobile phone use were lower among individuals with high mindfulness (Güner 2019). The general review of the above-mentioned study findings demonstrated that mindfulness was a significant intervention method in the reduction of various types of dependencies.

On another problem area, social phobia, Durusoy (2019) conducted a study with college students and concluded that the mindfulness levels of individuals with high social

anxiety were low. In another study on social anxiety, it was determined that social anxiety negatively affected and reduced mindfulness and life satisfaction among university students (Tuncer 2017). Furthermore, a study by Bayram (2019) reported that social appearance anxiety was associated with mindfulness. Furthermore, the impact of MBCT on obsessive-compulsive disorder symptoms was investigated by Gündoğan (2019). In the study, the comparison of the experimental group (who received the intervention) and the control group (did not receive the intervention) demonstrated that the OCD symptoms decreased among the experimental group members after the intervention and the decrease was retained four months after the intervention. These findings demonstrated that mindfulness could be effective on the control of anxiety in OCD, anxiety and associated disorders.

In a study conducted by Yavuz (2019) with pre-service teachers, it was suggested that mindfulness significantly contributed to the improvement of psychological resilience. Furthermore, a positive correlation was determined between spiritual well-being and mindfulness in that study. Yılmam (2019) concluded in a study conducted with adults that mindfulness was effective on the improvement of subjective well-being. Similar to these results, a study conducted by Özdoğan (2018) reported that mindfulness had an effect on optimism and life satisfaction levels, and as the level of mindfulness increased, other variables increased as well.

The national literature mostly includes descriptive studies on mindfulness. It was observed that the effects of mindfulness interventions were investigated in a limited number of quasi-experimental studies. In a study conducted by Yılmaz and Kavak (2015), individuals with schizophrenia were given mindfulness-based one-on-one psychoeducation in groups during 12 sessions, and the impact of the psychoeducation on internalized stigma was investigated. The findings demonstrated that the mindfulness-based psychoeducation program was effective on the reduction of internal stigma. In another study, the impact of MBCT on the stress, depression, anxiety and mindfulness dimensions of nursing students was investigated. The study findings demonstrated that the mindfulness and stress levels decreased in the experimental group when compared to the control group (Yüksel and Bahadır-Yılmaz 2019). In another study conducted with college students, participants with moderate and severe anxiety disorder were included in the study and the effect of MBCT was investigated. After the 8-session therapy program, there was a significant decrease in the anxiety scores of the participants (Demir 2017). Despite the predominance of the descriptive method in studies on mindfulness in Turkey, it was observed that the number of experimental studies has increased recently.

It was suggested that mindfulness-based interventions could be effective on several psychiatric diagnoses and may have an important role in the treatment of these disorders (Allen et al. 2006). The review of overall research findings demonstrated that mindfulness-based interventions could be effective on the increase of positive emotions and the reduction of negative emotions. Furthermore, it was a remarkable finding that mindfulness-based interventions had a wide range of effects, including psychological problems such as depression, anxiety disorders, and stress, and psychopathologies such as schizophrenia, OCD, borderline personality disorder, which are relatively difficult to treat. Furthermore, the fact that mindfulness-based interventions had positive effects on adults, children and adolescents demonstrated that mindfulness-based interventions had wide range of effects. Thus, the impact of mindfulness-based interventions on psychopa-



thologies with different symptoms and the correlation between mindfulness-based interventions and inter-diagnostic variables could be investigated.

## **Correlation between certain transdiagnostic variables and mindfulness**

Literature review revealed that the scope of the impact of mindfulness is quite wide. Thus, it was suggested that mindfulness has beneficial outcomes that include increasing the life satisfaction and decreasing stress (Brown and Ryan 2003). This could be explained by the effect of mindfulness training on most psychiatric transdiagnostic processes (Baer 2007). To better understand these common processes, the importance of using the transdiagnostic approach has been emphasized. Based on this approach, the emphasis is on the concepts that are not entirely specific to a disorder but that contribute to their sustenance by influencing the cognitive and behavioral processes in various disorders (Mansell et al. 2008). Thus, Carmondy et al. (2009) suggested that variables such as self-regulation, cognitive, behavioral and emotional flexibility may be effective on mindfulness mechanisms. The following section aimed to convey information about variables that were associated with mindfulness.

### **Emotion regulation**

One of the processes influenced by mindfulness was emotion regulation. Emotion regulation was described as a way to experience and reflect emotions (Gross 2002) and an effort spent to regulate emotions (Koole 2009). Previous study findings demonstrated that high mindfulness levels were associated with mood regulation, self-acceptance and positive affection (Jimenez et al. 2010). A study by Lutz et al. (2013) investigated the neurobiological effects of mindfulness training during emotional excitation. Various pictures were presented to the control and experimental groups and records were taken with functional magnetic resonance imaging. The findings demonstrated that individuals who participated in mindfulness training exhibited a decreased activation in cerebral areas associated with emotional processes after negative stimuli. This finding was explained by the fact that individuals with high awareness levels require lower regulatory resources to reduce emotional excitement. In another study, Demir and Gündoğan (2018) investigated the impact of MBCT on emotional regulation with the semi-experimental method. The study presented there was a significant difference between the pretest and posttest scores of the participants, reflecting a decrease in emotional regulation problems. The retention of this effect was also tested in that study, and the findings of the follow-up test conducted fifteen months after the application indicated that the participants retained their achievements in emotional regulation.

