

THE MEDIATING ROLE OF COGNITIVE DISTORTIONS IN THE RELATIONSHIP
BETWEEN EMOTIONAL REACTIVITY AND EMOTION REGULATION

by

Ayşegül Teyfur

Submitted to Graduate School of Educational Sciences
in Partial Fulfillment of the Requirements
for the Degree of Master of Guidance and Psychological Counselling

YEDİTEPE UNIVERSITY

2023

THE MEDIATING ROLE OF COGNITIVE DISTORTIONS IN THE RELATIONSHIP
BETWEEN EMOTIONAL REACTIVITY AND EMOTION REGULATION

APPROVED BY:

Dr. Öğr. Üyesi Burcu Aykaç

(Thesis Supervisor)

.....

Dr.Öğr. Üyesi Serdar Körük

.....

Dr.Öğr. Üyesi Naif Ergün

.....

DATE OF APPROVAL: 06 / 06 / 2023

I hereby declare that all information in this study has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and rules that are not original to this work.

Ayşegül Teyfur

Signature

ACKNOWLEDGEMENT

First, I would like to express my gratitude to my supervisor, Dr. Burcu Aykaç for the best guidance, support and knowledge. I consider myself lucky to have the opportunity to work with you. I would like to express my gratitude to my dear friends their support during data collection. I also very grateful to them, they always supported me emotionally with their great friendship.

I would like to heartfelt thank to my family; my mother, my brother and my sister for their support and understanding.



This thesis is dedicated to my father.

ABSTRACT

THE MEDIATING ROLE OF COGNITIVE DISTORTIONS IN THE RELATIONSHIP BETWEEN EMOTIONAL REACTIVITY AND EMOTION REGULATION

This study aims to examine the mediating role of cognitive distortions in the relationship between emotional reactivity and emotion regulation in adults (18-65 years old) who live in Turkey. The study consists of 339 participants ($N_{\text{female}} = 210$, $N_{\text{male}} = 94$, $N_{\text{others}} = 35$). The data of the research was collected through the Demographic Information Form (DIF), Emotional Reactivity Scale (ERS), Difficulty in Emotion Regulation-Short Form (DERS-16), and Cognitive Distortion Scale (CDS). In this study, the correlational model was used. In the data analysis phase, independent sample t-test and ANOVA were used to examine emotional reactivity, which is the dependent variable of the study, in terms of various socio-demographic variables; the relationship between the variables was tested with the Pearson Correlation analysis. Hayes Process (Model 4) mediating variable analysis was conducted to examine the mediating role of cognitive distortions in the relationship between emotional reactivity and emotion regulation. The analysis of the obtained data was performed using the SPSS PROCESS 3.5 version of the SPSS statistical program. When the findings were examined, it was found that the total emotional reactivity scores of the participants differed according to gender, age, and parental attitudes, but there was no difference according to the income variable. A positive correlation was found between emotional reactivity, difficulty in emotion regulation, and cognitive distortion scales, and cognitive distortions were found to partially mediate the relationship between emotional reactivity and emotion regulation.

Key Words: Emotional reactivity, Emotional regulation, Cognitive distortion

ÖZET

DUYGUSAL TEPKİSELLİK İLE DUYGU DÜZENLEME ARASINDAKİ İLİŞKİDE BİLİŞSEL ÇARPITMALARIN ARACI ROLÜNÜN İNCELENMESİ

Bu araştırmanın amacı, Türkiye'de yaşayan yetişkinlerde (18-65 yaş arası), duygusal tepkisellik ile duygu düzenleme arasındaki ilişkide bilişsel çarpıtmaların aracı rolünü incelemektir. Araştırma 210 kadın, 94 erkek ve 35 diğer olmak üzere toplam 339 katılımcı ile gerçekleştirilmiştir ($N_{kadın} = 210$, $N_{erkek} = 94$, $N_{diğer} = 35$). Çalışmada veri toplama aracı olarak "Demografik Bilgi Formu", "Duygusal Tepkisellik Ölçeği", "Duygu Düzenlemesi Güçlükleri Ölçeği - Kısa Formu" ve "Bilişsel Çarpıtmalar Ölçeği" kullanılmıştır. Bu çalışmada ilişkisel tarama yöntemi kullanılmıştır. Verilerin analizi aşamasında, araştırmanın bağımlı değişkeni olan duygusal tepkiselliği çeşitli sosyo demografik değişkenler açısından incelemek için bağımsız örneklem t-testi ile ANOVA kullanılmış; değişkenler arasındaki ilişki Pearson Korelasyon analizi ile test edilmiştir. Duygusal tepkisellik ile duygu düzenleme arasındaki ilişkide bilişsel çarpıtmaların aracılık rolünü incelemek amacıyla aracı değişken analizi gerçekleştirilmiştir. Elde edilen verilerin analizi SPSS istatistik programının SPSS PROCESS 3.5 versiyonu kullanılarak yapılmıştır. Elde edilen bulgular incelendiğinde katılımcıların duygusal tepkisellik toplam puanlarının cinsiyet, yaş ve ebeveyn tutumlarına göre farklılaştığı, ancak gelir değişkenine göre herhangi bir fark olmadığı bulunmuştur. Duygusal tepkisellik, duygu düzenleme güçlüğü ve bilişsel çarpıtma ölçekleri arasında pozitif korelasyon saptanmış, bilişsel çarpıtmaların duygusal tepkisellik ile duygu düzenleme arasındaki ilişkiye kısmi aracılık ettiği bulunmuştur.

Anahtar Kelimeler: Duygusal tepkisellik, Duygu düzenleme, Bilişsel çarpıtmalar

TABLE OF CONTENT

ACKNOWLEDGEMENT	iv
ABSTRACT	v
ÖZET	vi
LIST OF FIGURES	x
LIST OF TABLES	xi
1.INTRODUCTION.....	1
1.1. Problem Statement.....	1
1.2. Purpose of the Study.....	8
1.3. Importance of the Study.....	9
1.4. Assumptions	10
1.5. Limitations.....	11
1.6. Definitions	11
2. LITERATURE REVIEW.....	13
2.1. Emotional Reactivity	13
2.1.1. <i>Emotional Reactivity in Childhood</i>	15
2.1.2. <i>Emotional Reactivity in Adolescence</i>	16
2.2. Emotion Regulation.....	17
2.3. Cognitive Distortions.....	20
2.4. Relationship Between Emotional Reactivity and Emotion Regulation.....	24
2.5. Relationship Between Emotional Reactivity and Cognitive Distortions.....	27

2.6. Relationship Between Emotion Regulation and Cognitive Distortions	30
2.7. Relationship Between Emotional Reactivity, Emotional Reactivity and Cognitive Distortions	32
3. METHOD.....	36
3.1. Research Design	36
3.2. Sample	36
3.3. Assessment Tools	39
3.3.1. <i>Demographic Information Form</i>	39
3.3.2. <i>Emotional Reactivity Scale</i>	40
3.3.3. <i>Difficulty in Emotion Regulation Scale-Short Form</i>	41
3.3.4. <i>Cognitive Distortion Scale</i>	43
3.4. Data Collection Process	44
3.5. Analysis of the Data.....	45
4. FINDINGS	49
4.1. Descriptive Analysis of Outcome and Associational Measures	49
4.1.1. <i>ERS Score by Gender</i>	49
4.1.2. <i>ERS Score by Age</i>	51
4.1.3. <i>ERS Score by Income Level</i>	53
4.1.4. <i>ERS Score by Parental Attitudes</i>	55
4.1.5. <i>Corelation of ERSTR, CDS, and DERSTR Scales</i>	59
4.2. The Mediating Role of Cognitive Distortions	62
5. RESULTS.....	66

6. DISCUSSION and SUGGESTION	67
6.1. Discussion.....	67
6.2. Suggestion.....	84
6.2.1. <i>Suggestion for Researchers</i>	84
6.2.2. <i>Suggestion forPractioners</i>	85
REFFERENCES.....	86
APPENDICES	108



LIST OF FIGURES

Figure 1. Mediation Analysis Model

Figure 2. The Mediating Role of Cognitive Distortions



LIST OF TABLES

Table 1. Characteristics of the Sample	37
Table 2. Perceptions of parental attitudes	37
Tables 3. Comparison of parental attitude perception: mother vs. father	38
Table 4. Skewness and kurtosis of the ERSTR and its by independent variables.....	46
Table 5. t- Test findings and descriptive statistics for ERSTR and its subscales by gender ..	50
Table 6. One-way ANOVA findings and descriptive statistics for ERSTR and its subscales by age	52
Tables 7. Findings Kruskal-Wallis H Test for ERSTR and its subscales by income level	54
Table 8. One-way ANOVA findingsfor ERSTR and its subscales by perceived maternal parenting.....	57
Table 9. One-way ANOVA findings for ERSTR and its subscales by perceived paternal parenting	59
Table 10. Pearson correlations between ERSTR, CDSTR, and DERSTR and subscales	61
Table 11. Mediating Variables Analysis	63

1. INTRODUCTION

1.1.Problem Statement

Emotion, indicated and behaviour that constitute the mental structure of human beings have been a subject of curiosity from past to present. Research in the field of psychology started with the behaviourist approach focusing on observable human behaviour, continued with the cognitive approach, examined cognition, and then came to the present day with emotion-oriented studies. Research has shown that emotion, thought and behaviour, which constitutes the mental structure, affect each other.

Emotions, and the structure of emotions which are an important part of the human psychological structure, how they are formed, and in what ways they affect the person have been one of the most remarkable topics of recent years. When we look at emotion studies, which have an important place in psychology, it is seen that important scientific research has been conducted to understand the structure of emotion (Ekman & Davidson, 1994). Despite these researches and analyses, not all questions about emotion have been answered yet. The fact that emotions are diverse, vary according to the experiences of each individual, and are effective in all areas of human life, increases the interest in this field and makes it the subject of psychopathological research (Nock et al., 2008).

Given the central role that emotions play in how we feel and how we react, it is not surprising that they have become the target of research (Ochsner & Gross, 2005). Emotions are the most important experiences we develop in the face of life-long events. These experiences can be negative, such as fear, sadness, anger, or anxiety, or positive, such as peace, serenity, or happiness.

Emotions that have been researched about the structure, have been discussed many times as a concept and different definitions have been made. The most general concept of

emotion is that emotion is the feelings that are indicated, and the actions that result from the thoughts that arise from the feelings. (Goleman, 1996; Ledoux, 2006).

The first studies on emotion were related to depressive emotions and anxiety, which are frequently seen in mood disorders, and depression and anxiety were investigated by many researchers (e.g., Beck et al., 1961; Spielberger, 1983).

Later research has focused on the lack of regulation of emotions and the resulting problems (e.g., Cole et al., 1994; Gross & John, 2003; Southam-Gerow et al., 2000). In particular, pathology in mood disorders (Davidson et al., 2002; Silk et al., 2003), anxiety disorders (Mennin et al., 2005; Suveg & Zeman, 2004), eating disorders (Safer et al., 2001), personality disorders (Conklin et al., 2006; Levine et al., 1997; Linehan, 1993; Yen et al., 2002) and self-destructive emotions and indicated disorders have been investigated (Nock & Prinstein, 2004, 2005).

Emotions have been included in mental health research in recent years because there is data that many psychopathologies are caused by emotions. According to Cole (2016), psychopathology arising from maladaptive functioning in individuals' relations with the environment is mostly caused by emotion processing and emotional dysfunction.

Emotions are experienced in terms of both interpersonal relationships and mental health, the intensity, expression, and regulation of these emotions are important. Ölçer et al. (2010) stated that emotions are an important tool in communicating people's expectations to their environment. Seçer et al. (2013) also stated that emotions are important qualities that affect human life. They stated that emotional reactivity may be at the root of mood disorders such as depression, anxiety, and many other psychological disorders. With the concept of emotion, new concepts and situations have been included in the literature. The concepts of emotional reactivity and emotion regulation, which are also the subject of this study, are at the top of these. Emotional reactivity as a concept has been the subject of research after emotion

regulation, and according to Nock (2008), it has not been researched as much as emotion regulation. Emotional reactivity is explained as the emotions that arise as a result of interpersonal relationships, the intensity of these emotions, and the reactions to these intense emotions (Nock et al., 2008). It refers to the emotions that people feel according to their personality traits in their relationships with the social environment in daily life and the reactions shown in response to these emotions (Yurdakul & Üner, 2015).

Another definition of emotional reactivity is that it is accepted as one of the factors that determine the individual's readiness for emotional experiences, predisposition to emotion, intensity, and duration of emotion (Davidson, 1998; Gohm & Clore, 2000).

Emotions are experienced as negative or positive. As a result of these experiences, the reactions to stimuli are also shaped as negative or positive. These reactions depending on the experiences are explained as the concept of emotional reactivity.

Although emotional reactivity is mostly considered as a concept related to negative emotions, reactivity is also possible for positive emotions (Spinrad et al., 2004). If the person's positive reactions are increased, positive emotions such as love, respect, and trust will increase, and if there is a negative reactivity, there will be a tendency to show negative emotions such as insecurity and helplessness (Wentzel, 1998). In a study with 143 participants, it was observed that participants with high emotional reactivity scores had difficulty in expressing and experiencing love, and had no problem expressing sadness and anger (Polanco-Roman et al., 2018).

Emotional reactions can be positive or negative according to their experienced status, and they can be low, medium, and high levels according to their intensity. A person can give low, moderate, or intense reactions in response to stimuli. This situation shows that emotional reactivity has different dimensions. Nock et al. (2008) evaluated the concept of emotional reactivity through 3 dimensions. These are emotional sensitivity, emotional intensity, and

emotional continuity. In which situations the emotional reactions of the individual will occur shows the emotional sensitivity dimension; the intensity of the reactions shows the emotional intensity dimension; and how long the person maintains the reaction shows the emotional continuity dimension.

One of the variables addressed in the context of the research is the concept of emotion regulation. Emotion regulation refers to when, how, and under what conditions people experience their emotional experiences, the process of processing emotions, and the ability to handle and change one's emotions (Cole et al., 2004; Gross, 1998; Thompson, 1994). Emotion regulation can also be considered as the process of preventing emotional reactions to events or stimuli, refocusing attention, and reconstructing cognitive conditions (Suri et al., 2013). Emotion regulation is also defined as what to do about active emotions, not which emotions to activate (Cole et al., 2004).

Gross (1998) considered the emotion regulation process as 5 stages. These are; the selection of the environment, organization of the environment, the concentration of attention, cognitive change, and response adaptation. Inappropriate or inappropriate regulation of emotions can negatively affect emotion regulation processes and lead to emotion dysregulation. Difficulties in emotion regulation can negatively affect the relationship of individuals with others in social life and reduce the quality of life (Gross & Munoz, 1995).

In the related literature, studies revealing the relationship between emotional reactivity and an individual's emotion regulation skills were found (Retz et al., 2012). Cook et al. (2017) stated that emotional reactivity is one of the indicators of an individual's successful regulation of emotions in maladaptive experiences. While effective emotion regulation behaviour can reduce emotional reactivity in worrying situations, the inability to regulate emotions can lead to inappropriate reactions. In addition, difficulties with emotion regulation are accepted as the basic mechanism of mood disorders such as anxiety disorders. Therefore, many clinical

approaches focus on increasing the use of emotion regulation to keep emotional reactivity under control (Goldin et al., 2009).

Emotion regulation helps individuals to have control over their emotions and prevent negative behavioural reactions. In this respect, emotion regulation is an effective factor in the level of emotional reactivity. Low emotion regulation and high emotional reactivity are seen as a factor that increases the risk of psychological symptoms in individuals. Many psychopathologies occur as a result of unsuccessful emotional reactions to personal distress (Davidson, 2000).

According to Thompson (1991), emotional reactivity affects one's ability to manage one's emotions. Rosen et al. (2012) also stated that positive emotion regulation skills prevent exaggerated and destructive experiences of emotions, thus preventing emotional reactivity. In another study conducted with adolescents, emotion regulation skills were found to help adolescents better manage their emotional reactions (Chorpita & Weisz, 2009).

The other variable in the study was cognitive distortions. The concept of cognitive distortion entered the literature with cognitive theory and has maintained its place in the field by combining it with different disciplines. The cognitive approach, which has been the focus of psychology for many years, started with the investigation of cognition. According to Beck's model, cognitions are responsible for psychological disorders. Beck et al. (1979) started their research on cognitive theory with depression and then expanded their research to include other psychopathologies. After a while, behavioural therapy and cognitive therapy were combined to form the Cognitive Behavioural Therapy Model.

According to the Cognitive Model, there are cognitive structures responsible for the formation of intense negative emotional states. Beck defines cognitive structure as a cognitive triad, cognitive schemas, cognitive distortions, and automatic thoughts (Beck, 1976;

Pössel & Thomas, 2011). The cognitive triad is the individual's negative evaluation of himself, his environment, and the future. Depression is the basic pattern seen.

Cognitive distortions, also called cognitive errors, are systematic logic errors in an individual's thoughts (Fair, 1986; Murad, 2002). Logic errors in the information processing process are conceptualized as cognitive distortions ((Beck, 2001). The individual evaluates himself/herself and his/her environment unrealistically and experiences emotional, intellectual, and behavioural problems due to this evaluation.

According to cognitive theory, cognition is considered as a nested structure. While the schema is the innermost structure, the part of the schemas reflected in consciousness is called automatic thoughts. Schemas are lifelong cognitive patterns about oneself and one's environment, including negative experiences, emotions, body sensations, and thoughts that develop from the early stages of life (Young et al., 2003). Beck (2015) defines cognitive schemas as structures that are formed in childhood, are rigid, and take time to change. The structures between the schema and automatic thoughts that cause automatic thoughts to occur are cognitive distortions. Beck (1976) states that cognitive distortions occur when the cognitive schema is negative, and as a result of cognitive distortions, cognitive triads, and automatic thoughts emerge. Beck named unrealistic, distorted thoughts as automatic thoughts, while Ellis named them as irrational beliefs (Leahey, 2007). According to cognitive theorists, automatic thoughts that arise in stressful and intense pressure situations differentiate interpersonal interaction and form the basis of psychological disorders. Beck's views on cognitive distortions are supported by many researchers such as Griffin (2003) and Reavis (2003) (Kaslow et al., 2000; Weems et al., 2001).

Typical cognitive distortions, which can also be called cognitive errors, can be shown as should, should-style thinking, arbitrary inference, selective perception (filtering), overgeneralization, and personalization (Cole et al., 1998).

According to the cognitive approach, negative thoughts evoke negative emotions. Clinical research has shown that these negative emotions cause some psychopathologies. In particular, the cognitive approach has investigated the relationship of disorders such as depression and anxiety with emotions and thoughts. In many studies, data supporting each other have been found and it has been shown that emotions and thoughts affect each other and these affect each other and these affect the basis of some pathologies. The relationship between cognition and emotions has been the determining factor for the other variable of this research, cognitive distortion.

One of the most common effects of cognitive distortion is that it causes people to have false beliefs about themselves, others, and the world (Ma, & Teasdale, 2004; Aldoa et al, 2010; Gross, 1998). Another effect is that it causes an increase in negative emotions (Seligman, 2012). It has been observed that negative thoughts and increased negative emotions caused by cognitive distortions cause people to have difficulty in the process of regulating their emotions and emotional reactions (Peale, 2006; Breuning, 2017). There are studies showing that cognitive distortion causes impairment in emotion regulation skills (Ma, & Teasdale, 2004; Aldoa et al., 2010; Gross, 1998). Ellis (1980) emphasized that cognitive distortion in the emotion regulation process may affect emotion regulation skills and may harm the mental health of the person.

In a study conducted by Denson et al. (2009), it was observed that cognitive distortion may make emotion regulation difficult by increasing anger and aggressive behaviours. In addition, it was observed that individuals who have difficulty in emotion regulation tend to continue to show unwanted emotions despite their efforts (Kring & Werner 2004). Shapero et al. (2016) also suggested that increased negative evaluations as a result of stressful experiences and difficulties in coping with these evaluations may be associated with high emotional reactivity.

In parallel, when the relationship between emotional reactivity and cognitive distortion is examined, Gross and John (2003) state that cognitive distortion can cause emotional reactions. At the same time, it was stated that emotional reactions can cause a person to give different reactions at physiological, behavioural, and cognitive levels (Levenson, 2014).

Bolat (2005) attributed the emotional problems that people experience or may experience to their irrational thoughts and stated that there are significant relationships between anger, guilt, useless and irrational thoughts, and negative emotional reactions.

Research shows that cognitive distortions are an inhibiting factor in controlling emotional reactions. For example, when a person perceives an event in an overly negative way, this situation triggers cognitive distortions, weakens the ability to regulate emotions, and may cause emotional reactions (Tugade et al., 2007).

Studies in the literature have shown that emotional reactivity, emotion regulation, and cognitive distortions are interrelated and affect each other (e.g. Gross, 1998; Ma, & Teasdale, 2004; Peale, 2006; Aldoa et al, 2010; Breuning, 2017; Cengiz, 2017; Yumuşak, 2019). It is indicated that this relationship will be better understood with the mediating role of cognitive distortions in this relationship.

1.2.Purpose of the Study

Studies in the field of psychology started with behaviourist theory and continued with cognitive theory. The cognitive model examined the relationship between mood disorders such as depression and anxiety and cognitive processes. As a result of these analyses, it has been argued that cognitive processes are effective on the basis of psychological disorders.

In recent years, emotions have been given a lot of attention in mental health research, and the view that emotions are the basis of psychopathologies has become stronger. Emotion has been tried to be investigated in every aspect, and in this context, the concepts of emotion regulation and emotional reactivity have come to the fore. It has been found that emotion

dysregulation negatively affects functionality and causes high emotional reactions. At the same time, it has been observed that there are studies examining the relationship between cognitive distortions and emotional reactivity, and emotion regulation.

In this context, the main purpose of this study is to examine the mediating role of cognitive distortions in the relationship between emotional reactivity and emotion regulation in adulthood. To achieve the main purpose, the following questions were sought to be answered.

1. Do the emotional reactivity levels of adults significantly differ in terms of various demographic variables such as gender, age, economic status, and perceived parental attitude?
2. Is there a significant relationship between emotional reactivity and emotion regulation?
3. Is there a significant relationship between emotional reactivity and cognitive distortions?
4. Is there a significant relationship between emotion regulation and cognitive distortions?
5. Is there a mediating role of cognitive distortions in the relationship between emotional reactivity and emotion regulation?

1.3.Importance of the Study

The concept of emotional reactivity has entered the literature in recent years and it has been emphasized that it has not been researched as much as emotion regulation (Nock, 2008). When the literature is examined, studies on emotional reactivity were generally conducted in childhood and adolescence periods, and also its relationship with anxiety, self-harm, and suicidal behaviour was investigated (e.g. Carth et al, 2010; Zerkowitz et al, 2016; Wald, 2016; Wald et al., 2017; Miller et al., 2019; Hasking et al., 2020; Liu et al., 2020).

Studies examining the relationship between the concept of emotional reactivity and different variables such as emotion regulation and cognitive distortions have been found (e.g., Lavi et al., 2019; Miller et al., 2019). There are also studies examining the relationship between cognitive distortions and emotion regulation. In a 2006 study, it was observed that false beliefs which developed with cognitive distortions, may reduce the ability to regulate emotional reactions and cause emotion dysregulation (Peale, 2006). These and similar studies have shown that emotional reactivity, emotion regulation, and cognitive distortions are related to each other.

In this context, the aim of this study is to examine the mediating role of cognitive distortions in the relationship between emotional reactivity and emotion regulation in adults who live in Turkey. Upon reviewing the relevant literature, it was found that while research on the relationship between emotional reactivity and emotion regulation has been conducted, there is a lack of sufficient studies on the mediating role of cognitive distortions in this relationship. Furthermore, given that the concept of emotional reactivity is relatively new and has mainly been studied in the adolescent population, there is a dearth of studies in both Turkish and other literature, and a gap in the field has been identified. Therefore, it is indicated that examining the mediating role of cognitive distortions in the relationship between emotional reactivity and emotion regulation will contribute to the literature. Additionally, this research aims to assist mental health professionals in the field and contribute to academic research in this area.

1.4.Assumptions of the Study

The scales used in the research are valid and reliable in terms of the characteristics they measure, and it is assumed that the participants sincerely reflect their true feelings and thoughts while answering the scales. The statistics used in the study are consistent with the variables in the study and the analyses performed.

