T.C.

TED UNIVERSITY

GRADUATE SCHOOL

CLINICAL PSYCHOLOGY

UNDERSTANDING THE RELATIONSHIP BETWEEN PARENTAL STRESS AND PSYCHOSOCIAL OUTCOMES IN SIBLINGS OF CHILDREN WITH SPECIAL NEEDS: THE ROLE OF PERCEIVED EXPRESSED EMOTION

SENA YILDIRIM

ANKARA, 2025

UNDERSTANDING THE RELATIONSHIP BETWEEN PARENTAL STRESS AND PSYCHOSOCIAL OUTCOMES IN SIBLINGS OF CHILDREN WITH SPECIAL NEEDS: THE ROLE OF PERCEIVED EXPRESSED EMOTION

A Thesis Submitted To
The Graduate School
of
TED University

by

Sena Yıldırım

In Partial Fulfillment of The Requirements
For
Master of Science
in
Clinical Psychology

ANKARA, 2025

Approval of the Graduate School

_____

Prof. Dr. Ayça Tekin Koru
Dean, Graduate School

_____

Assoc. Prof. Emrah Keser
Program Chair

This is to certify that we have read this thesis and that in our opinion it is fully adequate, in scope and quality, as a thesis for the degree of Master of Science.

_____

Prof. Dr. Ilgın Gökler Danışman
Supervisor

Examining Committee Members

Assoc. Prof. Zeynep Tüzün Gün (Committee Chair) _____
Hacettepe University, Adolescent Health

Prof. Dr. Ilgın Gökler Danışman _____
TED University, Department of Psychology

Prof. Dr. Nur Serap Özer _____
TED University, Department of Psychology

I hereby declare that all information in this document 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 results that are not original to this work.

Name, Last name : Sena Yıldırım

Signature :

ABSTRACT

UNDERSTANDING THE RELATIONSHIP BETWEEN PARENTAL STRESS AND PSYCHOSOCIAL OUTCOMES IN SIBLINGS OF CHILDREN WITH SPECIAL NEEDS: THE ROLE OF PERCEIVED EXPRESSED EMOTION

Sena Yıldırım

Master of Science, Clinical Psychology

Supervisor: Prof. Dr. Ilgın Gökler Danışman

August, 2025

This thesis explores how parental stress relates to the psychological and behavioural outcomes of siblings of children with special needs. Specifically, it focuses on the mediating role of perceived expressed emotion, which reflects how siblings interpret their parents' emotional expressions. Data were collected from 154 families in Turkey, including mothers, fathers, and one sibling aged 11 to 18, through both online and physical forms. The constructs were assessed using the Parental Stress Scale (PSS), the Shortened Level of Expressed Emotion Scale (SLEES), and the Strengths and Difficulties Questionnaire – Youth Form (SDQ). Two simple mediation models were tested separately for maternal and paternal stress using Hayes PROCESS Model 4. The findings revealed that higher maternal stress was associated with greater sibling psychosocial difficulties through increased perceived maternal expressed emotion. For fathers, the indirect effect through perceived expressed emotion was also

significant, while the total and direct effects were not. However, when parental psychological symptoms were included as covariates, the indirect effects in both models became nonsignificant. These findings highlight the importance of emotional dynamics within the family system and draw attention to perceived parental emotion as a potential pathway linking parental stress to sibling adjustment.

Keywords*:* parental stress, perceived expressed emotion, siblings of children with special needs, psychosocial outcomes, family systems theory

ÖZET

ÖZEL GEREKSİNİMLİ ÇOCUKLARIN KARDEŞLERİNDE EBEVEYN STRESİ İLE PSİKOSOSYAL ÇIKTILAR ARASINDAKİ İLİŞKİNİN ANLAŞILMASI: ALGILANAN DUYGU DIŞAVURUMUNUN ROLÜ

Sena Yıldırım

Yüksek Lisans, Klinik Psikoloji

Tez Yöneticisi: Prof. Dr. Ilgın Gökler Danışman

Ağustos, 2025

Bu tez özel gereksinimli bir çocuğun bulunduğu ailelerde, ebeveyn stresinin tipik gelişim gösteren kardeşlerin psikolojik ve davranışsal sonuçlarıyla nasıl ilişkili olduğunu incelemektedir. Özellikle, kardeşlerin ebeveynlerinin duygusal tutumlarını nasıl algıladıklarını yansıtan "algılanan duygu dışavurumunun aracılık rolüne odaklanılmıştır. Türkiye'de yaşayan 154 aileden (anne, baba ve 11–18 yaş arası bir kardeş) veri toplanmıştır. Veriler hem çevrimiçi anket formları hem de yüz yüze uygulanan fiziksel formlar aracılığıyla toplanmıştır. Araştırmadaki değişkenler Ebeveyn Stres Ölçeği (PSS), Kısaltılmış Duygu Dışavurum Ölçeği (KDVÖ) ve Güçler ve Güçlükler Anketi – Ergen Formu (SDQ) ile ölçülmüştür. Anneler ve babalar için ayrı ayrı olmak üzere iki basit aracılık modeli Hayes PROCESS Model 4 kullanılarak test edilmiştir. Bulgular, yüksek anne stresinin artan algılanan anne duygu dışavurumu yoluyla kardeşlerde daha fazla psikososyal zorlukla ilişkili olduğunu göstermiştir. Baba modeli için de dolaylı etkinin anlamlı olduğu bulunmuş, ancak toplam ve doğrudan etkiler anlamlı bulunmamıştır. Bununla birlikte ebeveynin psikolojik belirtileri kontrol değişkeni olarak modele dahil edildiğinde her iki modeldeki dolaylı etkiler anlamlılığını yitirmiştir. Bu bulgular, aile sistemi içindeki algılanan duygusal

dinamiklerin önemine işaret etmekte kardeş uyumu arasındaki ilişkiyi açıklayabilecek bir yol olabileceğini göstermektedir.

Anahtar Kelimeler: ebeveyn stresi, algılanan duygu dışavurumu, özel gereksinimli çocuğun kardeşleri, psikososyal sonuçlar, aile sistemleri kuramı

ACKNOWLEDGMENTS

Writing this thesis has been a challenging but very meaningful journey, shaped by many people and places that accompanied me along the way.

First of all, I am deeply grateful to my family. Thank you to my parents for their endless support, both emotionally and practically, throughout this entire process. To my sister Selin, being your sibling has been one of the most emotionally meaningful experiences of my life. You have always been the wisest soul I have ever known. Growing up in a family with a child with special needs has been a journey full of deep meaning. I am thankful for the efforts of my family.

I would like to express my appreciation to Doç. Dr. İbrahim Yiğit, who guided me in the early stages of my thesis and supported the initial shaping of this work. I am also grateful to my thesis advisor, Prof. Dr. Ilgın Gökler Danışman, for her guidance and valuable contributions during the final stages of this thesis.

I am sincerely thankful to the jury members, Prof. Dr. Nur Serap Özer and Doç. Dr. Zeynep Tüzün Gün, for their thoughtful comments, constructive feedback, and valuable perspectives, which have strengthened this thesis.

I would like to thank all the families who took part in this study. I know there are many stories that could have been told about their experiences. Thank you for giving me the chance to reach out to you. It was truly meaningful.

To my dearest friend, Antonia Tokes, thank you for always making me feel close and supported, no matter the distance. Your presence was a backbone to my emotional resilience during this process.

To Murat Arıca, thank you for your encouragement and help throughout the data collection, and for walking part of this road with me.

To Çağrı Güçlüten, my brother, thank you for your attentiveness to my work and your sensitive support.

To my colleagues, Hatice Merve Aykaç, Gizem Atak, and Özge Ayşe Güler, thank you for your meaningful support and companionship.

I also want to give a big thank you to myself, for continuing even when things felt heavy, and for allowing myself to have many experiences during this thesis-writing period. This process showed me my own dedication.

Last but not least, I would like to express my appreciation to the places that became part of this journey. From Uppsala to Leiden and Schöngrabern, each place quietly accompanied me through the intense and solitary moments of writing. I am thankful for the sense of mental space and shelter they provided.

To my beloved sibling, parents, and all families with a special child…

TABLE OF CONTENTS

PLAGIARISM....iii
ABSTRACT....iv
ÖZET....vi
ACKNOWLEDGMENTS....viii
DEDICATION....x
TABLE OF CONTENTS....xi
LIST OF TABLES....xiv
LIST OF SYMBOLS/ABBREVIATIONS....xv
LIST OF FIGURES....xvi
CHAPTER
1. INTRODUCTION....1
1.1 Overview....1
1.2 Parental Stress....2
1.2.1 Parental Stress in Families of Children with Special Needs....4
1.2.2 Being a Sibling of Children with Special Needs....6
1.3 Expressed Emotion....6
1.3.1 Historical Development of Expressed Emotion....7
1.3.2 Measurement Approaches for Expressed Emotion....8
1.3.3 Family Contexts: High vs. Low Expressed Emotion....9
1.3.4 Perceived Expressed Emotion....9
1.3.5 Parental Stress and Expressed Emotion....11
1.4 Sibling Psychosocial Outcomes....12
1.4.1 Effect of Family Environment on Siblings with Typical Development....13
1.4.2 Perceived Expressed Emotion and Sibling Outcomes....15
1.5 The Family Systems Framework....18
1.6 The Current Study....21
2. METHOD....24
2.1 Participants....24

2.2 Measures 26
2.2.1 Demographic Information Form 26
2.2.2 Parental Stress Scale (PSS) 26
2.2.3 Brief Symptom Inventory (BSI) 27
2.2.4 Strengths of Difficulties Questionnaire (SDQ) 27
2.2.5 Shortened Level of Expressed Emotion Scale for Adolescents (SLEES) 28
2.3 Procedure 28
3. RESULTS 30
3.1 Data Screening and Assumption Tests 30
3.2 Descriptive Statistics 30
3.3 Bivariate Correlations of the Variables in the Study 31
3.4 Simple Mediation Analyses 33
3.4.1 The Mediating Role of Perceived Expressed Emotion in the Relationship between Maternal Stress and Psychological Outcomes of the Sibling 33
3.4.2 The Mediating Role of Perceived Expressed Emotion in the Relationship between Paternal Stress and Psychological Outcomes of the Sibling ..... …35
4. DISCUSSION 37
4.1 Discussion of Findings Regarding the Proposed Mediation Models 37
4.2 Differences Between Mother-Sibling and Father-Sibling Dyads 40
4.3 Interpreting Findings Through Family Systems Theory 41
4.4 Limitations of the Current Study 43
4.5 Clinical Implications and Contributions 44
4.6 Future Research 46
4.7 Conclusion 47
REFERENCES 49
APPENDICES
A. Informed Consent for Parents/Parental Consent for Adolescents 85
B. Informed Consent for Adolescents 88
C. Demographic Information Form for Parents 91

D. Demographic Information Form for Adolescents 94
E. Parental Stress Scale (PSS) 95
F. Brief Symptom Inventory (BSI) 97
G. Shortened Level of Expressed Emotion Scale (SLEES) 100
H. Strengths and Difficulties Questionnaire (SDQ) 103
I. Bivariate Correlations Among Variables (Mother-Sibling) 104
J. Bivariate Correlations Among Variables (Father-Sibling) 105
K. Bivariate Correlations between BSI and Study Variables (Mothers) 106
L. Bivariate Correlations between BSI and Study Variables (Fathers) 107
M. Ethics Committee Approval 108

LIST OF TABLES

TABLES

Table 1 Demographic Characteristics of Participants 25
Table 2 Descriptive Statistics of the Variables in the Study 31
Table 3 Bivariate Pearson's Correlations Among Variables Among Mother-Sibling Dyads 32
Table 4 Bivariate Pearson's Correlations Among Variables Among Father-Sibling Dyads 32
Table 5 Simple Mediation Models 33
Table 6 Bivariate Correlations Among Variables (Mother-Sibling) 104
Table 7 Bivariate Correlations Among Variables (Father-Sibling) 105
Table 8 Bivariate Correlations between BSI and Study Variables (Mothers) 106
Table 9 Bivariate Correlations between BSI and Study Variables (Fathers) 107

LIST OF ABBREVIATIONS

DD	Developmental Disability
ID	Intellectual Disability
EE	Expressed Emotion
PEE	Perceived Expressed Emotion
LEE	Level of Expressed Emotion
SLEES	Shortened Level of Expressed Emotion
SDQ	Strengths and Difficulties Questionnaire
BSI	Brief Symptom Inventory
PSS	Parental Stress Scale
CFI	Camberwell Family Interview
FMSS	Five Minute Speech Sample

LIST OF FIGURES

FIGURES

Figure 1 The Proposed Mediation Model 23
Figure 2 The Results of Simple Mediation Analysis (Mother-Sibling Dyad) 34
Figure 3 The Results of Simple Mediation Analysis (Father-Sibling Dyad)..... 36

CHAPTER 1

INTRODUCTION

1.1 Overview

A family does not function as isolated individuals but rather as an interconnected system where the emotional states, stress levels, and behaviors of each member impact the entire household. Among the various factors influencing family stress, raising a child with special needs presents a unique factor (Priego-Ojeda & Rusu, 2023). Parental stress tends to be significantly heightened when children have chronic conditions or special healthcare needs (Farrace et al., 2013; Christian, 2022). In the present study, the term "special needs" refers to diagnosed developmental and physical disabilities, including autism, intellectual disabilities, and neurological or genetic conditions, as represented in the current sample. In the literature, developmental disabilities (DD) include a range of conditions such as Autism Spectrum Disorder, Down Syndrome, Fragile X Syndrome, Williams Syndrome, Cerebral Palsy, and Global Developmental Delay in younger children (AAIDD, 2019). Intellectual disability (ID), as one type of developmental disability, involves significant limitations in both intellectual functioning and adaptive behaviour, with symptoms appearing before the age of 18 (AAIDD, 2019; Hayden & Hastings, 2022). The phrases “children with special needs” and “children with disabilities*”* are used interchangeably to describe the study sample. Families with a child who has a disability often face heightened caregiving demands, emotional strain, and financial burdens, leading to higher levels of parental stress compared to families with typically developing children (Lopez et al., 2008; Farrace et al. 2013). Importantly, when parents experience stress, particularly in demanding caregiving environments, these stressors do not remain isolated, and they often extend to influence the well-being of all family members, including typically developing siblings (Beyhatun, 2022; Ilhan, 2017).

One theoretical construct that may help explain the family dynamics is Expressed Emotion (EE), which originally referred to emotional attitudes and communication patterns within a family, particularly in terms of criticism, warmth, emotional over-involvement, hostility, and positive remarks (Brown et al., 1972).

The construct of expressed emotion has contributed to shifting attention away from individual difficulties toward recognizing how the context of the person can affect their well-being (Neath, 2020). However, there might be a potential risk of unintentionally pathologizing emotional responses to highly demanding circumstances. It is important to recognize that high levels of EE may, in many cases, represent a natural response to challenging circumstances and stress, especially in high-demand caregiving roles. In fact, relatively few studies appear to have explored the influence of life stressors on EE (Neath, 2020). Therefore, an essential consideration in this family research is context sensitivity (Priego-Ojeda & Rusu, 2023). Studies have found that children in high-EE family environments have been found to face up to five times the risk of developing psychological difficulties compared to those in low-EE families (Stubbe et al., 1993). While EE has been widely studied in clinical populations, particularly in relation to psychiatric disorders, research examining EE in non-clinical family settings remains limited (Burkhouse et al., 2012; Hale et al., 2016; Han & Shaffer, 2014).

In recent years, Perceived Expressed Emotion (PEE) has emerged as a relevant construct for understanding how individuals interpret emotional expressions within their family environment (Nelis et al., 2011). While PEE is conceptually related to the original EE construct, this approach centers the individual's subjective experience (Cole & Kazarian, 1988). Despite its relevance in family research, PEE is an underexplored variable in the context of families of children with special needs. Although stress and expressed emotion have been extensively studied in family environments, their impact within high-stress families, such as those raising a child with special needs, remains understudied (Barak-Levy & Atzaba-Poria, 2015). In this study, the emphasis is on perceived expressed emotion**,** which reflects how typically developing siblings experience and evaluate the emotional expressions of their parents. Accordingly, this thesis aims to emphasize not only what parents do, but how the family system functions under stress, and through which underlying mechanisms it may affect siblings' psychosocial outcomes.

1.2 Parental Stress

According to the Transactional Model of Stress and Coping (Lazarus & Folkman, 1984), stress occurs when an individual's resources are exceeded by environmental

demands, leading to negative impacts on well-being. Excessive stress negatively affects various physiological and psychological functions, including mental health (Ellis & Giudice, 2014; Shonkoff et al., 2012). Thus, stress can severely impair an individual's ability to perform basic daily tasks or responsibilities (Peer & Hillman, 2012). Understanding how stress affects psychological functioning is particularly important in caregiving contexts, such as parenting, where stress can interrupt family dynamics (Han et al., 2018).

Parental stress arises from an interplay of personal factors (e.g., personality), child characteristics (e.g., temperament), and external resources (e.g., support systems) (Abidin, 1992). This stress is further influenced by family structure, parental adaptability, and availability of external resources (Abidin, 1989). Notably, parental stress is not a static experience but rather fluctuates based on situational, psychological, and interpersonal factors. Therefore, the multifaceted character of parental stress derives from the unique traits of each child and parent at a particular moment, as well as from situational factors associated with the parenting role (Abidin, 1990). All of these components have the potential to either exacerbate or lessen the stress that parents experience (Belsky, 1984; Crnic & Low, 2002; Deater-Deckard, 2004).

Parental stress is crucial to research since it has significant implications for both parents and children (Abidin, 1992). Within parent-child interactions, stress significantly influences communication and caregiving behaviours. From an ecological systems perspective, parental stress is not just confined to the parent-child relationship but also shapes overall family functioning (Bronfenbrenner, 1979). In this context, Abidin's (1992) Parental Stress Model identifies stress as a primary contributor to dysfunctional parenting, arguing that increased levels of stress lead to greater use of maladaptive parenting strategies.

Parents experiencing high stress levels often struggle with effective communication and educational strategies, which can lead to poor family relationships and disrupted parent-child bonds (Webster-Stratton, 1990; Gabriel & Bodenmann, 2006; Butcher et al., 2023). Research has consistently linked higher parental stress to an increased likelihood of reduced emotional warmth, coercive discipline, and over-reactivity (Emery & Tuer, 1993; Deater-Deckard & Scarr, 1996; Ang, 2008). In

contrast, lower levels of parental stress have been associated with more positive parenting practices, such as greater supervision and emotional warmth (Bonds et al., 2002). Furthermore, high levels of stress can negatively impact a parent's physical and psychological well-being, potentially compromising their ability to fulfil their parental role, and ultimately can affect the development of their children and adolescents (Siegel & Hartzell, 2013). Prior research has identified links between parental stress and various dimensions of parenting behaviour (Briggs-Gowan et al., 2001; Pinderhughes et al., 2000). Moreover, studies have demonstrated that parental behaviour is directly linked to child adjustment, with stress in parents being associated with mental health issues and lower psychological well-being in both parents and children (Barroso et al., 2018; Farmer & Lee, 2011; Menon et al., 2020).

Given this, along with being a uniquely fulfilling experience, parenthood also introduces new responsibilities that can contribute to stress. This may be particularly relevant in families of children with special needs, where parental stress is intensified by additional caregiving demands (McStay et al., 2014). Due to the distinct nature of parenting, the stress associated with raising a child differs from stress caused by other major life events and has the potential to accumulate over time (Crnic & Low, 2002; Deater-Deckard, 2004). Understanding how parental stress manifests is especially important in families facing additional caregiving responsibilities, such as raising a child with special needs.

1.2.1 Parental Stress in Families of Children with Special Needs

Parenting is inherently complex, involving emotional, practical, and psychological demands. However, when a child's developmental progress does not align with typical expectations, parents may experience heightened anxiety and stress (Hastings, 2002). Thus, while parenting inherently involves stress (Deater-Deckard, 2005), research suggests that the nature of stress associated with raising a child with a disability has a more pronounced negative impact on parental well-being (Feldman, 2007). The presence of a child with special needs reshapes family dynamics, requiring additional emotional, financial, and caregiving resources (Okanlı et al., 2004). Furthermore, caring for a child with special needs often puts ongoing demands on the family, requiring them to manage daily challenges, adjust to long-term care routines, and preserve their overall well-being (Grandjean et al., 2021). Therefore, families

experience stress due to the challenges of managing daily difficulties and fulfilling caregiving responsibilities (Arif et al., 2021; Caley, 2012; Cheng & Lai, 2023; Jackson et al., 2015; Valicenti-McDermott et al., 2015).

These families often face greater caregiving burdens than those raising typically developing children (Priego-Ojeda & Rusu, 2023). Regardless of the type of disability, research has indicated that parents of children with developmental and chronic conditions have elevated levels of parental stress in comparison to parents of children with typical development (Baker et al., 2003; Eisenhower et al., 2005; Gupta, 2007; Hoffman et al., 2009; Hayes & Watson, 2013; Farrace et al., 2013; Golfenshtein et al., 2015). Existing research on parents of children with special needs has mostly concentrated on mothers. While mothers are typically more involved in caregiving, fathers also play a significant role and devote substantial time and energy to caring for and meeting their children's specific needs (Bhopti et al., 2016). Studies have consistently found that parents of children with special needs, particularly mothers, report significantly higher stress levels compared to parents of typically developing children (Desiningrum et al., 2023; Si et al., 2020). Although most studies focus on maternal stress, research on paternal stress remains scarce (Tehee et al., 2009; Davys et al., 2017), limiting our understanding of how parental stress influences dynamics within the family. This disparity may be attributed to traditional gender roles and research methodologies that have historically focused on mothers' caregiving roles (Cabrera et al., 2014; Smith, 2017).

The prolonged caregiving-related stress not only affects parents' ability to cope effectively but also has wider implications for overall family functioning (Han et al., 2018; Kuhn & Carter, 2006). In line with Abidin's Parental Stress Model, research has shown that high levels of parental stress have a negative impact on parenting behaviors among parents of children with developmental disabilities (Osborne & Reed, 2009). These findings highlight the often compounded nature of stress in these families and its broader impact on family functioning. While the effects of elevated parental stress are well-established, less is known about how this stress shapes the emotional atmosphere siblings perceive within the family, and how that perception relates to their psychosocial outcomes. This interplay warrants further investigation, particularly in the context of family dynamics involving typically developing siblings.

1.2.2 Being a Sibling of Children with Special Needs

The presence of a child with special needs in the family brings significant changes to family dynamics (Besier et al., 2010). Typically developing siblings are often considered as one of the groups most susceptible to negative impacts on their well-being. However, research has shown that growing up alongside a sibling with special needs or a chronic condition can cause both positive and negative developmental outcomes (Macks & Reeve, 2007; Findler & Vardi, 2009; Fisman et al., 2000). According to Dondi (2018), siblings shape their sense of identity and personality through their daily experiences of living with disability in the family and being part of a household where stress is something they often face. Research suggests that growing up with a sibling who has a disability can affect the whole family in different ways (Boelsma et al., 2017; McHale & Gamble, 1989; Noonan et al., 2018; Fuerboeter et al., 2021).

Siblings with typical development often grow up in a family environment shaped by their brother or sister's condition. This often means that siblings need to be aware of and sensitive to the needs of their brother or sister, while also dealing with certain stressors themselves, which might affect their own psychosocial well-being (Alderfer et al., 2010; Schamong et al., 2022). When one family member's functioning changes, it often leads to changes in how other members function as well (Bowen, 1978). In the context of families with children with special needs, the presence of a child with a disability can also influence the experiences of other family members (Russell, 2024). Aligned with this literature, this study acknowledges that there is no single or universal experience of being a typically developing sibling of children with special needs.