Avoidance of negative experiences, suppression or constantly dealing with emotional experiences, struggling with anxiety and obsessions are considered as the two extremes of emotional regulation problems (Hayes and Feldman 2004). Such dysfunctional methods were closely associated with psychological problems (Gross 2002). Mindfulness interventions play a role in the acceptance of both positive and negative emotions and reducing judgments (Kabat-Zinn 1990, Jimenes et al. 2010). It was also emphasized that mindfulness was effective on the perception of emotions more clearly and in restoring the emotional states of individuals (Hayes and Feldman 2004). In a study conducted with experience sampling method by Hill and Updegraff (2012), the participants were asked

to keep records about their emotional experiences six times a day for a week, and the correlations between the mindfulness levels and emotional differentiation and mood changes of the participants were determined. The study showed that mindfulness was associated with emotional differentiation (for both positive and negative emotions) and emotional difficulties such as lower emotional changes or emotional irregularities. Thus, mindfulness plays an important role in better recognition, identification and functioning of the emotions.

## **Rumination**

Another concept that could be associated with the mindfulness mechanism is rumination. Rumination could be defined as repetitive and uncontrollable thoughts about negative individual experiences (Ingram 1990). Rumination is described as self-attention due a loss or an unfairness; thus, a reflection of past negative experiences (Trapnell and Campbell 1999). A quantitative increase in rumination may lead to the self-identification of these thoughts and a framework where interpretation of the world is based on these thoughts. This may lead to a case where the individual remains in a constant cognitive process with reduced awareness about the environment (Ögel 2012). This trend may lead to the emergence of various psychopathologies such as depression and anxiety (Nolen-Hoeksema 2000). In fact, mindfulness involves emphasis on the present, not the past or the future, and individuals with mindfulness could focus on their thoughts and feelings as they experience those (Baer 2003). Furthermore, it was suggested that unconditional acceptance would lead to the acceptance of negative emotions, hence avoidance of these emotions, and as a result, the need for rumination is reduced (Thompson and Waltz 2008). While rumination entails unfit and strict self-concentration, cognitive flexibility is emphasized in mindfulness applications and aim to break the vicious cycles of rumination (Shapiro et al. 2006). On the other hand, in mindfulness applications, individuals are allowed to be effective in tackling rumination by suggesting them how they should be associated with their thoughts rather than changing their content (Borders et al. 2010).

It was observed in several studies that mindfulness-based interventions could control rumination (Raes and Williams 2010). In a study conducted by Labelle et al. (2010), the impact of MBSR on depression and rumination levels of cancer patients was investigated. The findings demonstrated that the depression and rumination of the experimental group significantly decreased when compared to the control group and the rumination variable exhibited an intermediary role between depression and mindfulness-based intervention program. In another study that supported these findings, it was determined that mindfulness led to a decrease in stress by reducing rumination (Cenkseven-Önder and Utkan 2018). In another study, mindfulness significantly predicted rumination and depression (Yiğit 2018). In general, mindfulness is found to reduce rumination by focusing on the moment, acceptance, and going with the flow of life; thereby, exerting a positive effect on the treatment of problems with high rumination such as depression, anxiety and stress.

## **Self-esteem**

Self-esteem was described as the self-attitude and self-observation of an individual (Rosenberg 1965). Self-esteem was also characterized by the strength of individuals to tackle

the problems they encounter and their self-value perceptions (Mruk 2006). It was suggested that high self-esteem was effective on success in various fields such as satisfaction in life, work and relationships (Leary and MacDonald 2003). Low self-esteem could be associated with anxiety and depression (Sowislo and Orth 2013). It was reported that there was a significant correlation between mindfulness and self-esteem (Randal et al. 2015), and mindfulness contributed to the development of self-esteem (Thompson and Waltz 2008). Furthermore, it was emphasized that self-esteem could be improved through well-organized interventions (Ree and Cragie 2007). Since mindfulness entails lower reactions to thoughts, it was reported that individuals with high mindfulness were less affected by strict self-criticism and negative thoughts caused by low self-esteem (Baer et al. 2006). In brief, it was suggested that individuals with low self-esteem may have negative beliefs and prejudices about themselves, and mindfulness could help overcome these beliefs (Pepping et al. 2013). Furthermore, another property of mindfulness is no-judgmentalism. Thus, it was argued that being open to various thoughts and emotions would contribute to self-esteem and would decrease the possibility of self-judgment, increasing the self-esteem (Pepping et al. 2013).