1.5.Limitations of the Study

This research is limited to the sample group consisting of participants living within the borders of Turkey and the qualities measured by the scales, and online data collection process.

1.6.Definitions

Below are some definitions necessary for the research.

Emotional Reactivity: Emotional reactivity is explained as the emotions that arise as a result of interpersonal relationships, the intensity of these emotions and the reactions to these intense emotions (Nock et al., 2008). In another definition, it refers to the emotions that people feel according to their personality traits in their relationships with the social environment in daily life and the reactions shown in response to these emotions (Yurdakul & Üner, 2015).

Emotion Regulation: Emotion regulation involves the conscious or unconscious, automatic or controlled management of one or more components of the emotional response (Gross, 1998, 1999). According to Gratz and Roemer (2004), emotion regulation consists of a multidimensional structure, but basically, four main dimensions are mentioned. These dimensions are defined as; recognizing, understanding, and accepting the emotion; volunteering to access functional strategies to be used in adjusting the intensity and duration of the emotional response; volunteering to experience the emotional stress encountered in achieving the goal; and the ability to engage in goal-oriented behaviour in stressful situations.

Cognitive Distortions: Cognitive distortions explain the unrealistic evaluations, automatic thoughts and emotional, intellectual, and behavioural problems experienced by the individual in perceiving himself/herself and the outside world (Fair, 1986). According to the cognitive behavioural model, people's emotions, thoughts and behaviours are related to how they evaluate what they experience (Beck, 2001). This evaluation process is an automatic process that occurs spontaneously. Systematic errors leading to erroneous assumptions and

misunderstandings within this automatic process are defined as cognitive distortion (Corey, 2008).



2. LITERATURE REVIEW

The psychological structure of a human being, which is a biopsychosocial being, consists of emotion, thought, and behaviour dimensions. These structures interacting with each other and how they interact have been the subject of many studies. The fact that there are still unanswered questions about this interaction ensures that the interest in the subject continues. Accordingly, the subject of this study is to examine the mediating role of cognitive distortions in the relationship between emotional reactivity and emotion regulation.

2.1.Emotional Reactivity

Emotional reactivity is explained as the emotions that arise as a result of interpersonal relationships, the intensity of these emotions and the reactions to these intense emotions (Nock et al., 2008). Gross (1998) defines emotional reactivity as automatic and immediate responses to emotional stimuli.

Similarly, Lazarus (1991) defines emotional reactivity as sudden and intense emotional reactions triggered by external stimuli. In another definition, it refers to the emotions that individuals feel in daily life and social relationships according to their personality traits and the reactions shown in response to these emotions (Yurdakul & Üner, 2015).

Emotional reactivity is an important concept to understand how people experience and manage their emotional world (Mendoza-Denton & Ayduk, 2014). Low emotional reactivity may mean that the person reacts less to emotional stimuli. In this case, the person may exhibit a more rational and intellectual approach to emotional stimuli (Gross, 2015). According to Thompson, the importance of emotional responsiveness is that it can help people increase their ability to manage their emotional experiences and develop strategies to improve their psychological health (Thompson, 1994).

Research on emotional reactivity covers different areas such as mood disorders and interpersonal relationships. For example, many studies show that emotional reactivity is associated with psychological problems such as anxiety and depression (Gross, 2015). On the other hand, it is also stated that emotional reactivity has a significant effect on interpersonal relationships. In a study conducted by Gross and John (2003), it was shown how individuals' emotional reactivity affects how they behave in their relationships with others and how it affects the quality of these relationships. In a parallel study conducted by Webb et al. (2012), a high level of emotional reactivity was shown to play a negative role in interpersonal communication.

In a study conducted in 2014, the role of emotional reactivity in romantic relationships was analyzed. The findings showed that high emotional reactivity is associated with more conflict and stress in romantic relationships and therefore reduces relationship quality (Lavner et al., 2014).

The effects of emotional reactivity are not limited to interpersonal relationships. In addition to these, there are also studies on the effects of emotional reactivity on social psychology and personality psychology. For example, in a study conducted by Ayduk et al. (2007), the effect of emotional reactivity on personality traits was analyzed. In this study, it was observed that individuals with high emotional reactivity had lower self-esteem and self-confidence than individuals with low emotional reactivity. Similarly, Mendoza-Denton and Ayduk (2014) found that emotional reactivity is associated with defense mechanisms such as self-inhibition. It was also shown in the study that emotional reactivity affects attitudes towards one's achievements and self-confidence.

In a study examining the relationship between emotional reactivity and social phobia, it was found that high emotional reactivity increased social phobia symptoms and therefore

increased social anxiety (Moscovitch et al., 2005). These and similar studies have shown that emotional reactivity is related to and affected by different variables.

Emotional reactivity is also affected by the developmental process. In terms of developmental psychology, development takes place in infancy, childhood, adolescence, adulthood, and old age. Each developmental period has its own unique developmental characteristics. Childhood and adolescence periods are periods that play an important role in the developmental process. During these periods, children and young people undergo a great changes physically, mentally, and emotionally. These changes may lead to increased emotional reactivity in children and adolescents (Masten, 2002). In this study, childhood and adolescence periods were handled separately.

2.1.1. Emotional Reactivity in Childhood

The foundations of emotional development are laid in childhood. Studies have emphasized the importance of genetic and environmental factors in the development of children's emotional reactivity. In particular, children's relationships with their families and caregivers are effective in determining their emotional reactivity. Caregivers help children to secure attachments and meet their emotional needs. Families who respond to children's emotional needs can help their children manage their emotional reactivity better (Cassidy, 1994). Managing children's emotional reactivity is extremely important for their healthy development. Children who cannot manage their emotional reactivity may tend to show intense emotional reactions such as anxiety, fear, anger, irritability, aggression, or sadness in stressful and emotionally challenging situations. Such emotional reactions cause children to lose control of their behaviour. It prevents them from interacting harmoniously with their environment (Thompson, 1994). In addition, intense emotional reactions may disrupt children's relationships with others and may lead to emotional problems in the long term (Eisenberg et al., 2001).

Being able to manage emotional reactions helps children develop social skills, express themselves, and empathize with others (Martin & Greenberg, 2011). Therefore, developing healthy emotional reactions forms the basis of personality and social development (Kandır & Alpan, 2008). Excessive emotional reactions may cause children to experience functional difficulties in their daily lives (Underwood & Rosen, 2011).

2.1.2. Emotional Reactivity in Adolescence

Adolescence is a very sensitive period following childhood, especially in terms of emotional reactivity. Simultaneous changes in different areas such as physical, hormonal, and structural changes in the brain, social pressures, and personality change the emotional reactions of adolescents.

During this period, adolescents strive to meet basic social and emotional needs such as self-confidence, identity, and a sense of belonging (Hampel & Petermann, 2006). Many adolescents are exposed to peer, family, and academic pressures. These stressful situations create a tendency to give high emotional reactions in adolescents (Hampel & Petermann, 2006). Many adolescents experience an increase in emotional reactivity. Therefore, adolescence is one of the periods with the highest risk of experiencing emotional and behavioural problems.

During adolescence, emotional reactivity is affected not only by environmental factors but also by structural changes in the brain. Changes in the prefrontal cortex, insulin, and amygdala regions responsible for the regulation and expression of emotions make it difficult for adolescents to manage their emotional reactions (Hampel & Petermann, 2006).

One of the important factors affecting the level of emotional reactivity of adolescents is parental attitude and approach. Attitudes such as parents being intolerant towards the child, not making the child feel accepted, or being insensitive to their needs negatively affect children and adolescents in the emotional dimension (Yavuzer, 1999). Individuals who

receive sufficient attention and love from their families and are loved in their social environment do not experience loneliness and adjustment problems. This situation allows them to develop healthy emotional and behavioural reactions and reduces stress, depression, and suicidal thoughts of adolescents (Doğan, 2008).

High emotional reactivity may prevent adolescents from exhibiting appropriate behaviours. Adolescents who tend to overreact emotionally may suffer socially and academically. Therefore, families and educators need to use different strategies to respond to the emotional needs of adolescents, to support them, and to cope with their emotional reactions. Strategies used to deal with emotional reactivity include teaching emotion regulation skills, positive communication, and providing support. Research shows that learning emotion regulation skills helps adolescents to better manage their emotional reactions. Emotion regulation strategies improve adolescents' ability to recognize, accept, express, and regulate their emotions. These learned skills can help adolescents manage their emotional reactions more effectively (Chorpita & Weisz, 2009).

Positive communication can also help adolescents manage their emotional reactions. Seeing and trying to understand the emotional needs of adolescents, reassuring them, and listening to their emotional experiences can help adolescents who tend to overreact emotionally to relax (Novick & Novick, 2000).

2.2. Emotion Regulation

Emotion regulation is the process of conscious or unconscious, automatic or controlled management of one or more components of emotional response (Gross, 1998, 1999). This process is multifaceted and multidimensional (Rosen & Epstein, 2010). According to Gratz and Roemer (2004), this multidimensional structure includes recognizing, understanding, and accepting emotion, accessing functional strategies to be used in adjusting the intensity and duration of emotional response, and engaging in appropriate behaviour. Individuals need

emotion regulation in many areas such as recognizing and interpreting their own and others' emotions, giving appropriate emotional responses to the situation, and having control over their emotions (Joormann & Stanton, 2016).

Emotion regulation consists of external and internal processes that are responsible for monitoring, evaluating, and changing emotional goals (Thompson, 1994). According to Freud and Jones (1993), acquiring the skills necessary for successful emotion regulation is a developmental achievement. In adulthood, emotion regulation is necessary for daily functioning rather than a desire.

According to Çolak (2016), emotion regulation is individuals' realizing their own emotional states and managing these emotions. In another study, Gross (1998) defines emotion regulation as the processes of initiating, maintaining, shaping, and terminating emotional experiences.

This concept is also used as a psychological intervention method and examined under the name of "emotion regulation strategies" (Aldao et al., 2010). When analyzed in this sense, emotion regulation is seen as a set of strategies we use to control and manage our emotions. These strategies help to manage emotions by changing our emotional experiences or expressing them appropriately.

Emotion regulation strategies include different techniques that individuals use to increase positive emotions and decrease negative emotions. For example, strategies such as problem-solving, acceptance, distraction, and restructuring are among the effective methods used in emotion regulation (Gross, 1998).

Emotion regulation is an important skill for psychological resilience and psychological well-being. Developing emotion regulation skills can improve the quality of life of individuals and help in the treatment of psychological problems. The importance of emotion regulation is emphasized in many studies. In particular, it has been shown that the development of emotion

regulation skills in individuals exposed to stressful life events is effective in coping with stress (Aldao & Nolen-Hoeksema, 2012). In addition, emotion regulation skills are indicated to be effective in the treatment of psychological problems such as depression and anxiety (Hofmann et al., 2010).

The concept of emotion regulation is important not only at the individual level but also at the social level. In terms of the social level, emotional regulation can facilitate people to adapt to different, cultural, social, and economic conditions. Therefore, the social dimension of the emotion regulation concept is also being investigated (Nolen-Hoeksema, 2012).

Individuals who have difficulty in emotion regulation have interpersonal relationships, anger problems, self-harm, suicidal thoughts, and serious psychological disorders. Bonn-Miller et al. (2008) stated that people with difficulties in emotion regulation use substances to get rid of the anxiety and stress they experience internally and develop substance use disorder. Atalar and Atalay (2018) stated that emotion dysregulation creates a fragile structure for psychological health and carries the risk of being affected by psychological disorders.

Research has shown that emotion regulation is important in terms of improving individuals' emotional health, well-being, and quality of life. Improving emotion regulation skills can help individuals to be more successful in coping with stress and reducing psychological problems (Hofmann et al., 2010). In addition, learning and applying emotion regulation strategies can help individuals cope better with emotionally challenging situations (Aldao, 2013).

For these reasons, methods such as individual or group therapies can be applied by mental health professionals to learn and develop emotion regulation skills. Individuals differ in terms of emotion regulation capacity and emotion regulation levels (Hessler & Katz, 2007; Cool et al., 2004). In other words, the process of developing emotion regulation skills may

differ from person to person. While some individuals can learn these skills more easily, the learning process may be challenging for others.

2.3. Cognitive Distortions

Cognitive psychology has investigated whether the knowledge of the individual is realistic or not, based on the need to enlighten the world of knowledge. Beck et al. (1979) developed the cognitive theory, which started with depression and was later explained for other psychopathologies. According to the cognitive theory, it is how individuals perceive events that affect their feelings, indicateds, and behaviours. It is not the event itself that affects emotions and behaviours, but how it is perceived. The theory can be summarised in its simplest form with the view that "it is our thoughts that make us sick" (Shultz & Shultz, 2001). According to the cognitive theory, every thought is accompanied by an emotion.

Beck defines cognitive structure as cognitive schemas, cognitive distortions, cognitive triads, and automatic thoughts (Beck, 1976; Pössel & Thomas, 2011). He states that cognitive distortions occur when the cognitive schema is a negative and cognitive triad and automatic thoughts emerge as a result of cognitive distortions.

According to Beck, schema also referred to as 'core belief' in some sources, is a sorting, coding, and evaluation system. It is determined as a result of the individual's previous experiences and learning. In other words, schemas are shaped by important others and events at the beginning of life. They are the negative schemas underlying the negative emotions of the individual. Keser and Voltanacar (2013) define schemas as a set of permanent characteristics that begin in childhood, develop throughout life, and are resistant to change. Schemata are unique to the individual and affect his/her view of himself/herself and the world.

According to Beck, cognitive schemas are reflected in consciousness through automatic thoughts. Beck called unrealistic, distorted thoughts automatic thoughts, while Ellis

called them irrational beliefs (Leahey, 2007). In another definition, automatic thoughts are defined as thoughts that arise as a result of cognitive distortions, are accompanied by negative emotions, and occur against the individual's own will (Türkçapar, 2009). In the process of processing information, information encountered for the first time is often distorted in order to fit into the existing schema and these thoughts automatically come to the level of consciousness (Kuyucu, 2007).

Cognitive distortion, which is the other concept in the cognitive model and one of the main variables of this research, explains the unrealistic evaluations, automatic thoughts, and the emotional, intellectual, and behavioural problems experienced by the individual in perceiving himself/herself and the outside world (Fair, 1986).

According to the cognitive behavioural model, people's emotions, thoughts and behaviours are related to how they evaluate what they experience (Beck, 2001). The evaluation process takes place automatically and spontaneously. Systematic errors that lead to erroneous assumptions and misunderstandings in this automatic process are defined as cognitive distortion (Corey, 2008). In parallel with this definition, cognitive distortions are conceptualized as systematic logical errors in an individual's thoughts (Fair, 1986; Murad, 2002). Briefly, it can be said that cognitive distortions are the connections between dysfunctional cognitive schemas and automatic thoughts.

As a result of cognitive distortions, the cognitive triad is formed with the negative evaluation of oneself, the environment, and the future (Pössel & Thomas, 2011). The person perceives himself/herself, the current situation, the world, and the future negatively. Systematic errors in information processing are seen as the cause of the cognitive triad (Ünal & Özcan, 2000).

Beck argued that mental disorders and emotional difficulties are caused by dysfunctional indicated errors. According to cognitive theory, a person's thoughts direct

his/her emotions and behaviours. Each indicated leads to an emotion, and unrealistic negative thoughts cause more intense negative emotions such as unhappiness, hopelessness, helplessness, inadequacy, worthlessness, insignificance, humiliation, fear, anger, violence, jealousy, and defeatism (Fair, 1986). This situation shows that cognitive distortions cause both the continuation of unrealistic basic beliefs and aggravate psychopathology.

Beck started his research on cognitive distortions with depression. In parallel with Beck's findings, Reavis (2003) also emphasized the relationship between the negative perception of the individual's self and the world with anxiety and depression. Griffin (2003) emphasized the relationship between borderline personality structure and cognitive distortions, and this study proved that cognitive distortions are related to different psychopathologies other than anxiety and depression. In addition, studies show that cognitive distortions are also seen in normal individuals, but in crises, individuals with any pathology have more difficulty in this crisis (Leahey, 2007). In addition, people's negative perceptions of themselves also make the situation difficult for them.

Typical cognitive distortions that have an important place in cognitive therapy are selective abstraction, arbitrary inference, overgeneralization, personalization, polarised thinking, and magnification/exaggeration (Köknel, 1997). Beck et al. (1979) listed cognitive distortions and later Burns (1980) expanded this list. Cognitive distortions, which have an important place in cognitive therapy theory, are as follows (Beck, 2005):

1. *Must have:* It includes necessity and obligation. There are fixed rules in this type of distortion. If these rules are not followed, it is indicated that disaster will occur. The individual thinks as "I must always do the best. It would be terrible if I make a mistake" (Beck et al., 1979). This distorted thinking may cause helplessness (Özer, 2000).
2. *Arbitrary inference / Ignoring the positive:* The person comes to a conclusion according to himself/herself despite the absence of any evidence. Here, positive experiences,

qualities, and achievements are ignored. Successes are interpreted as coincidence (Karahan & Sardoğan, 2004). This type of distortion is especially seen in depressive patients (Beck, 2005).

3. *Selective perception (mental filtering)*: It is when the individual makes negative evaluations with reference to a single detail, although there is evidence in different directions about the event (Beck, 2005). Finding the negativity with tweezers from the whole and commenting on this feature or experience (Özer, 2000).

4. *Overgeneralisation*: Making a judgement based on a single cause or event and generalising this judgement. A feature is evaluated by the individual as if it is a whole (Klar et al., 1997). When generalising, people often use words such as "everyone, always, always, never, never, no one, absolutely" (Haaga & Davison, 1986). Therefore, even if a person makes a small mistake, he/she may often use generalisations such as "I will ruin everything" (Dökmen, 2004; Özakkaş, 2004; Özer, 2000).

5. *Personalisation*: This way of thinking is also one of the frequently used distortions. The person holds himself/herself responsible for the problems experienced by others even though he/she has no influence on them. Intense feelings of guilt and inadequacy may be experienced due to this distortion (Dökmen, 1994).

6. *Polarised thinking (all or nothing thinking)*: The person places his/her experiences or judgements in one of the extreme poles. This cognitive distortion is also called 'all or nothing'. Indications are often expressed in 'always' or 'never' patterns. People with this type of thinking evaluate others in two extremes as 'good - bad' or 'smart - stupid' (Türküm, 2003; Kurtoğlu, 2009).

7. *Exaggeration (exaggeration) / Underestimation*: The person needs to see the negative material collected by selectivity in perception as larger than it is and the positive ones as smaller. While the positive sides of the current situation are minimised, the negative side is perceived as larger than it is. The person looks at himself/herself, others, or the situation from

the opposite side of the binoculars. In addition to exaggerating negative events, these people tend to underestimate their own strengths and good sides. According to Türküm (1996), these people constantly criticize themselves and feel worthless.

8. *Disasterisation*: Predicting the future as negative and terrible without considering more realistic outcomes (Beck et al., 1979).
9. *Tunnel View*: Seeing only the negative side of the situation with insufficient information, ignoring or downplaying the positive aspects. This type of distortion is also called 'narrow perspective'.
10. *Labelling*: Making wholesale, judgemental, and negative conclusions about oneself and others by ignoring the available data. Example: "I am nothing" (Burns, 1980).
11. *Mind Reading*: Believing that one knows the thoughts of others about oneself (Burns, 1980).
12. *Emotional Reasoning*: Explaining the situation based on emotions and believing that this indicated is correct. Example: "I know that I have done many things well at work, but I still feel like a failure." (Kılınç, 2005).

2.4.The Relationship Between Emotional Reactivity and Emotion Regulation

The relationship between emotional reactivity and emotion regulation has long been examined in the field of psychology. In the related literature, there are studies showing the relationship between emotional reactivity and an individual's emotion regulation skills (Retz et al., 2012). Studies have shown that emotion regulation is related to both early emotional reactivity and emotion regulation components (Gross et al., 2011). Emotion regulation is a concept that helps individuals to have control over their emotions and prevent negative behavioural outcomes. In this respect, emotion regulation is an effective factor in the formation of emotional reactivity. The emotion regulation process either elicits an emotional

response or helps to change existing emotional responses (Gross & Thompson, 2007; Ochsner & Gross, 2005).

Difficulty in the regulation of emotions leads to emotional reactivity and some psychological disorders. In terms of its relationship with psychopathology, it is suggested that the degree of emotional reactivity is related to the individual's ability to self-regulate emotions (Gratz & Roemer, 2002). Studies have shown that exaggerated emotional reactivity and disorders in emotion regulation are the basis of many psychiatric problems (Campbell-Sills & Barlow, 2007). Low emotion regulation and high emotional reactivity are factors that increase the risk of psychological symptoms in individuals. Henry and Dargel (2019) stated that emotion regulation difficulties and emotional reactivity are effective in the etiology of mood disorders such as depression, anxiety, and bipolar disorders.

According to another theoretical model, the importance of both emotion regulation and emotional reactivity in the development and maintenance of psychopathology has been emphasized, but emotional reactivity has been given less importance and few studies have been conducted (Nock et al., 2008). Cook et al. (2017) stated that emotional reactivity is one of the indicators of the individual's successful regulation of emotions in maladaptive experiences.

Emotional reactivity refers to how sensitive the person is to the emotional state, while emotion regulation refers to the ability to manage these emotions (Gross, 1998). Emotion regulation skills help people to be aware of their emotional reactions and control their emotions while being aware of emotional reactions can help to develop emotion regulation skills. This situation also shows that they are influenced by each other.

Thanks to emotion regulation skills, it is possible for the person to be aware of his/her emotions, react appropriately to situations, and develop positive coping and problem-solving

skills. In this case, the person does not experience emotional reactivity and his/her behaviours are not exaggerated (Campos et al., 2004).

As a result of the correlation analysis conducted in a study, it was observed that there was a significant relationship between difficulty in emotion regulation and emotional reactivity. As the participants' emotion regulation difficulty scores increased, emotional reactivity scores also increased (Yumuşak, 2019).

Rosen et al. (2012) stated that positive emotion regulation skills prevent exaggerated and destructive emotions, thus preventing emotional reactivity. Emotion regulation skills reduce the level of intense arousal and prevent the strong experience of emotions. Nock et al. (2008) stated the role of intense experience of emotions and experiences at high arousal levels in emotional reactivity.

Emotional reactivity is influenced by a number of environmental and personal factors. For example, a person's genetic structure, personality traits, and life experiences can affect emotional reactivity (Davidson & McEwen, 2012). In addition to these factors, emotion regulation is also influenced by factors such as learned behaviours and social environment (Gross & Thompson, 2007). Also, individuals differ according to their emotional reactivity and emotion regulation capacities (Hessler & Katz, 2007). Individuals' reactivity and emotion regulation levels also vary from situation to situation and globally (Cole et al., 2004).

The use of emotion regulation strategies can reduce emotional reactivity, or make it manageable. Studies show that emotion regulation strategies reduce emotional reactivity, reduce stress levels and improve general mood (Gross & John, 2003; Webb et al., 2012). Therefore, the development of emotion regulation skills is important in terms of improving the quality of life of individuals. Learning and applying emotion regulation strategies can help individuals cope better, especially in emotionally challenging situations (Aldao et al., 2010).

Since effective regulation regulates negative emotional reactivity, the individual does not experience destructive emotional stress, but impairment in the regulation of negative emotional reactivity may lead to ever-increasing and damaging emotional stress (Rosen et al., 2012).

Emotion regulation strategies include techniques such as problem-solving, distraction, acceptance, and restructuring (Aldao et al., 2010). Emotion regulation skills are especially important in situations with high emotional intensity. In these situations, the person may need to recognize their emotions, identify them and direct them in a positive way using emotion regulation strategies. For example, if a person has had a bad day and is angry because of an argument, through emotion regulation skills, he/she can communicate more constructively and resolve the conflict (Troy, 2011).

In conclusion, emotion regulation and emotional reactivity are important concepts about how emotions are managed and expressed, and they are closely related to each other. Developing emotion regulation skills can help manage emotional reactions more appropriately and contribute to one's mental health (Garnefski, 2001; Gross, 2013). In addition, emotion regulation is important for individuals' emotional health and well-being. Developing emotion regulation skills can help individuals to be more successful in coping with stress and reducing psychological problems (Hofmann et al., 2010). Individual differences can be seen in the skill development process and it may be easy for some and challenging for others. Therefore, methods such as individual therapy sessions or group therapies can be applied by psychologists, psychological counsellors, and therapists to learn and develop these skills.