1.3 Expressed Emotion

Expressed Emotion (EE) is a concept developed through empirical research, initially aimed at exploring whether the emotional atmosphere within families could influence the course of psychiatric disorders (Brown et al., 1972). EE is commonly used to describe the overall emotional climate within the household (Asarnow, 1992). It has since become a standardized construct used to assess emotional dynamics within families, especially through patterns of communication among close relatives (Nelis et al., 2011). The construct was developed in response to findings that changes in

family dynamics are closely associated with the psychological well-being of individual family members (Hale et al., 2016). EE captures the emotional attitudes and responses of caregivers toward close relatives and is frequently employed as an indirect measure of the emotional tone in family interactions (Magaña et al., 1986; Fahrer et al., 2022). High parental EE has also been conceptualized as a form of toxic family stress, particularly when characterized by high levels of criticism and emotional over-involvement (Peris & Miklowitz, 2015).

A substantial body of empirical and meta-analytic research on clinical populations demonstrates that individuals from families with high levels of EE are at elevated risk for psychiatric relapse (Butzlaff & Hooley, 1998; Cechnicki et al., 2013; Hooley, 2007; Weintraub et al., 2017). Furthermore, elevated EE has also been shown to influence the clinical trajectory and treatment outcomes of various disorders, including anxiety, depression, and bipolar disorder (Hirshfeld et al., 1997; Kim & Miklowitz et al., 2004; Peris et al., 2015; Przeworski et al., 2012). EE has also been applied in studies involving both neurotypical families (Sher-Censor, 2015) and those with children who have developmental disabilities (Thompson et al., 2018), suggesting its relevance beyond clinical or psychiatric contexts.

1.3.1 Historical Development of Expressed Emotion

The concept of expressed emotion first introduced by George Brown and colleagues in the 1950s during a longitudinal study examining relapse in individuals with schizophrenia. Their findings emphasized the role of the family environment, revealing that individuals who returned to live with their families after hospitalization were more likely to relapse than those living apart from their families (Brown, 1959; Vaughn, 1989). Therefore, EE was conceptualized as a way to assess relatives' emotional responses toward a family member with a psychiatric condition, reflecting the broader emotional atmosphere within the household (Lobban et al., 2006). For more than fifty years, expressed emotion has remained a central topic in family research, serving as a proxy for evaluating the emotional climate within the family (Fahrer et al., 2022). Researchers, especially in the field of adolescent psychopathology, have often used measures of expressed emotion to capture the complex and hard-to-operationalize construct of emotional climate (Khafi et al., 2019).

Given its clinical relevance and theoretical significance, various tools have been developed to operationalize and assess the construct of expressed emotion.

1.3.2 Measurement of Expressed Emotion in Research

Over the years, several methods have been developed to measure EE, each offering different strengths depending on the population and research context. The most widely known method is the Camberwell Family Interview (CFI), a semi-structured and in-depth interview conducted with a key relative of the individual. While CFI is considered the gold standard due to its depth and predictive validity, its practical use is limited because it requires extensive training and significant time for both administration and coding (Leff & Vaughn, 1985). To address these limitations, shorter alternatives have been developed. The Five-Minute Speech Sample (FMSS) requires a relative to speak uninterrupted about the patient for five minutes (Magaña et al., 1986). This speech sample is then analysed to assess levels of criticism and emotional over-involvement. Although FMSS excludes components like hostility and warmth, it is often preferred in clinical and research settings for its efficiency and minimal training requirements (Magaña et al., 1986). In recent years, self-report measures have been more commonly used, primarily because they are easier to administer and can be adapted for different populations. One tool is the Level of Expressed Emotion (LEE) Scale, a 60-item measure developed by Cole and Kazarian (1988) that evaluates individuals' perceptions of their emotional environment. It includes subscales such as attitude towards illness, intrusiveness, emotional response, tolerance, and expectations and can be completed by either the patient or a relative (Cole & Kazarian, 1988).

Recognizing the need for adolescent-appropriate tools, Nelis et al. (2011) adapted and shortened the Level of Expressed Emotion Scale into a 33-item version specifically designed for use with adolescents. The Shortened Level of Expressed Emotion Scale assesses three main subdimensions: Lack of Emotional Support, Irritability, and Intrusiveness, based on adolescents' perceptions of their parents' emotional attitudes and behaviours. In the Turkish context, SLEES was adapted by Vural et al. (2013). Their validation study supported the scale's three-factor structure and demonstrated its reliability and relevance among Turkish adolescents. Given its

focus on perceived emotional climate from the adolescent's perspective and its practical ease of administration, the SLEES was selected for this study.

1.3.3 Family Contexts: High vs. Low Expressed Emotion

As indicated by the previous literature, relatives identified as low in EE were typically described as non-intrusive, having tolerance and sensitivity to patients' needs. In contrast, high-EE relatives tended to exhibit more intrusive behaviours, show less tolerance, and less flexibility for the difficulties associated with the illness (Barrowclough & Hooley, 2003). Within clinical child and adolescent psychology, high levels of EE are often interpreted as reflections of the overall quality of the relationship of the parent and child (Daley et al., 2003). According to Hale et al. (2011), high EE is associated with parenting behaviours characterized by a lack of emotional support, frequent interference in adolescents' decisions, irritability, and critical communication patterns. On the other hand, parents with low EE tend to avoid excessive criticism or over-involvement, instead offering warmth, respect, and support for their adolescent's autonomy (Lefley, 1992). Understanding the psychological traits linked to EE can offer valuable insight into why some individuals may be more predisposed than others to express high levels of expressed emotion (Neath, 2020). Therefore, it is also important to consider how emotional expression within families may be shaped by broader contextual factors, such as parental stress in demanding caregiving contexts.

1.3.4 Perceived Expressed Emotion

Studies using parent-report measures of EE, high EE has demonstrated both immediate and long-term associations with internalizing and externalizing difficulties in children and adolescents, across clinical and community populations (Wearden et al., 2000; Asarnow et al., 2001; Peris et al., 2003). Recent research also showed that higher levels of parental EE have consistently been associated with elevated psychological symptoms in children and adolescents (Uçar, 2015; Hale et al., 2011). These associations highlight the importance of evaluating EE comprehensively, as it plays a significant role in shaping children's overall developmental outcomes (Pelham & Fabiano, 2008). However, few studies have focused on how adolescents perceive this emotional climate, even though cognitive theories suggest that their interpretations

may be just as important as the expressions themselves, and may influence psychological outcomes (Hale et al., 2011). Given these findings, it becomes essential to also consider how individuals perceive the emotional climate within their families, rather than relying solely on caregiver reports. Perceived expressed emotion (PEE) refers to an individual's interpretation of the emotional environment within the family, particularly how they perceive their parents' attitudes and behaviours (Cole & Kazarian, 1988). While traditional measures of EE typically focus on how parents or caregivers communicate criticism, emotional over-involvement, or hostility, perceived EE shifts the focus toward how these emotional expressions are interpreted by the child or adolescent (Cole & Kazarian, 1988; Nelis et al., 2011). Perceived expressed emotion was operationalized as including characteristics such as irritability, intrusiveness, and lack of emotional support (Nelis et al., 2011; Vural et al., 2013)**.** The lack of emotional support subscale reflects the perception of emotional unavailability, relational distance, or a lack of warmth from the parent. The irritability subscale captures how the parent is seen as easily annoyed, frustrated, or emotionally reactive. Finally, intrusiveness describes the experience of the parent as overly involved or interfering in an individual's space or decisions (Nelis et al., 2011).

It has been suggested that children and adolescents may be more sensitive to the negative effects of high parental perceived EE compared to adults (Nelis et al., 2011). This sensitivity has led to increased interest in the appropriateness and utility of EE assessments specifically tailored for younger populations (Çolpan et al, 2018). Emotional expressions of the parents are an important component of parental emotional socialization and significantly contribute to the socioemotional adjustment of children (Kehoe et al., 2013). Moreover, perceived EE has been identified as a meaningful factor associated with psychological difficulties in adolescence (Güler et al., 2023). Although EE has been extensively examined in clinical populations, its relevance has also been demonstrated in non-clinical family contexts (Hibbs et al., 1991; Koenigsberg et al., 1995). In addition to providing insight into relational dynamics, EE has been used to evaluate children's daily functioning by assessing the nature and quality of parental behaviours (Lefley & Wasow, 2013). Assessing expressed emotion in both clinical and general youth populations helps to clarify how

family emotional dynamics relate to adolescent mental health, thereby guiding the development of more effective support strategies (Hamzat et al., 2025).

1.3.5 Parental Stress and Expressed Emotion

According to Hooley and Gotlib (2000), high EE can be understood within the framework of the diathesis-stress model, which suggests that emotionally intense reactions from caregivers may arise under sufficient levels of stress or burden. Research indicates a significant link between caregivers' stress levels and the degree of expressed emotion within the family (Balachandran & Bhuvaneswari, 2024). Several studies have found that caregivers who express higher levels of EE also report greater levels of caregiving burden (Carrà et al., 2012; Möller-Leimkühler & Jandl, 2011; Wang et al., 2017). Furthermore, according to recent studies, high parental stress is found to be higher among parents who also display high levels of criticism, emotional over-involvement, and reduced warmth (De Clercq et al., 2022; Balachandran & Bhuvaneswari, 2024). On the other hand, parents who report lower stress levels tend to show lower degrees of EE, often interpreted as a sign of a less reactive and more supportive home environment. Therefore, high levels of EE might be a situational reaction to ongoing stress rather than a consistent caregiver characteristic (Falloon, 2003). This viewpoint is especially crucial because it warns against pathologizing caregivers with high EE without considering the possible contextual stressors causing their reactions.

Stress in family dynamics can become more noticeable in families responsible for caring for a child who has mental or physical health conditions. Parents raising children with developmental disabilities often encounter distinct challenges in their daily interactions, which can cause them a great deal of emotional and psychological strain (Peer & Hillman, 2014). Parenting stress has been the subject of numerous studies, all of which have consistently shown that parents of children with special needs experience parenting stress at a significantly higher rate than parents of children with typical development (Peer & Hillman, 2014; Hodapp et al., 2019; Yorke et al., 2018; Pinquart, 2018). Moreover, a considerable number of families raising children with developmental disabilities experience a highly stressful emotional environment (De Clercq et al., 2022).

Recent research has started to concentrate on particular parenting practices among parents of children with developmental disabilities, in addition to the well-established body of literature on parenting stress (Boonen et al., 2015; Dieleman et al., 2017; Maljaars et al., 2014; Phillips et al., 2017). According to Lada-Masko et al. (2025), parental stress can be reflected in parenting behaviors that shape family interactions. Several studies have investigated parental expressed emotion with an effort to better comprehend the emotional climate in the household of children with special needs. Findings have shown that parents of children with autism spectrum disorder tend to express more criticism and show less warmth (Griffith et al., 2015), while those with children who have intellectual disabilities report overall higher EE levels (Beck et al., 2004). Moreover, a recent meta-analysis by Thompson et al. (2018) found that parents in samples from different disability groups had high levels of expressed emotion. This pattern was also observed by De Clercq et al. (2022) in their study with families of children with developmental disabilities. Their study revealed that families with children who have cerebral palsy and autism spectrum disorder (ASD) had comparatively high rates of EE (De Clercq et al., 2022), highlighting the need for greater attention to the emotional climate in these family contexts.

1.4 Sibling Psychosocial Outcomes

There is a body of research examining the psychosocial outcomes of typically developing siblings of children with developmental or neurodevelopmental conditions. However, the findings are mixed and often contradictory about whether these siblings are at increased risk for negative outcomes (Mandleco & Webb, 2015; Knecht et al., 2015; Kovshoff et al., 2017; McKenzie Smith et al., 2018; Marquis et al., 2019). While some studies suggest no significant negative effects (Cuskelly & Gunn, 2006; Wolff et al., 2023), others report poorer mental health and increased emotional and behavioral challenges such as anxiety, depression, or low self-concept (Sharpe & Rossiter, 2002; Vermaes et al., 2012; Giallo et al., 2012; Shivers et al., 2019; Lin et al., 2021; Marquis et al., 2019). There is also substantial evidence suggesting higher rates of mental health diagnoses among these siblings (Lin et al., 2021; Wang et al., 2020). On the other hand, several findings emphasize strengths, with siblings showing increased empathy, maturity, or interpersonal sensitivity (Connors & Stalker, 2003; Orm et al., 2022; Cridland et al., 2014; Leedham et al., 2020; Watson et al., 2021).

Qualitative findings especially tend to emphasize these positive aspects more strongly than quantitative studies, which highlight growth, resilience, and emotional insight (Lamsal & Ungar, 2021; Lummer-Aikey & Goldstein, 2021).

In another words, the most consistent findings in the literature are that sibling outcomes are mixed. According to population-level research, siblings of children with intellectual disabilities often have higher behavioural and emotional difficulties in direct comparisons (Hayden et al., 2019). However, additional research revealed that these group differences were mostly explained by larger structural characteristics like socioeconomic status as well as other within-family factors, including maternal stress (Marquis et al., 2019). On the other hand, even after controlling for these factors, siblings of children with developmental disabilities have still been found to face higher risks for depression and other mental health difficulties (Marquis et al., 2019). This inconsistency in findings can be partially due to methodological differences and limitations, such as relying on parents' or teachers' views instead of the siblings' own perspectives or using retrospective data (Caliendo et al., 2020). Additionally, individual outcomes appear to be shaped by a complex mix of factors, including sibling characteristics, the nature of the child's disability, and broader family and social dynamics (Marquis et al., 2019). Therefore, understanding what family-level processes may explain this variability is essential.

1.4.1 Effect of Family Environment on Siblings with Typical Development

As mentioned earlier, Family Systems Theory views the family as an emotionally connected and interdependent system, where the needs and capabilities of any individual member can influence the overall functioning and well-being of the entire family (Bowen, 1966). Beyond the direct caregiving connection between parent and child with special needs, the stress of having a child with special needs can broadly impact the larger family environment (Samadi & McConkey, 2014). Some studies suggest that siblings may be affected when parental attention and emotional resources are limited, or when everyday family routines are disrupted due to the demands of caring for a child with special needs (Povee et al., 2012; Moyson & Roeyers, 2012; Luijkx et al., 2016). Research has also shown that stress can alter how parents perceive and respond to their environment, including their interactions with family members (Rivers & Stoneman, 2003). When parents face ongoing stressors,

they may struggle with negative emotions, which can in turn affect how they behave, respond to, and interact with their children (Brinkman et al., 2023). Therefore, when parents are overwhelmed by stress, perception and behavior can influence the emotional tone they express and how they engage emotionally with their children (Fontes, 2023). This emotional atmosphere can also shape how their typically developing child experiences the family environment.

Recent study showed that siblings of children with developmental disabilities are at increased risk for mental health problems, partly due to the heightened stress within the family environment (Marquis et al., 2019). Moreover, poor family climate has been shown to negatively affect sibling outcomes, with research linking it to reduced prosocial behavior in typically developing siblings (Benson & Karlof, 2008). How siblings adjust to these challenges often depends on broader family dynamics, such as parental attitudes and how they support each child (Giallo & Gavidia-Payne, 2006).

While much of the research on disability focuses on the child or the parents, despite their important role in family functioning the experiences of siblings have often been underrepresented (Friedman & Oleksa, 2017). Bronfenbrenner's Ecological Systems Theory (1979) offers a useful framework for understanding how sibling experiences are shaped within broader layers of family and environmental context. The theory proposes that development occurs within nested systems, such as microsystem, mesosystem, exosystem, and macrosystem, and each of them influences the individual's growth (Ryan, 2001). Among these, the microsystem is considered most directly impactful, which includes daily family interactions. From this perspective, typically developing siblings can be influenced by the dynamics within their immediate family, particularly the emotional and relational environment. Building on Bronfenbrenner's model, the Sibling Embedded Systems Framework (Kovshoff et al., 2017) has been proposed to more directly and specifically conceptualize the experiences of typically developing siblings of children with autism. This framework emphasizes that sibling outcomes are not only shaped by the immediate microsystem, such as parental stress or sibling relationship quality. Empirical research has supported this multi-layered view, showing that it is also influenced by broader contextual factors like parental mental health and family dynamics (Shivers et al., 2013; Petalas et al.,

2012; Gau et al., 2010). It highlights the active role of the sibling in interpreting and adapting to these factors, and it offers a comprehensive understanding of how emotional and relational environments may impact psychosocial outcomes (Kovshoff et al., 2017).

As mentioned earlier, sibling outcomes have been shown to be influenced by various family-level risk and protective factors. Research suggests that stronger family communication and emotional cohesion are linked to better psychosocial adjustment for the siblings (Okashah et al., 2015; Pavlopoulou & Dimitriou, 2020). In this context, expressed emotion may act as a relational factor that contributes to these dynamics (Thompson et al., 2018), potentially functioning as either a protective or risk factor depending on how siblings perceive parental expressed emotion.

1.4.2 Perceived Expressed Emotion and Sibling Outcomes

According to research, one aspect of environmental risk is family-environmental stress (Asarnow et al., 2001). As mentioned earlier, a diagnosis related to a child's special condition can influence the psychological well-being of all family members, affecting the overall family system (Fuerboeter et al., 2021). A brother or sister with a disability often means also being exposed to specific stressors. Due to increased levels of stressors in these families, parents may experience increased negative emotions, which can contribute to less adaptive or negative parenting behaviors (Brinkman et al., 2023).

Adolescence represents a particularly sensitive developmental stage, marked by the transition from childhood to adulthood (Nurany et al., 2022). During this period, adolescents' socioemotional well-being may be importantly shaped by the emotional environment within the family (Wang et al., 2024). Although adolescence is characterised by increased social independence, and being close to their social circles, the nature of adolescents' relationships with their parents continues to have a significant impact on their psychological adjustment (Nurany et al., 2022). It has been shown that youth mental health is influenced by the family environment (Çolpan et al., 2018). Moreover, the emotional climate in the home has been associated with a number of developmental outcomes and is frequently seen as a helpful predictor of the quality of the parent-child relationship (Blum & Ribner, 2022).

Over the years, research on expressed emotion has expanded beyond adult psychopathology to include studies of child and adolescent functioning. Research started to discover this construct across various developmental stages, from early childhood through adolescence (Rogosch et al., 2004). Both longitudinal and retrospective studies conducted in clinical and community settings have been linked parental EE to the onset, development, and severity of psychological difficulties in young populations (Bolton et al., 2003). Children and adolescents exposed to high levels of parental expressed emotion have been found to experience a range of psychological difficulties (Hodes et al., 1999; Wamboldt & Wamboldt et al., 2000). One longitudinal study by McCleary and Sanford (2002) found that adolescents exposed to high levels of parental expressed emotion were more likely to exhibit depressive symptoms over time. Also, more recent research has indicated that children and adolescents' psychopathological symptoms are predicted by high levels of parental expressed emotion (Hale et al., 2011). In line with research emphasizing the role of emotional climate, Luebbe and Bell (2014) found that adolescents who experienced lower levels of maternal warmth were more likely to report depressive symptoms. Consistent with these findings, Güler et al. (2023) found that perceived lack of emotional support was significantly associated with higher levels of anxiety and depression in adolescents. Although EE's relationship with the onset and course of youth psychological outcomes is well acknowledged, underlying mechanisms and contextual factors that contribute to high levels of parental expressed emotion remain a gap in the research area (Peris et al., 2015).

Furthermore, the importance of examining EE as a possible risk factor for adolescent mental health outcomes is supported by current studies, but little is known about the caregiver-related factors that may contribute to elevated EE (Neath, 2020). An increasing body of research has highlighted the role of family-environmental stress as a significant contributor to depressive symptoms in adolescents, emphasizing the importance of the emotional climate at home for youth mental health outcomes (Shonkoff et al., 2012; Menon et al., 2020). Some studies have examined how parental stress is associated with elevated levels of expressed emotion, particularly in families of children with special needs (Balachandran & Bhuvaneswari, 2024; De Clercq et al., 2022).

An important reason to examine adolescents' perceptions of expressed emotion is the idea that adolescents' subjective experience of being raised may play a more significant role in shaping their development than how parents describe their own behaviour (Steinberg et al., 1992). Research also indicates that adolescents' interpretations of emotional experiences are more closely linked to their mental health and adjustment outcomes (Hale et al., 2011). Furthermore, the degree to which these dynamics affect the adolescent's psychological well-being strongly depends on how they perceive these interactions (Hudson & Rapee, 2004). This gap on sibling perception is especially crucial because families with high levels of expressed emotion have been found to show poorer overall functioning among family members (Delvecchio et al., 2014; Muralidharan et al., 2015).

However, parental expressed emotion has generally been investigated towards the child with a diagnosis, such as autism spectrum disorder (ASD), while much less attention has been given to how EE might relate to outcomes in typically developing siblings in these families (Griffith et al., 2015). In this regard, a study by Brinkman et al. (2023) is significant since it examined parental EE towards typically developing siblings in the families of children with ASD. Their findings indicated that higher parental warmth was associated with fewer psychosocial difficulties in siblings. On the other hand, higher criticism was related to more difficulties, suggesting that the emotional tone in the parent–sibling relationship may be an important factor for sibling well-being. However, their study only looked at ASD and was based on parental self-report, which captures how carers perceive their own emotional expressions.

There is a well-founded literature on parental stress in families with children with special needs. However, there is limited understanding of how family dynamics, such as parental stress, may shape the emotional atmosphere at home, and how this environment, as perceived by typically developing siblings, might influence their psychosocial well-being. Research has demonstrated that EE is a dynamic and evolving concept that might predict depressive symptoms in adolescents. Therefore, it could provide helpful methods for creating family-focused interventions (Hale et al., 2011). This study also broadens the scope by including typically developing siblings from families of children with a range of special needs groups. Through this approach,

this study expands the understanding of the experiences of siblings growing up in underrepresented family contexts.

1.5 Family Systems Theory Framework

A system is defined as a whole in which the relationships among its components reflect integrity, follow an organized structure, and are continually shaped through dynamic processes (Bertalanffy, 1968; Minuchin, 1985; Kerig, 2001; Kerig, 2019). Thus, the effective operation of the family system through member interactions can be compared to how a machine operates through the coordinated functioning of its parts (Kerr & Bowen, 1988). Family Systems Theory provides a broad framework for understanding families as systems in which members are interconnected and interdependent. From a systemic perspective, difficulties in the family are understood as stemming not from individuals themselves but from the patterns of interaction between them. Examining these relational processes helps to identify the factors that shape either positive or negative relationship patterns (LoBraico et al., 2020).

Family systems theory is considered one of the most widely used frameworks in research on siblings of individuals with intellectual and developmental disabilities (Cridland et al., 2014). Bowen's (1966) viewpoint emphasized that individuals cannot be completely understood in isolation from their unique family context. In this view, families function as integrated systems in which changes in one member influence the entire system. The diagnosis of a disability or chronic illness in a family member is likely to cause a certain level of stress in all family systems. Research repeatedly shows that parents of children with disabilities report higher levels of stress than those of typically developing children, although individual circumstances may vary (Woodman, 2014). This stress can influence the way family members interact with one another. Distinct patterns of communication and interaction within a family are commonly described as the family's communication climate, which plays a central role in shaping overall family dynamics (Peterson, 2005; Koerner et al., 2006). Relatedly, the term "family functioning" describes how members of a family relate to each other, react to difficulties, and support one another (Roper et al., 2014). In the context of chronic stressors such as raising a child with special needs, this stress significantly affects not only the individual but also the functioning of the family as a whole (Popovski et al., 2022). The following section highlights four foundational

concepts within Family Systems Theory that provide a framework for understanding family dynamics:

Interdependence and Wholeness. Systems theory views the family as a whole, where members cannot be separated from the context of their relationships. This perspective emphasizes that each member must be examined within their family context. When one member experiences change or transition, it often has effects on the rest of the family (Kerig, 2016; Kerr & Bowen, 1988). The notion of interdependence is therefore closely tied to the organizational nature of family systems. Bowen (1978) emphasized that members are interdependent and the system functions as more than just the sum of its parts. Similarly, Minuchin (1974) conceptualized families as composed of interrelated subsystems, which are relational units within a family. Moreover, the functioning of individual family members and the subsystems of the family are shaped by one another, reflecting their mutual influence and interdependence (Bertalanffy, 1968; Whitchurch & Constantine, 1993). Therefore, the theory offers a framework for understanding how individuals within a family affect one another, emphasizing the interdependent nature of these relationships (Cox & Paley, 1997).