The correlation between mindfulness and self-esteem was determined in various studies. In a study by Biegel et al. (2009), it was found that self-esteem of the participants significantly improved after 8 weeks of MBSR. A study by Bajaj et al. (2016) reported that mindfulness indirectly affected depression and anxiety through self-esteem. Another study that supported these findings was conducted by Rasmussen and Pidgeon (2011). In that study, it was reported that mindfulness was associated with high self-esteem and low social anxiety, and self-esteem had a mediating role in the correlation between mindfulness and social anxiety. Other studies reported the positive effects of mindfulness on life satisfaction by increasing self-esteem (Pepping et al. 2013). Thus, it was suggested that mindfulness could positively affect the individual's self-esteem and self-sufficiency perceptions. Therefore, individuals could be more successful in the control of several psychopathologies.

### **Intolerance for uncertainty**

Intolerance for uncertainty is a concept that reflects an individual's tendency to exhibit negative emotional, cognitive and behavioral reactions towards uncertainties (Buhr and Dugas 2009). It was reported that one of the processes affected by mindfulness was intolerance for uncertainty. On the correlation between mindfulness and intolerance for uncertainty, it was reported that mindfulness could contribute to considering the experiences less threatening; and thus, individuals could improve their intolerance for uncertainty (Kraemer et al. 2016). Mindfulness approach proposes that even false beliefs should be tackled with care and without judgment. This approach could also explain the positive effect of mindfulness on anxiety disorders (Kim et al. 2016). Furthermore, mindfulness facilitates the regulation of the time frame that the individual focused on, reducing the current anxiety, instead of worrying about the uncertainty of the future (Jha et al. 2007).

Intolerance for uncertainty may also be a mediator in the correlations between various psychopathologies (Gentes and Ruscio 2011). Particularly the anxiety disorders may be closely associated with intolerance for uncertainty (Mahoney and McEvoy 2012). In a study that investigated the impact of MBCT on panic symptoms, depression and intol-

erance for uncertainty in individuals with panic disorder, it was observed that there was a decrease in depression, panic and intolerance levels in the participants after the intervention. In the same study, there was a significant decrease in intolerance for uncertainty even after depression scores were under control (Kim et al. 2016). Kraemer et al. (2016) investigated the mechanisms through which the mindfulness-based interventions affected health anxiety. The findings emphasized the mediating role of intolerance for uncertainty and as mindfulness levels increased, intolerance for uncertainty and health anxiety levels decreased as well.

In the end, the individual who could remain at the present moment with mindfulness would display a healthier attitude towards possible uncertainties of the future. This attitude would possibly lead to a buffer zone between an individual and her or his concerns. Thus, mindfulness is expected to contribute to the achievement of positive outcomes, especially in the treatment of anxiety disorders.

## Conclusion

Although the notion of mindfulness dates back 2500 years, the interest in the concept has increased during recent years (Kang and Whittingham 2010). Thus, mindfulness-based approaches were observed in several fields. The wide impact of mindfulness could be observed in sports, especially among NBA athletes, politicians and significant industrial corporations such as P&G (Atalay 2019). In the concept of conscious awareness, three components, mainly attention, intent and attitude, were emphasized. In mindfulness, it is necessary to observe the moment with curiosity (Bishop et al. 2004), without classifying the outcomes of the present moment as good or bad (Kabat-Zinn 2012), and by accepting them with compassion and affection (Marlatt and Kristeller 1999). Furthermore, mindfulness skills were scrutinized based on 7 topics of non-judgmentalism, patience, beginner's mind, confidence, avoiding ambition, acceptance, and going with the flow (Kabat-Zinn 1990).

Mindfulness skills and mindfulness-based interventions could be effective in the treatment of several psychopathologies (Allen et al. 2006). Thus, studies on the topic demonstrated that mindfulness had significant contributions to the treatment of anxiety and substance abuse (LePera 2011), chronic-recurrent depression (Winnebeck et al. 2017), borderline personality disorder (Soler et al. 2011), eating disorders (Kristeller and Wolever 2011) and schizophrenia (Lecomte et al. 2013). The mechanism behind the impact of mindfulness training on the treatment of various diagnoses could be due to its effect on conventional processes in these diagnoses (Baer 2007). Previous studies demonstrated that mindfulness had positive effects on transdiagnostic variables such as emotional regulation (Hill and Updegraff 2012), rumination (Raes & Williams, 2010), self-esteem (Bajaj et al. 2016), and intolerance for uncertainty (Kraemer et al. 2016).

Previous studies developed several therapeutic approaches based on mindfulness due to its beneficial effects on psychopathologies. These are called third-wave cognitive-behavioral therapies (Hayes 2004). Significant standardized treatment approaches such as MBSR (Kabat-Zinn 1982), MBCT (Teasdale et al. 1995), ACT (Hayes and Wilson 1994), and DBT (Linehan 1993) were developed to improve mindfulness skills. In recent years, mindfulness became a popular topic in both national and international literature. In general, studies emphasized the significance of mindfulness-based therapies. Thus, it is suggested that dissemination and promotion of mindfulness interventions in

national literature could have significant contributions to the psychology of the individuals. Furthermore, future national research on mindfulness interventions could contribute to a better understanding of the effects of mindfulness on our culture. Besides, to better understand the underlying mechanisms of mindfulness, it could be suggested that future studies on the correlation between mindfulness and transdiagnostic variables would have significant effects on both national and international literature.

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