2.5.The Relationship Between Emotional Reactivity and Cognitive Distortions

The psychological structure is affected by emotions, thoughts and behaviours. How the relationship between these variables affects mental health has been a subject of curiosity.

Therefore, the relationship between emotional reactivity and cognitive distortion is very important in terms of understanding human behaviour. These two factors are interrelated and can negatively affect the emotional state of a person by affecting his/her thoughts, behaviours, and body functions (Beck, 1963). When the relationship between emotional reactivity and cognitive distortion is examined, Gross and John (2003) state that cognitive distortion can cause emotional reactions. At the same time, emotional reactions can cause people to react differently at physiological, behavioural, and cognitive levels (Levenson, 2014).

Bolat (2005) attributed the emotional problems that people experience or may experience to their irrational thoughts and stated that there are significant relationships between anger, guilt, uselessness, irrational thoughts, and negative emotional reactions.

According to Beck (1967), cognitive distortion, which is a mental process in which the person misinterprets his/her experiences, can negatively affect the emotions of the person. Recent studies have shown that emotions also affect individuals' thoughts and that the two concepts are in mutual interaction. The level of emotional reactivity can affect one's thoughts and thus cause cognitive distortion. For example, when a person gets angry during an argument, his/her thoughts may be shaped by anger. In this case, instead of seeing the facts, the person may misinterpret the event according to his/her anger and perceive what the other party says in a different way. This may cause cognitive distortion (Burns, 1999; APA, 2019).

It is stated that individuals experiencing high levels of emotional reactivity react to stressful conditions with an increasing level of a negative impact and have maladaptive evaluations of these events (Bylsma et al., 2011; Lee & Woodruff-Borden, 2018). As it is understood from here, maladaptive evaluations can be a source of emotional reactivity.

Cengiz (2017) examined the relationship between emotional reactivity, cognitive distortions, and depression in adolescents in a study with 410 adolescent students. The researcher used the depression and cognitive distortions scale and emotional reactivity scale

in his study. As a result of the study, it was found that cognitive distortions and emotional reactivity were associated with adolescents' depression.

As seen in these studies, emotional reactivity levels and cognitive distortions affect each other. When we look at the research, a positive relationship was found between emotional reactivity and cognitive distortion in most studies. A meta-analysis study (Martin & Dahlen, 2019) revealed that emotional reactivity has a positive relationship with cognitive distortion.

Another systemic review and meta-analysis (Kassem et al., 2020) showed that emotional reactivity has a positive relationship with cognitive distortion and that this relationship is associated with depression symptoms. A pilot study (Campos et al., 2014) investigated the effect of emotional reactivity on attentional control and found that those who were less emotionally reactive had lower levels of cognitive distortion.

A study in the context of judgemental decision-making (Sahdra et al., 2015) showed that those who were less emotionally reactive had lower levels of cognitive distortion.

In a study called Analysis of Pathways of Influence (Ehring et al., 2014), it was found that stress is related to cognitive distortions and this relationship is dependent on emotional reactivity. It was found that individuals who are more emotionally reactive have more cognitive distortions in stressful situations.

In a study with a sample of high school students (Davies et al., 2020), the effect of emotional reactivity and cognitive distortion on psychological well-being was investigated. The findings showed that students who were more emotionally reactive had higher levels of cognitive distortion, but the effect of this relationship on psychological well-being was complex. As in emotional reactivity and emotion regulation studies, it is seen that there is an interaction between emotional reactivity and cognitive distortions.

Dryden and Neenan (2004), in their study on the effect of irrational beliefs on the individual, stated that these beliefs would cause negative emotions such as sadness, anger, depression, excessive anxiety, and jealousy, and that these emotions could lead to disordered behaviours and reactions.

In another study, according to the cognitive approach model, it was emphasized that inflexible cognitions cause adaptation problems and negative emotional reactions in the individual (Canas et al., 2003).

There are also studies showing that cognitive distortions can cause negative effects not only on emotional reactions but also on physical health. For example, in a study (Suls et al., 1998), the relationship between cognitive distortions and chronic diseases was examined. The findings showed that people with chronic diseases evaluated their health status in an overly negative way and therefore had worse health outcomes. In another study (Epel et al., 2000), the role of cognitive distortions in the aging process was examined. In the study, participants' cognitive distortions and cortisol levels were measured. The findings showed that high cognitive distortions increase cortisol levels and therefore accelerate the aging process.

2.6. The Relationship Between Emotion Regulation and Cognitive Distortions

Emotion regulation is the ability to regulate one's emotions and emotional reactions. This skill depends on many different factors and cognitive distortion is one of them. The effects of cognitive distortion in the emotion regulation process may affect emotion regulation skills and may harm the mental health of the person (Ellis, 1980). Studies have shown that cognitive distortion causes impairment in emotion regulation skills (Ma, & Teasdale, 2004; Aldoa et al., 2010; Gross, 1998).

One of the most common effects of cognitive distortion is that it causes people to have false beliefs about themselves, others, and the world (Ma, & Teasdale, 2004; Aldoa et al.,

2010; Gross, 1998). When a person has unrealistic beliefs, he/she may develop negative thoughts to support these beliefs. These negative thoughts may reduce the person's ability to regulate emotional reactions and cause emotion dysregulation (Peale, 2006). In addition, the person's false beliefs about reality and the use of these beliefs in the emotion regulation process may mislead him and his environment. This situation makes it difficult for the person to contact reality and reduces the effectiveness of emotion regulation skills (Breuning, 2017).

Another effect of cognitive distortion is that it causes the strengthening of negative emotions. When a person has unrealistic beliefs, they may develop critical thoughts towards themselves to support these beliefs. These critical thoughts may worsen the person's emotions and cause an increase in negative emotions (Seligman, 2012). The increase in negative emotions makes the emotion regulation process difficult.

Aldao and Nolen (2012), Gross and John (2003), Kross and Ayduk (2017), and Cisler (2012) emphasized the importance of emotion regulation skills and cognitive distortions. In the studies, it was stated that emotion regulation skills are important for the correction of cognitive distortions. In a study conducted by Denson et al. (2009), it was observed that cognitive distortion may increase the feeling of anger and aggressive behaviours and make emotion regulation difficult.

Hofmann et al. (2010) found that mindfulness techniques increased emotional regulation skills by reducing the effects of cognitive distortion and were associated with better psychological adjustment. In parallel with these findings, in another study (Carmody & Baer, 2008), the effect of mindfulness meditation on cognitive distortions was examined. The findings showed that mindfulness meditation reduced cognitive distortions and improved emotion regulation skills.

Therapeutic approaches such as cognitive-behavioural therapy (CBT) are effective in many psychological disorders in which cognitive distortions are corrected and emotion

regulation skills are improved. For example, in conditions such as depression, anxiety, and post-traumatic stress disorder, CBT helps the person to recognize and correct their cognitive distortions. In this way, the person has a healthier mind structure and can develop emotion regulation skills (Beck, 2011).

In a study (Leyro et al., 2010), the effect of cognitive behavioural therapy (CBT) on correcting cognitive distortions was examined. The findings showed that CBT corrected cognitive distortions in parallel with Beck's views and therefore improved emotion regulation skills.

2.7. The Role of Cognitive Distortion in the Relationship Between Emotional Reactivity and Emotion Regulation

The relationship between emotional reactivity and emotion regulation has begun to be better understood in recent years with research in the field of psychology. Research on the mediating role of cognitive distortions in this relationship is also very important. Because we now know that emotion and thought interact with each other. In this study, emotional reactivity, emotion regulation, and cognitive distortions, the relationships between these three concepts, and the mediating role of cognitive distortions were emphasized. Emotional reactivity is a person's reactions to the events and emotions that occur as a result of these events. These reactions arise as a natural consequence of the situation the person is in and are usually uncontrollable. For example, when a person receives bad news, he/she shows emotional reactions such as sadness or anger (Gross, 1998). Emotion regulation is the method used to manage and direct one's emotions and reactions resulting from these emotions. These methods differ depending on the situation the person is in. For example, a person can meditate to relax in a stressful situation or reduce anxiety by focusing on positive thoughts when anxious (Beck, 1967). Cognitive distortions are misconceptions in the way a person perceives

and evaluates the events he/she experiences. These distortions may have consequences such as deviating one's thoughts from reality and negatively affecting one's emotions. For example, when a person makes a small mistake at work, he/she may perceive it as bigger than it is and criticize himself/herself as "incompetent" (Kim & Haman 2007).

The relationship between emotional reactivity and emotion regulation shows the effect of the methods used to control one's emotional reactions. When a person shows emotional reactivity, cognitive distortions may also occur. For example, when a person unfairly over-criticizes himself/herself by describing himself/herself as "incompetent" because of a small mistake, he/she may have difficulty in controlling his/her negative thoughts and may fail in emotion regulation skills.

The mediating role of cognitive distortions in the relationship between emotional reactivity and emotion regulation is an important factor. Research shows that cognitive distortions are an inhibiting factor in controlling emotional reactions. For example, when a person perceives an event in an overly negative way, this triggers cognitive distortions and weakens emotion regulation skills (Tugade et al., 2007).

A person's level of emotional reactivity may depend on the presence and intensity of cognitive distortions. An example of negative cognitive distortions is constantly evaluating oneself with derogatory and critical thoughts. These cognitive distortions may increase the level of emotional reactivity by causing self-blame and feelings of worthlessness.

The development of emotion regulation skills enables the person to recognize, question, and correct cognitive distortions. For example, realizing that one's negative evaluations of oneself may be unrealistic may enable one to develop a more compassionate and accepting attitude towards oneself. This awareness is realized through emotion regulation. Thus, the person can cope with negative thoughts and reduce the level of emotional reactivity.

It is indicated that cognitive distortions may play a mediating role in the relationship between emotional reactivity and emotion regulation. In order to manage emotional reactivity, regulating their emotions and identifying and correcting cognitive distortions may help them to have a healthier and more positive mindset. In studies conducted in this field (Gross & John, 2003), cognitive distortions were found to play an important mediating role in the relationship between emotional reactivity and emotion regulation. In the study, participants were presented with various stressors and then their cognitive distortions, emotional reactivity, and emotion regulation skills were measured. The findings showed that cognitive distortions led to an increase in emotional reactivity and a decrease in emotion regulation skills.

In a study conducted by Hofmann in 2008, cognitive distortions were found to play a mediating role in the relationship between emotional reactivity and emotion regulation (Hofmann, 2008). It has been stated that therapeutic approaches in which cognitive distortions are corrected and emotion regulation skills are developed help the person to reduce emotional reactions and have a healthier mind structure.

Shapero et al.(2016) suggested that increased negative evaluations as a result of stressful experiences and difficulty in coping with these evaluations may be related to high emotional reactivity.

Similarly, in another study (Garnefski, et al., 2001), the effect of cognitive distortions on emotional reactivity was examined. In the study, participants were administered a questionnaire to measure emotional reactions after a stressful event and then the presence of cognitive distortions was measured. The findings showed that cognitive distortions caused an increase in the severity of emotional reactions.

In Cengiz's (2017) study, it was observed that cognitive distortions positively predicted emotional reactivity in adolescents, and emotional reactivity constituted an important risk source for adolescents to experience depression.

Cognitive distortions can make it difficult to control emotional reactions as erroneous perceptions of the events experienced by the person. Therefore, recognizing cognitive distortions and developing the ability to cope with them is an important factor in controlling emotional reactions (Beck, 1967; Gross, 1998; Kim & Haman, 2007). In this regard, cognitive therapy can help the person to identify his/her cognitive distortions and develop the ability to cope with them. Emotion-focused therapy practices can be used to recognize emotions.

In conclusion, it is indicated that the relationship between emotional reactivity and emotion regulation will be better understood through research on the mediating role of cognitive distortions. In this context, this study examined the mediating role of cognitive distortions in the relationship between emotional reactivity and emotion regulation.

3. METHOD

In this section, the research design, the characteristics of the sample, assessment tools, the data collection process, and the analysis process were explained. Also, the validity and reliability findings reported in the scale adaptation studies, and the internal consistency coefficients of the subscales in our sample, were explained in detail.

3.1. Research Design

In this study, which examines the mediating role of cognitive distortions in the relationship between emotional reactivity and emotion regulation, the correlational model, one of the descriptive models, was used. The correlational survey model is a research model that aims to determine the presence and/or degree of co-change between two or more variables (Karasar, 2007). In this research model, variables are not intervened and their changes together are examined. Mediation analyses were conducted with the Hayes Process method using SPSS Process 3.5 version.

3.2. Sample of the Study

The data collection tools were completed by 339 respondents. These individuals were reached through the convenience sampling method. Convenience sampling is a non-probability sampling method that involves selecting participants who are readily available and accessible to the researcher. This method is commonly used in social science research when the researcher wants to obtain a sample quickly and easily without the need for a random selection process. According to Creswell (2014), this method is often used in qualitative research, while Babbie (2016) explains that participants are selected based on their proximity to the researcher, rather than their representativeness of the population.

Table 1*Characteristics of the sample*

		N	%	M	SD	SE	MDN	Min	Max
Gender	Male	94	27.73						
	Female	210	61.95						
	Other	35	10.32						
Income Level	Low	58	17.11						
	Middle	262	77.29						
	High	19	5.60						
Age Group	18-26	119	35.10						
	27-44	185	54.57						
	45-64	35	10.32						
		339	100.00	31.04	9.62	.52	30	18	64

M: arithmetic mean; SD: standard deviation; SE: standard error; MDN: median

61.95% of the respondents were female, 27.73% were male, and 10.32% were others. The youngest respondent stated that he was 18 years old, and the oldest was 64 years old. The average age of all was 31.04. The median age was 30. Individuals aged 27-44 made up 54.57%; 18-26 years old individuals made up 35.10% of the respondents. The share of those who stated that they were middle-income was 77.29%; The share of those who stated that they were low-income was 17.11%. 5.60% of the respondents thought that they had high incomes (Table 1).

Table 2*Perceptions of parental attitudes*

		N	%
Mother's parenting attitude	Authoritarian	53	15.63
	Permissive	58	17.11
	Protective	188	55.46
	Democratic	40	11.80
Father's parenting attitude	Authoritarian	72	21.24
	Permissive	92	27.14
	Protective	120	35.40
	Democratic	55	16.22

While 55.46% of the respondents defined their mother's parenting attitude as protective, 17.11% defined it as permissive, 15.63% as authoritarian, and 11.80% as democratic. 35.40% of the respondents thought that their father's parental attitude was protective, 27.14% permissive, 21.24% authoritarian, and 16.22% democratic (Table 2)

Table 3

Comparison of parental attitude perception: Mother vs. father

Mother	Father	N	%
Authoritarian	Authoritarian	18	33.96
	Permissive	17	32.08
	Protective	14	26.42
	Democratic	4	7.55
	N	53	100.00
Permissive	Authoritarian	12	20.69
	Permissive	25	43.10
	Protective	15	25.86
	Democratic	6	10.34
	N	58	100.00
Protective	Authoritarian-Overbearing	38	20.21
	Permissive	44	23.40
	Protective	80	42.55
	Democratic	26	13.83
	N	188	100.00
Democratic	Authoritarian-Overbearing	4	10.00
	Permissive	6	15.00
	Protective	11	27.50
	Democratic	19	47.50
	N	40	100.00

Of those who indicated their mother was authoritarian, 33.96% believed their father was also authoritarian, 32.08% permissive, 26.42% protective, and 7.55% democratic. Of those who indicated their mother was permissive, 43.10% believed their father was also permissive, and among these, 25.86% indicated their father was protective, 20.69% indicated their father was authoritarian, and 10.34% indicated their father was democratic. Of the respondents who indicated their mother displayed a protective attitude, 42.55% indicated their father also displayed a protective attitude, while 23.40% indicated their father

was permissive, 20.21% indicated he was authoritarian, and 13.83% indicated he was democratic. Of those who indicated their mother was democratic, 47.50% indicated their father was also democratic. Among those whose mother was democratic, 27.50% indicated their father was protective, 15% indicated their father was permissive, and 10% indicated their father was authoritarian (Table 3).

3.3. Assessment Tools

In this part, the validity and reliability of the scales (ERSTR, CDSTR, DERS16TR) were discussed, with reference to the findings of previous studies on adaptation to Turkish culture and language. In addition, the internal consistency of the scales was retested using our data. In our study, the cut-off points suggested by Kalaycı et al. (2018) were used as a reference to determine the levels of internal consistency: If $0 \leq \alpha < .40$, the internal consistency of the measurement tool is insufficient; if $.40 \leq \alpha < .60$, the internal consistency of the measurement tool is low; if $.60 \leq \alpha < .80$, the measurement tool is quite consistent; if $.80 \leq \alpha < 1.0$, the reliability of the scale is high.

3.3.1. Demographic Information Form (DIF)

A demographic information form was designed by the researcher to collect personal information, which is indicated to be related to the research variables. It includes information on gender, age, economic status, and perceived parenting attitudes. In accordance with ethical rules and to get realistic answers, questions containing identity information will not be asked of the participants during the research. (See Appendix A).

3.3.2. Emotional Reactivity Scale (ERS-TR)

This scale was developed by Nock et al. in 2008. There were 21 items and it had a four-point Likert system. Adaptation to Turkish culture and language, validity and reliability studies were performed by Seer et al. (2013). They obtained a 17-item structure consisting of three sub-dimensions when adapting that scale to Turkish culture and language; the four-point Likert structure was maintained in this version (See Appendix B).

The construct validity of the Turkish version of the Emotional Reactivity Scale was tested by the adaptors (Seer et al., 2013) through both exploratory and confirmatory factor analyses. According to the exploratory factor analysis, the subscales in the Turkish version of the scale consisted accounted for 49.77% of the total variance. The confirmatory factor analysis results supported the exploratory factor analysis findings (Seer et al., 2013).

The internal consistency of the scale was reported to be high with Cronbach's alpha ($\alpha=.82$) and two half-reliability methods ($r=.78$) based on the data collected from 130 university students (62.8% female). The correlation between test-retest was reported to be high ($r=.82$), indicating a high level of reliability. High scores on the sub-dimensions indicate high emotional sensitivity and reactivity, and low resilience (Seer et al., 2013).

The internal consistency of the scale was tested for the current study by Cronbach's alpha method. According to this, the internal consistency of the emotional sensitivity subscale, which has five items was found to be high ($\alpha = .86$). No item was found to increase the internal consistency when removed from the subscale. The lowest correlation between the items was .43, the highest was .77, and the average correlation was calculated as .54.

The internal consistency coefficient of the five items in the Resilience subscale indicated that it was quite reliable ($\alpha = .75$). Additionally, no item was found to increase the internal consistency of the subscale when removed. The item correlations ranged from .23 to .65, with an average correlation of .37.

When the internal consistency coefficient was calculated for the seven-item Emotional Reactivity subscale, it was found to have a high level of internal consistency ($\alpha = .832$). No item was found to threaten the internal consistency of the subscale due to its inclusion. The item correlations ranged from .28 to .56. The average item correlation was 0.42.

The internal consistency of the Turkish version of the 17-item Emotional Reactivity Scale was examined without dividing it into any subscales, and it was found to be highly internally consistent ($\alpha = .91$). No item that threatened internal consistency was identified due to its presence in the scale. However, the correlation between ERS1 and ERS12 was quite low ($r = .054$). This situation did not require removing any item from the scale since it did not compromise internal consistency. It is, however, presented to the reader's attention. The internal consistency coefficients calculated from the data obtained from our sample indicate that the Turkish Version of the Emotional Reactivity Scale provides a consistent measurement.

3.3.3. Difficulties in Emotion Regulation Scale-Short Form (DERS-16-TR)

This scale is a short version of the Difficulties in Emotion Regulation Scale (DERS) developed by Gratz and Roemer (2014). It consists of 16 items that are rated on a five-point Likert scale (1=almost never, 5=almost always) and is used to assess various aspects of emotion regulation difficulties. Higher scores indicate higher levels of emotion regulation difficulties. Bjureberg et al. (2016) developed this brief scale and reported that it has excellent internal consistency ($\alpha = .92$) and good test-retest reliability ($r = .85$; Yiğit&Yiğit, 2017). Factor structure, criterion validity, and internal consistency of DERS16TR were investigated in a Turkish sample that consisted of 316 undergraduate students (53.48% females) between 18 and 28 years old (Yiğit&Yiğit, 2017). DERS-16 scale was presented in Appendix C.

The five-factor structure of the scale, proposed by Bjureberg et al. (2016), was verified by CFA in a sample of Yiğit and Yiğit (2017). The internal consistency of DERS-16-TR indicated high and very high reliability, both at the overall scale and at the sub-dimensions level. The researchers also reported significant positive correlations between all DERS16TR scores and emotional avoidance and a negative correlation with emotional expression. Taken together, the findings suggested that DERS16TR was a valid and reliable scale for conceptualizing emotion dysregulation (Yiğit and Yiğit,2017).

The internal consistencies of the subscales and the whole scale were examined using the Cronbach alpha model for the present study. The internal consistency of the two-item clarity subscale was high enough ($\alpha = .76$). The correlation between the two items was .61. The internal consistency of the 3-item goals subscale was very high ($\alpha = .86$). The item correlations ranged from .58 to .75. The internal consistency of the Impulse subscale was sufficiently high ($\alpha = .79$). Item correlations ranged between .51 and .59. The five-item Strategies subscale showed a high level of internal consistency ($\alpha = .863$). The lowest correlation among the items was .51, and the highest correlation was .61. The average correlation was .56. The internal consistency of the three-item Nonacceptance subscale was sufficiently high ($\alpha = .78$). The inter-item correlations were between .50 and .62. The average correlation was .54.

The internal consistency of the Turkish version of the Emotion Regulation Difficulty Scale-Short Form was examined without any sub-dimension separation, and it was found to exhibit a highly consistent structure ($\alpha = .92$). The lowest correlation between items was .10, and the highest correlation was .78. The average correlation between items was .42. The findings indicate that the current structure of the scale provided consistent measurement and reliability in our sample.

3.3.4. Cognitive Distortion Scale (CDS-TR)

The Cognitive Distortion Scale (CDS), consists of 40 items that allow individuals to evaluate their sense of self and measure five dimensions of self-perception: "negative self-perception," "inadequate self-perception," "self-blame," "helplessness," and "hopelessness and perceived dangerousness of life (future)", developed by Briere (2000), was adapted to Turkish language and culture by Ağır and Yavuzer in 2018 (See Appendix D). In this context, linguistic equivalence, validity, and reliability analyses were conducted.

According to the test-retest reliability coefficients of all sub-dimensions of the CDS40-TR (negative self-perception $r=.84$; self-blame $r=.72$; helplessness $r=.81$; hopelessness $r=.88$; perceived dangerousness of life (future) $r=.71$; $p<0.001$), it was reported that the scale was highly reliable. According to the Cronbach Alpha coefficients of the scale's sub-dimensions (negative self-perception $\alpha=.91$; self-blame $\alpha=.88$; helplessness $\alpha=.83$; hopelessness $\alpha=.90$; perceived dangerousness of life (future) $\alpha=.78$), the scale appears to have high to very high levels of consistency (Ağır&Yavuzer, 2018). These results indicate that the sub-dimensions of the scale are a reliable tool for measurement.

Additionally, Ağır and Yavuzer (2018) tested the construct validity and criterion-related validity of the CDS40-TR. The researchers reported that the findings of the exploratory factor analysis showed parallelism with the original scale and that the Turkish version also exhibited a five-factor structure. This suggests that the Turkish version of the scale has adequate construct validity.

Based on the data collected from our sample, the internal consistency of the "Turkish Version of the Cognitive Distortion Scale" was tested both at the subscale level and for the entire scale. The eight-item "negative self-image" subscale indicated a highly consistent structure within itself ($\alpha=.88$) based on the data collected from our sample. The average inter-item correlation was .47, with the lowest item correlation being .21 and the highest being .68.

The seven-item "Self-blame" subscale demonstrated high internal consistency ($\alpha=.87$). The lowest correlation between items was .38, the highest correlation was .67, and the average correlation was .50. The eight-item helplessness subscale had a high level of internal consistency ($\alpha=.90$). While the lowest correlation was .31 and the highest was .67, the average inter-item correlation was calculated as .52. The eight-item "Hopelessness" subscale demonstrated high internal consistency ($\alpha=.95$). The lowest inter-item correlation was .60, the highest was .81, and the average inter-item correlation was .69. The sub-dimension "Perceiving Life as Threatening" showed a high level of internal consistency ($\alpha = .86$). The inter-item correlations ranged from .24 to .67, with an average inter-item correlation of .44. The overall internal consistency of the Turkish Version of Cognitive distortion Scale was found to be very high, regardless of the subscale divisions ($\alpha= .97$). The lowest inter-item correlation was .18 and the highest was .81, while the average inter-item correlation was observed as .45.