Subsystems and Boundaries. Families can be seen as systems made up of subsystems, which are smaller relational units carrying out certain functions and tasks (Kerr & Bowen, 1988). Subsystems arise when family members come together for certain purposes or because of shared tasks. These groups also have their own internal power structures. Family members may participate in more than one subsystem, which gives them different roles and responsibilities. Boundaries separate subsystems from each other and also define the family system in relation to other systems (Kameguchi, 1996). It is important to look at how these subsystems cooperate, how they interact with each other, and how stability is maintained to understand the whole system (Bornstein & Sawyer, 2006). Family Systems Theory proposes that when there is a disruption in one part of the system or when one subsystem requires disproportionate attention, it may lead to shifts in other subsystems (Minuchin, 1974). A body of research suggests that families of children with autism or intellectual disabilities often report lower levels of family functioning compared to families of typically developing children (Jackson et al., 2022; Desquenne Godfrey et al., 2023). Parents may

experience increased anxiety due to a variety of contributing factors, which frequently leave them feeling burdened, and emotionally exhausted (Reio & Fornes, 2011). This parental distress often goes beyond the individual level, affecting the overall well-being of the entire family system (Orfus & Howe, 2008; Gottfried & McGene, 2013; Van Haren & Fiedler, 2008; Hanvey et al., 2022). Therefore, such stress may place additional demands on the family system, potentially influencing dynamics between parents and typically developing siblings. This transmission of emotional strain across members of the family is consistent with the concept of the emotional spillover hypothesis (Erel & Burman, 1995).

Homeostasis and Adaptation. The family system is organized hierarchically into subsystems and shaped by its ability to adapt to both normative and non-normative life events (Cox & Paley, 2003). Families typically experience developmental transitions such as becoming parents, supporting a child's entry into adolescence, and later guiding the adolescents as they leave home (McGoldrick et al., 2014) These transitions require a reorganization of family members' roles at each stage. Having a child with special needs often reshapes family life, and it may disrupt established routines and require significant adjustments from all family members (Lada-Masko et al., 2025). Stress is defined as any physical, physiological, or psychological change that requires individuals to adapt to external demands (Cohen et al., 2007), often involving psychophysiological reactions that disturb homeostasis (Carroll, 2019). From a systemic perspective, homeostasis describes how families attempt to maintain emotional balance in response to stress (Minuchin, 1974). It refers to the ways families strive to preserve functional equilibrium when facing external stressors like caring for a child with a disability, typically involving shifts in daily roles and responsibilities (Lada-Masko et al., 2025). A child's disability can challenge the stability of family life, often requiring families to adopt new strategies to balance the needs of the child, the siblings, and the parents (Murphy et al., 2017; Walker et al., 2016). In this process, the ways parents express emotions in response to stress may become part of the system's attempt to restore balance.

Circular Causality. Rather than being explained through simple linear cause-and-effect, sources of difficulties can be understood in terms of circular causality. Individuals or subsystems are linked reciprocally, influencing one another (Kerr &

Bowen, 1988). Family members' reactions are continuously shaped by one another, creating a process of ongoing interaction (Crossno, 2011). Through this lens, circular responses build upon each other, and family conflict can be seen as the outcome of overlapping cycles of interaction rather than a single linear chain of causes (Ferguson, 2014). In line with circular causality, changes in one family member's functioning, such as increased parental stress, can influence the emotional dynamics as experienced or interpreted by others. This reciprocal influence helps explain how stress may not remain isolated in one person but instead circulates within the family system and may become an interaction pattern that affects other parts of the family.

Taken together, Family Systems Theory may provide a framework for understanding how parental stress may shape the emotional climate siblings perceive, clarifying possible pathways from stress to sibling psychosocial outcomes. Hastings (2016) suggests that adopting a systems-based approach could offer a useful way to challenge the often negative assumptions about families of individuals with intellectual and developmental disabilities. Instead of focusing only on how the individual with developmental disability affects other members of the family, this approach emphasizes the value of looking at how family members influence each other within the family (Hastings, 2016).

1.6 The Current Study

Siblings of children with special needs are deeply influenced by the heightened emotional and psychological stress within the household (Jessup et al., 2018). Given the significant impact of stress on family interactions, it is crucial to examine how stress is transmitted within the family system and how it affects not only parents but also siblings of children with special needs. Although there has been extensive focus on parent-child relationships in families with children with disabilities, the experiences of typically developing siblings remain relatively underexplored (Blamires et al., 2024). Studies on siblings of children with special needs have found considerable impact on their mental health and adjustment (Chan & Shorey, 2022; Chudleigh et al., 2019; Long et al., 2018; Martinez et al., 2022; Quintana Mariñez et al., 2022), but overall, the literature remains mixed in terms of the outcomes. This highlights the need to better understand the contextual factors that may help explain the variability in sibling outcomes. Drawing from Family Systems Theory, understanding how stress

affects emotional dynamics across the entire family unit is essential. One such emotional dynamic is how family members express or respond to stress through interactions. Building on this, perceived expressed emotion is proposed as one of the key mechanisms linking parental stress with siblings' psychosocial outcomes. To the best of our knowledge, no study to date has specifically examined whether perceived expressed emotion mediates this relationship in families of children with special needs.

Additionally, although maternal expressed emotion has received more attention in the literature, fathers have largely been overlooked. Some earlier studies, for instance, focused exclusively on mothers when examining EE, leaving out paternal EE within the family system entirely (Psychogiou et al., 2007; Barak-Levy & Atzaba-Poria, 2015). Despite increasing recognition of the father's role in caregiving, research on paternal stress also remains limited. However, evidence suggests that fathers of children with special needs report levels of stress that are comparable to, or sometimes even greater than, those of mothers, particularly in high-stress caregiving contexts (Kersh et al., 2006; Barak-Levy & Atzaba-Poria, 2015; Gray, 2003). Since perceived expressed emotion reflects how siblings interpret the emotional climate at home, it is important to consider whether maternal and paternal expressions are experienced differently or reflect a shared emotional atmosphere shaped by parental stress. These potential differences could have important implications for the psychosocial outcomes of typically developing siblings.

Prior research has examined how disability-related stress affects the family. In accordance with the theories and findings discussed above, the present research extends previous studies by exploring how parental stress influences the psychosocial outcomes of typically developing siblings through the mediating role of perceived expressed emotion. Specifically, the focus is on how both maternal and paternal emotional expression perceived by the sibling contributes to these outcomes. The current research seeks to shed light on this gap in the literature and provide a better understanding of the underlying mechanisms that may influence sibling well-being in families raising a child with special needs**.** The guiding research question of this thesis is how siblings perceive parental expressed emotion in the context of parental stress, and what role these perceptions might play in their psychosocial adjustment. Additionally, the study aimed to explore whether maternal and paternal stress models

show different patterns of association. Based on this, the study tested the following hypotheses:

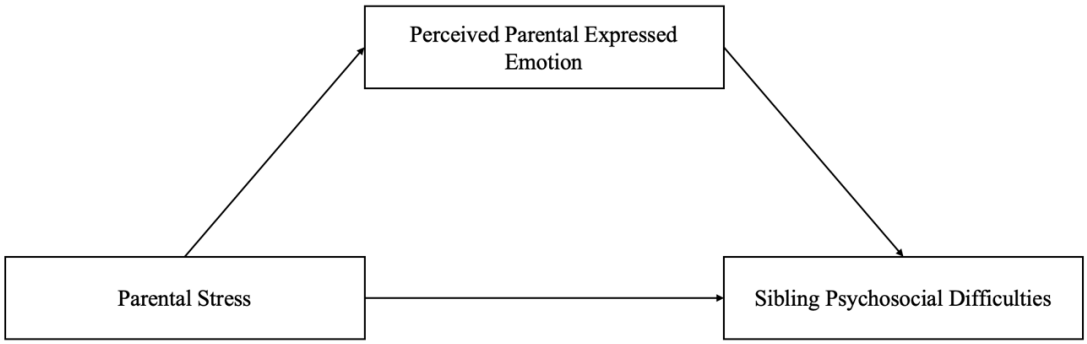


Figure 1. *Proposed Mediation Model*

Hypotheses:

- **H1a:** Higher levels of maternal stress are positively associated with greater psychosocial difficulties in siblings of children with special needs.
- **H1b:** Higher levels of paternal stress are positively associated with greater psychosocial difficulties in siblings of children with special needs.
- **H2a:** Higher levels of maternal stress are positively associated with higher levels of perceived maternal expressed emotion, which in turn will be associated with greater psychosocial difficulties in siblings of children with special needs.
- **H2b:** Higher levels of paternal stress are positively associated with higher levels of perceived paternal expressed emotion, which in turn will be associated with greater psychosocial difficulties in siblings of children with special needs.

CHAPTER 2

METHOD

2.1 Participants

Participants were recruited through several associations for families of children with special needs including the Association of Families of Children with Rett Syndrome and the Down Syndrome Association, as well as through various rehabilitation centers across Turkey. The study included 154 families with children requiring life-long care due to special needs. Inclusion criteria were as follows: (1) families had a child with special needs who required life-long care, (2) the sibling of the child was aged between 11 and 18 years**,** (3) the sibling lived at the family home with both parents; and (4) the parents were together. Data were collected from three groups within each family as mothers, fathers, and siblings, resulting in 462 individual participants**.** Incomplete responses, as well as siblings and parents with any diagnosed psychiatric disorders, were excluded based on their self-report prior to analysis.

The sibling sample consisted of 154 individuals aged between 11 and 18 years (M = 14.85, SD = 2.28). The gender of the siblings was nearly equally distributed (51% male, 49% female). Most siblings were second-born (M = 1.49, SD = 1.08), with families having approximately 3 children in total (M = 2.84, SD = 1.26). The parents' sample included 154 mothers and 154 fathers. Mothers' age ranged from 31 to 60 years (M = 40.96, SD = 5.09), while fathers' age ranged from 30 to 67 years (M = 44.90, SD = 6.14). The socioeconomic status (SES) of the families was assessed on a 5-point scale (1 = Very Low, 5 = High). The mean SES score was 2.92 (SD = 0.64), indicating a predominantly medium SES.

The children with special needs had a mean age of 10.71 years (SD = 5.27, range = 1–33 years. Diagnoses varied across the sample, with the majority (55.2%) having autism, followed by Rett syndrome (12.3%), Down syndrome (11.7%), cerebral palsy (9.7%), intellectual disabilities (5.8%), and rare conditions such as 1p36 deletion syndrome and spina bifida among the population of the sample. The descriptive characteristics of the sample are presented in Table 1 in more detail.

Table 1. *Demographic Characteristics of Participants*

Variable	Mothers (N = 154)	Fathers (N = 154)	Siblings (N = 154)
Age (M ± SD)	40.96 ± 5.09	44.90 ± 6.14	14.85 ± 2.28
Education Level (%)	Elementary: 25.3% Middle School: 17.5% High School: 32.5% University and Higher Education: 24.7%	Elementary: 18.8% Middle School: 13.6 % High School: 38.3% University and Higher Education: 29.3%	Elementary: 35.7% Middle School: 50.6% High School: 13.7%
Employment Status (%)	Part-Time: 7.8% Full-Time: 13.6% Not Employed: 77.3% Retired: 1.3%	Part-Time: 7.8% Full-Time: 78.6% Not Employed: 5.8% Retired: 7.8%	—
Household Income (M ± SD	2.87 ± 0.66 (5-point scale)	2.87 ± 0.66 (5-point scale)	—
Number of Children (M ± SD)	2.74 ± 0.89	2.74 ± 0.89	—
The child with Special Needs Age (M ± SD)	10.71 ± 5.27	10.71 ± 5.27	—

2.2 Measures

2.2.1 Demographic Information Form

Separate demographic forms were administered to parents and siblings. Participants provided information on their age, gender, educational background, employment status, occupation, and income level. Additionally, parents reported the number of children in the household, as well as the age, gender, and diagnosis of the child with special needs. Also, parents and siblings were asked to indicate whether they had any diagnosed psychological disorders in the demographic form. Participants who reported a diagnosed psychological disorder in the demographic form were excluded from the analysis.

2.2.2 Parental Stress Scale (PSS)

The Parental Stress Scale (PSS) was developed by Berry and Jones in 1995 and used to assess parental stress levels in families of children with special needs. The PSS evaluates the stress parents experience in relation to their children across four dimensions: parental rewards, parental stressors, lack of control, and parental satisfaction. The original scale consists of 18 items rated on a 5-point Likert scale, with example items such as "I am happy in my role as a parent" and "Caring for my child(ren) sometimes takes more time and energy than I have to give." The PSS is divided into four domains: parental rewards (5 items), parental stressors (6 items), lack of control (3 items), and parental satisfaction (2 items). Seven items are reverse-coded (items 1, 3, 4, 5, 6, 15, 16), with higher scores indicating higher levels of parental stress. The original version of the scale demonstrated adequate internal reliability, with a Cronbach's alpha coefficient reported as .83 (Berry & Jones, 1995).

Turkish version of the PSS, adapted by Aslan-Gördesli and Aydın-Sünbül (2021), 16 items were retained after conducting exploratory factor analysis. Two items (Items 2 and 15) were removed due to low factor loadings and insufficient contribution to the factor structure. The internal consistency for the full scale was reported as α = .81. (Aslan Gördesli & Aydın-Sünbül, 2021). In this study, Cronbach's alpha was .82 for mothers and .85 for fathers, indicating good internal consistency for both groups. In this study, PSS was used to assess parental stress levels in families of children with special needs. The scale was administered separately to mothers and fathers, and the resulting scores are referred to as maternal stress and paternal stress, respectively.

2.2.3 Brief Symptom Inventory (BSI)

The Brief Symptom Inventory (BSI), developed by Derogatis (1992), is a 53-item self-report scale used to assess psychological symptoms. Respondents rate each item on a 5-point Likert scale, ranging from 0 ("Not at all") to 4 ("Extremely"). The BSI measures nine symptom dimensions: somatization, obsession-compulsion, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism. The original version demonstrated adequate internal reliability, with Cronbach's alpha reported as .88. (Derogatis, 1992).

The Turkish version of the BSI, adapted by Şahin and Durak (1994), revealed a five-factor structure: somatization, negative self-concept, depression, anxiety, and anger-hostility. The internal consistency for the subscales in the adult population ranged from .75 to .87 (Şahin & Durak, 1994), indicating good reliability across factors. For the original BSI, internal consistency across the nine dimensions ranged from .71 for psychoticism to .85 for depression. In this study, the BSI was used to assess the psychological symptoms of both mothers and fathers. Cronbach's alpha was .97 for mothers and .96 for fathers, indicating excellent internal consistency for both groups. In the current study, maternal and paternal psychological symptom levels were measured using the BSI and represented as maternal and paternal psychological symptom scores, respectively.

2.2.4 Strengths and Difficulties Questionnaire (SDQ)

The Strengths and Difficulties Questionnaire (SDQ), developed by Robert Goodman (1997), is a 25-item self-report scale designed to screen for emotional and behavioral problems in children and adolescents. The SDQ evaluates both positive and negative behaviors across five subscales: emotional problems, conduct problems, hyperactivity/inattention, peer relationship problems, and prosocial behaviors. Each item is rated on a 3-point Likert scale: 0 ("Not true"), 1 ("Somewhat true"), and 2 ("Certainly true"). Higher scores on the first four subscales indicate greater difficulties, while higher scores on the prosocial behaviors subscale reflect stronger social skills. The original self-report version of the SDQ for youth aged 11–16 demonstrated good internal consistency for the total difficulties score, $\alpha = .82$, while subscale reliability ranged from .59 to .77 (Goodman, 2001).

In Turkey, the SDQ was adapted and validated by Güvenir et al. (2008), who reported a Cronbach's alpha of .73 for the adolescent self-report form. In this study, the SDQ was used to evaluate the psychosocial well-being of siblings. Although the original adolescent form is typically used for individuals aged 11–16, this study extended its application to participants aged 11–18 years. To assess the scale's reliability for this age group, Cronbach's alpha was calculated and found to be .73, which is consistent with the results reported in the Turkish adaptation study.

2.2.5 Shortened Level of Expressed Emotion Scale for Adolescents (SLEES)

The Shortened Level of Expressed Emotion Scale (SLEES) was utilized in this study to assess the perceived emotional expression of both mothers and fathers. SLEES was administered to the siblings twice in this study. Siblings completed the scale by reflecting on the emotional expressions they perceived from their parents. The Shortened Level of Expressed Emotion Scale (SLEES), developed by Nelis et al. (2011), demonstrated good internal consistency (α = .88). The scale adapted into Turkish by Vural et al. (2013), is a 33-item self-report scale that measures adolescents' perceptions of the emotional expression of the most significant person in their life over the past three months. The scale includes three subscales: lack of emotional support, irritability, and intrusiveness, with responses rated on a 4-point Likert scale (1 = "Not true", 4 = "True"). Higher scores indicate higher levels of perceived expressed emotion. The internal consistency of the adapted version was reported as α =.90. In the current study, Cronbach's alpha for the mothers was .92, and for the fathers, it was .95, both demonstrating strong internal consistency.

2.3 Procedure

The study received ethical approval from the TED University Human Research Ethics Committee prior to data collection (Decision No: 2024-21; see Appendix M). Data were collected using both online surveys (via Qualtrics) and face-to-face administration using printed forms. Data were collected separately from mothers, fathers, and siblings in each family. Before beginning the survey, participants were provided with an informed consent form explaining the study's purpose, voluntary participation, and confidentiality. For siblings aged 11–18, written parental consent was obtained first, and then each adolescent gave their own written permission to take

part. Following consent, participants were instructed to fill out the forms separately and privately. Each participant first completed a demographic form and then proceeded to answer the relevant psychological scales. The average time to complete the forms was approximately 20–30 minutes.

CHAPTER 3

RESULTS

3.1 Data Screening and Assumption Tests

Prior to conducting the main analyses, data were screened for missing values, normality, linearity, homoscedasticity, and multicollinearity. Normality of residuals was assessed through a Normal P-P Plot, and no significant deviations were observed. Scatterplots of standardized residuals and predicted values confirmed linear relationships among the key study variables and homoscedasticity. Variance inflation factors (VIFs) were below the commonly accepted threshold of 3.0, indicating independent contributions of the predictor variables, and there is no multicollinearity. Furthermore, the data were reviewed for extreme outliers using z-scores, but no values exceeded the critical threshold of ±3.5 (Field, 2018). No missing values were detected, so no imputation was required. These evaluations confirmed that the dataset was appropriate for the planned analyses.

3.2 Descriptive Statistics

Descriptive statistics for all study variables, including means, standard deviations, and observed ranges, are presented in Table 2. Maternal stress levels were moderate (M = 2.26, SD = 0.60, range = 1.00–3.94), whereas fathers reported slightly lower stress levels (M = 2.13, SD = 0.60, range = 1.00–3.50). In terms of psychological symptoms, mothers reported higher scores (M = 1.86, SD = 0.68, range = 1.00–4.85), compared to fathers (M = 1.65, SD = 0.54, range = 1.00–4.00).

The Shortened Level of Expressed Emotion Scale (*SLEES*), which assesses perceived emotional expression, was completed by siblings for both parents. Siblings' perceptions of expressed emotion differed by parent, with higher perceived paternal expressed emotion (M = 2.05, SD = 0.66, range = 1.00–3.97), compared to maternal expressed emotion (M = 1.91, SD = 0.52, range = 1.00–3.55). Finally, the Strengths and Difficulties Questionnaire indicated that siblings exhibited low levels of psychosocial difficulties (M = 1.81, SD = 0.24, range = 1.36–2.44).

Table 2. *Descriptive Statistics of the Variables in the Study*

Participant	Variables	N	Min	Max	*M*	*SD*
Mothers	Parental Stress (PSS)	154	1.00	3.94	2.26	.60
	Psychological Symptoms (BSI)	154	1.00	4.85	1.86	.68
Fathers	Parental Stress (PSS)	154	1.00	3.50	2.13	.60
	Psychological Symptoms (BSI)	154	1.00	4.00	1.65	.54
Siblings	Perceived EE (Mother, SLEES)	154	1.00	3.55	1.91	.52
	Perceived EE (Father, SLEES)	154	1.00	3.97	2.05	.66
	Psychological and Behavioral Outcomes (SDQ)	154	1.36	2.44	1.81	.24

Note. PSS = Parental Stress Scale; BSI = Brief Symptom Inventory; SLEES = Shortened Level of Expressed Emotion Scale; SDQ = Strengths and Difficulties Questionnaire; M = Mean; SD = Standard Deviation

3.3 Bivariate Correlations of the Variables in the Study

Pearson's correlation analyses were conducted to examine relationships between parental stress (i.e., maternal and paternal stress), perceived maternal and paternal expressed emotion, and sibling psychosocial outcomes. Tables 3 and 4 present the correlation coefficients separately for the mother-sibling and father-sibling dyads.

Table 3. *Bivariate Pearson's Correlations Among Variables for Mother-Sibling Dyads*

Variable	1	2	3
1. Maternal Stress	—		
2. Perceived Maternal EE	.19*	—	
3. Sibling Psychosocial Difficulties	.21**	.41**	—

*$p < .05$, **$p < .01$. Only the variables included in the primary analyses are shown. For the full correlation matrix including subscale-level data, see Appendix I.

Table 4. *Bivariate Pearson's Correlations Among Variables for Father-Sibling Dyads*

Variable	1	2	3
1. Paternal Stress	—		
2. Perceived Paternal EE	.19*	—	
3. Sibling Psychosocial Difficulties	.14	.38**	—

*$p < .05$, **$p < .01$. Only the variables included in the primary analyses are shown. For the full correlation matrix including subscale-level data, see Appendix J.

For the mother-sibling dyad, maternal stress was significantly and positively correlated with perceived maternal expressed emotion ($r = .191$, $p < .05$) and sibling psychosocial difficulties ($r = .214$, $p < .01$). Perceived maternal expressed emotion was also significantly correlated with sibling psychosocial difficulties ($r = .409$, $p < .01$), suggesting that higher levels of perceived maternal expressed emotion were related to greater psychosocial difficulties among siblings.

For the father-sibling dyad, paternal stress was significantly and positively correlated with perceived paternal expressed emotion ($r = .192$, $p < .05$) but was not

significantly related to sibling psychosocial difficulties (r = .135, p > .05). However, perceived paternal expressed emotion was significantly correlated with sibling psychosocial difficulties (r = .384, p < .01).

3.4 Simple Mediation Analyses

To examine whether perceived expressed emotion mediated the relationship between parental stress and sibling psychosocial outcomes, two separate simple mediation models (one for maternal stress and one for paternal stress) were conducted using Hayes PROCESS Model 4 (Hayes, 2018). Maternal or paternal psychological symptoms were included as covariates in the models. The tested models are presented in Table 5. Additionally, the direct, indirect, and total effects are presented in Figures 2 and 3.