As a result, the "Turkish Version of the Cognitive Distortion Scale" showed high internal consistency in measuring the level of cognitive distortions in our sample both in terms of sub-dimensions and as a whole.

3.4. Data Collection Process

Yeditepe University Human and Social Sciences Ethics Committee was applied to collect the data. The ethics committee approved the data collection with the decision number 35/2023 dated 06.01.2023. After that, the data started to be collected. The convenience sampling method was preferred to create the sample. Respondents filled out the questionnaire online. The consent form was presented to all respondents, and those who volunteered to contribute to the study were included in the sample. In the questionnaire, no question could be associated with the identity of the participants, and all responses were recorded and analyzed

anonymously. In addition, all data is stored in an encrypted folder on the researcher's computer.

3.5. Analysis of the Data

The data collected with the convenience sampling method were analyzed using quantitative analysis methods in the SPSS program. First, normality analysis was performed for the distribution of the data and it is shown in Table 4 that the data are normally distributed. Then, descriptive analyses of the participants and data were conducted. In this context, descriptive statistics such as frequency analysis, mean, and standard deviation were used to analyze the research data; t-test and ANOVA were used to test whether the dependent variable differed in terms of demographic variables; PEARSON correlation analysis was used to test co-variance relationships, and finally, SPSS PROCESS 3.5 version was used to determine causal relationships and whether there is a mediating relationship.

The independent samples t-test was used to question whether the level of emotional reactivity differs according to gender because the variable had two subcategories (female & male). The difference in the emotional reactivity score of the sample according to the age, income level, and perceived parenting attitude of the mother or father were tested with one-way ANOVA. Also, the potential differences in emotional reactivity based on income status were examined using the Kruskal-Wallis H test as there were less than 30 respondents in high-income levels. Since the total score of the resilience subscale differed between at least two income groups, Mann-Whitney U was run to determine this difference. Pearson correlation was utilized to determine the relationship between emotional reactivity, cognitive distortion, and difficulties in emotion regulation.

Table 4

Skewness and kurtosis of the ERSTR regarding independent variables

		Total-ERSTR				Sensitivity				Resilience				Reactivity			
		Skewness	SE	Kurtosis	SE	Skewness	SE	Kurtosis	SE	Skewness	SE	Kurtosis	SE	Skewness	SE	Kurtosis	SE
Gender	Male	.24	.25	-.91	.49	-.03	.25	-.66	.49	.03	.25	-.68	.49	.38	.25	-.73	.49
	Female	-.02	.17	-.47	.33	-.22	.17	-.70	.33	-.25	.17	-.29	.33	.24	.17	-.52	.33
	Total	-.03	.13	-.71	.26	-.26	.13	-.59	.26	-.20	.13	-.54	.26	.23	.13	-.65	.26
Age	18-26	0.07	0.22	-0.9	0.44	-0.17	0.22	-0.67	0.44	-0.06	0.22	-0.6	0.44	0.2	0.22	-0.86	0.44
	27-44	-0.18	0.18	-0.55	0.36	-0.41	0.18	-0.43	0.36	-0.34	0.18	-0.47	0.36	0.14	0.18	-0.58	0.36
	45-64	0.32	0.4	-0.27	0.78	0.14	0.4	-0.23	0.78	-0.07	0.4	-0.66	0.78	0.42	0.4	-0.26	0.78
Mother	Authoritarian	0.38	0.33	-0.48	0.64	-0.21	0.33	-0.23	0.64	0.05	0.33	-0.24	0.64	0.39	0.33	-0.27	0.64
	Permissive	0.03	0.31	-0.79	0.62	0	0.31	-0.92	0.62	-0.31	0.31	-0.35	0.62	0.26	0.31	-0.88	0.62
	Protective	0.01	0.18	-0.73	0.35	-0.23	0.18	-0.61	0.35	-0.25	0.18	-0.61	0.35	0.3	0.18	-0.57	0.35
	Democratic	0.31	0.37	-1.21	0.73	-0.04	0.37	-0.78	0.73	0.29	0.37	-0.78	0.73	0.2	0.37	-1.15	0.73
Father	Authoritarian	-0.19	0.28	-0.69	0.56	-0.47	0.28	-0.45	0.56	-0.28	0.28	-0.78	0.56	0.11	0.28	-0.86	0.56
	Permissive	-0.07	0.25	-0.59	0.5	-0.12	0.25	-0.35	0.5	-0.47	0.25	-0.38	0.5	0.29	0.25	-0.73	0.5
	Protective	0.07	0.22	-0.79	0.44	-0.21	0.22	-0.73	0.44	.001	0.22	-0.58	0.44	0.19	0.22	-0.5	0.44
	Democratic	0.11	0.32	-0.77	0.63	-0.15	0.32	-0.87	0.63	-0.03	0.32	-0.49	0.63	0.32	0.32	-0.42	0.63

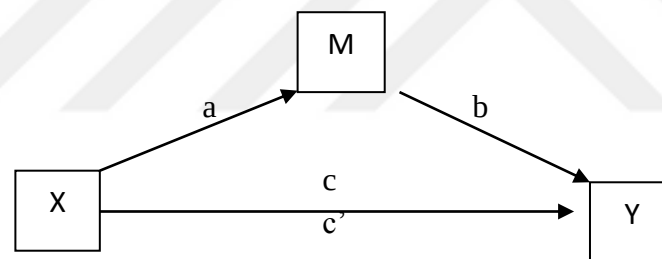
Mediation analysis was performed to determine the mediating role of cognitive distortions in the relationship between emotional reactivity and difficulty in emotion regulation. The PROCESS macro developed by Hayes (2008) was used for this process. Mediation analysis is conducted to find out to what extent some putative causal variables have a significant effect on an outcome through one or more mediating variables (Hayes, 2013). A mediation effect is proven when there is a relationship between an independent variable (e.g., emotional reactivity) and the dependent variable (e.g., emotion regulation), the independent variable and the mediating variable (e.g., cognitive distortions), and the product of the coefficients in these relationships is different from zero (Hayes, 2008).

The model in Figure 1 demonstrates the mediation process. First, the relationship between the independent variable (X) and the dependent variable (Y) is examined. In this relationship, the effect of the mediating variable is free and the independent variable should predict the dependent variable in a significant way. Otherwise, there will not be a relationship that can mediate anyway. In the mediation model, this effect is called the total effect. If the total effect is represented by the coefficient c , it is expressed by the equation $c = c' + a*b$ in linear systems. The coefficient c' shown in figure represents the direct effect and the product of the coefficients $a*b$ represents the indirect effect. The direct effect examines the change in the dependent variable caused by a unit change in the independent variable when the effect of the mediating variable is held constant. The indirect effect, on the other hand, examines how the change in the mediating variable affects the situation between the independent and dependent variable when the independent variable is held constant.



Secondly, the relationship between the independent variable (X) and the mediating variable (M) is examined. The independent variable should predict the mediating variable in a

meaningful way. Otherwise, there will not be a relationship that can mediate anyway. a coefficient represents this relationship. Finally, the relationship between the independent variable (X) and the mediating variable (M) and the dependent variable (Y) is examined. Thus, the coefficients b and c' are estimated. Here, the mediation effect is mentioned if the relationship between the independent variable and the dependent variable (c) observed in the first step is statistically insignificant or if there is a decrease in the strength of the relationship. The first of these cases is defined as full mediation effect and the second as partial mediation effect. At the same time, if the coefficient c' is not statistically significant, there is a full mediation effect. However, if the coefficient c estimated in the first step is equal to the coefficient c' estimated in the third step, there is no mediation effect. If the coefficient of c' is statistically significant but $a*b$ (or $c-c'$) is statistically significant, there is a partial mediation effect.



The mediational model of the current study to answer research questions is depicted in Figure 1.

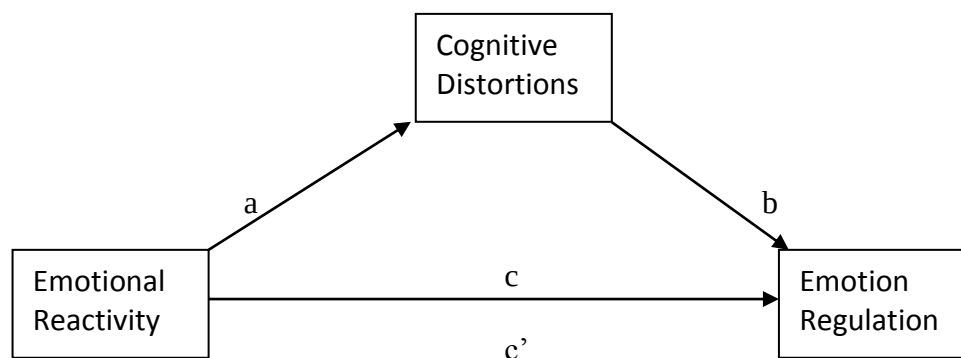


Figure 1. *Mediation Analysis Model*

4. FINDINGS

In this chapter, the findings obtained from the answers of the respondents to the tools used to measure their levels of emotional reactivity, cognitive distortion, and difficulty in emotion regulation were reported. First, it was examined whether there was a difference between the participants in terms of gender, age group, income, and parenting attitudes according to their CustomERS TR scores. After that, the hypotheses of the research were questioned. Relationships were examined between emotional reactivity and emotion regulation, emotional reactivity and cognitive distortion, and emotion regulation and cognitive distortion. The direct effect of emotional reactivity on difficulties in emotion regulation, the direct effect of cognitive distortion, and the mediating role of cognitive distortion in the relationship between emotional reactivity and emotion regulation difficulties were examined.

The findings are presented in two titles: (1) descriptive analysis of outcome and correlational measures, (2) results addressing the mediational role of cognitive distortions in the relationship between emotional reactivity and emotion regulation.

4.1. Descriptive analysis of outcome and correlational measures

4.1.1. ERSTR Score by Gender Group

Table 1 shows the means, standard deviations, and t-test results for the two genders on the Emotion Reactivity Scale, as well as their respective subscales. The subscales are sensitivity, resilience, and reactivity for the Emotion Reactivity Scale. The average total score of ERSTR obtained by men ($M=39.18$) was lower than the average of women ($M=45.14$), and the difference between them ($t=-5.96$) was statistically significant ($t(157.334)=4.67$; $p<.01$).

Table 5

t- Test findings and descriptive statistics for ERSTR and its subscales by gender

Measures	Total			Male			Female			t value
	M	SD	SE	M	SD	SE	M	SD	SE	
ERSTR (Total)	43.2993	.58	10.09	39.180	10.7	1.1	45.142	9.2	.6	4.67*
				9	3	1	9	4	4	*
Sensitivity (Subscale)	14.6679	.20	3.46	12.968	3.68	.38	15.414	3.0	.2	5.62*
				1			3	8	1	*
Resilience (Subscale)	12.8553	.18	3.17	11.670	3.41	.35	13.385	2.9	.2	4.24*
				2			7	1	1	*
Reactivity (Subscale)	15.7862	.27	4.70	14.542	4.93	.51	16.342	4.5	.3	3.13*
				6			9	1	1	*

Equal variances were not assumed for ERSTR (Total), and Emotional Sensitivity Resilience (all $p < .05$).

** $p < .01$

Male $n = 94$; Female $n = 210$; Total $N = 304$

The average total score of emotional sensitivity obtained by men ($M=12.97$) was lower than the average of women ($M=15.41$) and the difference between them (differ=-2.45) was statistically significant [$t(153.861)=5.62$; $p < .01$]. The average total score of resilience obtained by men ($M=11.67$) was lower than the average of women ($M=13.39$) and the difference between them (differ=-1.72) was statistically significant [$t(156.02)= 4.24$; $p < .01$]. The average total score of emotional reactivity subscale obtained by men ($M=16.34$) was lower than the average of women ($M=13.39$) and the difference between them (differ=-1.80) was statistically significant [$t(302)= 3.13$; $p < .01$].

According to the findings related to the gender variable, it was seen that the emotional reactivity levels of women were higher than men both in the total score and in all sub-dimensions.

4.1.2.. ERSTR Score by Age Group

This section explored whether there were differences in the ERSTR total score and its subscales by age groups. All were analysed using One-way ANOVA. According to Levene's statistic, the assumption of the equality of variances was met for all analyses (All $p > .05$). Hochberg's GT2 test was run because the difference between respondents in age groups was large (Field, 2013). Age group cut-off points were determined by taking into account studies conducted in the world and Turkey (Arnett, 2000; Atak & Çok, 2007; Doğan et al., 2007).

The difference between the mean of the total ERSTR score of 45-64 age group ($M = 37.99$) and 18-26 ($M = 43.90$) was statistically significant ($p < .05$). Following that, the difference between the mean of the total ERSTR score of 45-64 age group ($M = 37.99$) and 27-44 was statistically significant ($p < .05$). Accordingly, the mean score of total ERSTR of those who were 45-64 years old was lower than those who were 18-26 and 27-44. On the other hand, when the mean of the 18-26 and 27-44 age groups were compared, no statistical difference could be found ($p > .05$, Table 6).

Table 6.*One-way ANOVA findings and descriptive statistics for ERSTR and its subscales by age*

Measures		Descriptive			18-26			27-44		45-64	
	Age	M	SD	SE	N	d	p	d	p	d	p
ERSTR Total	18-26	43.8992	10.39	.95	119	0	-	0.49	0.97	6.01	.01**
	27-44	43.4108	9.95	.73	185	-0.49	0.97	0	-	5.53	.01**
	45-64	37.8857	9.14	1.54	35	-6.01	.01**	-5.53	.01**	-	0
	Total	43.0118	10.15	.55	339						
<i>F (2,338) = 5.185; p < .01</i>											
Measures		Descriptive			18-26			27-44		45-64	
	Age	M	SD	SE	N	d	p	d	p	d	p
E. sensitivity	18-26	14.5462	3.49	.32	119	0	-	-0.36	.76	1.29	.15
	27-44	14.9027	3.48	.26	185	0.36	.76	0	-	1.65	.03*
	45-64	13.2571	3.34	.56	35	-1.29	.15	-1.65	.03*	0	-
<i>F (2,338) = 3.343; p < .05</i>											
Measures		Descriptive			18-26			27-44		45-64	
	Age	M	SD	SE	N	d	p	d	p	d	p
Resilience	18-26	13.1345	3.13	.29	119	0	-	0.31	.78	2.11	0.00**
	27-44	12.8216	3.22	.24	185	-0.31	.78	0	-	1.79	.01
	45-64	11.0286	2.93	.49	35	-2.11	.00*	-1.79	.01**	0	-
<i>F (2,338) = 6.109; p < .01</i>											
Measures		Descriptive			18-26			27-44		45-66	
	Age	M	SD	SE	N	d	p	d	p	d	p
E. reactivity	18-24	16.2185	5.14	.47	119	0	-	.53	.71	2.62	.01**
	27-44	15.6865	4.52	.33	185	-.53	.71	0	-	2.09	.05*
	45-64	13.60	3.96	.67	35	-2.62	.01**	-2.09	.05*	0	-
<i>F (2,338) = 4.215; p < .05</i>											

** $p < .01$; * $p < .05$

Examining the mean scores of the emotional sensitivity subscale of the respondents according to the age group, it was observed that the respondents in the 45-64 age group ($M=13.26$) and those in the 27-44 age group ($M=14.90$) differed statistically ($p < .05$). Therefore, the score of emotional sensitivity in the 45-64 age group was lower than those in the 27-44 age group. However, the mean of respondents in the 45-64 age group and 18-26 age group, as well as the 27-44 age group and 18-26 age group, did not differ ($p > .05$).

Resilience subscale mean scores of respondents in the 45-64 age group and 18-26 age group, as well as those in the 45-64 age group and 27-44 age group, were compared and it was found that they differed statistically (all $p < .05$). First, the 45-65 age group ($M=11.03$) had a lower resilience score than the 18-26 age group ($M=13.13$). In addition, the mean resilience subscale was lower in the 45-65 age group compared to the 27-44 ($M=12.82$) age group. There was no difference between the 18-26 and 27-44 age groups ($p > .05$).

The total score of the emotional reactivity subscale of respondents in the 45-64 age group and 18-26 age group, as well as those in the 45-64 age group and 27-44 age group, were compared and it was found that they differed statistically (all $p < .05$). First, the 45-65 age group ($M=13.60$) had a lower score than the 18-26 age group ($M=16.22$). In addition, the mean emotional reactivity subscale was lower in the 45-65 age group compared to the 27-44 ($M=15.69$) age group. There was no difference between the 18-26 and 27-44 age groups ($p > .05$, Table 2).

According to the findings related to the age variable, it was observed that the emotional reactivity levels of the individuals aged 45-64 were lower than the other age groups both in the total score and in all sub-dimensions.

4.1.3. ERSTR Score by Income Level

This section explored whether there were differences in the ERSTR total score and its subscales by income level. All were analysed using Kruskal-Wallis H test as it was one of the non-parametric options to compare more than two independent groups. The non-parametric test was run since there were only 19 respondents in the high-income group.

Table 7*Findings Kruskal-Wallis H Test for ERSTR and its subscales by Income Level*

	Low (n= 58)				Middle (n= 262)				High (n=19)		
Measures	MDN	MDN	Min	Max	MDN	MDN	Min	Max	MDN	Min	Max
ERSTR (Total)	45	195.00	26	63	43	166.08	18	68	37	147.76	25
E.sensitivity											
(Subscale)	15	191.27	6	20	15	165.57	5	20	14	166.21	20
Resilience (Subscale)	14	200.28	8	19	13	166.19	5	20	9	130.05	19
E. reactivity											
(Subscale)	16.5	189.97	8	26	15	166.73	7	28	14	154.13	25

MDN: Median; K-W: Kruskal-Wallis H test.

Monte Carlo p. values based on 10000 sampled tables were used.

****** $p < .01$; ***** $p < .05$

No significant differences were found in the mean ranks of total ERSTR, emotional sensitivity subscale, and emotional reactivity subscale based on income status (all $p > .05$). In contrast, a significant difference was observed in the resilience subscale scores based on income levels ($p < .01$, Table 7).

Specifically, at least two income groups demonstrated distinct scores in the resilience subscale. To determine which two groups exhibited statistical differences, the Mann-Whitney U test was conducted.

The Mann-Whitney U test indicated that, for the resilience subscale, the median score of the low-income respondents and those in the middle-income group differed ($U = 6033$; $p < .01$). Low-income respondents (MDN= 14) had higher scores compared to middle-income respondents (MDN=13). Similarly, it was observed that the scores of the low-income group and the high-income group were different from each other ($U = 360$; $p < .05$). One more time, the median score of the low-income group (MDN=14) was higher compared to the high-income group (MDN= 9). Finally, the median scores of the resilience subscale of middle-

income (MDN= 13) and high-income respondents (MDN= 9) were compared (table 3), and no statistical difference was found ($U = 1921$; $p > .05$).

4.1.4. ERSTR Score by Parental Attitude

In this section, it was examined whether participants' perceptions of their own parents' parenting styles differed in terms of ERSTR and its subscale scores. These analyses were conducted by considering separately the perceived maternal parenting style and the perceived paternal parenting style. In order to shed light on both issues, a One-Way ANOVA was conducted. However, it could not be confirmed that the variances of the total score for ERSTR and the total score for the emotional sensitivity subscale were homogeneous based on perceived maternal parenting style. In order to assess the probability of differentiation in ERSTR and the emotional sensitivity subscale based on perceived maternal parenting style, the findings of the robust Welch test were taken into consideration. When variances are significantly different, corrective measures are taken for the F-statistic. Welch's F is one of the options for this correction (Field, 2018). Furthermore, in order to compare group means, the Games-Howell post hoc test was employed since the assumption of homogeneous variances was not satisfied. Games–Howell is one of the several multiple comparison procedures (post hoc test) that have been specially designed for situations in which population variances differ. It is a powerful and also accurate procedure when sample sizes are unequal but can be liberal when sample sizes are small (Field, 2018). The resilience subscale and emotional reactivity subscales of the measurement instrument were analysed across all perceived parenting styles of the mother as well, and it is found that the assumption of homogeneity of variance in these two sub-scales was met. Similarly, based on perceived paternal parenting style, the ERSTR scale and all of its subscales demonstrated homogeneous variances. Therefore, for the determination of score differences based on parenting style, the findings of the variance

analysis were considered. Due to the substantial difference in the number of participants among the groups, the Hochberg post hoc test findings were taken into account when comparing means.

ERSTR Scores By Perceived Maternal Parenting Attitude: According to the perceived maternal attitude of the respondents, it was determined that there were differences in the scores of the ERSTR scale [$W-F(3,110.78)=4.631$; $p < .05$] and the emotional sensitivity subscale [$W-F(3,109.99)=4.387$; $p < .05$]; Table 8.].

Respondents who perceived their mothers' parenting attitude as authoritarian had a higher mean ($M = 46.19$) on the ERSTR total compared to those who perceived their mothers as permissive (40.93). Similarly, the mean scores of the emotional sensitivity subscale were also different between these two groups. The mean score of this subscale was statistically significantly higher among those who perceived their mothers as authoritarian ($M = 15.66$) compared to those who perceived their mothers as permissive ($M = 13.66$). Another difference was observed between those who perceived their mothers as authoritarian and those who perceived their mothers as democratic in terms of the total score on the ERSTR scale. The average ERSTR score was higher ($M = 46.19$) among those who perceived their mothers as authoritarian compared to those who believed they had a democratic mother ($M = 40.65$). There was not enough evidence to claim that the total mean score of the ERSTR scale or the mean score of the emotional sensitivity subscale differed among the respondents in the other groups, at least at a statistical significance level of .05. Similarly, the scores on the resilience subscale did not differ based on the perceived parental attitude of the respondents [$F(3,388) = 2.174$; $p > .05$], and there was no difference in the mean scores of the emotional reactivity [$F(3,338) = 57.507$; $p > .05$] subscale either (Table 8.)

Table 8*One-way ANOVA findings for ERSTR and its subscales by perceived maternal parenting*

Measures	Attitude	Descriptive				Authoritarian		Permissive		Protective	
		M	SD	SE	N	d	p	d	p	d	p
ERSTR	Authoritarian	46.1887	6.98	.96	53	0	-	5.26	0.02*	2.93	.08
	Permissive	40.9310	10.89	1.43	58	-5.26	0.02*	0	-	-2.33	.48
	Protective	43.2606	10.37	.76	188	-2.93	.08	2.33	0.48	0	-
	Democratic	40.6500	10.62	1.68	40	-5.54	0.03*	-0.28	1.00	-2.61	0.49
	Total	43.0118	10.15	.55	339						

Levene (3,335) = 5.517; $p < .01^{**}$ Welch F (3,110.78) = 4.631; $p < .01^{**}$

Measures	Attitude	Descriptive				Authoritarian		Permissive		Protective	
		M	SD	SE	N	d	p	d	p	d	p
Sensitivity	Authoritarian	15.6604	2.40	.33	53	0	-	1.99	.01*	0.94	0.11
	Permissive	13.6724	3.98	.52	58	-1.99	.01*	0	-	-1.05	0.28
	Protective	14.7181	3.50	.26	188	-0.94	0.11	1.05	0.28	0	-
	Democratic	14.0500	3.59	.57	40	-1.61	0.08	0.38	0.96	-0.67	0.71
	Total	14.6077	3.49	.19	339						

Levene (3,335) = 5.181; $p < .01^{**}$ Welch F (3,109.99) = 4.387; $p < .01^{**}$

Measures	Attitude	Descriptive				Authoritarian		Permissive		Protective	
		M	SD	SE	N	d	p	d	p	d	p
Resilience	Authoritarian	13.5849	2.66	.36	53	0	-	1.36	0.14	0.79	0.51
	Permissive	12.2241	3.26	.43	58	-1.36	0.14	0	-	-0.57	0.80
	Protective	12.7926	3.25	.24	188	-0.79	0.51	0.57	0.80	0	-
	Democratic	12.1750	3.49	.55	40	-1.41	0.20	-0.05	1.00	-0.62	0.84
	Total	12.7463	3.21	.17	339						

Levene (3,335) = 1.660; $p > .05$ F (3,388) = 2.174; $p > .05$

Measures	Attitude	Descriptive				Authoritarian		Permissive		Protective	
		M	SD	SE	N	d	p	d	p	d	p
Reactivity	Authoritarian	16.9434	4.05	.56	53	0	-	1.91	0.18	1.19	0.48
	Permissive	15.0345	4.86	.64	58	-1.91	0.18	0	-	-0.72	0.89
	Protective	15.7500	4.78	.35	188	-1.19	0.48	0.72	0.89	0	0
	Democratic	14.4250	4.92	.78	40	-2.52	0.06	-0.61	0.99	-1.33	0.49
	Total	15.6578	4.74	.26	339						

Levene (3,335) = 1.615; $p > .05$ F (3,338) = 57.507; $p = .052$ $^{**}p < .01$; $*p < .05$.