Table 5. *Simple Mediation Models*

Independent Variable (X)	Mediator Variable (M)	Dependent Variable (Y)
Model 1: Maternal Stress	Perceived Maternal Expressed Emotion	Sibling Psychosocial Difficulties
Model 2: Paternal Stress	Perceived Paternal Expressed Emotion	Sibling Psychosocial Difficulties

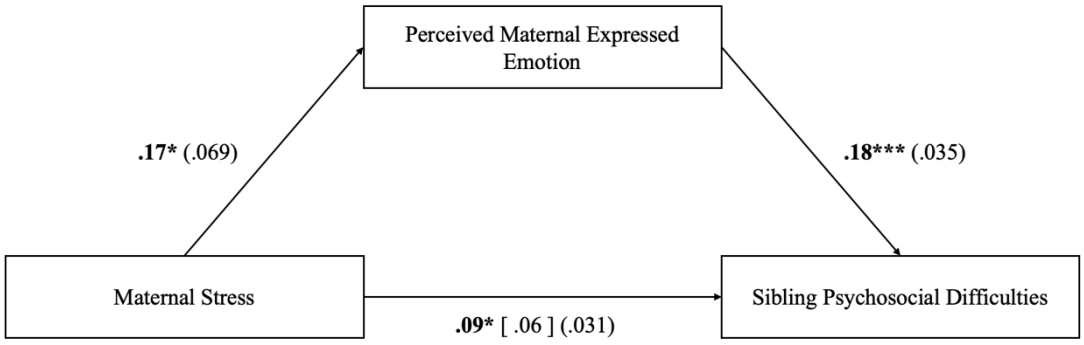
3.4.1 The Mediating Role of Perceived Expressed Emotion in the Relationship between Maternal Stress and Psychological Outcomes of the Sibling

A simple mediation analysis was conducted to examine whether perceived maternal expressed emotion mediates the relationship between maternal stress and sibling psychosocial difficulties. The total effect (i.e., the effect without the mediator in the model) of maternal stress on sibling psychosocial difficulties was significant (B = .09, SE = .031, p = .008, 95% CI [.024, .151]). The direct effect of maternal stress on sibling psychosocial difficulties was not statistically significant (B = .06, SE = .031, p = .060, 95% CI [–.003, .118]). Moreover, maternal stress was significantly associated with perceived maternal expressed emotion (B = .17, SE = .069, p = .018, 95% CI [.029, .303]). Perceived maternal expressed emotion was also significantly associated

with sibling psychosocial difficulties (B = .18, SE = .035, p < .001, 95% CI [.110, .248]).

The indirect effect of maternal stress on sibling psychosocial outcomes through perceived maternal expressed emotion was statistically significant (B = .03, 95% CI [.008, .057]). The full model accounted for 18.6% of the variance in sibling psychosocial difficulties. These findings support Hypothesis 1a, indicating that the total effect of maternal stress on sibling psychosocial difficulties was significant. Additionally, Hypothesis 2a was supported, as maternal stress predicted higher perceived maternal expressed emotion, which in turn was associated with increased psychosocial difficulties in siblings.

The same mediation model was also tested by entering maternal psychological symptoms (BSI total score) as a covariate. In this model, the indirect effect was not significant (B = .01, 95% CI [–.006, .041]). Correlation analyses showed that maternal psychological symptoms were significantly correlated with maternal stress and with perceived maternal expressed emotion (see Appendix, Table 8). These findings were not included in the final models.



Indirect effect = .03 (95% CI [.008, .057])

Figure 2. *The Results of Simple Mediation Analysis (Mother-Sibling Dyad)*

Note. All path coefficients represent unstandardized regression weights. Values in square brackets represent the direct effect after including the mediator. Standard errors for the direct effects are in parentheses. *p < .05, ***p < .001.

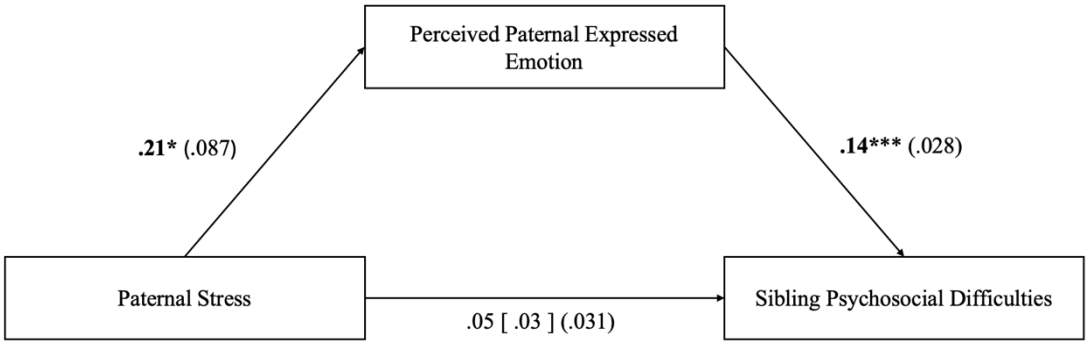
3.4.2 The Mediating Role of Perceived Expressed Emotion in the Relationship between Paternal Stress and Psychological Outcomes of the Sibling

A simple mediation analysis was conducted to examine whether perceived paternal expressed emotion mediates the relationship between paternal stress and sibling psychosocial outcomes. The total effect of paternal stress on sibling psychosocial outcomes was not statistically significant (*B* = .05, *SE* = 0.033, *p* = .096, 95% CI [–.010, .119]). The direct effect of paternal stress on sibling psychosocial outcomes was not statistically significant (*B* = .03, *SE* = .031, p = .408, 95% CI [–.036, .087]).

However, paternal stress was significantly associated with perceived paternal expressed emotion *(B* = .21, *SE* = .087, *p* = .017, 95% CI [.037, .381]), and perceived paternal expressed emotion was also significantly associated with sibling psychosocial outcomes (B = .14, SE = .028, p < .001).

The indirect effect of paternal stress on sibling psychosocial outcomes through perceived paternal expressed emotion was significant (*B* = .03, 95% CI [.005, 0.056]). The full model explained 15.1% of the variance in sibling psychosocial difficulties**.** These findings do not support Hypothesis 1b, as the total effect of paternal stress on sibling psychosocial difficulties was not statistically significant. However, Hypothesis 2b was supported, indicating a significant indirect effect of paternal stress on sibling psychosocial outcomes through perceived paternal expressed emotion.

Additionally, the same mediation model was tested by entering paternal psychological symptoms as a covariate. In this model, the indirect effect was not significant (*B* = .02, 95% CI [–.005, .045]). Correlation analyses indicated that paternal psychological symptoms were significantly related to paternal stress and to perceived paternal expressed emotion (see Appendix, Table 9). As with the maternal model, these findings were not included in the final analyses.



Indirect effect = .03 (95% CI [.005, .056])

Figure 3. *The Results of Simple Mediation Analysis (Father-Sibling Dyad)*

Note. All path coefficients represent unstandardized regression weights. Values in square brackets represent the direct effect after including the mediator. Standard errors for the direct effects are in parentheses. *$p < .05$, ***$p < .001$

CHAPTER 4

DISCUSSION

The purpose of the current study was to investigate whether perceived expressed emotion mediates the relationship between parental stress and psychosocial outcomes in typically developing siblings of children with special needs. It was hypothesized that higher levels of maternal and paternal stress would be associated with greater psychosocial difficulties for siblings (Hypotheses 1a and 1b), and that these links would be mediated by siblings' perceptions of maternal and paternal expressed emotion (Hypotheses 2a and 2b). Two simple mediation models were tested separately for mothers and fathers to examine these pathways within the unique context of families raising a child with special needs.

Before interpreting these findings in detail, it is important to clarify one methodological decision made during the analysis. In our study, parental psychological symptoms were initially considered as a potential covariate. However, further analyses showed that the inclusion of psychological symptomatology altered mediation pathways. More specifically**,** previously significant indirect effects became nonsignificant. Consistent with this, correlation analyses confirmed that parental psychological symptoms were associated with both parental stress and perceived expressed emotion. This suggests that parental psychological symptoms may not function just as a confounding variable but may instead conceptually and statistically overlap with the mediator**.** The primary aim was to understand how siblings perceive and are affected by parental expressed emotion in the context of stress. However, controlling for parental symptoms in this context may unintentionally have a suppressor effect**,** masking part of the mechanism the study is intended to understand. Based on this rationale, parental psychological symptoms were excluded from the final mediation models.

4.1 Discussion of Findings Regarding the Proposed Mediation Models

The findings of the mother-sibling dyad supported the hypothesis that higher levels of maternal stress are associated with greater psychosocial difficulties in siblings. These findings supported the previous literature showing that higher maternal

stress is associated with more emotional or behavioral difficulties in typically developing siblings. Studies indicate that psychological distress is reported more frequently by mothers in these families than by mothers in typical developmental samples (Desiningrum et al., 2023; Si et al., 2020). In a study by Tudor et al. (2018), maternal and family functioning emerged as key factors shaping the well-being of typically developing siblings. Moreover, the researchers showed that maternal stress and depression were specifically linked to internalizing difficulties in siblings. Hastings et al. (2022) also highlighted that a mother's higher psychological stress was linked with increased behavioural difficulties in siblings. Furthermore, Zahl et al. (2024) followed the emotional interplay between mothers and siblings across 12 months in families of children with disabilities in a longitudinal study. Although they did not find strong evidence of a directional causal relationship, the results suggested that changes in maternal mental health and sibling adjustment tended to occur in parallel. Therefore, changes in maternal mental health often coincided with changes in the typically developing sibling's psychosocial functioning.

In contrast, no significant total effect was found between paternal stress and siblings' psychosocial difficulties in the father–sibling dyad. Therefore, Hypothesis 1b was not supported. Descriptive findings suggested that mothers in this sample reported slightly higher levels of parental stress than fathers (see Table 2). Although this difference was not tested statistically, it is consistent with previous research showing that caregiving does not affect all parents equally since the parents' role in the family affects the caregiving demands differently. For instance, Pinquart's (2017) meta-analysis shows that mothers generally report slightly higher levels of parenting stress than fathers, which may reflect their greater daily caregiving involvement. There is also evidence that mothers often report higher levels of mental health concerns than fathers (Pinquart, 2018; Zahl et al., 2024). Dunn et al. (2019) further support this pattern, showing that mothers of children with intellectual disabilities often report higher levels of stress and mental health difficulties than fathers. This difference in stress levels might help explain why only maternal stress, not paternal stress, showed an association with sibling psychosocial difficulties in our findings.

On the other hand, the findings supported both hypothesis 2a and hypothesis 2b. Although the direct effect was not significant, the total effect of maternal stress on

sibling difficulties was significant, and this association was mediated by siblings' perceptions of maternal EE. These results support Hypothesis 2a. Mothers who reported higher stress tended to be perceived by siblings as showing higher levels of EE in aspects such as irritability, intrusiveness, and lack of emotional support, which in turn were associated with higher psychosocial difficulties for the siblings. Similarly, in the father–sibling dyad, paternal stress showed a significant indirect effect on sibling outcomes through siblings' perceptions of paternal EE. This indicates that while paternal stress did not show a significant total effect or direct association with siblings' psychosocial difficulties, it contributed to these outcomes indirectly via siblings' perceptions of paternal expressed emotion. Thus, these results support the idea that perceived expressed emotion may serve as an underlying mechanism to explain the link between parental stress and sibling outcomes.

These findings are also supported by the previous literature. Families with a child who has a disability face a higher likelihood of challenges affecting family health and functioning (Kuhlthau et al., 2022). Children with a disability frequently need more intensive care and support, which can influence the family's overall dynamics (World Health Organization, 2014). Prior research indicates that parental expressed emotion tends to be higher in families of children with intellectual and developmental disabilities, and higher EE is linked to more behaviour problems in these children (Bader et al., 2014; Beck et al., 2004; Hastings et al., 2006). A meta-analysis by Thompson et al. (2018) reported that nearly 40% of parents raising a child with developmental disabilities fall into the high expressed emotion category (Thompson et al., 2018). This prevalence highlights that high EE may reflect not only individual parental characteristics but also dynamic emotional patterns within parent–child subsystems. More recently, studies focusing on families of children with ASD (Brinkman et al., 2023; Marshall et al., 2024) further emphasized that parental stress is linked to higher EE, which in turn relates to adjustment difficulties in child with ASD. These studies have mainly focused on the child with the diagnosis and measured EE and parental stress towards the child with the disability. Therefore, this raises important questions about whether these emotional dynamics also shape the experiences of typically developing siblings in these families. Siblings are often sensitive to what their parents are feeling or expressing and may mirror those feelings

themselves (Moreno, 2010). Although based on studies of autism, Green (2013) argued that sibling adjustment is not necessarily compromised by having a brother or sister with a disability; outcomes vary depending on broader family conditions. The effects of parental stress are commonly seen on the parenting and play a role in structuring family interactions. Ongoing stress can cause parents to pull back emotionally, making it harder for them to stay involved with their children (Cuzzocrea et al., 2013; Walker et al., 2016). According to research, siblings frequently pointed to their parents' emotional responses, acceptance, and ability to adjust as key factors influencing their experience of having a sibling with a disability (Lobato, 1990). Taken together, these findings suggest that perceived parental expressed emotion may help explain how stress experienced by mothers and fathers is linked to sibling outcomes.

4.2 Differences Between Mother–Sibling and Father–Sibling Dyads

Results overall showed that maternal stress was associated with increased psychosocial difficulties in siblings both at the total level and indirectly through perceived maternal expressed emotion. On the other hand, paternal stress was not directly associated with sibling outcomes but showed an indirect link through perceived expressed emotion. Previous studies have shown that mothers and fathers contribute to children's and adolescents' psychological functioning in distinct and nuanced ways (Reeb & Conger, 2009; Shelton & Harol, 2008), and these relationships are shaped by variables such as family structure and the gender of the child (Schleider et al., 2014). Although maternal stress and emotional expression have traditionally received more attention in research, recent studies underscore the distinct contribution of paternal factors to sibling adjustment (Frederiksen et al., 2023).

This pattern of indirect relationships in the present study aligns with evidence that paternal stress tends to influence child outcomes through more indirect pathways, particularly via emotional tone and parenting behaviours. For example, in bereaved families, Morris et al. (2016) found that paternal PTSD and grief symptoms were not directly related to sibling adjustment; instead, the impact occurred through less supportive parenting. Moreover, paternal irritability, criticism and emotional unavailability have been consistently linked to both externalizing and internalizing difficulties in adolescents (Kirchhofer et al., 2025). Previous research has pointed out that fathers' emotional involvement and support can have a protective effect on

adolescents. Opondo et al. (2017) showed that emotionally responsive fathers were linked to lower depression risk, while emotionally absent fathers posed higher risk. Along similar lines, Kirchhofer et al. (2025) showed that stronger communication and support from fathers were linked to better quality of life among siblings. Moreover, while both maternal and paternal stress were self-reported in this study, perceived expressed emotion was assessed from the sibling's perspective for both parents. Therefore, the lack of a direct effect for paternal stress may reflect how fathers express stress less overtly, since the stress they experience may not directly affect siblings unless it is expressed in observable emotional interactions. As Darling et al. (2012) found, fathers of children with special needs often cope more internally and may not openly express their stress. Thus, paternal stress may affect siblings primarily through the emotional expressions that children perceive, such as irritability, intrusiveness, or a lack of emotional support.

4.3 Interpreting the Findings Through Family Systems Theory

Results from the mother-sibling and father-sibling dyad highlight that the connection between parental stress and expressed emotion may have broader implications for the family system in families of children with disabilities. According to research, siblings often experience emotional strain due to a less predictable environment, unequal parental attention, difficulties in family communication, and reduced support in some cases (Stoneman, 2001; Incledon et al., 2015; Haukeland et al., 2022; Kirchhofer et al., 2022). A family systems perspective emphasizes that individuals can only be understood by considering their position within the broader network of family relationships. Understanding families of individuals with intellectual and developmental disabilities through a systems lens provides valuable insights, making it a meaningful framework both conceptually and methodologically (Cridland et al., 2014).

The family operates in *interdependence*, in which each member's behaviour and well-being influence others (Bowen, 1966). Also, the *spillover hypothesis* (Engfer, 1988) suggests that emotional dynamics within one part of the family system can transfer into other subsystems. Gnainsky et al. (2022) provides important empirical support for the spillover hypothesis within the family context by demonstrating that parents' expressed emotion towards a child with a psychiatric disorder was positively

correlated with their expressed emotion towards a typically developing sibling. Although those studies did not directly examine the sibling perspective, they highlight the value of considering how parental stress and perceived expressed emotion may shape the experiences of typically developing siblings. In line with the family system's interdependence concept and the spillover hypothesis, the present findings suggest that parental stress may indirectly impact sibling well-being by shaping the emotional tone of family interactions, ultimately contributing to increased psychosocial difficulties in these siblings.

As noted before, according to Family Systems Theory, families comprise smaller relational units or *subsystems*, such as the mother–sibling subsystem and father–sibling subsystem, with their own roles and boundaries (Minuchin, 1984). Our findings suggest these subsystems functioned differently. The mother–sibling subsystem showed that higher maternal stress was associated with higher sibling difficulties mediated by the sibling's perception of the mother's expressed emotion. In contrast, the father–sibling subsystem showed only an indirect effect as paternal stress predicted sibling difficulties only through the sibling's perception of paternal emotional expression. This pattern may reflect typical caregiving roles, such as mothers often spending more time in direct caregiving, and thus their stress may be transmitted more directly into family interactions, whereas fathers' stress may be less immediately apparent unless it manifests in observable behaviours.

Moreover, a child's disability can act as a stressor that disrupts *homeostasis*, requiring families to develop new interaction strategies that balance the competing needs of the child, siblings, and parents (Murphy et al., 2017; Walker et al., 2016). When a parent has increased stress, the family may unconsciously adjust roles or emotions to cope. According to the results of this study, increased parental stress was linked to siblings perceiving higher EE. This may reflect disruptions in emotional communication within the family system under stress. Although the current study followed a unidirectional mediation model, the principle of *circular causality* within Family Systems Theory would offer a broader lens for interpreting the findings. This principle emphasizes that behaviour and emotional patterns within families are mutually influential rather than being strictly linear (Minuchin, 1985; Cox & Paley, 1997). From this viewpoint, the associations found in the mother–sibling and father–

sibling dyads can be understood as part of a dynamic system. It is also plausible, though not tested in the present design, that siblings' psychological difficulties might exacerbate parental stress, particularly under ongoing caregiving burdens.

4.4 Limitations of the Current Study

The study has several limitations that should be considered. One concern is the methodology of data collection**.** All data, collected from mothers, fathers, and siblings were obtained through self-report questionnaires. This may introduce biases related to subjectivity or social desirability. Secondly, this study did not include demographic factors such as sibling age, gender, or socioeconomic status in the models. These variables could have influenced the relationships observed in this study. Additionally, although the scale includes theoretically meaningful subdimensions (irritability, intrusiveness, and lack of emotional support), the analysis focused on the total EE score. Therefore, it was not possible to explore whether different dimensions have unique associations with sibling outcomes. Furthermore, the study's operationalization of EE was limited to the three dimensions captured by the SLEES. This means that the scale may not cover all components of expressed emotion assessed in broader EE frameworks. Thus, the results are inherently limited by the constructs assessed by these instruments and may not fully capture the complexity of family emotional dynamics.

In terms of design and sample characteristics, the cross-sectional design prevents any claims about causality. Another limitation is the lack of a comparison group (e.g., siblings from families without children with special needs). This might limit the ability to determine whether the observed patterns are specific to this population or reflect broader familial processes. An additional issue is the possibility of discrepancies in informant perspectives. Prior research has shown that adolescents may view family functioning more negatively than parents (Korelitz & Garber, 2016; De Los Reyes et al., 2016). However, since the study emphasizes perceived EE, the adolescent's viewpoint remains a valid and necessary lens to understand how emotional expressions are internalized and experienced. Lastly, the study relied exclusively on quantitative data. Inclusion of qualitative insights could have added depth to how siblings make sense of family emotional dynamics.

4.5 Clinical Implications and Contributions

This study also has some important clinical implications and contributions to the existing literature. Although expressed emotion has been studied with numerous clinical and non-clinical samples, research on families with children with special needs has generally measured expressed emotion toward the child with the diagnosis. However, siblings' experiences of the emotional family environment have been less explored. Building on this gap, one contribution of the study is its examination of family processes from the perspective of siblings. By focusing on siblings' own perceptions of expressed emotion, this study offers a perspective often missing from studies that mostly rely on parent reports.

This study also included dyadic data from both mothers and siblings, as well as fathers and siblings. This allowed for an examination of how emotional processes differ across parents. Research in the area of family dynamics in families of children with special needs has mostly focused on mothers, leaving fathers' roles less explored (Risi et al., 2021). This study contributes to filling this underrepresented area by examining perceived EE in both mother–sibling and father–sibling dyads, highlighting potentially distinct pathways. Furthermore, studies of families with special needs have largely focused on autism. Instead of focusing on a single diagnostic group, this study chose a sample that included a variety of developmental conditions and underrepresented groups. This diversity reflects the real-world variability of families raising children with special needs.

One of the essential clinical implications of this study is the importance of focusing on modifiable aspects of the family environment, particularly those linked to parental stress. Even though the child's condition may not be easily altered, communication and emotional responses can be strengthened through support and intervention (Mash & Johnston, 1990; Bohadana et al., 2019). Focusing on these factors can help reduce parental stress and improve the family's emotional climate. In this way, the psychosocial well-being of typically developing siblings would be supported through this improvement.

Results of this study highlight the need to consider the emotional atmosphere of the whole family in clinical work, not just the parents and diagnosed child. Paying attention to siblings' perceptions and experiences can offer valuable insight when

planning family-based interventions. In this study, expressed emotion was assessed through total scores, with higher scores reflecting greater levels of expressed emotion. While this approach aligns with the broader literature often describing families in terms of "high" versus "low", the previous research reminds us that these labels don't always capture the complexity of family relationships. Researchers have also noted that families labeled as having high expressed emotion may feel judged and misunderstood rather than being empathically seen and supported (Hatfield et al., 1987). Moreover, while EE was not originally developed to track therapeutic change, later research suggests that it can reflect evolving family dynamics during treatment (Vostanis et al., 1992). Exploring how siblings make sense of EE in their families may open new doors for clinical support to these families managing long-term caregiving conditions.

A systemic family therapy approach may be especially relevant here, as it targets emotional patterns across the family rather than focusing on one individual. It differs from individual therapy in that it considers people within their relational systems. It focuses on how patterns of communication and interaction may contribute to emotional strain or psychological distress (Varghese et al., 2020), and the aim is to improve communication patterns, strengthen mutual understanding, and help families manage stressors by working with their existing strengths and resources. This study supports the idea that systemic interventions may be particularly beneficial for families of children with special needs. Psychoeducation is one of the widely used tools in family therapy, and studies show that it can help reduce expressed emotion and promote healthier communication (Chan & Lam, 2018). To strengthen a supportive family atmosphere, psychoeducation can also be combined with skills training that focuses on problem-solving and communication (Peris & Miklowitz, 2015). In addition, interventions that address emotional regulation can also reduce the impact of negative interactions on the family climate (Peris & Piacentini, 2013). On the other hand, clinical work should be attentive to maternal stress as a more immediate risk factor for sibling adjustment. Interventions should support both parents, but with special attention to mothers, who may carry a heavier visible stress and influence siblings' adjustment more directly.