ERSTR Scores by Perceived Paternal Parenting Attitude: One-way analysis of variance revealed a piece of statistical evidence that the mean scores of the emotional sensitivity subscale differed based on the perceived parental attitude of the respondents regarding their fathers ($F(3,338) = 3.032$, $p < .05$). However, comparing the mean scores

across perceived parental attitudes using Hochberg post hoc test, no statistical difference was found between any perceived attitudes. Subsequently, a least significant difference (LSD) pair-wise comparison, which makes no attempt to control the Type I error (rejecting the true null hypothesis), and is equivalent to conducting multiple pairwise comparisons on the data, but can use when ANOVA yields a significant result, was conducted (Field, 2018).

Taking into account the findings from the LSD, respondents who perceived their fathers as authoritarian had a higher mean emotional sensitivity score ($M=15.28$) compared to those who described their fathers as permissive ($M=13.88$). Another difference was observed between respondents who believed their fathers exhibited a protective attitude and those who perceived their fathers as permissive. The mean emotional sensitivity score was higher among respondents who perceived their fathers as protective ($M=14.97$) compared to those who perceived their fathers as permissive ($M=13.88$). However, no statistical evidence was found to suggest that the mean scores of the emotional sensitivity subscale differed based on other perceived parental attitudes of fathers (Table 9).

The mean scores of the ERSTR scale ($F(3,338) = 2.448, p > .05$), the resilience subscale ($F(3,338) = 1.439, p > .05$), and the emotional reactivity subscale ($F(3,338) = 1.710, p > .05$) did not differ based on the perceived parental attitudes of fathers (Table 9).

Table 9*One-way ANOVA findings for ERSTR and its subscales by perceived paternal parenting*

Measures	Attitude	Descriptive				Authoritarian		Permissive		Protective	
		M	SD	SE	N	d	p	d	p	d	p
ERSTR	Authoritarian	45.00	10.331	.22	72	0	-	3.78	.10	1.21	.96
	Permissive	41.2174	10.001	.04	92	-3.78	.10	0	-	-2.57	.34
	Protective	43.7917	9.67	.88	120	-1.21	.96	2.57	.34	0	-
	Democratic	41.7091	10.781	.45	55	-3.29	.35	.49	1.00	-2.08	.75
	Total	43.0118	10.15	.55	339						
Levene (3,335) = .514; $p > .05$											
F (3,338) = 2.448; $p > .05$											
Measures	Attitude	Descriptive				Authoritarian		Permissive		Protective	
		M	SD	SE	N	d	p	d	p	d	p
Sensitivity	Authoritarian	15.2778	3.29	.39	72	0	-	1.40	.01 ⁺	.30	.56
	Permissive	13.8804	3.52	.37	92	-1.40	.01 ⁺	0	-	-1.09	.02 ⁺
	Protective	14.9750	3.24	.30	120	-0.30	0.56	1.09	.02 ⁺	0	-
	Democratic	14.1455	4.00	.54	55	-1.13	.07	.27	.65	-.83	.14
	Total	14.6077	3.49	.19	339						
Levene (3,335) = 1.313; $p > .05$											
F (3,338) = 3.032; $p < .05$											
Measures	Attitude	Descriptive				Authoritarian		Permissive		Protective	
		M	SD	SE	N	d	p	d	p	d	p
Resilience	Authoritarian	13.2361	3.19	.38	72	0	-	.80	.51	.31	0.99
	Permissive	12.4348	3.31	.35	92	-.80	.51	0	-	-.49	.85
	Protective	12.9250	3.17	.29	120	-.31	0.99	0.49	0.85	0	-
	Democratic	12.2364	3.11	.42	55	-1.00	.40	-.20	1.00	-.69	.71
	Total	12.7463	3.21	.17	339						
Levene (3,335) = .210; $p > .05$											
F (3,338) = 1.439; $p > .05$											
Measures	Attitude	Descriptive				Authoritarian		Permissive		Protective	
		M	SD	SE	N	d	p	d	p	d	p
Reactivity	Authoritarian	16.4861	5.09	.60	72	0	-	1.58	.19	0.59	.95
	Permissive	14.9022	4.54	.47	92	-1.58	.19	0	-	-0.99	.57
	Protective	15.8917	4.56	.42	120	-0.59	.95	0.99	.57	0	-
	Democratic	15.3273	4.88	.66	55	-1.16	.68	0.43	1.00	-0.56	.98
	Total	15.6578	4.74	.26	339						
Levene (3,335) = .848; $p > .05$											
F (3,338) = 1.710; $p > .05$											
+ $p < .05$ based on the least-significant difference (LSD) pairwise comparison											

4.1.5. Correlation of ERSTR, CDS, and DERSTR Scales

The correlation between the scales of emotional reactivity, difficulty in emotion regulation, and cognitive distortion, as well as the correlation among the sub-dimensions, were reported in this section.

There is a positive correlation between ERSTR and CDSTR ($r = .61$), and ERSTR and DERSTR ($r = .68$). The CDSTR and DERSTR scales also showed a positive correlation ($r = .69$). A low, positive correlation was found between the emotional sensitivity subscale of the ERSTR scale and the CDSTR scale ($r = .42$). The resilience subscale total score of the ERSTR scale showed a low, positive correlation with the CDSTR scale total score ($r = .54$). There was a moderate and positive correlation between the total score of the emotional reactivity subscale of the ERSTR scale and the total score of the CDSTR scale ($r = .63$). A low, positive correlation was observed between the emotional sensitivity subscale total score of the ERSTR scale and the total score of the DERSTR scale ($r = .49$). The resilience subscale total score of the ERSTR scale exhibited a moderate, positive correlation with the DERSTR scale total score ($r = .63$). There was a moderate, positive correlation between the total score of the emotional reactivity subscale of the ERSTR scale and the total score of the DERSTR scale ($r = .67$). As seen, all sub-dimensions showed correlations with other scales and sub-dimensions, all of which were positively oriented. The correlations between sub-dimensions and scales, excluding their own scale scores, were generally at a moderate level (Table 6).

Table 10*Pearson correlations between ERSTR, CDSTR, and DERSTR and subscales*

Scales	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p
a. ERSTR	1															
b. CDSTR	.606**	1														
c. DERSTR	.685**	.692**	1													
d. ERSTR-Sen	.841**	.417**	.495**	1												
e. ERSTR-Res	.897**	.536**	.635**	.668**	1											
f. ERSTR-Reac	.915**	.627**	.674**	.611**	.752**	1										
g. CDS-NSP	.490**	.863**	.621**	.333**	.426**	.516**	1									
h. CDS-SB	.540**	.861**	.629**	.392**	.464**	.554**	.772**	1								
i. CDS-Helpless	.579**	.920**	.630**	.414**	.520**	.583**	.715**	.702**	1							
j. CDS-hopeless	.507**	.905**	.596**	.336**	.457**	.529**	.683**	.662**	.870**	1						
k. CDS-PDL	.581**	.890**	.613**	.385**	.516**	.611**	.712**	.741**	.765**	.746**	1					
l. DERS-Clarity	.347**	.456**	.595**	.235**	.325**	.350**	.424**	.449**	.398**	.371**	.405**	1				
m. DERS-Goal	.546**	.426**	.772**	.453**	.503**	.494**	.411**	.382**	.398**	.359**	.349**	.295**	1			
n. DERS-Impulse	.532**	.501**	.795**	.304**	.516**	.566**	.460**	.448**	.422**	.423**	.487**	.401**	.552**	1		
o. DERS-Strategy	.679**	.710**	.929**	.486**	.617**	.678**	.605**	.613**	.664**	.640**	.632**	.475**	.654**	.663**	1	
p. DERS-nonaccep	.518**	.583**	.809**	.399**	.478**	.492**	.526**	.570**	.533**	.484**	.497**	.450**	.461**	.541**	.711**	1

**Correlation is significant at the 0.01 level (2-tailed).Based on Pearson correlation

4.2. Mediating Role of Cognitive Distortions

Several multiple regression analyses were used to investigate the hypothesis that cognitive distortion mediates the relationship between emotional reactivity and emotion regulation. To conduct mediation analysis, criteria suggested by Baron and Kenny (1986) were used. More specifically, as preconditions for testing a mediational model, (1) independent variables (i.e., emotional reactivity) must be correlated significantly with the dependent variables (i.e., emotion regulation), (2) independent variables must be correlated significantly with mediator variables (i.e., cognitive distortions), and (3) the mediator variables should be correlated significantly with the outcome variable (Baron & Kenny, 1986).

PROCESS macro for SPSS was used to conduct the mediation analysis, which is “a computational tool for path analysis-based moderation and mediation analysis as well as their integration in the form of a conditional process model” (Hayes, 2013, p. 419), and for this analysis model 4 was chosen. Thus, it provides an integrated output that includes the test of preconditions suggested by Baron and Kenny (1986) as well as the test of the proposed mediational model. In light of the study of Baron and Kenny (1986), the four steps below were considered in establishing mediation:

Step 1: Show that the predictor variable is significantly correlated with the criterion variable. This step determines that there is an effect that can be mediated.

Step 2: Show that the predictor variable is significantly correlated with the mediator variable. At this stage, the mediator variable is considered as the predicted variable.

Step 3: Show that the mediator variable is significantly correlated with the criterion variable. Without a significant relationship between the mediating variable and the criterion variable, the mediation model cannot be mentioned.

Step 4: Evaluate the statistical model of mediation. A nonsignificant relationship between the independent variable and the dependent variable previously observed in Step 1 is

defined as a full mediation effect, and a decrease in the strength of the relationship is defined as a partial mediation effect.

In the current study, emotional reactivity was a predictor variable, emotion regulation was a criterion variable, and cognitive distortion score was the mediator variable. The mediating role of cognitive distortions in the relationship between emotional reactivity and emotion dysregulation was examined. The findings regarding the mediation relationship according to Model 4 were summarized in Table 11 below.

Table 11

Mediating Variable Analysis

Model	Dependent variable	Independent variable	Beta	Std. E.	Standardize Beta	t	p
Model 1	DERSTR	Sabit	3,33	2,26		0,47	14,23
		ERSTR	1,14	0,07	0,62	15,84	0,00*
		$F_{(1,337)}=250,95$; $p=0,00$; $R=0,65$; $R^2=0,43$					
Model 2	CDSTR	Sabit	8,17	5,21		1,57	0,12
		ERSTR	2,07	0,17	0,56	12,5	0,00*
		$F_{(1,337)}=156,23$; $p=0,00$; $R=0,56$; $R^2=0,32$					
Model 3	DERSTR	Sabit	1,50	1,95		0,77	0,44
		ERSTR	0,68	0,07	0,39	9,05	0,00*
		CDSTR	0,22	0,02	0,47	11,04	0,00*
		$F_{(2,336)}=231,49$; $p=0,00$; $R=0,76$; $R^2=0,58$					

According to Model 1, ERSTR was found to be a significant predictor of DERSTR ($F_{(1,337)}=250.95$; $p<0,05$). The c coefficient defined in Model 1 was calculated as 1.14. Accordingly, when ERSTR scores increase by one unit, it causes an increase of 1.14 units in DERSTR scores, and ERSTR explains approximately 43% of the total variance in DERSTR scores ($R^2=0.43$). The regression equation for Model 1 is as follows:

$$DERSTR = 3,33 + 1,14 \cdot ERSTR$$

According to Model 2, ERSTR was found to be a significant predictor of CDSTR ($F_{(1,337)}=156,23$; $p<0.05$). The coefficient a defined in Model 2 was calculated as 2.07. Accordingly, a one unit increase in ERSTR scores leads to a 2.07 unit increase in CDSTR scores and ERSTR scores explain approximately 32% of the total variance in CDSTR scores ($R^2=0,32$). The regression equation for Model 2 is as follows:

$$CDSTR = 8,17 + 2,07*ERSTR$$

According to Model 3, ERSTR and CDSTR were found to be significant predictors of DERSTR ($F_{(2,297)}=231,49$; $p<0.05$). The c' (0,68) and b (0,22) coefficients defined in Model 3 were calculated and found to be statistically significant ($c'=0,68$; $b=0,22$; $p<0,05$). Accordingly, a one unit increase in ERSTR scores leads to a 0.68 unit increase in DESTTR scores, and a one unit increase in CDSTR scores leads to a 0.22 unit increase in DESTTR scores. Moreover, ERSTR and CDSTR scores together explain approximately 58% of the total variance in DESTTR scores ($R^2=0,58$). The total effect of ERSTR on DESTTR was calculated as $c=1.14$ in Model 1. With the inclusion of CDSTR in the model, the direct effect of ERSTR on DESTTR was calculated as $c'=0.68$. In this case, the indirect effect of CDSTR is calculated as 0.46 ($a*b=0.22*2.07$). The statistical significance of this indirect effect was checked with the Sobel test and it was found that this change was not significant ($Z=8.16$, $p=0.00$). These results indicate that CDSTR has a partial mediation effect. The regression equation for Model 4 is as follows:

$$DERSTR = 1,50 + 0,68*ERSTR + 0,22*CDSTR$$

The mediation model used by the current study to answer the research questions, and the results of the analysis were shown in Figure 2.

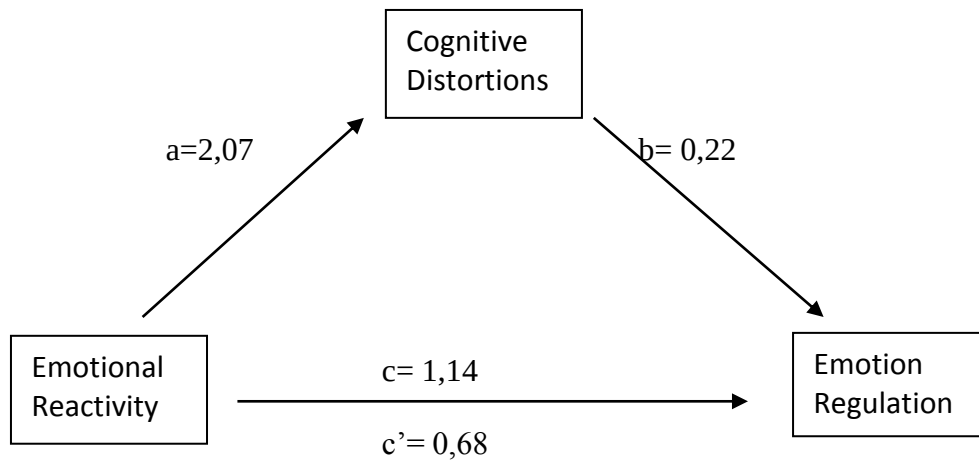


Figure 2. *The Mediating Role of Cognitive Distortions*

In sum, emotional reactivity positively predicts both emotion regulation and cognitive distortions, and cognitive distortions positively predict emotion regulation. It was observed that the total effect of emotional reactivity on emotion regulation decreased with the inclusion of cognitive distortions in the model; therefore, cognitive distortions partially mediated this relationship.

5. RESULTS

First, the findings regarding whether the total scores of the respondents from the CustomERSTR scale differ according to gender, age, income level, and parental attitude were examined. Next, the mediating role of cognitive distortions in the relationship between emotional reactivity with emotion regulation was examined. According to the findings, the emotional reactivity levels of the participants differed according to gender, income level, and parental attitude. However, no differentiation was observed according to the age variable. According to the structural regression analysis, cognitive distortions mediate the relationship between emotional reactivity and emotion regulation.

- 1) The results obtained from the study can be briefly summarized as follows:
- 2) The mean emotional reactivity scores of women were higher than that of men.
- 3) The mean emotional reactivity scores of 45-64 years were lower than 18-26 and 27-44 years.
- 4) No significant difference was found according to the total score of the emotional reactivity scale depending on the income level variable. However, a significant difference was observed in the resilience subscale scores based on income levels. The mean emotional reactivity score of participants with low income was higher than middle and high-income.
- 5) The mean emotional reactivity scores of participants who had authoritarian parental attitudes were higher than others.
- 6) There is a positive relationship between emotional reactivity, difficulty in emotion regulation, and cognitive distortion.
- 7) Emotional reactivity predicts difficulty in emotion regulation and cognitive distortions, and cognitive distortions positively predict difficulty in emotion regulation. Cognitive distortions partially mediate the relationship between emotional reactivity and emotion regulation.

6. DISCUSSION and SUGGESTION

6.1. Discussion

In this study, the level of emotional reactivity of individuals aged 18-65 in Turkey was examined to determine whether it differed according to their demographic characteristics (gender, age group, income level) and perceived parental attitudes using independent t-tests and one-way analysis of variance.

Next, the relationship between emotional reactivity and difficulty in emotion regulation was investigated, with the mediating role of cognitive distortion being questioned. For this purpose, a structural regression model was used and a latent variable structural equation model was run. Thus, the direct effect of emotional reactivity on the difficulty in emotion regulation, the direct effect of emotional reactivity on cognitive distortion, and the direct effect of cognitive distortion on the difficulty in emotion regulation were tested. Additionally, the mediating role of cognitive distortion in the effect of emotional reactivity on the difficulty in emotion regulation was examined.

The emotional reactivity level, difficulty in emotion regulation level, and cognitive distortion level of the sample were measured using the Turkish Version of the Emotional Reactivity Scale (ERSTR), Turkish Version of Difficulties in Emotion Regulation Scale-Short Form (DERS16TR), and Turkish Version of Cognitive Distortion Scale (CDSTR), respectively. A high score on the ERSTR indicates a high level of emotional reactivity, a high score on the DERS16TR indicates a high level of difficulty in emotion regulation, and a high score on the CDSTR indicates a high level of cognitive distortion. In our study, the mediating effect of cognitive distortion was examined through a latent variable structural equation modelling approach. Therefore, the model fit was tested first and the scales and structural model were reshaped accordingly. Reconstructed scales were used in all analyses.

All these steps and other analyses were made by conducted sample consisting of 61.95% female (210), 27.73% male (94), and 10.32% other individuals (35); with 70.80% of the sample being between the ages of 25-65, and 29.20% between 18-24; and with 77.29% of the sample consisting of individuals with moderate income, 17.11% with low income, and 5.60% with high income. Interm of perceived parental attitudes, 55.46% of the sample reported their mother's attitude as protective, 17.11% as permissive, 15.63% as authoritarian, and 11.80% as democratic. For their father's parental attitude, 35.40% of the sample reported it as protective, 27.14% as permissive, 21.24% as authoritarian, and 16.22% as democratic. We had three hypotheses regarding the relationship between demographic factors and individuals' emotional reactivity levels. These hypotheses claimed that gender has a main effect (directeffect/sole effect) on emotional reactivity level, age has a direct effect (maineffect/ sole effect) on emotional reactivity level, and income level has a sole effect(directeffect/main effect) on emotional reactivity level.

Examining whether emotional reactivity levels differ according to the gender, age group, and income level of the respondents in our study, it was found that the gender factor may have an effect on emotional reactivity levels. According to our findings, the main effect of gender was significant and women had higher levels of emotional reactivity than men.

Hare et al. (2008) conducted a studyusing FMRI to investigate the biological basis of emotional reactivity and regulation in both adolescents and adults. They found that gender differences were observed in adults, with women exhibiting higher emotional reactivity compared to men's intensity and reactivity.

Fischer and Manstead (2000) conducted a meta-analysis that included data from 37 countries and found that women tend to express more intense emotions, especially in response to interpersonal stressors. Kringand Gordon (1998) found that women tend to display more intense emotional reactions than men to both positive and negative stimuli. A study by McRae

et al. (2008) found that women exhibited greater emotional reactivity than men in response to emotionally evocative images. In their search by Hamaideh in which university students' reactions to stress and the relationship between gender and stress; a statistically significant difference was found in emotional, behavioral, and cognitive responses to stress between male and female students. Female students stated that they had more emotional reactions than male students.

Studies in the literature tend to show that women have higher levels of emotional reactivity compared to men. However, Fridlund and Izard (1983) evaluated emotional differences between men and women using electromyographic (EMG) methods and found that men experienced higher levels of emotional arousal compared to women (as cited in Cacioppo et al., 1986). Additionally, Cacioppo et al. (1986) evaluated emotional differences between men and women using electromyographic (EMG) methods and found that men experienced higher levels of emotional arousal compared to women. In another study in Turkey, a statistically significant relationship was found between gender and emotional reactivity total and sub-dimension score (Yurdakul & Üner). When other variables were controlled, the mean emotional reactivity score of women is 2.23 units slower than that of men.

We compared emotional reactivity levels by dividing individuals between the ages of 18-65 into three groups, 18-26, 27-44, and 45-64. There was a difference between these age groups. 45-64 years had low emotion reactivity levels than other age groups. Therefore, it is possible to claim that emotional reactivity differs by age based on our findings. Carstensen et al. (1997) focus on the experience, expression, and control of emotions during the aging process. The researchers examined the emotional experiences, emotional expressions, and emotional control strategies of adults across a wide age range (18 to 88 yearsold). The

findings of the study indicate that older adults experienced fewer negative emotions and more positive emotions.

Additionally, older adults tended to display less intense emotional expressions and used emotional control strategies more effectively. However, it is not clear whether these differences are a direct result of aging or whether age-related factors influence other variables. Hess and colleagues (2005) reported that older adults showed less emotional reactivity to lower-intensity emotional stimuli (as cited in Charles&Carstensen, 2010). Also, Hare et al. (2008) conducted a study using fMRI to investigate the biological basis of emotional reactivity and regulation in both adolescents and adults during an emotional Go-Nogo task. The study found that adolescents showed higher emotional responses to emotional stimuli compared to adults. In order to regulate their emotions effectively, adolescents needed to exhibit higher activity in a specific region of the prefrontal cortex. The prefrontal cortex was also found to play a crucial role in the different biological processes required to control emotional responses in adolescents compared to adults. Moreover, the study found that emotional regulation is controlled by different brain regions at different developmental stages in adolescents, with more effort required in the early stages of development. The study also examined emotional reactivity and regulation skills in adults and found that adults had better control over their emotional activation. This suggests that adults have better emotion regulation skills, which may influence amygdala activation. Also according to Masten's (2002) study, emotional reactivity is higher in childhood and adolescence.

According to the findings reported by Charles and Carstensen (2010), understanding how the aging process affects our social and emotional experiences was important. The researchers suggested that older adults generally experience more positive emotions. The intensity and frequency of negative emotions decrease with age, which is interpreted as older adults being generally less stressed and happier. According to the researchers, with their

greater life experience and better thinking and emotional control strategies, older adults tend to be emotionally healthier. Older adults show less emotional expression and response tendencies, but they still maintain appropriate social response skills

The difference in income level appears to be one of the factors that affect individuals' emotional reactivity levels. According to our findings, the direct effect of income level on the respondents' emotional reactivity total score is not significant, but a significant difference was observed in the resilience subscale. Low-income respondents had higher scores compared to middle-income respondents. Similarly, it was observed that the scores of the low-income group and the high-income group were different from each other. Therefore, we can say that individuals in the low-income group have higher levels of emotional reactivity in the resilience sub-dimension compared to others.

When previous studies were examined, it was found that there is a relationship between low-income levels and emotional reactivity, and research has shown that individuals with low-income levels have higher emotional reactivity compared to those with middle-income levels. There haven't been many studies focused specifically on the relationship between income level and emotional reactivity. Studies have generally focused on the relationship between empathy and income (Piff et al., 2012), the relationship between economic equality and emotional stress (Pickett & Wilkinson, 2010), and the impact of economic inequality on mental health (Pickett & Wilkinson, 2010). These studies suggest that individuals with lower socioeconomic status may have higher levels of emotional reactivity. However, it should be noted that there are also individuals from higher social classes who may not exhibit emotional reactivity. In the study conducted by Pickett and Wilkinson (2010), the impact of economic inequality on mental health was examined. The study found that high levels of economic inequality lead to higher rates of mental health problems and emotional

stress in society. Additionally, it was noted that individuals with low incomes have higher rates of depression, anxiety, and other mental health issues.