Adolescence is a particularly relevant period for examining how family dynamics influence sibling outcomes in families of children with special needs. Research by Santrock (2014) shows that parents are key in guiding young people's emotional well-being and supporting them through the various tasks during adolescence. The current study suggests that parental stress and expressed emotion at home may be equally important to consider in understanding these outcomes. Ultimately, recognizing that typically developing siblings may be impacted in subtle and complex ways by these families highlights the value of family-oriented interventions. By identifying both risk and protective factors, such interventions can help support sibling well-being (Psihogios et al., 2019).

Although not directly examined in the present study, prior research indicates that parents with higher levels of EE often report having fewer external support resources, such as outside guidance or assistance (Balachandran & Bhuvaneswari, 2024). This finding underscores the importance of providing accessible and tailored supports for families raising children with special needs. Parents of children with special needs often struggle with emotional demands, and the caregiving role can be both demanding and exhausting, frequently influencing caregivers' overall well-being. Understanding the factors that shape expressed emotion within these families is important for informing more effective and tailored support interventions (Liu et al., 2024).

4.6 Future Research

Building on this study, there are several important directions for future research. First, future work could explore potential moderators, like sibling age, gender, socioeconomic status, or diagnosis type, that may influence the relationship. Future studies could also adopt a mixed-methods approach, collecting qualitative data alongside quantitative methods to explore siblings' emotional experiences in more detail. Additionally, including parent-reported expressed emotion would give a more complete picture of the bidirectional dynamics Another important area for the future study to investigate more deeply would be the culture. Dimensions like intrusiveness, which are often seen as negative, may carry different meanings in Turkish families. Especially under high-stress caregiving situations, a sibling might view parental intrusiveness not as controlling, but as a form of care or attention.

Future studies could also explore how perceived expressed emotion relates to parenting style, to better understand how each shapes siblings' experiences in the family. Moreover, as researchers pointed out, sibling research has often emphasized how siblings are affected, but paying attention to the role they may play in shaping family dynamics is also important (Hayden & Hastings, 2022). Adopting a more reciprocal framework may help address this gap. Future studies may also include a matched comparison group of families without a child with a disability. This would help clarify whether the observed associations are unique to high-stress caregiving contexts or reflect broader family processes. Future work could also benefit from analysing the subdimensions of perceived expressed emotion separately. Exploring whether certain aspects like intrusiveness, irritability or lack of support are more influential would add nuance to our understanding. Finally, given the relatively limited exploration of fathers in the literature, especially in this context of the families, future studies should continue investigating variables that might affect family dynamics.

Although parental symptomatology could normally be considered a potential mediator, this study prioritized siblings' perceptions of parental expressed emotion, as it offers a unique perspective rarely examined in the literature. Future research may test models incorporating both parental psychopathology and siblings' perceptions to compare their relative contributions. Furthermore, recent studies have emphasized the emotional dimensions of parenting either by examining parents' own emotional tendencies and their emotion regulation abilities in both general, and parenting-specific contexts (Zimmer-Gembeck et al., 2022). Since EE reflects underlying parental attitudes (Peris & Baker, 2000; Peris & Miklowitz, 2015) and elevated EE has been shown to correlate with negative behavioral tendencies among parents (McCarty et al., 2004), parental emotion regulation would be an important consideration for further research.

4.7 Conclusion

This thesis aimed to understand whether perceived expressed emotion mediates the link between parental stress and psychosocial outcomes in typically developing siblings of children with special needs. The findings indicated that higher levels of parental stress, especially when reported by mothers, were associated with more psychosocial difficulties in siblings. Moreover, siblings' perception of parental

expressed emotion seems to play an important role in this relationship. This study highlights the value of including sibling perspectives in research and the importance of interpreting stress and expressed emotion with contextual sensitivity. Results showed that perceived expressed emotion may be one way through which parental stress is experienced by siblings and becomes part of their everyday emotional environment.

Findings offer important insights into the pathways through which family-level emotional dynamics may influence sibling outcomes within the unique caregiving contexts of these families. They may also help to explain some of the mixed findings about the siblings in the existing literature. Moreover, these findings are also important for extending research on stress and expressed emotion to the sibling–parent subsystem, which remains a largely underexplored area within research on families of children with special needs. Stress and emotional experiences are not isolated to individuals but shared and interpreted across relationships. Interpreting the findings through a systemic lens highlights the importance of considering siblings' perspectives in both future research and clinical practice. Acknowledging this complexity is important in both domains, so that families feel understood rather than pathologized, while moving toward more supportive interventions.

REFERENCES

Abidin, R. (1990). *Parenting stress index short form—Test manual*. Pediatric Psychology Press.

Abidin, R. R. (1989). *The determinants of parenting: What variables do we need to look at?* Paper presented at the Annual Meeting of the American Psychological Association (97th), New Orleans, LA, August 11–15.

Abidin, R. R. (1992). The determinants of parenting behavior. *Journal of Clinical Child Psychology, 21*(4), 407–412. https://doi.org/10.1207/s15374424jccp2104_12

Alderfer, M. A., Long, K. A., Lown, E. A., Marsland, A. L., Ostrowski, N. L., Hock, J. M., & Ewing, L. J. (2010). Psychosocial adjustment of siblings of children with cancer: A systematic review. *Psycho-Oncology, 19*(8), 789–805. https://doi.org/10.1002/pon.1638

American Association on Intellectual and Developmental Disabilities. (2019). *Definition of intellectual disability*. http://aaidd.org/intellectual-disability/definition

Ang, R. P. (2008). Dysfunctional parenting behaviors and parenting stress among mothers of aggressive boys. *Child & Family Behavior Therapy, 30*(4), 319–336. https://doi.org/10.1080/07317100802483181

Arif, A., Ashraf, F., & Nusrat, A. (2021). Stress and coping strategies in parents of children with special needs. *The Journal of the Pakistan Medical Association, 71*(5), 1369–1372. https://doi.org/10.47391/JPMA.1069

Asarnow, J. R. (1992). Psychosocial intervention strategies for the depressed child: Approaches to treatment and prevention. *Child and Adolescent Psychiatric Clinics of North America, 1*(1), 257–283.

Asarnow, J. R., Tompson, M., Woo, S., & Cantwell, D. P. (2001). Is expressed emotion a specific risk factor for depression or a nonspecific correlate of psychopathology? *Journal of Abnormal Child Psychology, 29*(6), 573–583. https://doi.org/10.1023/A:1012282922900

Aslan Gördesli, M., & Aydın Sünbül, Z. (2021). The Psychometric Properties of Parental Stress Scale-Turkish Form. *Turkish Psychological Counseling and Guidance Journal*, *11*(61), 199-213.

Bader, S. H., Barry, T. D., & Hann, J. A. H. (2015). The relation between parental expressed emotion and externalizing behaviors in children and adolescents with an autism spectrum disorder. *Focus on Autism and Other Developmental Disabilities, 30*(1), 23–34. https://doi.org/10.1177/1088357614523065

Baker, B. L., McIntyre, L. L., Blacher, J., Crnic, K., Edelbrock, C., & Low, C. (2003). Pre-school children with and without developmental delay: Behaviour problems and parenting stress over time. *Journal of Intellectual Disability Research, 47*(Pt 4–5), 217–230. https://doi.org/10.1046/j.1365-2788.2003.00484.x

Balachandran, K. P., & Bhuvaneswari, M. (2024). Expressed emotion in families of children with neurodevelopmental disorders: A mixed-method approach. *Annals of Neurosciences, 31*(2), 105–114. https://doi.org/10.1177/09727531231181014

Barak-Levy, Y., & Atzaba-Poria, N. (2015). The effects of familial risk and parental resolution on parenting a child with mild intellectual disability. *Research in Developmental Disabilities, 47*, 106–116. https://doi.org/10.1016/j.ridd.2015.09.008

Barroso, N. E., Mendez, L., Graziano, P. A., & Bagner, D. M. (2018). Parenting stress through the lens of different clinical groups: A systematic review and meta-analysis. *Journal of Abnormal Child Psychology, 46*(3), 449–461. https://doi.org/10.1007/s10802-017-0313-6

Barrowclough, C., & Hooley, J. M. (2003). Attributions and expressed emotion: A review. *Clinical Psychology Review, 23*(6), 849–880. https://doi.org/10.1016/s0272-7358(03)00075-8

Beck, A., Daley, D., Hastings, R. P., & Stevenson, J. (2004). Mothers' expressed emotion towards children with and without intellectual disabilities. *Journal of*

Intellectual Disability Research, 48(7), 628–638. https://doi.org/10.1111/j.1365-2788.2003.00564.x

Belsky, J. (1984). The determinants of parenting: A process model. *Child Development, 55*(1), 83–96. https://doi.org/10.2307/1129836

Benson, P. R., & Karlof, K. L. (2008). Child, parent, and family predictors of latter adjustment in siblings of children with autism. *Research in Autism Spectrum Disorders, 2*(4), 583–600. https://doi.org/10.1016/j.rasd.2007.12.002

Berry, J. O., & Jones, W. H. (1995). The Parental Stress Scale: Initial psychometric evidence. *Journal of Social and Personal Relationships, 12*(3), 463–472. https://doi.org/10.1177/0265407595123009

Besier, T., Holling, H., Schlack, R., West, C., & Goldbeck, L. (2010). Impact of a family-oriented rehabilitation programme on behavioural and emotional problems in healthy siblings of chronically ill children. *Child: Care, Health and Development, 36*(5), 686–696.

Beyhatun, M. N. (2022). *Kronik hastalığı olan ve olmayan annelerin aile dayanıklığı ile ebeveyn özyeterliği ve ebeveyn stresi arasındaki ilişki* [Master's thesis, Maltepe Üniversitesi, Lisansüstü Eğitim Enstitüsü].

Bhopti, A., Brown, T., & Lentin, P. (2016). Family quality of life: A key outcome in early childhood intervention services—A scoping review. *Journal of Early Intervention, 38*(4), 191–211. https://doi.org/10.1177/1053815116673182

Blamires, J., Foster, M., Rusmussen, S., Zgambo, M., & Mörelius, E. (2024). The experiences and perceptions of healthy siblings of children with a long-term condition: Umbrella review. *Journal of Pediatric Nursing, 77*, 191–203. https://doi.org/10.1016/j.pedn.2024.03.022

Blum, M., & Ribner, A. (2022). Parents' expressed emotions and children's executive functions. *Journal of Experimental Child Psychology, 219*, Article 105403. https://doi.org/10.1016/j.jecp.2022.105403

Boelsma, F., Caubo-Damen, I., Schippers, A., Dane, M., & Abma, T. A. (2017). Rethinking FQoL: The dynamic interplay between individual and family quality of life. *Journal of Policy and Practice in Intellectual Disabilities, 14*(1), 31–38. https://doi.org/10.1111/jppi.12224

Bohadana, G., Morrissey, S., & Paynter, J. (2019). Self-compassion: A novel predictor of stress and quality of life in parents of children with autism spectrum disorder. *Journal of Autism and Developmental Disorders, 49*(10), 4039–4052. https://doi.org/10.1007/s10803-019-04121-x

Bolton, C., Calam, R., Barrowclough, C., Peters, S., Roberts, J., Wearden, A., & Morris, J. (2003). Expressed emotion, attributions and depression in mothers of children with problem behaviour. *Journal of Child Psychology and Psychiatry, 44*(2), 242–254. https://doi.org/10.1111/1469-7610.00117

Bonds, D., Gondoli, D., Sturge-Apple, M., & Salem, L. (2002). Parenting stress as the mediator of the relationship between parental support and optimal parenting. *Parenting: Science and Practice, 2*(4), 409–435.

Boonen, H., van Esch, L., Lambrechts, G., Maljaars, J., Zink, I., Van Leeuwen, K. G., et al. (2015). Mothers' parenting behaviors in families of school-aged children with autism spectrum disorder: An observational and questionnaire study. *Journal of Autism and Developmental Disorders, 45*(11), 3580–3593. https://doi.org/10.1007/s10803-015-2506-6

Bornstein, M. H., & Sawyer, J. (2006). Family systems. In K. McCartney & D. Phillips (Eds.), *Blackwell handbook of early childhood development* (pp. 381–398). Blackwell Publishing. https://doi.org/10.1002/9780470757703.ch19

Bowen, M. (1966). The use of family theory in clinical practice. *Comprehensive Psychiatry, 7*(5), 345–374. https://doi.org/10.1016/S0010-440X(66)80065-2

Bowen, M. (1978). *Family therapy in clinical practice*. Northvale, NJ: Jason Aronson, Inc.

Briggs-Gowan, M. J., Carter, A. S., Skuban, E. M., & Horwitz, S. M. (2001). Prevalence of social-emotional and behavioral problems in a community sample of 1- and 2-year-old children. *Journal of the American Academy of Child and Adolescent Psychiatry, 40*(7), 811–819. https://doi.org/10.1097/00004583-200107000-00016

Brinkman, A. H., Barry, T. D., & Lindsey, R. A. (2023). The relation of parental expressed emotion, parental affiliate stigma, and typically-developing sibling internalizing behavior in families with a child with ASD. *Journal of Autism and Developmental Disorders, 53*, 4591–4603. https://doi.org/10.1007/s10803-022-05760-3

Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Harvard University Press.

Brown, G. W., & Rutter', M. (1966). The Measurement of Family Activities and Relationships: A Methodological Study. *Human Relations*, *19*(3), 241-263. https://doi.org/10.1177/001872676601900301 (Original work published 1966)

Brown, G. W., Birley, J. L., & Wing, J. K. (1972). Influence of family life on the course of schizophrenic disorders: A replication. *The British Journal of Psychiatry, 121*(562), 241–258. https://doi.org/10.1192/bjp.121.3.241

Burkhouse, K. L., Uhrlass, D. J., Stone, L. B., Knopik, V. S., & Gibb, B. E. (2012). Expressed emotion-criticism and risk of depression onset in children. *Journal of Clinical Child and Adolescent Psychology, 41*(6), 771–777. https://doi.org/10.1080/15374416.2012.703122

Butcher, I., Morrison, R., Balogun, O., Duncan, H., Louis, K., Webb, S., & Shaw, R. (2023). Burnout and coping strategies in pediatric and neonatal intensive care staff. *Clinical Practice in Pediatric Psychology, 12*(1). https://doi.org/10.1037/cpp0000474

Butzlaff, R. L., & Hooley, J. M. (1998). Expressed emotion and psychiatric relapse. *Archives of General Psychiatry, 55*(6), 547–552. https://doi.org/10.1001/archpsyc.55.6.547

Cabrera, N. J., Fitzgerald, H. E., Bradley, R. H., & Roggman, L. (2014). The ecology of father–child relationships: An expanded model. *Journal of Family Theory & Review, 6*(4), 336–354. https://doi.org/10.1111/jftr.12054

Caley, L. M. (2012). Risk and protective factors associated with stress in mothers whose children are enrolled in early intervention services. *Journal of Pediatric Health Care, 26*(5), 346–355.

Caliendo, M., Lanzara, V., Vetri, L., Roccella, M., Marotta, R., Carotenuto, M., Russo, D., Cerroni, F., & Precenzano, F. (2020). Emotional-behavioral disorders in healthy siblings of children with neurodevelopmental disorders. *Medicina (Kaunas, Lithuania), 56*(10), 491. https://doi.org/10.3390/medicina56100491

Carrà, G., Cazzullo, C. L., & Clerici, M. (2012). The association between expressed emotion, illness severity and subjective burden of care in relatives of patients with schizophrenia: Findings from an Italian population. *BMC Psychiatry, 12*, Article 140. https://doi.org/10.1186/1471-244X-12-140

Carroll, D. (2019). *Health psychology: Stress, behaviour and disease* (1st ed.). Routledge. https://doi.org/10.4324/9780203970447

Cechnicki, A., Bielańska, A., Hanuszkiewicz, I., & Daren, A. (2013). The predictive validity of expressed emotions (EE) in schizophrenia: A 20-year prospective study. *Journal of Psychiatric Research, 47*(2), 208–214. https://doi.org/10.1016/j.jpsychires.2012.10.004

Chan, K. K. L., & Shorey, S. (2022). Experiences and needs of children with siblings diagnosed with type 1 diabetes: A mixed studies systematic review. *Journal of Pediatric Nursing, 63*, 1–8. https://doi.org/10.1016/j.pedn.2021.12.002

Chan, K. K., & Lam, C. B. (2018). The impact of familial expressed emotion on clinical and personal recovery among patients with psychiatric disorders: The mediating roles of self-stigma content and process. *American Journal of Orthopsychiatry, 88*(6), 626–635. https://doi.org/10.1037/ort0000327

Cheng, A. W. Y., & Lai, C. Y. Y. (2023). Parental stress in families of children with special educational needs: A systematic review. *Frontiers in Psychiatry, 14*, Article 1198302. https://doi.org/10.3389/fpsyt.2023.1198302

Christian, B. J. (2022). Translational research—Stress associated with parenting and caregiving of children with chronic conditions or special healthcare needs. *Journal of Pediatric Nursing, 66*, 218–221. https://doi.org/10.1016/j.pedn.2022.08.008

Chudleigh, J., Browne, R., & Radbourne, C. (2019). Impact of cystic fibrosis on unaffected siblings: A systematic review. *The Journal of Pediatrics, 210*, 112–117.e9. https://doi.org/10.1016/j.jpeds.2019.03.035

Cohen, S., Janicki-Deverts, D., & Miller, G. E. (2007). Psychological stress and disease. *JAMA, 298*(14), 1685–1687. https://doi.org/10.1001/jama.298.14.1685

Cole, J. D., & Kazarian, S. S. (1988). The level of expressed emotion scale: A new measure of expressed emotion. *Journal of Clinical Psychology, 44*(3), 392–397. https://doi.org/10.1002/1097-4679(198805)44:3<392::AID-JCLP2270440315>3.0.CO;2-D

Çolpan, M., Eray, Ş., Eren, E., & Vural, A. (2018). Perceived expressed emotion, emotional and behavioral problems, and self-esteem in obese adolescents: A case-control study. *Journal of Clinical Research in Pediatric Endocrinology, 10*, Article 101. https://doi.org/10.4274/jcrpe.0101

Connors, C., & Stalker, K. (2003). *The views and experiences of disabled children and their siblings: A positive outlook.*

Cox, M. J., & Paley, B. (1997). Families as systems. *Annual Review of Psychology, 48*, 243–267. https://doi.org/10.1146/annurev.psych.48.1.243

Cox, M. J., & Paley, B. (2003). Understanding families as systems. *Current Directions in Psychological Science, 12*(5), 193–196. https://doi.org/10.1111/1467-8721.01259

Cridland, E. K., Jones, S. C., Magee, C. A., & Caputi, P. (2014). Family-focused autism spectrum disorder research: A review of the utility of family systems approaches. *Autism: The International Journal of Research and Practice, 18*(3), 213–222. https://doi.org/10.1177/1362361312472261

Crnic, K., & Low, C. (2002). Everyday stresses and parenting. In M. H. Bornstein (Ed.), *Handbook of parenting: Practical issues in parenting* (2nd ed., pp. 243–267). Lawrence Erlbaum Associates Publishers.

Crossno, M. A. (2011). Bowen family systems theory. In L. Metcalf (Ed.), *Marriage and family therapy: A practice-oriented approach* (pp. 39–64). Springer Publishing Company.

Cuskelly, M., & Gunn, P. (2006). Adjustment of children who have a sibling with Down syndrome: Perspectives of mothers, fathers, and children. *Journal of Intellectual Disability Research, 50*(12), 917–925. https://doi.org/10.1111/j.1365-2788.2006.00922.x

Daley, D., Sonuga-Barke, E. J., & Thompson, M. (2003). Assessing expressed emotion in mothers of preschool AD/HD children: Psychometric properties of a modified speech sample. *The British Journal of Clinical Psychology, 42*(Pt 1), 53–67. https://doi.org/10.1348/014466503762842011

Darling, C. A., Senatore, N., & Strachan, J. (2012). Fathers of children with disabilities: Stress and life satisfaction. *Stress and Health, 28*(4), 269–278. https://doi.org/10.1002/smi.1427

Davys, D., Mitchell, D., & Martin, R. (2017). Fathers of people with intellectual disability: A review of the literature. *Journal of Intellectual Disabilities, 21*(2), 175–196. https://doi.org/10.1177/1744629516650129

De Clercq, L. E., Prinzie, P., Warreyn, P., Soenens, B., Dieleman, L. M., & De Pauw, S. S. W. (2022). Expressed emotion in families of children with and without autism spectrum disorder, cerebral palsy and Down syndrome: Relations with parenting stress and parenting behaviors. *Journal of Autism and Developmental Disorders, 52*(4), 1789–1806. https://doi.org/10.1007/s10803-021-05075-9

De Los Reyes, A., & Ohannessian, C. M. (2016). Introduction to the special issue: Discrepancies in adolescent–parent perceptions of the family and adolescent adjustment. *Journal of Youth and Adolescence, 45*(10), 1957–1972. https://doi.org/10.1007/s10964-016-0533-z

Deater-Deckard, K. (2004). *Parenting stress*. Yale University Press. https://doi.org/10.12987/yale/9780300103939.001.0001

Deater-Deckard, K. (2005). Parenting stress and children's development: Introduction to the special issue. *Infant and Child Development, 14*(2), 111–115. https://doi.org/10.1002/icd.383

Deater-Deckard, K., & Scarr, S. (1996). Parenting stress among dual-earner mothers and fathers: Are there gender differences? *Journal of Family Psychology, 10*(1), 45–59. https://doi.org/10.1037/0893-3200.10.1.45

Delvecchio, E., Di Riso, D., Chessa, D., Mabilia, D., Salcuni, S., & Lis, A. (2014). Expressed emotion, parental stress, and family dysfunction among parents of nonclinical Italian children. *Journal of Child and Family Studies, 23*, 989–999. https://doi.org/10.1007/s10826-013-9754-x

Derogatis, L., (1992). *The brief symptom inventory: Administration, scoring, and procedures manual-II*. USA, Baltimore, MD: Clinical Psychometric Research.

Desiningrum, D. R., Hermawati, D., Somantri, M., Indriana, Y., & Rusydana, A. (2023). Compassionate love parenting training to reduce stress in caregivers of children with special needs: An experimental study. *Psikohumaniora: Jurnal Penelitian Psikologi, 8*(1), 69–86. https://doi.org/10.21580/pjpp.v8i1.14931

Desquenne Godfrey, G., Downes, N., & Cappe, E. (2023). A systematic review of family functioning in families of children on the autism spectrum. *Journal of Autism and Developmental Disorders*, 1–22. *(Advance online publication).*

Dieleman, L. M., De Pauw, S. S. W., Soenens, B., Beyers, W., & Prinzie, P. (2017). Examining bidirectional relationships between parenting and child maladjustment in youth with autism spectrum disorder: A 9-year longitudinal

study. *Development and Psychopathology, 29*(4), 1199–1213. https://doi.org/10.1017/s0954579416001243

Dondi, A. (2018). *Siblings: Crescere fratelli e sorelle di bambini con disabilità*. San Paolo Edizioni.

Dunn, K., Kinnear, D., Jahoda, A., & McConnachie, A. (2019). Mental health and well-being of fathers of children with intellectual disabilities: Systematic review and meta-analysis. *BJPsych Open, 5*(6), e96. https://doi.org/10.1192/bjo.2019.75

Eisenhower, A. S., Baker, B. L., & Blacher, J. (2005). Preschool children with intellectual disability: Syndrome specificity, behaviour problems, and maternal well-being. *Journal of Intellectual Disability Research, 49*(Pt 9), 657–671. https://doi.org/10.1111/j.1365-2788.2005.00699.x

Ellis, B. J., & Del Giudice, M. (2014). Beyond allostatic load: Rethinking the role of stress in regulating human development. *Development and Psychopathology, 26*(1), 1–20. https://doi.org/10.1017/S0954579413000849

Emery, R. E., & Tuer, M. (1993). Parenting and the marital relationship. In T. Luster & L. Okagaki (Eds.), *Parenting: An ecological perspective* (pp. 121–148). Lawrence Erlbaum Associates.

Engfer, A. (1988). The interrelatedness of marriage and the mother-child relationship. In R. A. Hinde & J. Stevenson-Hinde (Eds.), *Relationships within families: Mutual influences* (pp. 104–118). Oxford University Press.

Erel, O., & Burman, B. (1995). Interrelatedness of marital relations and parent–child relations: A meta-analytic review. *Psychological Bulletin, 118*(1), 108–132. https://doi.org/10.1037/0033-2909.118.1.108

Eshraghi, A. A., Cavalcante, L., Furar, E., Alessandri, M., Eshraghi, R. S., Armstrong, F. D., & Mittal, R. (2022). Implications of parental stress on worsening of behavioral problems in children with autism during COVID-19 pandemic: The

spillover hypothesis. *Molecular Psychiatry, 27*, 1865–1872. https://doi.org/10.1038/s41380-021-01433-2

Fahrer, J., Brill, N., Dobener, L. M., Asbrand, J., & Christiansen, H. (2022). Expressed emotion in the family: A meta-analytic review of expressed emotion as a mechanism of the transgenerational transmission of mental disorders. *Frontiers in Psychiatry, 12*, Article 2529. https://doi.org/10.3389/fpsyt.2021.721796

Falloon, I. R. (2003). Family interventions for mental disorders: Efficacy and effectiveness. *World Psychiatry, 2*(1), 20–28.

Farmer, A. Y., & Lee, S. K. (2011). The effects of parenting stress, perceived mastery, and maternal depression on parent–child interaction. *Journal of Social Service Research, 37*(5), 516–525. https://doi.org/10.1080/01488376.2011.607367

Farrace, D., Tommasi, M., Casadio, C., & Verrotti, A. (2013). Parenting stress evaluation and behavioral syndromes in a group of pediatric patients with epilepsy. *Epilepsy & Behavior, 29*(1), 222–227. https://doi.org/10.1016/j.yebeh.2013.07.020

Feldman, R. (2007). Parent-infant synchrony and the construction of shared timing: Physiological precursors, developmental outcomes, and risk conditions. *Journal of Child Psychology and Psychiatry, 48*(3–4), 329–354. https://doi.org/10.1111/j.1469-7610.2006.01701.x

Ferguson, K. R. (2014). *A phenomenological study of the circular causality of stress on the marital system when raising an autistic child* (Doctoral dissertation). The Chicago School of Professional Psychology.

Field, A. P. (2018). Discovering statistics using IBM SPSS statistics (5th ed.). Sage.

Findler, L., & Vardi, A. (2009). Psychological growth among siblings of children with and without intellectual disabilities. *Intellectual and Developmental Disabilities, 47*(1), 1–12. https://doi.org/10.1352/2009.47:1-12

Fisman, S., Wolf, L., Ellison, D., & Freeman, T. (2000). A longitudinal study of siblings of children with chronic disabilities. *Canadian Journal of Psychiatry, 45*(4), 369–375. https://doi.org/10.1177/070674370004500406

Fontes, B. A. (2023). *Sibling experience of autism: Through a family systems lens* [Doctoral dissertation, Chestnut Hill College]. ProQuest Dissertations Publishing.

Fredriksen, T., Vatne, T. M., Haukeland, Y. B., Tudor, M., & Fjermestad, K. W. (2023). Siblings of children with chronic disorders: Family and relational factors as predictors of mental health. *Journal of Child Health Care: For Professionals Working with Children in the Hospital and Community, 27*(1), 145–159. https://doi.org/10.1177/13674935211052157

Friedman, C., & Owen, A. L. (2017). Defining disability: Understandings of and attitudes towards ableism and disability. *Disability Studies Quarterly, 37*(1), Article 2.

Fuerboeter, M., Boettcher, J., Barkmann, C., Zapf, H., Nazarian, R., Wiegand-Grefe, S., Reinshagen, K., & Boettcher, M. (2021). Quality of life and mental health of children with rare congenital surgical diseases and their parents during the COVID-19 pandemic. *Orphanet Journal of Rare Diseases, 16*(1), Article 498. https://doi.org/10.1186/s13023-021-02129-0

Gabriel, B., & Bodenmann, G. (2006). Stress und Coping bei Paaren mit einem verhaltensauffälligen Kind. *Zeitschrift für Klinische Psychologie und Psychotherapie, 35*(1), 59–64. https://doi.org/10.1026/1616-3443.35.1.59

Gau, S. S., Chou, M. C., Lee, J. C., Wong, C. C., Chou, W. J., Chen, M. F., & Wu, Y. Y. (2010). Behavioral problems and parenting style among Taiwanese children with autism and their siblings. *Psychiatry and Clinical Neurosciences, 64*(1), 70–78. https://doi.org/10.1111/j.1440-1819.2009.02034.x

Giallo, R., & Gavidia-Payne, S. (2006). Child, parent and family factors as predictors of adjustment for siblings of children with a disability. *Journal of Intellectual Disability Research, 50*(12), 937–948.

https://doi.org/10.1111/j.1365-2788.2006.00928.x

Giallo, R., Gavidia-Payne, S., Minett, B., & Kapoor, A. (2012). Sibling voices: The self-reported mental health of siblings of children with a disability. *Clinical Psychologist, 16*, 36–43. https://doi.org/10.1111/j.1742-9552.2011.00035.x

Gnainsky, M., Shoval, G., Lubbad, N., Goldzweig, G., & Hasson-Ohayon, I. (2022). Parental expressed emotion towards child with psychiatric disorder vs. healthy sibling. *Journal of Child and Family Studies, 31*(3), 764–773. https://doi.org/10.1007/s10826-021-02052-9

Golfenshtein, N., Srulovici, E., & Medoff-Cooper, B. (2015). Investigating parenting stress across pediatric health conditions: A systematic review. *Issues in Comprehensive Pediatric Nursing, 39*(1), 1–49. https://doi.org/10.3109/01460862.2015.1078423

Goodman R. (2001). Psychometric properties of the strengths and difficulties questionnaire. *Journal of the American Academy of Child and Adolescent Psychiatry*, *40*(11), 1337–1345. https://doi.org/10.1097/00004583-200111000-00015

Goodman, R. (1997). The Strengths and Difficulties Questionnaire: A research note. *Journal of Child Psychology and Psychiatry, 38*(5), 581–586. https://doi.org/10.1111/j.1469-7610.1997.tb01545.x

Goodman, R., Meltzer, H., & Bailey, V. (1998). The Strengths and Difficulties Questionnaire: A pilot study on the validity of the self-report version. *European Child & Adolescent Psychiatry, 7*(3), 125–130. https://doi.org/10.1007/s007870050057

Gottfried, M. A., & McGene, J. (2013). The spillover effects of having a sibling with special educational needs. *The Journal of Educational Research, 106*(3), 197–215. https://doi.org/10.1080/00220671.2012.667011

Grandjean, C., Ullmann, P., Marston, M., Maitre, M. C., Perez, M. H., Ramelet, A. S., & OCToPuS Consortium. (2021). Sources of stress, family functioning, and needs of families with a chronic critically ill child: A qualitative study.

Frontiers in Pediatrics, 9, Article 740598. https://doi.org/10.3389/fped.2021.740598

Gray, D. E. (2003). Gender and coping: The parents of children with high functioning autism. *Social Science & Medicine, 56*(3), 631–642. https://doi.org/10.1016/s0277-9536(02)00059-x

Green, L. (2013). The well-being of siblings of individuals with autism. *ISRN Neurology, 2013*, 417194. https://doi.org/10.1155/2013/417194

Griffith, G. M., Hastings, R. P., Petalas, M. A., & Lloyd, T. J. (2015). Mothers' expressed emotion towards children with autism spectrum disorder and their siblings. *Journal of Intellectual Disability Research, 59*(6), 580–587. https://doi.org/10.1111/jir.12178

Güler, H. A., Koç Yıldırım, S., & Güler, D. (2023). The relationship between adolescents' perception of family emotional atmosphere and acne severity, self-esteem, and quality of life in adolescents diagnosed with acne vulgaris. *Turkish Archives of Pediatrics, 58*(6), 646–652. https://doi.org/10.5152/TurkArchPediatr.2023.23111

Gupta, V. B. (2007). Comparison of parenting stress in different developmental disabilities. *Journal of Developmental and Physical Disabilities, 19*(4), 417–425. https://doi.org/10.1007/s10882-007-9060-x

Güvenir, T., Özbek, A., Baykara, B., Arkar, H., Şentürk, B., & İncekaş, S. (2008). Güçler ve Güçlükler Anketi'nin (GGA) Türkçe uyarlamasının psikometrik özellikleri. *Çocuk ve Gençlik Ruh Sağlığı Dergisi, 15*(2), 65–74.

Hale, W. W., Crocetti, E., Nelemans, S. A., Branje, S. J., van Lier, P. A., Koot, H. M., & Meeus, W. H. (2016). Mother and adolescent expressed emotion and adolescent internalizing and externalizing symptom development: A six-year longitudinal study. *European Child & Adolescent Psychiatry, 25*(6), 615–624. https://doi.org/10.1007/s00787-015-0773-4

Hale, W. W., Raaijmakers, Q. A. W., van Hoof, A., & Meeus, W. H. J. (2011). The predictive capacity of perceived expressed emotion as a dynamic entity of

adolescents from the general community. *Social Psychiatry and Psychiatric Epidemiology, 46*(6), 507–515. https://doi.org/10.1007/s00127-010-0216-1

Hamzat, M. F., Aroyewun, B. A., & Akinwale, G. (2025). Development and validation of the Perceived Expressed Emotion Scale for Adolescents (PEES-Gap). *BMC Psychiatry, 25*(1), 268. https://doi.org/10.1186/s12888-025-06695-6

Han, K., Yang, Y., & Hong, Y. (2018). A structural model of family empowerment for families of children with special needs. *Journal of Clinical Nursing, 27*(5–6). https://doi.org/10.1111/jocn.14195

Han, Z. R., & Shaffer, A. (2014). Maternal expressed emotion in relation to child behavior problems: Differential and mediating effects. *Journal of Child and Family Studies, 23*, 1491–1500. https://doi.org/10.1007/s10826-014-9923-6

Hanvey, I., Malovic, A., & Ntontis, E. (2022). Glass children: The lived experiences of siblings of people with a disability or chronic illness. *Journal of Community & Applied Social Psychology, 32*(5), 936–948. https://doi.org/10.1002/casp.2602

Hastings, R. (2016). Do children with intellectual and developmental disabilities have a negative impact on other family members? The case for rejecting a negative narrative. In *International Review of Research in Developmental Disabilities* (Vol. 51). https://doi.org/10.1016/bs.irrdd.2016.05.002

Hastings, R. P. (2002). Parental stress and behaviour problems of children with developmental disability. *Journal of Intellectual and Developmental Disability, 27*(3), 149–160. https://doi.org/10.1080/1366825021000008657

Hastings, R. P., Daley, D., Burns, C., & Beck, A. (2006). Maternal distress and expressed emotion: Cross-sectional and longitudinal relationships with behavior problems of children with intellectual disabilities. *American Journal on Mental Retardation, 111*(1), 48–61. https://doi.org/10.1352/0895-8017(2006)111[48:MDAEEC]2.0.CO;2

Hatfield, A., Spaniol, L., & Zipple, A. (1987). Expressed emotion: A family perspective. *Schizophrenia Bulletin, 13*(2), 221–226. https://doi.org/10.1093/schbul/13.2.221

Haukeland, Y. B., Fjermestad, K. W., Mossige, S., & Vatne, T. M. (2022). Parent-child communication about emotions during SIBS: A joint intervention for siblings and parents of children with chronic disorders. *Nordic Psychology, 74*(3), 205–221. https://doi.org/10.1080/19012276.2021.1986850

Hayden, N. K., Hastings, R. P., & Bailey, T. (2023). Behavioural adjustment of children with intellectual disability and their sibling is associated with their sibling relationship quality. *Journal of Intellectual Disability Research, 67*, 310–322. https://doi.org/10.1111/jir.13006

Hayden, N. K., Hastings, R. P., Totsika, V., & Langley, E. (2019). A population-based study of the behavioral and emotional adjustment of older siblings of children with and without intellectual disability. *Journal of Abnormal Child Psychology, 47*(8), 1409–1419. https://doi.org/10.1007/s10802-018-00510-5

Hayden, N. K., McCaffrey, M., Fraser-Lim, C., & Hastings, R. P. (2019). Supporting siblings of children with a special educational need or disability: An evaluation of Sibs Talk, a one-to-one intervention delivered by staff in mainstream schools. *Support for Learning, 34*(4), 404–420. https://doi.org/10.1111/1467-9604.12275

Hayden, N., & Hastings, R. (2022). Family theories and siblings of people with intellectual and developmental disabilities. In *International Review of Research in Developmental Disabilities* (Vol. 63). https://doi.org/10.1016/bs.irrdd.2022.09.001

Hayes, A. F. (2018). Introduction to mediation, moderation, and conditional process analysis: A regression-based approach (2nd ed.). The Guilford Press.

Hayes, S. A., & Watson, S. L. (2013). The impact of parenting stress: A meta-analysis of studies comparing the experience of parenting stress in parents of children

with and without autism spectrum disorder. *Journal of Autism and Developmental Disorders, 43*(3), 629–642. https://doi.org/10.1007/s10803-012-1604-y

Hibbs, E. D., Hamburger, S. D., Lenane, M., Rapoport, J. L., Kruesi, M. J. P., Keysor, C. S., et al. (1991). Determinants of expressed emotion in families of disturbed and normal children. *Journal of Child Psychology and Psychiatry and Allied Disciplines, 32*(5), 757–770. https://doi.org/10.1111/j.1469-7610.1991.tb01900.x

Hirshfeld, D. R., Biederman, J., Brody, L., Faraone, S. V., & Rosenbaum, J. F. (1997). Expressed emotion toward children with behavioral inhibition: Associations with maternal anxiety disorder. *Journal of the American Academy of Child & Adolescent Psychiatry, 36*(7), 910–917. https://doi.org/10.1097/00004583-199707000-00012

Hodapp, R. M., Casale, E. G., & Sanderson, K. A. (2019). Parenting children with intellectual disabilities. In M. Bornstein (Ed.), *Handbook of parenting: Volume I: Children and parenting* (3rd ed.). Routledge.

Hodes, M., Garralda, M. E., Rose, G., & Schwartz, R. (1999). Maternal expressed emotion and adjustment in children with epilepsy. *Journal of Child Psychology and Psychiatry and Allied Disciplines, 40*(7), 1083–1093. https://doi.org/10.1111/1469-7610.00526

Hoffman, C., Sweeney, D., Hodge, D., Lopez-Wagner, M., & Looney, L. (2009). Parenting stress and closeness in mothers of typically developing children and mothers of children with autism. *Focus on Autism and Other Developmental Disabilities, 24*, 178–187. https://doi.org/10.1177/1088357609338715

Hooley, J. M. (2007). Expressed emotion and relapse of psychopathology. *Annual Review of Clinical Psychology, 3*, 329–352. https://doi.org/10.1146/annurev.clinpsy.2.022305.095236

Hooley, J. M., & Gotlib, I. H. (2000). A diathesis-stress conceptualization of expressed emotion and clinical outcome. *Applied & Preventive Psychology, 9*(3), 135–151. https://doi.org/10.1016/S0962-1849(05)80001-0

Hudson, J. L., & Rapee, R. M. (2004). From anxious temperament to disorder: An etiological model. In C. L. Turk (Ed.), *Generalized anxiety disorder: Advances in research and practice* (pp. 281–304). Guilford Press.

İlhan, T. (2017). Özel gereksinimli 3–6 yaş çocuklarının ebeveynlerinin stres düzeyleri ile rolleri arasındaki ilişki. *Ankara Üniversitesi Eğitim Bilimleri Fakültesi Özel Eğitim Dergisi, 18*(3), 383–400.

Incledon, E., Williams, L., Hazell, T., Heard, T. R., Flowers, A., & Hiscock, H. (2015). A review of factors associated with mental health in siblings of children with chronic illness. *Journal of Child Health Care, 19*(2), 182–194. https://doi.org/10.1177/1367493513503584

Jackson, A. C., Frydenberg, E., Liang, R. P. T., et al. (2015). Familial impact and coping with child heart disease: A systematic review. *Pediatric Cardiology, 36*(4), 695–712. https://doi.org/10.1007/s00246-015-1121-9

Jackson, S. Z., Pinto-Martin, J. A., Deatrick, J. A., Boyd, R., & Souders, M. C. (2022). High depressive symptoms, low family functioning, and low self-efficacy in mothers of children with autism spectrum disorder compared to two control groups. *Journal of the American Psychiatric Nurses Association*, Advance online publication. https://doi.org/10.1177/107839032211041

Jessup, M., Smyth, W., Abernethy, G., Shields, L., & Douglas, T. (2018). Family-centred care for families living with cystic fibrosis in a rural setting: A qualitative study. *Journal of Clinical Nursing, 27*(3–4), e590–e599. https://doi.org/10.1111/jocn.14105

Kameguchi, K. (1996). Chaotic states of generational boundaries in contemporary Japanese families. In M. Cusinato (Ed.), *Research on family resources and needs across the world* (pp. 235–242). Edizioni Universitarie di Lettere Economia Diritto.

Kehoe, C. E., Havighurst, S. S., & Harley, A. E. (2014). Tuning in to teens: Internalizing outcomes. *Social Development, 23*(2), 413–431. https://doi.org/10.1111/sode.12060

Kerig, P. K. (2001). Introduction and overview: Conceptual issues in family observational research. In P. K. Kerig & K. M. Lindahl (Eds.), *Family observational coding systems: Resources for systemic research* (pp. 1–22). Lawrence Erlbaum Associates Publishers.

Kerig, P. K. (2016). Family systems from a developmental psychopathology perspective. In D. Cicchetti (Ed.), *Developmental psychopathology, Vol. 1: Theory and method* (3rd ed., pp. 580–630). John Wiley & Sons.

Kerig, P. K. (2019). Parenting and family systems. In M. H. Bornstein (Ed.), *Handbook of parenting: Being and becoming a parent* (3rd ed., pp. 3–35). Routledge/Taylor & Francis Group. https://doi.org/10.4324/9780429433214-1

Kerr, M. E., & Bowen, M. (1988). *Family evaluation: An approach based on Bowen theory*. W. W. Norton & Company.

Kersh, J., Hedvat, T. T., Hauser-Cram, P., & Warfield, M. E. (2006). The contribution of marital quality to the well-being of parents of children with developmental disabilities. *Journal of Intellectual Disability Research, 50*(12), 883–893. https://doi.org/10.1111/j.1365-2788.2006.00906.x

Khafi, T. Y., Borelli, J. L., & Yates, T. M. (2019). Prospective associations between maternal self-sacrifice/overprotection and child adjustment: Mediation by insensitive parenting. *Journal of Child and Family Studies, 28*(1), 202–221. https://doi.org/10.1007/s10826-018-1276-4

Kim, E. Y., & Miklowitz, D. J. (2004). Expressed emotion as a predictor of outcome among bipolar patients undergoing family therapy. *Journal of Affective Disorders, 82*(3), 343–352.

Kirchhofer, S. M., Orm, S., Haukeland, Y. B., Fredriksen, T., Wakefield, C. E., & Fjermestad, K. W. (2022). A systematic review of social support for siblings of children with neurodevelopmental disorders. *Research in Developmental Disabilities, 126*, Article 104234. https://doi.org/10.1016/j.ridd.2022.104234

Knecht, C., Hellmers, C., & Metzing, S. (2015). The perspective of siblings of children with chronic illness: A literature review. *Journal of Pediatric Nursing, 30*(1), 102–116. https://doi.org/10.1016/j.pedn.2014.10.010

Koenigsberg, H. W., Klausner, E., Chung, H., Pelino, D., & Campbell, R. (1995). Expressed emotion and warmth: Extending the EE construct to insulin-dependent diabetes mellitus. *International Journal of Mental Health, 24*(1), 50–63. https://doi.org/10.1080/00207411.1995.11449260

Koerner, A. F., & Fitzpatrick, M. A. (2006). Family communication patterns theory: A social cognitive approach. In D. Braithwaite & L. Baxter (Eds.), *Engaging theories in family communication: Multiple perspectives* (pp. 50–65). Sage.

Korelitz, K. E., & Garber, J. (2016). Congruence of parents' and children's perceptions of parenting: A meta-analysis. *Journal of Youth and Adolescence, 45*(10), 1973–1995. https://doi.org/10.1007/s10964-016-0524-0

Kovshoff, H., Cebula, K., Tsai, H. J., & Hastings, R. P. (2017). Siblings of children with autism: The siblings embedded systems framework. *Current Developmental Disorders Reports, 4*(2), 37–45. https://doi.org/10.1007/s40474-017-0110-5

Kuhlthau, K. A., Ames, S. G., Ware, A., Hoover, C. G., Wells, N., & Shelton, C. (2022). Research on family health and children and youth with special health care needs. *Academic Pediatrics, 22*(S1), S22–S27. https://doi.org/10.1016/j.acap.2021.07.019

Kuhn, J. C., & Carter, A. S. (2006). Maternal self-efficacy and associated parenting cognitions among mothers of children with autism. *American Journal of Orthopsychiatry, 76*(4), 564–575. https://doi.org/10.1037/0002-9432.76.4.564

Łada-Maśko, A., Sajewicz-Radtke, U., Jurek, P., Olech, M., Radtke, B. M., & Lipowska, M. (2025). (Non)specific interaction patterns in families raising a child with disability or chronic illness: A latent profile analysis. *Frontiers in Psychology, 16,* 1555879. https://doi.org/10.3389/fpsyg.2025.1555879

Lamsal, R., & Ungar, W. J. (2021). Impact of growing up with a sibling with a neurodevelopmental disorder on the quality of life of an unaffected sibling: A scoping review. *Disability and Rehabilitation, 43*(4), 586–594. https://doi.org/10.1080/09638288.2019.1615563

Lazarus, R., & Folkman, S. (1984). *Stress, appraisal, and coping*. Springer.

Leedham, A. T., Thompson, A. R., & Freeth, M. (2020). A thematic synthesis of siblings' lived experiences of autism: Distress, responsibilities, compassion and connection. *Research in Developmental Disabilities, 97*, 103547. https://doi.org/10.1016/j.ridd.2019.103547

Leff, J., & Vaughn, C. (1985). *Expressed emotion in families: Its significance for mental illness*. Guilford Press.

Lefley, H. P. (1992). Expressed emotion: Conceptual, clinical, and social policy issues. *Hospital & Community Psychiatry, 43*(6), 591–598. https://doi.org/10.1176/ps.43.6.591

Lefley, H. P., & Wasow, M. (2013). *Helping families cope with mental illness* (2nd ed.). Routledge. https://doi.org/10.4324/9780203051393

Lin, H. C., Cheng, C. M., Huang, K. L., et al. (2021). Developmental and mental health risks among siblings of patients with autism spectrum disorder: A nationwide study. *European Child & Adolescent Psychiatry, 31*, 1361–1366. https://doi.org/10.1007/s00787-021-01784-9

Liu, X., Kanaya, R., Shigenobu, K., Takiue, K., Mo, W., Koujiya, E., Takeya, Y., & Yamakawa, M. (2024). Exploring expressed emotion and its influencing factors among family caregivers of dementia people: A 3-month study in Japan. *Psychogeriatrics, 24*(2), 1238–1244. https://doi.org/10.1111/psyg.13183

Lobban, F., Barrowclough, C., & Jones, S. (2006). Does expressed emotion need to be understood within a more systemic framework? An examination of discrepancies in appraisals between patients diagnosed with schizophrenia and their relatives. *Social Psychiatry and Psychiatric Epidemiology, 41*, 50–55.