Income is an important requirement for individuals to meet their needs. Income below the optimal level can make it difficult to meet physiological and psychological needs. The higher levels of emotional reactivity observed in low-income groups may be associated with at least insufficient fulfillment of needs.

We also developed two hypotheses regarding whether individuals' perceptions of their 'own parents' parenting styles differentiate their emotional reactivity levels. According to attachment style emotion and emotion processing is related to mother and father attitudes. The first hypothesis argues that individuals' emotional reactivity levels differ according to the perceived parenting style of their mothers, while the second hypothesis claims that emotional reactivity levels differ according to the perceived parenting style of their fathers.

Our findings supported the hypothesis that an individual's level of emotional reactivity varies depending on how they perceive their mothers' parenting style. Among the respondents, those who described their mothers as authoritarian had a higher level of emotional reactivity compared to those who described them as permissive. Another difference was observed between those who described their mothers as protective and those who described them as authoritarian. The level of emotional reactivity was lower among those who described their mothers as protective compared to those who described them as authoritarian. In this case, it is possible to suggest that the perceived parenting style of the mother may have a significant direct effect on the level of emotional reactivity of individuals.

The findings obtained through variance analysis do not support the claim that individuals' emotional reactivity levels vary according to their perceived paternal parenting style. However, our multiple group comparisons (using Sidak, Tukey, etc.) indicated that there may be a difference in emotional reactivity levels between individuals who perceive

their fathers as authoritarian versus permissive. According to our findings, those who perceived their fathers as authoritarian had a higher emotional reactivity level compared to those who perceived their fathers as permissive.

The study conducted by Fassot E-M, Tuschen-Caffier B, and Asbrand J. (2022) examined the relationships between parental characteristics and emotion regulation in 214 children and adolescents. The study included 106 participants with psychopathology and 108 without, along with their parents. The findings showed that children and adolescents with psychopathology had lower emotion regulation skills and their parents had higher levels of authoritarianism, low emotional support, low emotional expression, and low emotion regulation skills. In addition, a positive relationship was found between parental emotional support and expression skills and children's emotion regulation skills. According to Morris et al. (2017), parents have an impact on the development of their children's emotion regulation skills. The authoritative parenting style has a positive effect on emotion regulation skills, while the authoritarian parenting style has a negative effect. Additionally, providing emotional support and creating an emotionally supportive environment has a positive impact on children's emotion regulation. Robinson et al. (1995) reported findings on the relationship between parenting styles and children's self-esteem, behavioural problems, and academic achievement in a sample of 262 children and adolescents. According to their results, the authoritarian parenting style was associated with low self-esteem, high levels of behavioural problems, and poor academic achievement in children. The permissive parenting style was associated with low self-esteem, high levels of behavioural problems, and moderate academic achievement in children. The parenting style that provides a warm and supportive environment while being consistent in discipline and setting boundaries is associated with high self-confidence in children, low levels of behavioural problems, and high academic achievement.

As a result, relationships with parents, especially during childhood, are effective in determining an individual's emotional reactivity. Authoritarian parents can cause a higher degree of emotional reactions. Our research is important in suggesting that the influence of authoritarian parents on individuals' emotional reactivity can be observed in adulthood as well.

The motivation behind this research was also to contribute to the literature by shedding light on the relationship between individuals' levels of emotional reactivity and their emotion regulation difficulties and cognitive distortions. In this pattern, we were particularly interested in the mediating role of cognitive distortion level. To address this problem, we used the latent variable structural regression model.

Our hypotheses for these relationships were as follows: a) Emotional reactivity affects emotion regulation difficulty level; b) The level of emotional reactivity affects the level of cognitive distortions; c) The level of cognitive distortion affects the level of emotion regulation difficulty; d) There is a mediating role of cognitive distortions in the relationship between emotional reactivity and emotion regulation. These four claims were statistically supported.

Our findings indicate that, when controlling for the effect of cognitive distortions on emotion regulation difficulty, the main effect of individuals' emotional reactivity levels on emotion regulation difficulty is significant. Based on this, it is observed that emotional reactivity significantly predicts emotion regulation difficulty. This effect is positive, meaning that as individuals' emotional reactivity levels increase, so does their emotion regulation difficulty.

Many findings in the literature suggest a positive relationship between emotional reactivity and difficulty in emotion regulation. This phenomenon has been discussed below:

According to a correlation analysis conducted in a study among university students, a significant relationship was found between difficulty in emotion regulation and emotional reactivity. As the participants' scores on emotion regulation difficulty increased, their scores on emotional reactivity also increased (Yumuşak, 2019).

Sloan (2004) conducted a laboratory study with a sample of 60 undergraduate students. The participants were randomly assigned to one of two groups: an experiential avoidance group and a control group. The data were analyzed using statistical tests to compare the emotional reactivity and emotion regulation scores between the two groups. The findings showed that participants with high experiential avoidance exhibited higher levels of emotional reactivity and lower levels of emotion regulation compared to those with low experiential avoidance. Also, experiential avoidance was found to predict the relationship between emotional reactivity and emotion regulation. Thus, individuals with high levels of experiential avoidance are more likely to exhibit higher levels of emotional reactivity and have weak emotion regulation skills.

According to Gross and Jazaieri (2014), healthy emotion regulation skills are associated with psychological well-being, while emotional reactivity is linked to psychopathological disorders. The researchers suggested that emotional reactivity may impact individuals' capacity for emotion regulation. Additionally, individuals with well-developed emotion regulation skills may have more appropriate and balanced emotional responses. Therefore, developing emotion regulation skills can help individuals better manage their emotional responses.

At the same time, individuals with high levels of emotional reactivity and difficulty regulating emotions are more likely to experience psychological disorders. Badour and Feldner's (2013) study examined the relationship between emotional reactivity and regulation of emotion in individuals with post-traumatic stress disorder (PTSD) symptoms. The study

consisted of a sample of 145 college students, with a mean age of 20.38 years and 68% of whom were female. The sample was predominantly White (77%), followed by Black (14%) and other races (9%). Participants who reported experiencing at least one traumatic event and who reported PTSD symptoms within the past month were selected for the study. The sample selection was appropriate for the study's aims, which were to examine the relationship between emotional regulation skills and emotional reactivity in individuals with PTSD symptoms. The study found that individuals with PTSD symptoms exhibited higher levels of emotional reactivity and lower levels of emotional regulation skills. Additionally, a positive relationship was found between higher levels of emotional reactivity and lower levels of emotional regulation skills. According to findings suggested that individuals with PTSD symptoms need to develop their emotional regulation skills, which may be effective in reducing emotional reactivity.

Salsman and Linehan (2012) conducted a study on 456 participants from two different geographic regions to examine the indirect effects of problematic emotion regulation on features of Borderline Personality Disorder (BPD), while also considering the impact of negative affect. Participants completed several measures including the Affect Intensity Measure (AIM), Difficulties in Emotion Regulation Scale (DERS), Emotion Regulation Questionnaire (ERQ), and Borderline Symptom List (BSL). The results of this study supported two models: the first model showed significant indirect effects of a lack of emotional clarity and limited access to emotion regulation strategies on BPD features, taking into account negative affective intensity. The second model showed significant indirect effects of limited access to emotion regulation strategies and difficulties in goal-directed behavior on BPD features, taking into account negative affective reactivity. Overall, the study highlights important connections between emotion regulation and BPD features, and provides

evidence for the impact of difficulties in emotion regulation on BPD, even when accounting for negative emotions.

The mentioned studies suggest that the level of emotional reactivity may impact individuals' capacity for emotion regulation, and in the relationship between the two, borderline personality disorder, post-traumatic stress disorder, and psychological well-being levels should also be taken into consideration. Some researchers (Gross & John, 2003; Webb et al., 2012; Gross & Jazaieri, 2014) believe that emotion regulation abilities may contribute to reducing emotional reactivity, but Russell's (2003) neurological perspective should not be overlooked. Russell (2003) emphasized the role of neurological activation that underlies the emotional experiences of individuals, which he calls "core affect." In other words, he focused on the neurological basis of emotions in the human brain. According to him, emotional responses arise directly from neurological activation. The study also noted that factors such as an individual's experiences, personality, and culture play an important role in the construction of emotions. Therefore, attempting to cope with emotional reactivity solely through emotion regulation strategies without taking into account the biological underpinnings of emotional reactivity may not be a successful endeavor.

Aldao et al. (2010) conducted a meta-analytic review and found that individuals with psychopathology often try to suppress or deny their emotions. However, these suppression and denial strategies were found to lead to more emotional problems in the long run and to be less effective in coping. The authors also noted that emotion regulation strategies vary among psychopathologies. For example, individuals with borderline personality disorder were found to use emotion regulation strategies to distance themselves from thoughts of self-harm.

So, emotional reactivity is a phenomenon that has biological roots but can also be influenced by personality traits, social environment, and psychopathology. Individuals develop various strategies to control and regulate their emotions. As mentioned above, many

researchers have examined this relationship. The relationship between emotional reactivity and emotion regulation difficulties has been established in many previous studies, including the findings of our own study. However, questions remain in psychology about whether the level of emotional reactivity affects emotion regulation difficulties, whether learning healthy emotion regulation strategies reduces emotional reactivity, and to what extent and in which psychopathologies can reduce emotional reactivity. It is known that unhealthy emotion regulation strategies can lead to more emotional problems in the long run. Therefore, at least for individuals experiencing difficulty in controlling their reactions, emotion regulation should be taught with the guidance of a specialist.

According to our findings, it supports the hypothesis that emotional reactivity predicts individuals' level of cognitive distortions. In other words, emotional reactivity is one of the factors that affect cognitive distortions, and the positive effect of this suggests that as individuals' emotional reactivity levels increase, their cognitive distortions may also increase.

Beck (1963) emphasizes the significance of the connection between emotional reactivity and cognitive distortion in comprehending human behavior. These two factors are intertwined and can have a detrimental impact on an individual's emotional well-being as they shape their thoughts, behaviours, and physiological responses in a negative manner.

The findings of a pilot study conducted by Campos et al. (2017) and the study by Sahdra et al. (2015) suggested that individuals with lower levels of emotional reactivity may also have lower levels of cognitive distortion. Sahdra et al. (2015) also reported that individuals with lower levels of emotional reactivity had lower levels of cognitive distortion.

According to Levenson (2014), emotional responses can elicit diverse reactions at the physiological, behavioural, and cognitive levels. Beck (1967) asserts that cognitive distortion can adversely affect one's emotional state by influencing their indicated processes. When a person experiences emotional reactivity, their thoughts can be shaped by these reactions. In

this case, instead of perceiving events based on objective reality, individuals may start interpreting them based on their felt emotions. Thus, emotional reactivity can lead to cognitive distortions. For instance, when a person becomes angry during an argument, their thoughts may be influenced by anger. Consequently, they may misinterpret the situation based on their anger rather than seeing the facts clearly, leading to a distorted perception of the other person's words (Burns, 1999; APA, 2019).

In a pilot study (Campos et al., 2014), the effect of emotional reactivity on attention control was investigated, and it was found that those who were less emotionally reactive had lower levels of cognitive distortion.

In a research (Cezgiz, 2017), the relationship between emotional responsiveness, cognitive distortions, and depression in teenagers and the mediator role of emotional responsiveness and cognitive distortion on depression experienced by teenagers were studied. As a result of the structural equation model which was applied with the aim of revealing the relationship between emotional responsiveness, cognitive distortions, and depression, it was determined that cognitive distortion in teenagers predicts emotional responsiveness positively, and emotional responsiveness creates a high-risk predictor resource positively where the teenagers experience depression on the basis of this view, it can be said that cognitive distortions have a meaningful predictive effect on depression by the way of emotional responsiveness.

Numerous studies have demonstrated a positive relationship between emotional reactivity and cognitive distortion. Martin et al. (2019) conducted a meta-analysis of several studies and found a positive relationship between emotional reactivity and cognitive distortions. Another systematic review and meta-analysis showed that emotional reactivity is positively related to cognitive distortion and that this relationship is associated with symptoms of depression (Kassem et al., 2020).

There are also studies that evaluate more than two factors together. Ehring et al. (2014) have stated that stress is related to cognitive distortions, but this relationship is dependent on emotional reactivity. The findings suggest that individuals with high emotional reactivity are more exposed to cognitive distortions in stressful situations. In this case, the indirect effect of stress and emotional reactivity levels is significant.

Davies et al. (2020) examined the relationship between emotional reactivity, cognitive distortion, and psychological well-being in a sample of high school students. The findings of this study indicated that participants with high levels of emotional reactivity also had high levels of cognitive distortion.

The question of which variable should be defined as independent and which as dependent in the relationship between emotional reactivity and cognitive distortion is quite important, and there are different views in the literature. As our research model reflects, some researchers argue that emotional reactivity is the independent variable and cognitive distortion is the dependent variable. According to this view, people's emotional reactions can affect their cognitive distortions. However, some other researchers argue that cognitive distortion is the independent variable and emotional reactivity is the dependent variable. According to this view, people's cognitive distortions can affect their emotional reactions. Regardless of how it is defined, it has been established that there is a relationship between them.

In addition, factors such as stress and depression are also mediators or regulatory factors in the relationship between emotional reactivity and cognitive distortion. Therefore, representatives of cognitive theory have developed a therapy technique called Rational Emotive Behavior Therapy (REBT, Ellis, 1957) to help individuals solve their emotional problems by changing their cognitive distortions and developing positive thoughts. Beck has developed a therapy method called Cognitive Therapy to help people solve their emotional problems by changing their thoughts in their own minds (Beck, 1976).

When examining the effect of cognitive distortions on individuals' emotion regulation difficulty while controlling for the effect of emotional reactivity, it is found that cognitive distortion directly affects emotion regulation difficulty and this effect is positive. Therefore, it can be inferred that as individuals' cognitive distortion levels increase, their emotion regulation difficulty may also increase.

Denson et al. (2009) investigated the neural basis of anger and its relationship with anger cognitions and aggressive personality traits. Their findings suggested a strong connection between anger cognitions and aggressive personality traits with the limbic system and frontal cortex. Specifically, they proposed that anger cognitions and aggressive personality traits can lead to activation of the limbic system while reducing activation of the frontal cortex, which can make emotional regulation more difficult by increasing cognitive distortions and enhancing anger and aggressive behaviours.

Links between cognitive distortions and cognitive emotion regulation strategies in non-clinical young adulthood have been explored (Deperols & Combalbert, 2021). According to the results obtained from continuous data with non-clinical adults, greater use of non-adaptive CERS (cognitive emotion regulation strategies) is related to negative distortions in normal reasoning. By contrast, less use of adaptive CERS is related to positive distortions. More specifically, CDs (cognitive distortions) are associated with greater recourse to non-adaptive CERS (self-blame, rumination, and catastrophizing), at the expense of adaptive strategies (acceptance and refocusing on planning).

Aldao (2012), Gross (2003), Kross (2017), and Cisler (2012) have expressed that awareness about the importance of emotion regulation skills and cognitive distortions can be increased based on their research findings, and strategies can be developed to assist those working in the field of mental health. According to them, emotion regulation skills are

important for correcting cognitive distortions. Especially, positive emotion regulation skills stand out in terms of protecting and enhancing emotional health.

Research has shown that cognitive distortions can lead to impaired emotion regulation skills (Ma & Teasdale, 2004; Aldoa et al., 2010; Gross, 1998). Additionally, it has been found that cognitive distortions weaken and reduce the effectiveness of emotion regulation skills (Breuning, 2017; Tugade et al., 2017).

Cognitive theory is considered a psychological theory that focuses on explaining the relationship between indicated and emotion by examining human information processing. According to this theory, individuals process incoming information from their environment and make them meaningful using cognitive processes such as cognitive schemas, perceptions, attention, memory, and indicated processes. Cognitive theory approaches human information processing in three stages: input, processing, and output (Demirbaş & Sarıçam, 2016).

According to cognitive theory, it is our thoughts that shape our emotions. Unrealistic negative thoughts lead to more intense experiences of negative emotions such as sadness, hopelessness, helplessness, inadequacy, worthlessness, insignificance, humiliation, fear, anger, violence, jealousy, and defeat (Fair, 1986). In other words, cognitive distortions increase the intensity of emotions. Seligman (2012) has shown that negative critical thoughts associated with cognitive distortions increase the intensity of negative emotions and make the emotion regulation process more difficult.

Our findings are parallel to cognitive theory. It has been supported that cognitions affect emotional processes. Increasing cognitive distortions also increases the difficulty in emotion regulation. It is indicated that correcting cognitive distortions will increase emotion regulation skills and reduce related pathologies. Especially Cognitive Behavioral Therapy and Schema Therapy are indicated to be effective with exercises focused on the here and now.

Last but not least, our hypothesis regarding the mediating role of cognitive distortions in the effect of individuals' emotional reactivity levels on emotion regulation difficulty was supported. Therefore, the effect of emotional reactivity on emotion regulation difficulty through cognitive distortions is significant. From another perspective, the indirect effect of emotional reactivity on emotion regulation difficulty, which is the combined effect of emotional reactivity and cognitive distortions, is also significant. This effect is positive, meaning that as individuals' emotional reactivity and cognitive distortions levels increase together, so does their emotion regulation difficulty. However, our findings indicate that cognitive distortion level plays a partial mediating role. This is because the main effect of individuals' emotional reactivity levels on emotion regulation difficulty is also significant.

According to Gross & John (2003), cognitive distortions play an important mediating role in the relationship between emotional reactivity and emotion regulation. The researchers measured cognitive distortions, emotional reactivity, and emotion regulation skills in participants who were exposed to various stressors. The findings suggest that cognitive distortions lead to an increase in emotional reactivity and a decrease in emotion regulation skills. Similarly, Garnefski et al. (2001) examined the impact of cognitive distortions on emotional responses. In the study, a questionnaire was administered to participants to measure emotional responses following a stressful event, and the presence of cognitive distortions was subsequently assessed. The findings indicated that cognitive distortions led to an increase in the intensity of emotional responses. According to Hofmann (2008), cognitive distortions have been found to play a mediating role in the relationship between emotional reactivity and emotion regulation.

The studies reviewed support the findings, and it is seen that the studies examining the mediating role of cognitive distortion in the relationship between emotional reactivity and

emotion regulation are limited. It is indicated that a more detailed examination of the relationships between variables will contribute to the field of mental health.

6.2. Suggestion

6.2.1 Suggestions for Researchers

Our current knowledge suggests that there is a positive relationship between emotional reactivity, difficulties in emotion regulation, and cognitive distortions and that cognitive distortions partially mediate this relationship, but research on this issue is ongoing. As in every study, there are some limitations in this study. Further studies are needed to test the mediator role of cognitive distortion and to incorporate other mediator and moderator factors into models. Forexample, it is important to investigate whether factors such as gender, age, education level, income level, and parental attitudes play a moderating role in the relationship between emotional reactivity, cognitive distortion, and difficulties in emotion regulation. Answering the question of whether there are any differences in this relationship pattern due to gender, age, education, income, and parental attitudes is an important issue that deserves further exploration.

In our study, the ERS, CDS, and DERS scales used have been developed and adapted into Turkish by researchers who argue that emotional reactivity, cognitive distortion, and difficulties in emotion regulation are multi-dimensional latent structures, and they have developed the scales as multi-factorial. A measurement model that takes these multi-factorial structures into account needsto be tested, and a larger sample is needed for the analysis of the structural model. In addition, to bring the sample closer to representing all the characteristics of the population, sufficient individuals from all economic and cultural regions within a country should be included in the sample. Comparisons made by sampling from different countries in future studies will also contribute to the literature. Another need is to increase

longitudinal studies. It is important to longitudinally examine the measurement of emotional reactivity, cognitive distortion, and the difficulties in emotion regulation of individuals and the factors that affect them during the stages of infancy, childhood, adolescence, adulthood, and old age, in terms of observing whether the time factor leads to change. It is recommended that future studies be developed by considering the limitations related to the data collection process, sample size, and characteristics.

6.2.2. Suggestions for Practitioners

When the results obtained from the research are evaluated, it is indicated that studies to be carried out to increase emotion regulation skills and eliminate cognitive distortions may contribute to the development of positive emotional reactivity. Also, considering the findings on the effects of perceived parental attitude on the level of emotional reactivity, informative trainings can be organized for parents.

It is seen that the number of studies on emotional reactivity in Turkey is very low. Therefore, increasing the number of studies on emotional reactivity and investigating its relationship with different variables will contribute to the Turkish psychological literature.

REFERENCES

- Ağır, M. S., & Yavuzer, H. (2018). Bilişsel çarpıtma ölçeğinin Türkçe formunun geçerlilik ve güvenirlik çalışması. *Akdeniz Eğitim Araştırmaları Dergisi*, 12(26), 175 – 198.
<https://doi.org/10.29329/mjer.2018.172.10>
- Aldao, A. (2013). The future of emotion regulation research: Capturing context. *Perspectives on Psychological Science*, 8, 155 – 172.
- Aldao, A., & Nolen-Hoeksema, S. (2012). One versus many: Capturing the use of multiple emotion regulation strategies in response to an emotion-eliciting stimulus. *Cognition and Emotion*, 26(4), 753 – 760.
- Aldao, A., Nolen-Hoeksema, S., & Schweizer, S. (2010). Emotion-regulation strategies across psychopathology: A meta-analytic review. *Clinical Psychology Review*, 30(2), 217 – 237.
- Arnett, J.J. (2000) Emerging adulthood: a theory of development from the late teens through the twenties. *American Psychologist*, 55, 469– 480.
- Atak, H. & Çok, F. (2010) Beliren yetişkinlik (emerging adulthood): İnsan yaşamında yeni bir dönem. *Çocuk ve Gençlik Ruh Sağlığı Dergisi*, 17, 39-50.
- Atalar, D. S., & Atalay, A. A. (2018). Ergenlik döneminde duygu düzenleme ve ruh sağlığı: Ana-babanın ve mizacın rolü. In T. Bildik (Ed.), *Ergenlik Dönemi ve Ruhsal Bozukluklar* (pp. 84-90). Türkiye Klinikleri.
- Ayduk, Ö., Zayas, V., Downey, G., Cole, A.B., Shoda, Y., & Mischel, W. (2007). Rejection sensitivity and executive control: Joint predictors of borderline personality features. *Journal of Research in Personality*, 42(2), 151 – 168.
<http://doi.org/10.1016/j.jrp.2007.04.002>.
- Babbie, E. (2016). *The Basics Of Social Research*. Cengage Learning.

- Badour, C.L. & Feldner, M.T. (2013). Trauma-related reactivity and regulation of emotion: Associations with posttraumatic stress symptoms. *Journal of Behavior Therapy and Experimental Psychiatry*, 44(1), 69 – 76.
- Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173.
- Beck, A. T. (1963). Thinking and depression: I. Idiosyncratic content and cognitive distortions. *Archives of General Psychiatry*, 9(4), 324–333.
<https://doi.org/10.1001/archpsyc.1963.01720160014002>
- Beck, A. T. (1967). *Depression: Clinical, Experimental, and Theoretical Aspects*. Harper & Row.
- Beck, A. T. (1976). *Cognitive therapy and the emotional disorders*. International Universities Press.
- Beck, A. (2005). The current state of cognitive therapy: a 40-year retrospective. *Arch Gen Psychiatry*, 62(9), 953 – 959.
- Beck, J. S. (2011). *Cognitive Behavior Therapy: Basics and Beyond* (2nd ed.). Guilford Press.
- Beck, A., Butler, A. C., Brown, G. K., Dahlsgaard, K. K., Newman, C. F., & Beck, J. S. (2001). Dysfunctional beliefs discriminate personality disorders. *Behaviour Research and Therapy*, 39(10), 1213 – 1225. [https://doi.org/10.1016/S0005-7967\(00\)00099-1](https://doi.org/10.1016/S0005-7967(00)00099-1)
- Beck, A., Davis, D. D., & Freeman, A. (2015). *Cognitive Therapy For Personality Disorders*. Guilford Publication.
- Beck, A. T., Rush, A. J., Shaw, B. F., & Emery, G. (1979). *Cognitive Therapy of Depression*. The Guilford Press.