LoBraico, E. J., Brinberg, M., Ram, N., & Fosco, G. M. (2020). Exploring processes in day-to-day parent–adolescent conflict and angry mood: Evidence for circular causality. *Family Process, 59*(4), 1706–1721. https://doi.org/10.1111/famp.12506

Long, K. A., Lehmann, V., Gerhardt, C. A., Carpenter, A. L., Marsland, A. L., & Alderfer, M. A. (2018). Psychosocial functioning and risk factors among siblings of children with cancer: An updated systematic review. *Psycho-Oncology, 27*(6), 1467–1479. https://doi.org/10.1002/pon.4669

Lopez, V., Clifford, T., Minnes, P., & Ouellette-Kuntz, H. (2008). Parental stress and coping in families of children with and without developmental delays. *Journal of Developmental Disabilities, 14*(2), 99–104.

Luebbe, A. M., & Bell, D. J. (2014). Positive and negative family emotional climate differentially predict youth anxiety and depression via distinct affective pathways. *Journal of Abnormal Child Psychology, 42*(6), 897–911. https://doi.org/10.1007/s10802-013-9838-5

Luijkx, J., van der Putten, A. A. J., & Vlaskamp, C. (2016). "I love my sister, but sometimes I don't": A qualitative study into the experiences of siblings of a child with profound intellectual and multiple disabilities. *Journal of Intellectual & Developmental Disability, 41*(4), 279–288. https://doi.org/10.3109/13668250.2016.1224333

Lummer-Aikey, S., & Goldstein, S. (2021). Sibling adjustment to childhood chronic illness: An integrative review. *Journal of Family Nursing, 27*(2), 136–153. https://doi.org/10.1177/1074840720977177

Macks, R. J., & Reeve, R. E. (2007). The adjustment of non-disabled siblings of children with autism. *Journal of Autism and Developmental Disorders, 37*(6), 1060–1067. https://doi.org/10.1007/s10803-006-0249-0

Magaña, A. B., Goldstein, M. J., Karno, M., Miklowitz, D. J., Jenkins, J., & Falloon, I. R. (1986). A brief method for assessing expressed emotion in relatives of psychiatric patients. *Psychiatry Research, 17*(3), 203–212.

Maljaars, J., Boonen, H., Lambrechts, G., Van Leeuwen, K. G., & Noens, I. (2014). Maternal parenting behavior and child behavior problems in families of children and adolescents with autism spectrum disorder. *Journal of Autism and Developmental Disorders, 44*(3), 501–512. https://doi.org/10.1007/s10803-013-1894-8

Mandleco, B., & Webb, A. E. (2015). Sibling perceptions of living with a young person with Down syndrome or autism spectrum disorder: An integrated review. *Journal for Specialists in Pediatric Nursing, 20*(3), 138–156. https://doi.org/10.1111/jspn.12117

Marquis, S. M., McGrail, K., & Hayes, M. V. (2019). A population-level study of the mental health of siblings of children who have a developmental disability. *SSM - Population Health, 8*, 100441. https://doi.org/10.1016/j.ssmph.2019.100441

Marquis, S., Hayes, M. V., & McGrail, K. (2019). Factors that may affect the health of siblings of children who have an intellectual/developmental disability. *Journal of Policy and Practice in Intellectual Disabilities, 16*(4), 273–286. https://doi.org/10.1111/jppi.12309

Marshall, C., Hoshi, R., & Gregory, J. (2024). Parental expressed emotion and behavioural outcomes in autistic children and adolescents: A systematic review. *Child Psychiatry and Human Development*. https://doi.org/10.1007/s10578-023-01660-4

Martinez, B., Pechlivanoglou, P., Meng, D., Traubici, B., Mahood, Q., Korczak, D., ... Cohen, E. (2022). Clinical health outcomes of siblings of children with chronic conditions: A systematic review and meta-analysis. *The Journal of Pediatrics, 250*, 83–92.e88. https://doi.org/10.1016/j.jpeds.2022.07.002

Mash, E. J., & Johnston, C. (1990). Determinants of parenting stress: Illustrations from families of hyperactive children and families of physically abused children. *Journal of Clinical Child Psychology, 19*(4), 313–328. https://doi.org/10.1207/s15374424jccp1904_3

McCarty, C. A., Lau, A. S., Valeri, S. M., & Weisz, J. R. (2004). Parent-child interactions in relation to critical and emotionally overinvolved expressed emotion (EE): Is EE a proxy for behavior? *Journal of Abnormal Child Psychology, 32*(1), 83–93. https://doi.org/10.1023/b:jacp.0000007582.61879.6f

McCleary, L., & Sanford, M. (2002). Parental expressed emotion in depressed adolescents: Prediction of clinical course and relationship to comorbid disorders and social functioning. *Journal of Child Psychology and Psychiatry, 43*(5), 587–595. https://doi.org/10.1111/1469-7610.00048

McGoldrick, M., Carter, B., & Garcia-Preto, N. G. (2014). *The expanded family life cycle: Individual, family, and social perspectives* (4th ed.). Pearson.

McHale, S. M., & Gamble, W. C. (1989). Sibling relationships of children with disabled and nondisabled brothers and sisters. *Developmental Psychology, 25*(3), 421–429. https://doi.org/10.1037/0012-1649.25.3.421

McKenzie Smith, M., Pinto Pereira, S., Chan, L., Rose, C., & Shafran, R. (2018). Impact of well-being interventions for siblings of children and young people with a chronic physical or mental health condition: A systematic review and meta-analysis. *Clinical Child and Family Psychology Review, 21*(2), 246–265. https://doi.org/10.1007/s10567-018-0253-x

McStay, R. L., Trembath, D., & Dissanayake, C. (2014). Stress and family quality of life in parents of children with autism spectrum disorder: Parent gender and the double ABCX model. *Journal of Autism and Developmental Disorders, 44*(12), 3101–3118. https://doi.org/10.1007/s10803-014-2178-7

Menon, M., Fauth, R. C., & Easterbrooks, M. A. (2020). Exploring trajectories of young mothers' parenting stress in early childhood: Associations with protective factors and psychological vulnerabilities. *Parenting, 20*(3), 200–228. https://doi.org/10.1080/15295192.2020.1715683

Minuchin, P. (1985). Families and individual development: Provocations from the field of family therapy. *Child Development, 56*(2), 289–302. https://doi.org/10.2307/1129720

Minuchin, S. (1974). *Families & family therapy*. Harvard University Press.

Möller-Leimkühler, A. M., & Jandl, M. (2011). Expressed and perceived emotion over time: Does the patients' view matter for the caregivers' burden? *European Archives of Psychiatry and Clinical Neuroscience, 261*(5), 349–355. https://doi.org/10.1007/s00406-010-0178-y

Moreno, V. N. (2010). *Sibling stress in families of children with autism* [Master's thesis, University of Texas-Pan American]. ScholarWorks @ UTRGV. https://scholarworks.utrgv.edu/leg_etd/566

Morris, A. T., Gabert-Quillen, C., Friebert, S., Carst, N., & Delahanty, D. L. (2016). The indirect effect of positive parenting on the relationship between parent and sibling bereavement outcomes after the death of a child. *Journal of Pain and Symptom Management, 51*(1), 60–70. https://doi.org/10.1016/j.jpainsymman.2015.08.011

Moyson, T., & Roeyers, H. (2012). "The overall quality of my life as a sibling is all right, but of course, it could always be better": Quality of life of siblings of children with intellectual disability: The siblings' perspectives. *Journal of Intellectual Disability Research, 56*(1), 87–101. https://doi.org/10.1111/j.1365-2788.2011.01393.x

Muralidharan, A., Kotwicki, R. J., Cowperthwait, C., & Craighead, W. E. (2015). Parental relationships and behavioral approach system dysregulation in young adults with bipolar disorder. *Journal of Clinical Psychology, 71*(4), 387–401.

Murphy, L. K., Murray, C. B., Compas, B. E., & Guest Editors: Cynthia A. Gerhardt, Cynthia A. Berg, Deborah J. Wiebe and Grayson N. Holmbeck (2017). Topical Review: Integrating Findings on Direct Observation of Family Communication in Studies Comparing Pediatric Chronic Illness and Typically Developing

Samples. *Journal of pediatric psychology*, *42*(1), 85–94. https://doi.org/10.1093/jpepsy/jsw051

Neath, N. (2020). *The relationship between personality characteristics and expressed emotion in significant relationships* [Doctoral dissertation, University College London]. UCL Discovery. https://discovery.ucl.ac.uk/id/eprint/10115645/

Nelis, D., Kotsou, I., Quoidbach, J., Hansenne, M., Weytens, F., Dupuis, P., & Mikolajczak, M. (2011). Increasing emotional competence improves psychological and physical well-being, social relationships, and employability. *Emotion, 11*(2), 354–366. https://doi.org/10.1037/a0021554

Nelis, S. M., Rae, G., & Liddell, C. (2011). The level of expressed emotion scale: A useful measure of expressed emotion in adolescents? *Journal of Adolescence, 34*(2), 311–318. https://doi.org/10.1016/j.adolescence.2010.04.009

Noonan, H., O'Donoghue, I., & Wilson, C. (2018). Engaging with and navigating limbo: Lived experiences of siblings of adults with autism spectrum disorders. *Journal of Applied Research in Intellectual Disabilities, 31*(6), 1144–1153. https://doi.org/10.1111/jar.12474

Nurany, P. N., Adiyanti, M. G., & Hassan, Z. (2022). Parental expressed emotions and depression among adolescents: The mediating role of emotion regulation. *Psikohumaniora: Jurnal Penelitian Psikologi, 7*(2), 195–210. https://doi.org/10.21580/pjpp.v7i2.12556

Okanlı, A., Ekinci, M., Gözüağca, D., & Sezgin, S. (2004). Zihinsel engelli çocuğa sahip ailelerin yaşadıkları psikososyal sorunlar. *Uluslararası İnsan Bilimleri Dergisi*, 1–8.

Okashah, R., Schoch, K., Hooper, S. R., Shashi, V., & Callanan, N. (2015). Parental communication and experiences and knowledge of adolescent siblings of children with 22q11.2 deletion syndrome. *Journal of Genetic Counseling, 24*(5), 752–759. https://doi.org/10.1007/s10897-014-9806-4

Orfus, M., & Howe, N. (2008). Stress appraisal and coping in siblings of children with special needs. *Exceptionality Education Canada, 18*(3), 166–181.

Orm, S., Vatne, T., Tomeny, T. S., & Fjermestad, K. (2022). Empathy and prosocial behavior in siblings of children with autism spectrum disorder: A systematic review. *Review Journal of Autism and Developmental Disorders, 9*(2), 235–248. https://doi.org/10.1007/s40489-021-00251-0

Osborne, L. A., & Reed, P. (2009). The relationship between parenting stress and behavior problems of children with autistic spectrum disorders. *Exceptional Children, 76*, 54–73.

Pavlopoulou, G., & Dimitriou, D. (2020). In their own words, in their own photos: Adolescent females' siblinghood experiences, needs and perspectives growing up with a preverbal autistic brother or sister. *Research in Developmental Disabilities, 97*, Article 103556. https://doi.org/10.1016/j.ridd.2019.103556

Peer, J. W., & Hillman, S. B. (2012). The mediating impact of coping style on stress perception for parents of individuals with intellectual disabilities. *Journal of Intellectual Disabilities, 16*(1), 45–59. https://doi.org/10.1177/1744629512440783

Peer, J. W., & Hillman, S. B. (2014). Stress and resilience for parents of children with intellectual and developmental disabilities: A review of key factors and recommendations for practitioners. *Journal of Policy and Practice in Intellectual Disabilities, 11*(2), 92–98. https://doi.org/10.1111/jppi.12072

Pelham, W. E., Jr., & Fabiano, G. A. (2008). Evidence-based psychosocial treatments for attention-deficit/hyperactivity disorder. *Journal of Clinical Child & Adolescent Psychology, 37*(1), 184–214. https://doi.org/10.1080/15374410701818681

Peris, T. S., & Baker, B. L. (2000). Applications of the expressed emotion construct to young children with externalizing behavior: Stability and prediction over time. *Journal of Child Psychology and Psychiatry, 41*(4), 457–462.

Peris, T. S., & Hinshaw, S. P. (2003). Family dynamics and preadolescent girls with ADHD: The relationship between expressed emotion, ADHD

symptomatology, and comorbid disruptive behavior. *Journal of Child Psychology and Psychiatry, 44*(8), 1177–1190. https://doi.org/10.1111/1469-7610.00200

Peris, T. S., & Miklowitz, D. J. (2015). Parental expressed emotion and youth psychopathology: New directions for an old construct. *Child Psychiatry and Human Development, 46*(6), 863–873. https://doi.org/10.1007/s10578-014-0526-7

Peris, T. S., & Piacentini, J. (2013). Optimizing treatment for complex cases of childhood obsessive compulsive disorder: A preliminary trial. *Journal of Clinical Child & Adolescent Psychology, 42*(1), 1–8. https://doi.org/10.1080/15374416.2012.673162

Petalas, M. A., Hastings, R. P., Nash, S., Reilly, D., & Dowey, A. (2012). The perceptions and experiences of adolescent siblings who have a brother with autism spectrum disorder. *Journal of Intellectual & Developmental Disability, 37*(4), 303–314. https://doi.org/10.3109/13668250.2012.734603

Peterson, S. K. (2005). The role of the family in genetic testing: Theoretical perspectives, current knowledge, and future directions. *Health Education & Behavior, 32*(5), 627–639. https://doi.org/10.1177/1090198105278752

Phillips, B. A., Conners, F., & Curtner-Smith, M. E. (2017). Parenting children with Down syndrome: An analysis of parenting styles, parenting dimensions, and parental stress. *Research in Developmental Disabilities, 68*, 9–19. https://doi.org/10.1016/j.ridd.2017.06.010

Pinderhughes, E. E., Dodge, K. A., Bates, J. E., Pettit, G. S., & Zelli, A. (2000). Discipline responses: Influences of parents' socioeconomic status, ethnicity, beliefs about parenting, stress, and cognitive-emotional processes. *Journal of Family Psychology, 14*(3), 380–400. https://doi.org/10.1037//0893-3200.14.3.380

Pinquart, M. (2017). Associations of parenting dimensions and styles with externalizing problems of children and adolescents: An updated meta-analysis. *Developmental Psychology, 53*(5), 873–932.

https://doi.org/10.1037/dev0000295

Pinquart, M. (2018). Parenting stress in caregivers of children with chronic physical condition–A meta-analysis. *Stress and Health, 34*(2), 197–207. https://doi.org/10.1002/smi.2780

Popovska Nalevska, G., Popovski, F., & Popovska, H. (2022). Functionality of the family system within families with disabled children. *International Journal of Research Studies in Education, 11*(6), 1–11. https://doi.org/10.5861/ijrse.2022.317

Povee, K., Roberts, L., Bourke, J., & Leonard, H. (2012). Family functioning in families with a child with Down syndrome: A mixed methods approach. *Journal of Intellectual Disability Research, 56*(10), 961–973. https://doi.org/10.1111/j.1365-2788.2012.01561.x

Priego-Ojeda, M., & Rusu, P. P. (2023). Emotion regulation, parental stress and family functioning: Families of children with disabilities vs normative families. *Research in Developmental Disabilities, 139*, Article 104548. https://doi.org/10.1016/j.ridd.2023.104548

Psychogiou, L., Daley, D., Thompson, M., & Sonuga-Barke, E. (2007). Testing the interactive effect of parent and child ADHD on parenting in mothers and fathers: A further test of the similarity-fit hypothesis. *British Journal of Developmental Psychology, 25*(3), 419–433. https://doi.org/10.1348/026151006X170281

Quintana Mariñez, M. G., Chakkera, M., Ravi, N., Ramaraju, R., Vats, A., Nair, A. R., Bandhu, A. K., Koirala, D., Pallapothu, M. R., & Khan, S. (2022). The other sibling: A systematic review of the mental health effects on a healthy sibling of a child with a chronic disease. *Cureus, 14*(9), e29042. https://doi.org/10.7759/cureus.29042

Reeb, B. T., & Conger, K. J. (2009). The unique effect of paternal depressive symptoms on adolescent functioning: Associations with gender and father-adolescent relationship closeness. *Journal of Family Psychology, 23*(5),

758–761. https://doi.org/10.1037/a0016354

Reio, T. G., Jr., & Fornes, S. L. (2011). Learning and adaptation after diagnosis: The role of parent education. *New Directions for Adult and Continuing Education, 2011*(130), 53–61. https://doi.org/10.1002/ace.431

Risi, A., Pickard, J. A., & Bird, A. L. (2021). The implications of parent mental health and wellbeing for parent-child attachment: A systematic review. *PLOS ONE, 16*(12), Article e0260891. https://doi.org/10.1371/journal.pone.0260891

Rivers, J. W., & Stoneman, Z. (2003). Sibling relationships when a child has autism: Marital stress and support coping. *Journal of Autism and Developmental Disorders, 33*(4), 383–394. https://doi.org/10.1023/a:1025006727395

Rogosch, F. A., Cicchetti, D., & Toth, S. L. (2004). Expressed emotion in multiple subsystems of the families of toddlers with depressed mothers. *Development and Psychopathology, 16*(3), 689–709. https://doi.org/10.1017/s0954579404004730

Roper, S. O., Allred, D. W., Mandleco, B. L., Freeborn, D., & Taylor, T. (2014). Caregiver burden and sibling relationships in families raising children with disabilities and typically developing children. *Families, Systems, & Health, 32*(1), 122–126. https://doi.org/10.1037/fsh0000047

Ross, P., & Cuskelly, M. (2006). Adjustment, sibling problems and coping strategies of brothers and sisters of children with autistic spectrum disorder. *Journal of Intellectual & Developmental Disability, 31*(2), 77–86. https://doi.org/10.1080/13668250600710864

Russel, D. (2024). A sibling's sense of self. *Canadian Journal of Family and Youth, 16*(1). https://doi.org/10.29173/cjfy29984

Ryan, D. P. J. (2001). Bronfenbrenner's ecological systems theory. Retrieved January 9, 2012.

Şahin, N. H., & Durak, A. (1994). Kısa Semptom Envanteri: Türk gençleri için uyarlanması. *Türk Psikoloji Dergisi, 9*(31), 44–56.

Samadi, S. A., & McConkey, R. (2014). The utility of the Gilliam Autism Rating Scale for identifying Iranian children with autism. *Disability and Rehabilitation, 36*(6), 452–456. https://doi.org/10.3109/09638288.2013.797514

Santrock, J. W. (2014). *Adolescence* (15th ed.). McGraw-Hill Education.

Schamong, I., Bollmann, S., Struck, N., Zäske, H., Boettcher, J., & Lutz, W. (2022). Can we modulate therapeutic interpersonal style experimentally to address alliance? A proof-of-concept study. *Cognitive Therapy and Research, 46*(5), 873–888. https://doi.org/10.1007/s10608-022-10308-x

Schleider, J. L., Chorpita, B. F., & Weisz, J. R. (2014). Relation between parent psychiatric symptoms and youth problems: Moderation through family structure and youth gender. *Journal of Abnormal Child Psychology, 42*(2), 195–204. https://doi.org/10.1007/s10802-013-9780-6

Sharpe, D., & Rossiter, L. (2002). Siblings of children with a chronic illness: A meta-analysis. *Journal of Pediatric Psychology, 27*(8), 699–710. https://doi.org/10.1093/jpepsy/27.8.699

Shelton, K. H., & Harold, G. T. (2008). Interparental conflict, negative parenting, and children's adjustment: Bridging links between parents' depression and children's psychological distress. *Journal of Family Psychology, 22*(5), 712–724. https://doi.org/10.1037/a0013515

Sher-Censor, E. (2015). Five-minute speech sample in developmental research: A review. *Developmental Review, 36*, 127–155.

Shivers, C. M., Deisenroth, L. K., & Taylor, J. L. (2013). Patterns and predictors of anxiety among siblings of children with autism spectrum disorders. *Journal of Autism and Developmental Disorders, 43*(6), 1336–1346. https://doi.org/10.1007/s10803-012-1685-7

Shivers, C. M., Jackson, J. B., & McGregor, C. M. (2019). Functioning among typically developing siblings of individuals with autism spectrum disorder: A meta-analysis. *Clinical Child and Family Psychology Review, 22*(2), 172–196. https://doi.org/10.1007/s10567-018-0269-2

Shonkoff, J. P., Garner, A. S., Committee on Psychosocial Aspects of Child and Family Health, Committee on Early Childhood, Adoption, and Dependent Care, & Section on Developmental and Behavioral Pediatrics. (2012). The lifelong effects of early childhood adversity and toxic stress. *Pediatrics, 129*(1), e232–e246. https://doi.org/10.1542/peds.2011-2663

Si, Y., Ma, J. L. C., & Zhang, J. (2020). Factors influencing parenting stress among Chinese families of children with attention-deficit/hyperactivity disorder. *Children and Youth Services Review, 116*, Article 105148. https://doi.org/10.1016/j.childyouth.2020.105148

Siegel, D. J., & Hartzell, M. (2013). *Parenting from the inside out*. Penguin.

Smith, E. D. (2017). *The role of parental self-efficacy, hardiness, and parenting stress in predicting parenting behaviors* [Doctoral dissertation, The University of Southern Mississippi].

Steinberg, L., Lamborn, S. D., Dornbusch, S. M., & Darling, N. (1992). Impact of parenting practices on adolescent achievement: Authoritative parenting, school involvement, and encouragement to succeed. *Child Development, 63*(5), 1266–1281. https://doi.org/10.1111/j.1467-8624.1992.tb01694.x

Stoneman, Z. (2001). Supporting positive sibling relationships during childhood. *Mental Retardation and Developmental Disabilities Research Reviews, 7*(2), 134–142. https://doi.org/10.1002/mrdd.1019

Stubbe, D. E., Zahner, G. E., Goldstein, M. J., & Leckman, J. F. (1993). Diagnostic specificity of a brief measure of expressed emotion: A community study of children. *Journal of Child Psychology and Psychiatry, 34*(2), 139–154. https://doi.org/10.1111/j.1469-7610.1993.tb00976.x

Tehee, E. E., Honan, R., & Hevey, D. (2009). Factors contributing to stress in parents of individuals with autistic spectrum disorders. *Journal of Applied Research in Intellectual Disabilities, 22*(1), 34–42.

Thompson, T., Coleman, J., & Olmos, A. (2018). The expressed emotion of parents of children with developmental disabilities: A meta-analysis. *Life Span and Disability, 21*(2), 177–189.

Tomeny, T. S., Barry, T. D., & Bader, S. H. (2014). Birth order rank as a moderator of the relation between behavior problems among children with an autism spectrum disorder and their siblings. *Autism, 18*(2), 199–202. https://doi.org/10.1177/1362361312458185

Tudor, M. E., Rankin, J., & Lerner, M. D. (2018). A model of family and child functioning in siblings of youth with autism spectrum disorder. *Journal of Autism and Developmental Disorders, 48*(4), 1210–1227. https://doi.org/10.1007/s10803-017-3352-5

Uçar, H. N. (2015). *The comparative investigation between perceived expressed emotion and self-esteem in adolescents with attention deficit and hyperactivity disorder* [Master's thesis, Uludağ University].