- Beck, A. T, Ward, C. H, Mendelsohn, M., Mock, J., & Erbaugh, J. (1961). An inventory for measuring depression. *Archives of General Psychiatry*, 4, 561–571.
<https://doi.org/10.1001/archpsyc.1961.01710120031004>
- Bjureberg, J., Ljótsson, B., & Tull, M. T. (2016). Development and validation of a brief version of the difficulties in emotion regulation scale: The DERS-16. *Journal of Psychopathology and Behavioral Assessment*, 38(2), 284 – 296.
<https://doi.org/10.1007/s10862-015-9514-x>
- Breuning, L. G. (2017). *Mutlu Beyin*. AgantaYayınları.
- Briere, J. (2000) The cognitive distortion scale professional manual. *Psychological Assessment Resources*.
- Bolat, K.Z (2005). Anne-baba saldırganlığı ve lise öğrencilerinin saldırganlığı arasındaki ilişkinin incelenmesi. *Çağdaş Eğitim Dergisi*, 317(30), 30 – 39.
- Bonn-Miller, M. O., Vujanovic, A. A., & Zvolensky, M. J. (2008). Emotional dysregulation: Association with coping-oriented marijuana use motives among current marijuana users. *Substance Use & Misuse*, 43(11), 1653-1665.
- Burns, D. D. (1980). *Feeling Good: The New Mood Therapy*. Signet.
http://faculty.fortlewis.edu/burke_b/personality/readings/Burns.pdf
- Burns, D. D. (1999). *Feeling Good: The New Mood Therapy*. New York: William Morrow Paperbacks
- Bylsma, L. M., Taylor-Clift, A., & Rottenberg, J. (2011). Emotional reactivity to daily events in major and minor depression. *Journal of Abnormal Psychology*, 120(1), 155 – 167.
<https://doi.org/10.1037/a0021662>
- Cacioppo, J.T., Petty, R.E., Losch, M.E., & Kim, H.S. (1986). Electromyographic activity over facial muscle regions can differentiate the valence and intensity of affective reactions. *Journal of Personality and Social Psychology*, 50(2), 260 – 268.

- Campbell-Sills, L., & Barlow, D. H. (2007). Incorporating emotion regulation into conceptualizations and treatments of anxiety and mood disorders. In J. J. Gross (Ed.), *Handbook of Emotion Regulation* (pp. 542 – 559). Guilford Press
- Campos, D., Cebolla, A., Quero, S., & Breton-Lopez, J. (2016). Meditation and happiness: Mindfulness and self-compassion may mediate the meditation–happiness relationship. *Personality and Individual Differences*, 93, 80 – 85.
- Campos, J. J., Frankel, C. B., & Camras, L. (2004). On the nature of emotion regulation. *Child Development*, 75(2), 377 – 394.
- Canas, J., Quesada, J., Antolí, A., & Fajardo, I. (2003). Cognitive flexibility and adaptability to environmental changes in dynamic complex problem-solving tasks. *Ergonomics* 46(5), 482 – 501. doi:10.1080/0014013031000061640.
- Cassidy, J. (1994). Emotion regulation: Influences of attachment relationships. *Monographs of the Society for Research in Child Development*, 59, 228 – 283.
- https://www.practicewise.com/portals/0/MATCH_public/index.html
- Cengiz, S. (2017). *Ergenlerde duygusal tepkisellik, bilişsel çarpıtmalar ve depresyon arasındaki ilişkinin incelenmesi* (Yüksek Lisans Tezi). Atatürk Üniversitesi.
- Charles, S.T., & Carstensen, L.L. (2010). Social and emotional aging. *Annual Review of Psychology*, 61, 383-409.
- Charthy, T.; Horesh, N.; Apter, A.; Edge, M.D.; & Gross, J.J. (2010). Emotional reactivity and cognitive regulation in anxious children. *Behaviour Research and Therapy*, 48, 384–393.
- Chorpita, B. F., & Weisz, J. R. (2009). *Modular approach to therapy for children with anxiety, depression, trauma, or conduct problems (MATCH-ADTC)*. Practice Wise.
- Cisler, J. M., & Olatunji, B. O. (2012). Emotion regulation and anxiety disorders. *Current Psychiatry Reports*, 14(3), 182 – 187.

- Cole, P.M. (2016). Emotion and the development of psychopathology. *Developmental Psychopathology*, 19(5), 1–60.
- Cole, P. M., Martin, S. E., & Dennis, T. A. (2004). Emotion regulation as a scientific construct: Methodological challenges and directions for child development research. *Child Development*, 75(2), 317–333.
- Cole, D. A., Martin, J. M., Peeke, L. G., Seroczynski, A. D., & Hoffman, K. (1998). Are cognitive errors of underestimation predictive or reflective of depressive symptoms in children: A longitudinal study. *Journal of Abnormal Psychology*, 107(3), 481 – 496.
<https://psycnet.apa.org/doi/10.1037/0021-843X.107.3.481>
- Cole, P. M., Michel, M. K., & Teti, L.O. (1994). The development of emotion regulation and dysregulation: A clinical perspective. *Monographs of the Society for Research in Child Development*, 59(2/3), 73-100. <https://doi.org/10.2307/1166139>
- Conklin, C. Z., Bradley, R., & Westen, D. (2006). Affect regulation in borderline personality disorder. *The Journal Of Nervous And Mental Disease*, 194(2), 69 – 77.
DOI: 10.1097/01.nmd.0000198138.41709.4f
- Cook, E. C., Blair, B. L., & Buehler, C. (2017). Individual differences in adolescents' emotional reactivity across relationship contexts. *Journal of Youth and Adolescence*, 47(2), 290–305. <https://doi.org/10.1007/s10964-017-0673-9>
- Corey, G. (2008). *Psikolojik Danışma Kuram ve Uygulamaları* (T. Ergene, Trans.). Mentis Yayıncılık (Original work published, 2005).
- Creswell, J. W. (2014). *Research Design: Qualitative, Quantitative, And Mixed Methods Approaches*. Sage Publications.
- Çolak, E. (2016). Duygu düzenleme: Tanımı, modelleri ve müdahale yöntemleri. *Klinik Psikofarmakoloji Bülteni*, 26(4), 386 – 394.

- Davidson, R. J. (1998). Affective style and affective disorders: Perspectives from affective neuroscience. *Cognition and Emotion*, 12, 307 – 330.
<https://doi.org/10.1080/026999398379628>
- Davidson, R.J. (2000). Affective style, psychopathology, and resilience: Brain mechanisms and plasticity. *American Psychologist*, 55(11), 1196-1214.
<https://doi.org/10.1037/0003-066X.55.11.1196>
- Davidson, R. J., Jackson, D. C., & Kalin, N.H. (2000). Emotion, plasticity, context, and regulation: Perspectives from affective neuroscience. *Psychological Bulletin*, 126(6), 890-909. <https://doi.org/10.1037/0033-2909.126.6.890>
- Davidson, R. J., & McEwen, B. S. (2012). Social influences on neuroplasticity: Stress and interventions to promote well-being. *Nature Neuroscience*, 15(5), 689 – 695.
- Davidson, R.J., Pizzagalli, D., Nitschke, J.B, & Putnam, K. (2002). Depression: perspectives from affective neuroscience. *Annual Review of Psychology*, 53, 545 – 574.
DOI: 10.1146/annurev.psych.53.100901.135148
- Davies, E. L., Atherton, F., Cassidy, T., & Freeman, D. (2020). The relationships between emotional reactivity, cognitive distortions, and psychological well-being in a sample of secondary school students. *School Psychology International*, 41(6), 597 – 615.
- Denson, T. F., Spanovic, M., & Miller, N. (2009). Cognitive appraisals and emotions predict cortisol and immune responses: A meta-analysis of a cute laboratory social stressors and emotion inductions. *Psychological Bulletin*, 135(6), 823 – 853.
- Deperrois, R., Combalbert, N. (2022). Links between cognitive distortions and cognitive emotion regulation strategies in non-clinical young adulthood. *Cognitive Processing*, 23, 69-77.
- Doğan, T. (2008). Psikolojik belirtilerin yordayıcısı olarak sosyal destek ve iyilik hali. *Türk Psikolojik Danışma ve Rehberlik Dergisi*, 3(30), 30 – 44.

- Doğan-Ateş A, Cebioğlu S, Erdoğan E (2007) Conceptions of the transition to adulthood among Turkish emerging adults. (Poster presented at the 3rd Conference) Emerging Adulthood, Tucson, Arizona.
- Dökmen, Ü. (1994). *Psikolojik Danışma ve Rehberlikte Temel Beceriler*. Türk Psikologlar Derneği Yayınları.
- Dökmen, Ü. (2004). *Sanatta Ve Günlük Yaşamda İltişim Çatışmaları Ve Empati*. Sistem Yayıncılık.
- Dryden, W., & Neenan, M. (2004). *The Rational Emotive Behavioural Approach To Therapeutic Change*. Sage Publications.
- Ehring, T., Zetsche, U., Weidacker, K., Wahl, K., & Schönfeld, S. (2014). The perseverative thinking questionnaire (PTQ): Validation of a content-independent measure of repetitive negative thinking. *Journal of Behavior Therapy and Experimental Psychiatry*, 45(2), 242 – 251.
- Eisenberg, N., Cumberland, A., Spinrad, T. L., Fabes, R. A., Shepard, S. A., Reiser, M., Murphy, B. C., Losoya, S. H., Guthrie, I. K., & Thompson, M. (2001). The relations of regulation and emotionality to children's externalizing and internalizing problem behavior. *Child Development*, 72(4), 1112 – 1134.
- Ekman, P., & Davidson, R. J. (Eds.). (1994). *The nature of emotion: Fundamental questions*. Oxford University Press. <https://psycnet.apa.org/record/1995-97541-000>
- Ellis, A. (1957). Rational psychotherapy and individual psychology. *Journal of Individual Psychology*, 13, 38–44.
- Ellis, A. (1980). Rational-emotive therapy and cognitive behavior therapy: similarities and differences. *Cognitive Therapy and Research*, 4(3), 325 – 340. <https://doi.org/10.1007/BF01178210>

- Epel, E. S., Mcewen, B. S., Seeman, T., Matthews, K., Castellazzo, G., Brownell, K. D., Bell, J. & Ickovics, J. R. (2000). Stress and body shape: Stress-induced cortisol secretion is consistently greater among women with central fat. *Psychosomatic Medicine*, 62(5), 623 – 632. <https://doi.org/10.1097/00006842-200009000-00005>
- Fair, S. E. (1986). *Cognitive content and distortion associated with mood-induced depressive and anxious states*. Arizona State University.
- Fassot, E.M., Tuschen-Caffier, B., & Asbrand, J. (2022). Association of parental characteristics and emotion regulation in children and adolescents with and without psychopathology: A case-control study. *Plos One*, 17(7).
- Field, A. (2013). *Discovering Statistics Using IBM SPSS Statistics (4th Edition)*. Sage.
- Fischer, A. H., & Manstead, A. S. R. (2000). *The relation between gender and emotions in different cultures*. In A.H.Fischer (Ed.), *Gender and emotion: Social psychological perspectives* (pp. 71-94). Cambridge University Press
- Freud, S., & Jones, E. (1993). *The Complete Correspondence of Sigmund Freud and Ernest Jones, 1908–1939*. (R. A. Paskauskas, Ed.). Belknap Press / Harvard University Press.
- Fridlund, A.J., & Izard, C.E. (1983). *Electromyographic studies of facial expressions of emotions and patterns of emotions*. In J.T. Cacioppo & R.E. Petty, (Eds.), *Social psychophysiology: A sourcebook* ((pp. 243– 286). Guilford Press.
- Garnefski, N., Kraaij, V., & Spinhoven, P. (2001). Negative life events, cognitive emotion regulation and emotional problems. *Personality and Individual Differences*, 30(8), 1311 – 1327. [https://psycnet.apa.org/doi/10.1016/S0191-8869\(00\)00113-6](https://psycnet.apa.org/doi/10.1016/S0191-8869(00)00113-6)
- Gohm, C. L., & Clore, G. L. (2000). Individual Differences in Emotional Experience: Mapping Available Scales to Processes. *Personality and Social Psychology Bulletin*, 26(6), 679 – 697. <https://doi.org/10.1177/0146167200268004>

- Goldin, P. R., Manber, T., Hakimi, S., Canli, T., & Gross, J. J. (2009). Neural bases of social anxiety disorder. *Archives of General Psychiatry*, 66(2), 170 – 181.
<https://doi.org/10.1001/archgenpsychiatry.2008.525>
- Goleman, D. (1996). *Emotional intelligence*. Bloomsbury Publishing.
- Gratz, K. L., & Roemer, L. (2004). Multi dimensional assessment of emotion regulation and dysregulation: Development, factor structure, and initial validation of the difficulties in emotion regulation scale. *Journal of Psychopathology and Behavioral Assessment*, 26(1), 41–54. <https://doi.org/10.1023/b:joba.00000007455.08539.94>
- Griffin, J. L. (2003). *Structural equation modeling of borderline personality disorder: Cognitive distortions, maladaptive schemas, psychological distress and insecure attachment as long-term sequelae of childhood sexual abuse* (Doctoral dissertation, Virginia Consortium Program in Clinical Psychology).
- Gross, J. J. (1998). The emerging field of emotion regulation: an integrative review. *Review of General Psychology*, 2(3), 271–299. <https://doi.org/10.1037/1089-2680.2.3.271>
- Gross, J. J. (1999). Emotion regulation: Past, present, future. *Cognition & Emotion*, 13(5), 551 – 573. <https://doi.org/10.1080/026999399379186>
- Gross, J. J. (Ed.). (2013). *Handbook of Emotion Regulation*. Guilford Publications.
- Gross, J. J. (2015). Emotion regulation: Current status and future prospects. *Psychological Inquiry*, 26(1), 1 – 26. <https://psycnet.apa.org/doi/10.1080/1047840X.2014.940781>
- Gross, J. J., Carstensen, L.L., Pasupathi, M., Tsai, J., Götestam S., C., & Hsu, A. Y. C. (1997). Emotion and aging: Experience, expression, and control. *Psychology and Aging*, 12(4), 590–599. <https://doi.org/10.1037/0882-7974.12.4.590>
- Gross, J. J., & Jazaieri, H. (2014). Emotion, emotion regulation, and psychopathology: An affective science perspective. *Clinical Psychological Science*, 2(4), 387–401

- Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes: Implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology*, 85(2), 348 – 362. <https://psycnet.apa.org/doi/10.1037/0022-3514.85.2.348>
- Gross, J. J., & Munoz, R. F. (1995). Emotion regulation and mental health. *Clinical Psychology: Science and Practice*, 2, 151–164. <http://dx.doi.org/10.1111/j.1468-2850.1995.tb00036.x>
- Gross, J. J., Sheppes, G., & Urry, H. L. (2011). Cognition and emotion lecture at the 2010 SPSP emotion preconference. *Cognition and Emotion*, 25, 765 – 781. <https://doi.org/10.1080/02699931.2011.555753>
- Gross, J. J., & Thompson, R. A. (2007). Emotion regulation: Conceptual foundations. In J. J. Gross (Ed.), *Handbook of emotion regulation* (pp. 3–24). The Guilford Press.
- Haaga, D. A., & Davison, G. C. (1986). Generalization level and cognitive complexity in depression. *Cognitive Therapy and Research*, 10(4), 421 – 436. doi: 10.1007/BF0117349
- Hamaideh, S.H. (2012). Gender differences in stressors and reactions to stressors among Jordanian university students. *International Journal of Social Psychiatry* 58(1), 26-33.
- Hampel, P., & Petermann, F. (2006). Perceived stress, coping, and adjustment in adolescents. *Journal of Adolescent Health*, 38(4), 409 – 415. <https://doi.org/10.1016/j.jadohealth.2005.02.014>
- Hare, T.A., Tottenham, N., Galvan, A., Voss, H.U., Glover, G.H., & Casey, B.J (2008). Biological substrates of emotional reactivity and regulation in adolescence during an emotional Go-No task. *Biological Psychiatry*, 63(10), 927 – 934.
- Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. Guilford Press.

- Henry, C., & Dargel, A. (2019). The relevance of emotional reactivity in the clinical practice of bipolar disorder. *In Bipolar Disorders*, 55- 56.
- Hess TM, Osowski NL, Leclerc CM. Age differences in sensitivity to diagnostic cues and the flexibility of social judgments. *Psychology and Aging*. 2005;20:447–459.
- Hessler, D.M., & Katz, L.F. (2007). Children's emotion regulation: Self-report and physiological response to peer provocation. *Development Psychology*, 43, 27 – 38. <https://psycnet.apa.org/doi/10.1037/0012-1649.43.1.27>
- Hofmann, S. G. (2008). Cognitive processes during fear acquisition and extinction in animals and humans Implications for exposure therapy of anxiety disorders. *Clinical Psychology Review*, 28(2), 199 – 210. <https://doi.org/10.1016/j.cpr.2007.04.009>
- Hofmann, S. G., Sawyer, A. T., Witt, A. A., & Oh, D. (2010). The effect of mindfulness-based therapy on anxiety and depression: A meta-analytic review. *Journal of Consulting and Clinical Psychology*, 78(2), 169 – 183. <https://doi.org/10.1037/a0018555>
- Joormann, J., & Stanton, C. H. (2016). Examining emotion regulation in depression: A review and future directions. *Behavior Research and Therapy*, 86, 35–49. <https://doi.org/10.1016/j.brat.2016.07.007>
- Jöreskog, K. G., & Sörbom, D. (1984). *LISREL-VI User's Guide* (3. ed.). Mooresville: Scientific Software.
- Judd, C. M., & Kenny, D. A. (1981). Process analysis: Estimating mediation in treatment evaluations. *Evaluation Review*, 5(5), 602-619.
- Kalaycı, Ş. (2006). *Spss Uygulamalı Çok Değişkenli İstatistik Teknikleri* (8. ed.). Asil Yayın Dağıtım.
- Kandır, A., & Alpan, U.Y. (2008). Okul öncesi dönemde sosyal-duygusal gelişime anne-baba davranışlarının etkisi. *Aile ve Toplum Dergisi*, 4(14), 33 – 38.

- Karahan, T. F., & Sardoğan, M. E. (2004). Üniversite öğrencilerinde bilişsel çarpıtmalar ve ilişkili olduğu etmenlerin incelenmesi. *Türk Psikoloji Dergisi*, 19(54), 29 – 51.
- Karasar, N. (2007). *Bilimsel Araştırma Yöntemi*. Nobel Yayın Dağıtım.
- Kaslow, N. J., Adamson, L. B., & Collins, M. H. (2000). A developmental psychopathology perspective on the cognitive components of child and adolescent depression. In *Handbook of developmental psychopathology* (pp. 491-510). Springer. http://dx.doi.org/10.1007/978-1-4615-4163-9_26
- Kassem, A. M., Gangwani, S., & Upthegrove, R. (2020). The relationship between emotional reactivity, cognitive distortions and depression: A systematic review and meta-analysis. *Journal of Affective Disorders*, 266, 731 – 741.
- Keser, N., & Voltanacar, N.H. (2013). Türk atasözlerinde bilişsel çarpıtmalar. *Akademik Bakış Uluslararası Hakemli Sosyal Bilimler E-Dergisi*, 35, 1-20.
- Kılınç, M. (2005). *İki yıllık hemşirelik öğrencilerinin bilişsel çarpıtmalarının belirlenmesi* (Yüksek Lisans Tezi). Gazi Üniversitesi Sağlık Bilimleri Enstitüsü.
- Kim, S. H., & Hamann, S. (2007). Neural correlates of positive and negative emotion regulation. *Journal of Cognitive Neuroscience*, 19(5), 776 – 798. <http://dx.doi.org/10.1162/jocn.2007.19.5.776>
- Klar, Y., Gabai, T., & Baron, Y. (1997). Depression and generalizations about the future: Who overgeneralizes what? *Personality and Individual Differences*, 22(4), 575 – 584. [https://doi.org/10.1016/S0191-8869\(96\)00186-9](https://doi.org/10.1016/S0191-8869(96)00186-9)
- Köknel, Ö. (1997). *Kaygıdan Mutluluğa Kişilik*. Altın Kitaplar.
- Kring, A. M., & Gordon, A. H. (1998). Sex differences in emotion: Expression, experience, and physiology. *Journal of Personality and Social Psychology*, 74, 686-703. <http://dx.doi.org/10.1037/0022-3514.74.3.686>

- Kring, A. M., & Werner, K. H. (2004). Emotion regulation and psychopathology. In P. Philippot & R. S. Feldman (Eds.), *The regulation of emotion* (pp. 359–385). Lawrence Erlbaum Associates Publishers.
- Kross, E., & Ayduk, O. (2017). Self-distancing: Theory, research, and current directions. *Advances in Experimental Social Psychology*, 55, 81 – 136.
- Kurtoğlu, E. (2009). *Lise öğrencilerinde gözlenen saldırganlık düzeylerinin otomatik düşünceler, cinsiyet ve sınıf düzeyleri açısından incelenmesi* (Yüksek Lisans Tezi). On Dokuz Mayıs Üniversitesi, Sosyal Bilimler Enstitüsü. Tez no: 239829
- Kuyucu, Y. (2007). *Boşanmış ailede yetişen ergenlerin bilişsel çarpıtmalarıyla benlik değerleri arasındaki ilişki* (Doktora Tezi). Dokuz Eylül Üniversitesi, Eğitim Bilimleri Ana Bilim Dalı. Tez no: 211469
- Lavi, I.; Manor-Binyamini, I.; Seibert, E.; Katz, L.F.; Ozer, E.J.; & Gross, J.J. (2019). Broken bonds: A meta-analysis of emotion reactivity and regulation in emotionally maltreating parents. *Child Abuse & Neglect*, 88, 376-388.
- Lavner, J. A., Karney, B. R., & Bradbury, T. N. (2014). Relationship problems over the early years of marriage: Stability or change? *Journal of Family Psychology*, 28(6), 979–985. <https://doi.org/10.1037/a0037752>
- Lazarus, R. S. (1991). Emotion and Adaptation. In *Contemporary sociology*. (pp.609-637). Oxford University Press. DOI:10.2307/2075902
- Leahy, R. L. (2007). *Bilişsel terapi ve uygulamaları–tedavi müdahaleleri için bir kılavuz* (H. Hacak, M. Macit, & F. Özpilavcı, Çev.). Litera Yayıncılık. (Original book published 2000).
- Ledoux, J. (2006). *Duygusal beyin* (A. Uysal, Çev.). Pegasus Yayınları. (Original book published 1998).

- Lee, A. H., & Woodruff-Borden, J. (2018). Roles of emotional reactivity, intolerance of uncertainty, and negative problem orientation on developing childhood worry. *Personality and Individual Differences*, 135, 25–30. <https://doi.org/10.1016/j.paid.2018.06.048>
- Levenson, R. W. (2014). The autonomic nervous system and emotion. *Emotion Review*, 6(2), 100–112. DOI: 10.1177/1754073913512003
- Levine, D., Elsa, M., & Hood, J. (1997). Emotion processing in borderline personality disorders. *The Journal Of Nervous And Mental Disease*, 185(4), 240 – 246.
- Leyro, T. M., Zvolensky, M. J., & Bernstein, A. (2010). Distress tolerance and psychopathological symptoms and disorders: A review of the empirical literature among adults. *Psychological Bulletin*, 136(4), 576–600. <https://doi.org/10.1037/a0019712>
- Linehan, M. M. (1993). *Cognitive-Behavioral Treatment of Borderline Personality Disorder*. Guilford Press.
- Liu, S.; You, J.; Ying, J.; Li, X.; & Shi, Q. (2020). Emotion reactivity, nonsuicidal self-injury, and regulatory emotional self-efficacy: A moderated mediation model of suicide ideation. *Journal of Affective Disorders*, 266, 82–89.
- Ma, S. H., & Teasdale, J. D. (2004). Mindfulness-based cognitive therapy for depression: replication and exploration of differential relapse prevention effects. *Journal of Consulting and Clinical Psychology*, 72(1), 31–40. <https://doi.org/10.1037/0022-006X.72.1.31>
- Martin, R. C., & Dahlen, E. R. (2019). The relationship between emotional reactivity and cognitive distortions: A meta-analysis. *Cognitive Therapy and Research*, 43(1), 97 – 110.

- Martin, R., & Greenberg, J. (2011). The role of emotional regulation in positive youth development. *The Journal of Youth Development*, 6(3), 52 – 67.
- Masten, A. S., & Reed, M. J. (2002). Resilience in development. In C. R. Snyder, & S. J. Lopez (Eds.), *The handbook of positive psychology* (pp. 74-88). Oxford University Press.
- Mcrae K., Oschner, K.N., Maus, I.B., Gabrieli, J.J.D., & Gross, J. (2008). Gender differences in emotion regulation: An fMRI study of cognitive reappraisal. *Group Processes & Intergroup Relations*, 11(2), 143 – 162.
- Mendoza-Denton, R., & Ayduk, O. (2014). Priming and self-esteem maintenance: The impact of implicit self-esteem on behavioral self-handicapping. *Journal of Experimental Social Psychology*, 52, 56 – 70.
- Mennin, D. S., Heimberg, R. G., Turk, C. L., & Fresco, D. M. (2005). Preliminary evidence for an emotion dysregulation model of generalized anxiety disorder. *Behaviour Research and Therapy*, 43(10), 1281 – 1310. <https://doi.org/10.1016/j.brat.2004.08.008>
- Miller, A.B.; Prinstein, M.J.; Munier, E.; Machlin, L.; & Sheridan, M.A. (2019). Emotion reactivity and regulation in adolescent girls following an interpersonal rejection. *J Cogn Neurosci*, 31(2), 249–261
- Morris, A.S., Criss, M.M., Silk, J.S., & Houlberg, B.J. (2017). The impact of parenting on emotion regulation during childhood and adolescence. *Child Development Perspectives*, 11(4), 233–238.
- Moscovitch, D. A., Hofmann, S. G., & Litz, B. T. (2005). The impact of self-construals on social anxiety: A gender-specific interaction. *Personality and Individual Differences*, 38(4), 791 – 802.
- Murad, H. Y. (2002). Cognitive processes and aggression in middle school children. *Journal of Personality and Social Psychology*, 59, 132 – 139.

- Nock, M. K., & Prinstein, M. J. (2004). A functional approach to the assessment of self-mutilative behavior. *Journal of Consulting and Clinical Psychology*, 72(5), 885-890. <https://doi.org/10.1037/0022-006X.72.5.885>
- Nock, M. K., & Prinstein, M. J. (2005). Contextual features and behavioral functions of self-mutilation among adolescents. *Journal of Abnormal Psychology*, 114(1), 140–146. <https://doi.org/10.1037/0021-843X.114.1.140>
- Nock, M. K., Wedig, M. M., & Holmberg, E. B. (2008). The emotion reactivity scale: development, evaluation, and relation to self-injurious indicateds and behaviors. *Behavior Therapy*, 39(2), 107 – 116. <https://doi.org/10.1016/j.beth.2007.05.005>
- Nolen-Hoeksema, S. (2012). Emotion regulation and psychopathology: The role of gender. *Annual Review of Clinical Psychology*, 8, 161-187.
- Novick, K. K., & Novick, J. (2000). Adolescence: A developmental transition. *Handbook of adolescent healthcare*, 1-16.
- Ochsner, K., & Gross, J. (2005). The cognitive control of emotion. *Trends in Cognitive Sciences*, 9(5), 242 – 249.
- Ölçer, S., Perdahlı, N., Berkem, M., & Karadağ, B. (2010). Astımlı çocukların benlik saygıları ve annelerin duygu dışavurum düzeylerinin değerlendirilmesi. *Türk Pediatri Dergisi Arşivi*, 45, 144 – 149.
- Özakkas, T. (2004). *Bütüncül Psikoterapi*. Litera Yayıncılık.
- Özbay, Y., & Palancı, M. (2001, 5-7 Eylül). *Sosyal kaygı ölçeği: geçerlik güvenirlik çalışması*. 6.Ulusal Psikolojik Danışma ve Rehberlik Kongresi, Ankara, Türkiye.
- Özer, A.K. (2000). *Ben-Değeri Tiryakiliği: Duygusal Gerilimle Baş Edebilme*. Sistem Yayıncılık.
- Peale, N. V. (2006). *Olumlu Düşünce Gücü*. Remzi Kitabevi.

- Pickett, K., & Wilkinson, R. (2010). Inequality: An under acknowledged source of mental illness and distress. *The British Journal of Psychiatry*, 197(6), 426-428.
- Piff, P.K., Stancato, D.M., Martinez, A.G., Kraus, M.W., & Keltner, D. (2012). Higher social class predicts increased unethical behavior. *Proceedings of the National Academy of Sciences*, 109(11), 4086-4091.
- Polanco- Roman, L., Moore, A., Tsypes, A., Jacobson, C., & Miranda, R. (2018). Emotion reactivity, comfort expressing emotions, and future suicidal ideation in emerging adults. *Journal of Clinical Psychology*, 74(1), 123 – 135.
- Pössel, P., & Thomas, S. D. (2011). Cognitive triad as mediator in the hopelessness model? A three-wave longitudinal study. *Journal of Clinical Psychology*, 67(3), 224 – 240. <http://dx.doi.org/10.1002/jclp.20751>
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, 40, 879–891.
- Reavis, K. (2003). Childhood trauma and its relation to chronic depression in adulthood. *Journal of Child Sexual Abuse*, 12(2), 91 – 106.
- Retz, W., Stieglitz, R. D., Corbisiero, S., Retz-Junginger, P., & Rösler, M. (2012). Emotional dysregulation in adult ADHD: What is the empirical evidence? *Expert Review of Neurotherapeutics*, 12(10), 1241-1251. <https://doi.org/10.1586/ern.12.109>
- Robinson, C.C., Mandleco, B., Olsen, S.F., & Hart, C.H. (1995). Authoritative, authoritarian, and permissive parenting practices: Development of a new measure. *Psychological Reports*, 77(3), 819-830.
- Rosen, P. J., Milich, R., & Harris, M. J. (2012). Dysregulated negative emotional reactivity as a predictor of chronic peer victimization in childhood. *Aggressive Behavior*, 38(5), 414–427. <https://doi.org/10.1002/ab.21434>

- Rosen P.J., & Epstein J.N. (2010). A pilot study of ecological momentary assessment of emotion dysregulation in children. *Journal of ADHD Related Disorders*, 1(5), 39-52.
- Russell, J.A. (2003). Core affect and the psychological construction of emotion. *Psychological Review*, 110(1), 145–172.
- Safer, D. L., Telch, C. F., & Agras, W. S. (2001). Dialectical behavior therapy for bulimia nervosa. *The American Journal of Psychiatry*, 158(4), 632 – 634. <https://doi.org/10.1176/appi.ajp.158.4.632>
- Sahdra, B. K., Ciarrochi, J., Parker, P., Scrucca, L., & Kashdan, T. B. (2015). Nonattachment and mindfulness: Related but distinct constructs. *Psychological Assessment*, 27(4), 1160 – 1165.
- Salsman, N.L., Linehan, M.M. (2012). An investigation of the relationships among negative affect, difficulties in emotion regulation, and features of borderline personality disorder. *Journal of Psychopathology and Behavioral Assessment*, 34, 260–267.
- Sarıçam H., (2018). The Psychometric Properties of Turkish Version of Depression Anxiety Stress Scale-21 (DASS-21) in health control and clinical samples. *Bilişsel Davranışçı Psikoterapi ve Araştırmalar Dergisi*, 7(1), 19-30.
- Seçer, İ., Halmatov, S., & Gençdoğan, B. (2013). Duygusal tepkisellik ölçeğinin Türkçeye uyarlanması: Güvenirlik ve geçerlilik çalışması. *Sakarya University Journal of Education*, 3(1), 77 – 89.
- Seligman, M. E. P. (2012). *Olumlu Psikoloji*. Kaknüs Yayınları.
- Silk, J.S., Steinberg, L., & Morris, A. S., (2003). Adolescents' emotion regulation in daily life: Links to depressive symptoms and problem behavior. *Society for Research in Child Development*, 74(6), 1869 – 1880. <https://doi.org/10.1046/j.1467-8624.2003.00643.x>

- Shapero, B. G., Abramson, L. Y., & Alloy, L. B. (2016). Emotional reactivity and internalizing symptoms: Moderating role of emotion regulation. *Cognitive Therapy and Research*, 40(30), 328 – 34. <https://doi.org/10.1007/s10608-015-9722-4>
- Shultz, D., & Shultz, S. E. (2001). *Modern Psikoloji Tarihi*. Kaktüs Yayınları.
- Sloan, D.M. (2004). Emotion regulation in action: emotional reactivity in experiential avoidance. *Behaviour Research and Therapy*, 42(11), 1257–1270.
- Southam-Gerow, M. A., & Kendall, P. C. (2000). Emotion regulation and understanding: implications for child psychopathology and therapy. *Clinical Psychological Review*, 22(2), 189-222. [https://doi.org/10.1016/S0272-7358\(01\)00087-3](https://doi.org/10.1016/S0272-7358(01)00087-3)
- Spielberger C.D., (1983). *Manual for the State-Trait Anxiety Inventory: Self-evaluation questionnaire revised*. Consulting Psychologists Press.
- Spinrad, T. L., Eisenberg, N., Harris, E., Hanish, L., Fabes, R. A., & Kupanoff, K. (2004). The relation of children's everyday nonsocial peer play behavior to their emotionality, regulation, and social functioning. *Child Development*, 40, 67 – 80.
- Suls, J., Martin, R., & David, J. P. (1998). Personalized medicine of negative affectivity: Individual differences in understanding the cause of illness. *Health Psychology*, 17(2), 169 – 177.
- Suri, G., Sheppes, G., & Gross, J. J. (2013). Emotion regulation and cognition. In M. D. Robinson, E. Watkins, & E. Harmon-Jones (Eds.), *Handbook of cognition and emotion* (pp. 195–209). The Guilford Press.
- Suveg, C., & Zeman, J. (2004). Emotion regulation in children with anxiety disorders. *Journal of Clinical Child & Adolescent Psychology*, 33(4), 750 – 759. https://doi.org/10.1207/s15374424jccp3304_10
- Thompson, R. A. (1991). Emotional regulation and emotional development. *Educational Psychology Review*, 3(4), 269–307. <https://doi.org/10.1007/BF01319934>

- Thompson, R. A. (1994). Emotion regulation: A Theme in search of definition. *Monographs of the Society for Research in Child Development*, 59(2–3), 25–52.
<https://doi.org/10.1111/j.1540-5834.1994.tb01276.x>
- Troy, A.S.,& Mauss, I. B. (2011). Resilience in the face of stress: Emotion regulation as a protective factor. *Resilience and Mental Health: Challenges Across the Lifespan* (pp.30 – 44). Cambridge University Press.
- Tugade, Michele M.;& Fredrickson, Barbara L. (2007). Regulation of positive emotions: Emotions regulation strategies that promote resilience. *Journal of Happiness Studies*, 8, 311 – 333.
- Türkçapar, H. (2009). *Bilişsel Terapi*. Hekimler Yayın Birliği.
- Türküm, A.S. (2003). Akılcı Olmayan İnanç Ölçeğinin geliştirilmesi. *Turkish Psychological Counseling and Guidance Journal*, 2(19), 41–47.
<https://dergipark.org.tr/tr/pub/tpdrd/issue/21439/229618>
- Underwood , M. K.,& Rosen, L. H. (2011). Developmental, individual difference, relationship-based (DIR) therapy: A case study of a child with autism. *Journal of Infant, Child, and Adolescent Psychotherapy*, 10(2), 109 – 123.
- Ünal, E.,& Özcan, B. (2000). *Bilişsel Terapi*. Nobel Tıp Kitapevi.
- Vanden Bos, G. R. (Ed.). (2019). *APA dictionary of clinical psychology*. American Psychological Association.
- Wald, N., Carthy, T., Shenaar-Golan, V., Tadmor-Zeisman, Y., & Ziskind, M. (2017). Influence of maternal negative emotion reactivity and cognitive reappraisal on child anxiety disorder. *Depression and Anxiety*, 35 (4), 353-359.
<https://doi.org/10.1002/da.22745>

- Webb, T. L., Miles, E., & Sheeran, P. (2012). Dealing with feeling: A meta-analysis of the effectiveness of strategies derived from the process model of emotion regulation. *Psychological Bulletin*, 138(4), 775 – 808.
- Weems, C. F., Berman, S. L., Silverman, W. K., & Saavedra, L. M. (2001). Cognitive errors in youth with anxiety disorders: The linkages between negative cognitive errors and anxious symptoms. *Cognitive Therapy and Research*, 25(5), 559 – 575.
- Wentzel, K. (1998). Social relationship and motivation in middle school: The role of parents, teacher, and pers. *Journal Of Educational Psychology*, 90(2), 202 – 207.
- Yaşlıoğlu, M. M., & Toplu-Yaşlıoğlu, D. (2020). How and when to use which fit indices? A practical and critical review of the methodology. *Istanbul Management Journal*, 88: 1-20. <http://doi.org/10.26650/imj.2020.88.0001>
- Yavuzer, H. (1999). *Çocuk Psikolojisi*. Remzi Kitabevi.
- Yen, S., Zlotnick, C., & Costello, E. (2002). Affect regulation in women with borderline personality disorder traits. *The Journal of Nervous And Mental Disease*, 190(10), 693 – 696.
- Yiğit, İ., & Guzey, Y. M. (2017). Psychometric Properties of Turkish version of difficulties in emotion regulation scale-brief form (DERS-16). *Curr Psychol* 38, 1503–1511. <https://doi.org/10.1007/s12144-017-9712-7>
- Young, J.E., Klosko, J.S., & Weishaar, M.E. (2003). *Schema therapy: A practitioners guide*. The Guilford Press.
- Yumuşak, F.N. (2019). *Üniversite öğrencilerinde duygu düzenleme güçlüğü ve duygusal tepkiselliğin psikolojik belirtiler ile ilişkisinin incelenmesi*. (Master dissertation) Fatih Sultan Mehmet Üniversitesi.

Yurdakul, A.,& Üner, S. (2015). Sağlık yüksekokulu öğrencilerinin duygusal tepkisellik durumlarının değerlendirilmesi. *TAF Preventive Medicine Bulletin*, 14(4).
<https://doi.org/10.5455/pmb.1-1422358166>

Zelkowitz, R.; Cole, D.A.; Han, G.T.; & Tomarken, A.J. (2016). The incremental utility of emotion regulation but not emotion reactivity in nonsuicidal self-injury. *The Official Journal of The American Association of Suicidolog*, 46 (5), 545-562.



APPENDICES

Appendix A: Demografic Information Form

Değerli katılımcılar,

Bu çalışmada amacımız, yetişkinlerin duygusal tepkisellik özelliklerini çeşitli değişkenlere göre incelemektir. Dolduracağınız ölçeklerden elde edilecek veriler yalnızca bilimsel bir amaç için kullanılacaktır. **Bu nedenle sizlerden isim ve soy isim gibi kimlik bilgileri istenmemektedir.** Araştırmanın bilimsel ve güvenilir olması vereceğiniz cevapların samimiyetine bağlıdır. Lütfen, ölçme araçlarını doldururken hiçbir soruyu atlamayınız ve size en uygun ifadeyi işaretleyiniz.

Araştırmamıza verdiğiniz destekten dolayı teşekkür ederiz.

DEMOGRAFİK BİLGİ FORMU

1. Cinsiyetiniz:

() Kadın () Erkek () Diğer

2. Yaşınız:

3. Ekonomik Durumunuz / Gelirinizi nasıl değerlendirirsiniz?

() Düşük () Orta () Yüksek

4. Ebeveyn tutumunuzu nasıl değerlendirirsiniz?

4.a. Annenizin algıladığınız ebeveyn tutumunu nasıl tanımlarsınız?

a. Baskıcı b. Serbest c. Demokratik d. Koruyucu

4.b. Babanızın algıladığınız ebeveyn tutumunu nasıl tanımlarsınız?

a. Baskıcı b. Serbest c. Demokratik d. Koruyucu

Appendix B: Emotional Reactivity Scale

DUYGUSAL TEPKİSELLİK ÖLÇEĞİ

<i>Aşağıdaki ifadelere katılıp katılmadığınızı her ifadenin yanında yer alan 4 dereceli ölçek üzerinden değerlendiriniz.</i>	Tamamen katılıyorum	Katılıyorum	Katılmıyorum	Hiç katılmıyorum
1. Üzücü olaylar karşısında çok kolayca duygusallaşırım.				
2. Çok küçük şeyler bile beni duygusallaştırır				
3. Bir duygu yaşadığımda çok yoğun yaşarım				
4. Üzücü bir şey yaşadığımda, uzun bir süre ona kafa yorarım.				
5. Duygularımı çok yoğun yaşarım.				
6. Duygularımda ani iniş çıkışlar yaşadığım olur.				
7. Bir duyguyu yaşadığımda başka bir duyguyu yaşamak benim için zordur.				
8. Duygusal olarak çabuk incinirim.				
9. Kötü bir olay yaşadığımda, ruh halim hızlıca değişir.				
10. Çevremdekiler olaylar karşısında sakinliğimi koruyamadığımı söyler.				
11. Benim için mantıklı/düzgün düşünmek zordur, bu yüzden kendimi genellikle mutsuz hissederim.				
12. Kızgın olduğumda çevremdekiler beni zor sakinleştirir.				
13. Kendimi genellikle endişeli hissederim.				
14. Diğer insanların önemsemediği şeylere çok kafa yorarım.				
15. Üzücü bir durum karşısında kolayca dağılırım.				
16. Çevremdekiler olaylara aşırı tepki verdiğimi söyler.				
17. Eğer biriyle bir anlaşmazlık yaşarsam onu kafamdan atmam zaman alır				

Appendix C: Difficulties in Emotion Regulation Scale – Short Form

DUYGU DÜZENLEME GÜÇLÜĞÜ ÖLÇEĞİ – KISA FORM (DDGÖ-16)

<i>Aşağıdaki ifadelerin size ne sıklıkla uyduğunu, her ifadenin yanında yer alan 5 dereceli ölçek üzerinden değerlendiriniz. Her bir ifadenin altındaki 5 noktalı ölçekten, size uygunluk yüzdesini de dikkate alarak, yalnızca bir tek rakamı yuvarlak içine alarak işaretleyiniz.</i>	Hemen hemen hiç (%0-10)	Bazen (% 11-35)	Yaklaşık Yarı yarıya (% 36- 65)	Çoğu zaman (%66-90)	Hemen hemen her zaman (% 91- 100)
1. Duygularıma bir anlam vermekte zorlanırım.					
2. Ne hissettiğim konusunda karmaşa yaşarım.					
3. Kendimi kötü hissettiğimde işlerimi bitirmekte zorlanırım.					
4. Kendimi kötü hissettiğimde kontrolden çıkarım.					
5. Kendimi kötü hissettiğimde uzun süre böyle kalacağına inanırım.					
6. Kendimi kötü hissetmenin yoğun depresif duyguyla sonuçlanacağına inanırım.					
7. Kendimi kötü hissederken başka şeylere odaklanmakta zorlanırım.					
8. Kendimi kötü hissederken kontrolden çıktığım korkusu yaşarım.					
9. Kendimi kötü hissettiğimde bu duygumdan dolayı kendimden utanırım.					
10. Kendimi kötü hissettiğimde zayıf biri olduğum duygusuna kapılırım.					
11. Kendimi kötü hissettiğimde davranışlarımı kontrol etmekte zorlanırım.					
12. Kendimi kötü hissettiğimde daha iyi hissetmem içi yapabileceğim hiçbir şey olmadığına inanırım.					
13. Kendimi kötü hissettiğimde böyle hissettiğim için kendimden rahatsız olurum					
14. Kendimi kötü hissettiğimde kendimle ilgili olarak çok fazla endişelenmeye başlarım.					
15. Kendimi kötü hissettiğimde başka bir şey düşünmekte zorlanırım.					
16. Kendimi kötü hissettiğimde duygularım dayanılmaz olur.					

Appendix D: Cognitive Distortion Scale

BİLİŞSEL ÇARPITMA ÖLÇEĞİ

<i>Aşağıda, ifadelerde belirtilen durumlardan kendi durumunuza en uygun geleni işaretleyiniz. Araştırmaya katkılarınızdan dolayı teşekkür ederim.</i>	Hiçbir Zaman	Nadiren	Zaman Zaman	Sıklıkla	Çok Sık
1. Kendinizi küçük görüyorsunuz.					
2. Başınıza gelen bir olaydan dolayı kendinizi suçlarsınız.					
3. Durumunuzu daha iyi hale getirmek konusunda kendinizi çaresiz hissediyorsunuz.					
4. Umutsuz hissediyorsunuz.					
5. Başkalarının size kötü davranmasını beklersiniz.					
6. Kendinizden nefret ediyorsunuz.					
7. Kötü bir şey olduğunda bunu hak ettiğinizi düşünürsünüz.					
8. Başınıza gelen bir olay üzerinde pek fazla kontrolünüzün olmadığını düşünüyorsunuz.					
9. İşlerin sizin için asla iyi gitmeyeceğine inanıyorsunuz.					
10. Size göre dünya tehlikelerle dolu bir yerdir.					
11. Kendinizi eleştirirsiniz.					
12. Biri tarafında incitildiğinde kendinize hiddetlenirsiniz.					
13. Hayatınızda işleri yoluna koymak için elinizden pek fazla bir şey gelmeyeceğine inanıyorsunuz.					
14. Geleceğe dair umutsuzsunuz.					
15. Kötü bir haber almayı beklersiniz.					
16. Kendinize lakaplar takarsınız.					
17. Başınıza gelen kötü bir olayı hak ettiğinizi düşünürsünüz.					
18. Hayatınızın kontrolü sizin elinizde değildir.					

19. Hayatınızın asla düzelmeyeceğini düşünüyorsunuz.					
20. Birinin sizi incitebileceğini düşünüyorsunuz.					
21. Kendinizi beğenmiyorsunuz.					
22. Başınıza bir sıkıntı geldiğinde kendinizi suçlarsınız.					
23. Koşulları değiştirmeye çalışmanızın boşuna olacağını düşünüyorsunuz.					
24. Hiçbir şeyin daha iyi olamayacağını düşünüyorsunuz.					
25. İnsanlardan en kötüsünü beklemeye eğiliminiz vardır.					
26. Çekici/Hoş biri olduğunuzu düşünmüyorsunuz.					
27. Başınıza gelen bir olayda utanç duyarsınız.					
28. Engellemeye ne kadar uğraşsanız da dertlerden kurtulamayacağınızı hissediyorsunuz.					
29. Geleceğinizin umut vaat edici olduğunu hissetmiyorsunuz.					
30. Bir haber alacağınız da aklınıza en kötüsü gelir.					
31. Başkalarının arasındayken kendinizi küçük görüyorsunuz.					
32. Size bir şey yapıldığında kendinizi suçlu hissedersiniz.					
33. Hayatınızın kontrolünüzün elinizde olmadığı kanısındasınız.					
34. Hayatınızın asla düzelmeyeceğini düşünüyorsunuz.					
35. Geçmişte sizden yararlanmaya çalışan kişiler olduğunu düşünüyorsunuz.					
36. Kendinize aptal veya çirkin diye hitap edersiniz.					
37. Muhtemelen sizin suçunuz olmasa bile istenmeyen bir durumda kendinizi suçlarsınız.					
38. Hayatın size fazla seçenek sunmadığını hissediyorsunuz.					
39. Geleceği dair umutlu değilsiniz.					
40. Haksızca eleştirilmeyi veya aşağılanmayı beklersiniz.					

Ayşegül Teyfur_Thesis

ORIGINALITY REPORT

15%

SIMILARITY INDEX

11%

INTERNET SOURCES

9%

PUBLICATIONS

4%

STUDENT PAPERS

PRIMARY SOURCES

1

acikbilim.yok.gov.tr

Internet Source

2%

2

www.researchgate.net

Internet Source

1%

3

inased.org

Internet Source

1%

4

link.springer.com

Internet Source

1%

5

tez.yok.gov.tr

Internet Source

<1%

6

digitalcommons.andrews.edu

Internet Source

<1%

7

Submitted to
internationaluniversityofsarajevo

Student Paper

<1%

8

Ceren Gökdağ. "The effects of two individual
differences in emotional process on
psychological problems: The mediating role of
emotion dysregulation between emotional

<1%