Valicenti-McDermott, M., Lawson, K., Hottinger, K., Seijo, R., Schechtman, M., Shulman, L., & Shinnar, S. (2015). Parental stress in families of children with autism and other developmental disabilities. *Journal of Child Neurology, 30*(13), 1728–1735. https://doi.org/10.1177/0883073815579705

Van Haren, B., & Fiedler, C. R. (2008). Support and empower families of children with disabilities. *Intervention in School and Clinic, 43*(4), 231–235. https://doi.org/10.1177/1053451208314908 (Original work published 2008)

Varghese, M., Kirpekar, V., & Loganathan, S. (2020). Family interventions: Basic principles and techniques. *Indian Journal of Psychiatry, 62*(Suppl. 2), S192–S200. https://doi.org/10.4103/psychiatry.IndianJPsychiatry_773_19

Vaughn, C. E., & Leff, J. P. (1989). *Expressed emotion in families: Its significance for mental illness*. The Guilford Press.

Vermaes, I. P., van Susante, A. M., & van Bakel, H. J. (2012). Psychological functioning of siblings in families of children with chronic health conditions:

A meta-analysis. *Journal of Pediatric Psychology, 37*(2), 166–184. https://doi.org/10.1093/jpepsy/jsr081

Von Bertalanffy, L. (1968). *General system theory: Foundations, development, applications*. George Braziller.

Vostanis, P., & Nicholls, J. (1992). Expressed emotion in parents of non-referred children aged 6 to 11 years from two school populations: A pilot study. *Child: Care, Health and Development, 18*(5), 249–257. https://doi.org/10.1111/j.1365-2214.1992.tb00358.x

Vural, P., Sığırli, D., Eray, Ş., Ercan, İ., & Kılıç, E. Z. (2013). The reliability and validity study of shortened level of expressed emotion scale in Turkish adolescents. *Türkiye Klinikleri Journal of Medical Sciences, 33*(1), 193–199. https://doi.org/10.5336/medsci.2012-30433

Walker, A., Alfonso, M. L., Colquitt, G., Weeks, K., & Telfair, J. (2016). "When everything changes:" Parent perspectives on the challenges of accessing care for a child with a disability. *Disability and health journal*, *9*(1), 157–161. https://doi.org/10.1016/j.dhjo.2015.06.002

Wamboldt, M. Z., & Wamboldt, F. S. (2000). Role of the family in the onset and outcome of childhood disorders: Selected research findings. *Journal of the American Academy of Child & Adolescent Psychiatry, 39*(10), 1212–1219. https://doi.org/10.1097/00004583-200010000-00006

Wang, H. E., Cheng, C. M., Bai, Y. M., et al. (2020). Familial co-aggregation of major psychiatric disorders in first-degree relatives of individuals with autism spectrum disorder: A nationwide population-based study. *Psychological Medicine, 50*(9), 1437–1447. https://doi.org/10.1017/S0033291720003207

Wang, H., Hou, Y., Chen, J., et al. (2024). The association between discrepancies in parental emotional expressivity, adolescent loneliness and depression: A multi-informant study using response surface analysis. *Journal of Youth and Adolescence, 53*(12), 2407–2422. https://doi.org/10.1007/s10964-024-02033-3

Wang, X., Chen, Q., & Yang, M. (2017). Effect of caregivers' expressed emotion on the care burden and rehospitalization rate of schizophrenia. *Patient Preference and Adherence, 11*, 1505–1511. https://doi.org/10.2147/PPA.S143873

Watson, L., Hanna, P., & Jones, C. J. (2021). A systematic review of the experience of being a sibling of a child with an autism spectrum disorder. *Clinical Child Psychology and Psychiatry, 26*(3), 734–749. https://doi.org/10.1177/13591045211007921

Wearden, A. J., Tarrier, N., Barrowclough, C., Zastowny, T. R., & Rahill, A. A. (2000). A review of expressed emotion research in health care. *Clinical Psychology Review, 20*(5), 633–666. https://doi.org/10.1016/s0272-7358(99)00008-2

Webster-Stratton, C. (1990). Stress: A potential disruptor of parent perceptions and family interactions. *Journal of Clinical Child Psychology, 19*, 302–312.

Weintraub, M. J., Hall, D. L., Carbonella, J. Y., Weisman de Mamani, A., & Hooley, J. M. (2017). Integrity of literature on expressed emotion and relapse in patients with schizophrenia verified by a p-curve analysis. *Family Process, 56*(2), 436–444. https://doi.org/10.1111/famp.12208

Whitchurch, G. G., & Constantine, L. L. (1993). Systems theory. In P. G. Boss, W. J. Doherty, R. LaRossa, W. R. Schumm, & S. K. Steinmetz (Eds.), *Sourcebook of family theories and methods: A contextual approach* (pp. 325–355). Plenum Press. https://doi.org/10.1007/978-0-387-85764-0_14

Wolff, B., Magiati, I., Roberts, R., Skoss, R., & Glasson, E. J. (2023). Psychosocial interventions and support groups for siblings of individuals with neurodevelopmental conditions: A mixed methods systematic review of sibling self-reported mental health and wellbeing outcomes. *Clinical Child and Family Psychology Review, 26*(1), 143–189. https://doi.org/10.1007/s10567-022-00413-4

Woodman, A. C. (2014). Trajectories of stress among parents of children with disabilities: A dyadic analysis. *Family Relations, 63*(1), 39–54.

World Health Organization. (2014). *Integrating the response to mental disorders and other chronic diseases in health care systems*. World Health Organization.

Yorke, I., White, P., Weston, A., Rafa, M., Charman, T., & Simonoff, E. (2018). The association between emotional and behavioral problems in children with autism spectrum disorder and psychological distress in their parents: A systematic review and meta-analysis. *Journal of Autism and Developmental Disorders, 48*(10), 3393–3415. https://doi.org/10.1007/s10803-018-3605-y

Zahl, E., Cogo-Moreira, H., Fredriksen, T., Kirchhofer, S., Orm, S., Vatne, T., Botta, M., & Fjermestad, K. (2024). Mental health dynamics between mothers and siblings of children with disabilities. *Frontiers in Psychology, 15*, Article 1501343. https://doi.org/10.3389/fpsyg.2024.1501343

Zimmer-Gembeck, M. J., Rudolph, J., Kerin, J., & Bohadana-Brown, G. (2021). Parent emotional regulation: A meta-analytic review of its association with parenting and child adjustment. *International Journal of Behavioral Development, 46*(1), 63–82. https://doi.org/10.1177/01650254211051086 (Original work published 2022)

APPENDICES

Appendix A: Informed Consent for Parents/Parental Consent Form for Adolescents

Sayın Katılımcı,

Bu araştırma, TED Üniversitesi Gelişim Odaklı Klinik Çocuk ve Ergen Psikolojisi Yüksek Lisans programında öğrenci olan Sena Yıldırım tarafından, Doç. Dr. İbrahim Yiğit danışmanlığında yürütülmektedir. Bu çalışmanın katılımcılarını özel gereksinime sahip çocukların 11-18 yaş aralığındaki kardeşleri ve onların anne babaları oluşturmaktadır. Araştırmanın amacı, ebeveynlerin deneyimlediği stres düzeyi ve bu kardeşlerdeki psikososyal değişkenler arasındaki ilişkiyi incelemektir. Bu araştırma kapsamında sizden ve çocuğunuzdan bazı anket sorularına cevap vermesi istenmektedir. Bu aşamada ise sizden yaklaşık 15 dakika, çocuğunuzdan ise yaklaşık 20 dakika sürecek birtakım anket sorularına yanıt vermeniz beklenmektedir. Bu araştırma için TED Üniversitesi Etik Kurulu'ndan izin alınmıştır.

Anketlerde size yöneltilen soruların DOĞRU ya da YANLIŞ cevapları yoktur. Lütfen anketlerin öncesinde yer alan açıklamaları dikkatlice okuyunuz ve bu açıklamalar doğrultusunda işaretlemelerinizi yapınız. Size verilecek formdaki soruları eksiksiz olarak yanıtlamanız, değerlendirmelerinizi gerçek duygu ve düşüncelerinizi yansıtacak şekilde dürüstçe ve titizlikle yapmanız bilimsel verilerin sağlanmasına büyük katkıda bulunacaktır. Sizden istenilen bilgiler bir bütün olarak değerlendirilecek, bireysel değerlendirme yapılmayacak ve araştırmacılar dışında hiçbir üçüncü kişi veya kurumla paylaşılmayacaktır. Toplanan veriler isminiz silinerek, bilgisayarda şifreli bir dosyada tutulacaktır.

Araştırma sürecinin sağlıklı işleyebilmesi için soruları tek başınıza ve çocuğunuzdan ayrı doldurmanız büyük önem taşımaktadır. Çocuğunuzun da araştırmaya katılmasına izin verdiğiniz takdirde kendisinden yaklaşık 20 dakika sürecek anket sorularına yanıt vermesi beklenecektir. Herhangi bir nedenden ötürü çocuğunuz kendisini rahatsız hissetmesi durumunda nedenini açıklamaksızın araştırmadan ayrılabilir. Onayınızı çekmeniz durumunda herhangi bir yaptırımla karşılaşmanız söz konusu değildir. Bu çalışmaya katılım gönüllülük esasına dayalıdır. Lütfen tüm soruları yanıtladıktan sonra anketleri zarfın içindeki küçük zarfa koyunuz ve üzerine kendi el yazınızla "Çalışmaya

katılmayı kabul ediyorum" yazınız. Sonrasında ise küçük zarfı, büyük zarfın içine koyup tamamen kapatabilir ve çalışmanın yürütüldüğü Özel Eğitim Kurumu/Derneğin ilgili birimine teslim edebilirsiniz. Herhangi bir nedenden ötürü kendinizi rahatsız hissederseniz, nedenini açıklamaksızın araştırmadan ayrılabilirsiniz. Böyle bir durumda vermiş olduğunuz bilgilerin araştırmacı tarafından kullanılması ancak sizin onayınızla mümkün olacaktır.

Çalışma sırasında veya sonrasında acil olarak ihtiyaç duymanız halinde TED Üniversitesi Öğrenci Danışma Merkezi'ne ulaşabilirsiniz. Araştırmaya katılımınız ve haklarınızın korunmasına yönelik sorularınız varsa ya da herhangi bir şekilde risk altında olduğunuza veya strese maruz kalacağına inanıyorsanız TED Üniversitesi İnsan Araştırmaları Etik Kurulu'na telefon numarasından veya e-posta adresinden ulaşabilirsiniz. Çalışmaya katıldığınız için şimdiden teşekkür ederim. Çalışma hakkında daha fazla bilgi almak ve yanıtlanmasını istediğiniz sorularınız için araştırmayı yürüten Sena Yıldırım ve Doç. Dr. İbrahim Yiğit ile iletişim kurabilirsiniz.

Bu çalışmaya tamamen gönüllü olarak katılıyorum ve istediğim zaman yarıda kesip bırakabileceğimi biliyorum. Bu araştırma kapsamında gereken anket uygulamasında yer alacağımı biliyorum. Verdiğim bilgilerin bilimsel amaçlı yayımlarda kullanılmasını kabul ediyorum.

□ Yukarıda yazılanları kabul ediyorum ve araştırmaya katılmak istiyorum.

□ Çocuğumun yukarıda açıklanan çalışmaya katılmasına izin veriyorum.

Tarih: ...../……/……

Bu Sayfayı ATLAMAYINIZ. Lütfen Bu Bölümü Dikkatli Okuyunuz!

Verilerinizi eşleştirebilmek adına bir rumuz oluşturmanız gerekmektedir.

Lütfen **araştırmaya katılan çocuğunuzun** isminin ilk üç harfi, doğum günü ve doğum ayının rakamlarının birleşiminden oluşan rumuzu aşağıya yazınız. Çocuğunuz birden fazla isme sahipse lütfen rumuzu **ilk ismini dikkate alarak** oluşturunuz. Lütfen kurala uygun şekilde oluşturduğunuz bu rumuzu daha sonra hatırlayacağınız şekilde bir yere not etmeyi de unutmayınız. Aşağıda bir örnek verilmiştir:

Appendix B: Informed Consent for Adolescents

Sayın Katılımcı,

Bu araştırma, TED Üniversitesi Gelişim Odaklı Klinik Çocuk ve Ergen Psikolojisi Yüksek Lisans programında öğrenci olan Sena Yıldırım tarafından, Doç. Dr. İbrahim Yiğit danışmanlığında yürütülmektedir. Bu çalışmanın katılımcılarını özel gereksinime sahip çocukların 11-18 yaş aralığındaki kardeşleri ve onların anne babaları oluşturmaktadır. Araştırmanın amacı, ebeveynlerin deneyimlediği stres düzeyi ve bu kardeşlerdeki psikososyal değişkenler arasındaki ilişkiyi incelemektir. Bu araştırma kapsamında hem gençlerden hem de ebeveynlerinden bazı anket sorularına yanıt vermeleri istenmektedir. Çalışma kapsamında sizden yaklaşık 20 dakika, anne ve babanızdan ise yaklaşık 15 dakika sürecek bazı anket sorularına yanıt vermeniz beklenmektedir. Lütfen anketlerden önce yer alan açıklamaları dikkatlice okuyunuz ve bu açıklamalar temelinde işaretlemelerinizi yapınız.

Anketlerde size yöneltilen soruların DOĞRU ya da YANLIŞ cevapları yoktur. Lütfen anketlerin öncesinde yer alan açıklamaları dikkatlice okuyunuz ve bu açıklamalar doğrultusunda işaretlemelerinizi yapınız. Size verilecek formdaki soruları eksiksiz olarak yanıtlamanız, değerlendirmelerinizi gerçek duygu ve düşüncelerinizi yansıtacak şekilde dürüstçe ve titizlikle yapmanız bilimsel verilerin sağlanmasına büyük katkıda bulunacaktır. Sizden istenilen bilgiler bir bütün olarak değerlendirilecek, bireysel değerlendirme yapılmayacak ve araştırmacılar dışında hiçbir üçüncü kişi veya kurumla paylaşılmayacaktır. Toplanan veriler isminiz silinerek, bilgisayarda şifreli bir dosyada tutulacaktır. Bu çalışmaya katılım gönüllülük esasına dayalıdır. Dolduracağınız anketler ebeveynlerinize ve size kapalı bir zarf içinde verilecektir.

Araştırmanın sağlıklı ilerleyebilmesi için anne, babanızın ve sizin soruları sakin ve yalnız bir ortamda doldurmanız önemli olacaktır. Anket formlarını birbirinizden ayrı doldurmanız araştırma açısından büyük önem taşımaktadır. Lütfen tüm soruları yanıtladıktan sonra anketleri zarfın içindeki küçük zarfa koyunuz ve üzerine kendi el yazınızla "Çalışmaya katılmayı kabul ediyorum." yazınız. Sonrasında ise küçük zarfı, büyük zarfın içine koyup tamamen kapatabilir ve çalışmanın yürütüldüğü Özel Eğitim Kurumu/Derneğin ilgili birimine iletilmek üzere teslim edebilirsiniz. Herhangi bir nedenden ötürü kendinizi rahatsız hissederseniz, nedenini açıklamaksızın

araştırmadan ayrılabilirsiniz. Böyle bir durumda vermiş olduğunuz bilgilerin araştırmacı tarafından kullanılması ancak sizin onayınızla mümkün olacaktır. Çalışma sırasında veya sonrasında acil olarak ihtiyaç duymanız halinde TED Üniversitesi Öğrenci Danışma Merkezi'ne ulaşabilirsiniz. Araştırmaya katılımınız ve haklarınızın korunmasına yönelik sorularınız varsa ya da herhangi bir şekilde risk altında olduğunuza veya strese maruz kalacağına inanıyorsanız TED Üniversitesi İnsan Araştırmaları Etik Kurulu'na telefon numarasından veya e-posta adresinden ulaşabilirsiniz. Çalışmaya katıldığınız için şimdiden teşekkür ederim. Çalışma hakkında daha fazla bilgi almak ve yanıtlanmasını istediğiniz sorularınız için araştırmayı yürüten Sena Yıldırım ve Doç. Dr. İbrahim Yiğit ile iletişim kurabilirsiniz.

Bu çalışmaya tamamen gönüllü olarak katılıyorum ve istediğim zaman yarıda kesip bırakabileceğimi biliyorum. Bu araştırma kapsamında gereken anket uygulamasında yer alacağımı biliyorum. Verdiğim bilgilerin bilimsel amaçlı yayımlarda kullanılmasını kabul ediyorum.

□ Yukarıda yazılanları kabul ediyorum ve araştırmaya katılmak istiyorum.

Tarih: ...../……/……

Bu Sayfayı ATLAMAYINIZ. Lütfen Bu Bölümü Dikkatli Okuyunuz!

Verilerinizi eşleştirebilmek adına bir rumuz oluşturmanız gerekmektedir. Lütfen isminizin ilk üç harfi, doğum gününüz ve doğum ayınızın rakamlarının birleşiminden oluşan rumuzunuzu aşağıya yazınız. Eğer birden fazla isme sahipseniz lütfen rumuzu **ilk isminizi dikkate alarak** oluşturunuz. Aşağıda bir örnek verilmiştir:

Appendix C: Demographic Information Form for Parents

Yaşınız: _____

Yaşadığınız İl: _____

Aile içi rolünüz:

□ Anne

□ Baba

En son mezun olduğunuz okul:

□ İlkokul

□ Ortaokul

□ Lise

□ Üniversite

□ Yüksek Lisans/Doktora

Çalışma durumunuzu işaretleyiniz:

□ Yarı zamanlı çalışıyor

□ Tam zamanlı çalışıyor

□ Emekli

□ Çalışmıyor

Medeni durumunuzu işaretleyiniz:

□ Bekar

□ Evli

□ Boşanmış

□ Eşini kaybetmiş

□ Diğer: _____

Ailenizin Gelir Düzeyi:

□ Çok Düşük

□ Düşük

□ Orta

□ Ortanın üstü

□ Üst

Evinizde kimler ile yaşıyorsunuz?

□ Çekirdek aile

□ Geniş aile (Kimler olduğunu belirtiniz)

_____

□ Diğer (Lütfen belirtiniz)

_____

Daha önce psikiyatrik bir tanı aldınız mı?

□ Evet (Lütfen belirtiniz)

_____

□ Hayır

Kaç çocuğunuz var?

□ 1

□ 2

□ 3

□ 4

□ 5 ve daha fazla

Özel gereksinimi olan çocuğunuzun yaşı: _____

Özel gereksinimi olan çocuğunuzun cinsiyeti:

□ Kız

□ Erkek

Özel gereksinimi olan çocuğunuzun teşhisi: _____

Çocuğunuza teşhis konulduğunda kaç yaşındaydı? _____

Özel gereksinimli çocuğunuz büyürken ailenize (çekirdek aile) sosyal destek sağlayan biri/birileri var mıydı?

□ Evet (Varsa belirtiniz)

_____

□ Hayır

Appendix D: Demographic Information Form for Adolescents

Yaşınız: _____

Yaşadığınız İl: _____

Cinsiyetiniz:

□ Kız

□ Erkek

En son mezun olduğunuz okul:

□ İlkokul

□ Ortaokul

□ Lise

□ Üniversite

□ Yüksek Lisans/Doktora

Ailenizin Gelir Düzeyi:

□ Çok Düşük

□ Düşük

□ Orta

□ Ortanın üstü

□ Üst

Siz dahil kaç kardeşsiniz? _____

Ailenizin kaçıncı çocuğusunuz? _____

Daha önce psikiyatrik bir tanı aldınız mı?

□ Evet (Lütfen belirtiniz)

_____

□ Hayır

Appendix E: Parental Stress Scale (PSS)

Aşağıdaki tabloda ebeveyn olmanızla ilgili yaşadığınız strese ilişkin maddeler bulunmaktadır. Her bir maddeye ne ölçüde katıldığınızı verilen 5 dereceli ölçek üzerinden kendiniz için en uygun ifadeyi seçerek işaretleyiniz. **Bu soruları sizi duygusal, fiziksel, sosyal, ekonomik ve benzeri açılardan bakım sunmada daha çok zorlayan çocuğunuzu düşünerek yanıtlayınız.**

	Kesinlikle Katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle Katılıyorum
	1	**2**	**3**	**4**	**5**
Bir ebeveyn olarak bu rolden mutluyum.					
Çocuğuma bakmak bazen gerektiğinden çok daha fazla zaman ve enerjimi alıyor.					
Çocuğuma oldukça yakın hissediyorum.					
Çocuğumla vakit geçirmekten hoşlanıyorum.					
Çocuğum benim için önemli bir mutluluk kaynağıdır.					
Çocuğumun olması bana gelecek hakkında daha net ve daha iyimser bir bakış açısı sağlıyor.					
Hayatımdaki en büyük stres kaynağım çocuğumdur.					
Çocuk sahibi olmak hayatımda çok az zaman ve hareket alanı bırakır.					
Çocuk sahibi olmak maddi açıdan büyük bir yüktür.					
Çocuğumla hayattaki diğer sorumluluklarım arasında denge kurmak zordur.					
Çocuğumun davranışları benim için çoğu zaman utandırıcı ve stres verici oluyor.					

Geriye dönebilseydim çocuk sahibi olmamaya karar verebilirdim.					
Ebeveyn olma sorumluluğum bana boğulmuş hissettiriyor.					
Çocuk sahibi olmak hayatım hakkında daha az seçenek ve daha az kontrol anlamına geliyor.					
Ebeveynliğimden memnunum.					
Çocuğumu eğlenceli buluyorum.					

Appendix F: Brief Symptom Inventory (BSI)

Aşağıda insanların zaman zaman yaşadıkları yakınma ve belirtilerin bir listesi verilmiştir. Lütfen listedeki her bir maddeyi dikkatle okuyunuz. Sonrasında ise bugün de dahil olmak üzere içinde bulunduğunuz durumun son bir ay içinde sizi ne ölçüde etkilediğini göz önüne alarak "Hiç", "Biraz", "Orta Derecede", "Epey", "Çok fazla" olarak belirtilen tanımlamalar arasından uygun olanını işaretleyiniz.

	Hiç	**Biraz**	**Orta Derecede**	**Epey**	**Çok Fazla**
İçinizdeki sinirlilik ve titreme hali					
Baygınlık, baş dönmesi					
Bir başka kişinin sizin düşüncelerinizi kontrol edeceği fikri.					
Başınıza gelen sıkıntılardan dolayı başkalarının suçlu olduğu duygusu					
Olayları hatırlamada güçlük					
Çok kolayca kızıp öfkelenme					
Göğüs (kalp) bölgesinde ağrılar.					
Meydanlık(açık) alanlardan korkma duygusu					
Yaşamınıza son verme düşünceleri					
İnsanların çoğuna güvenilmeyeceği hissi					
İştahta bozukluklar					
Hiçbir nedeni olmayan ani korkular					
Kontrol edemediğiniz duygu patlamaları					
Başka insanlarla beraberken bile yalnızlık hissetme					
İşleri bitirme konusunda kendini engellenmiş hissetme					
Yalnızlık hissetme					
Hüzünlü, kederli hissetme					

Hiçbir şeye ilgi duymama					
Ağlamaklı hissetme					
Kolayca incinebilme, kırılma					
İnsanların sizi sevmediğine kötü davrandığına inanmak					
Kendini diğerlerinden daha aşağı görme					
Mide bozukluğu, bulantı					
Diğerlerinin sizi gözlediği ya da hakkınızda konuştuğu duygusu					
Uykuya dalmada güçlük					
Yaptığınız şeyleri tekrar tekrar doğru mu diye kontrol etme					
Karar vermede güçlükler					

	Hiç	**Biraz**	**Orta Dereceded e**	**Epey**	**Çok Fazla**
Otobüs, tren, metro gibi umumi vasıtalarla seyahat etmekten korkma					
Nefes darlığı, nefessiz kalma					
Sıcak, soğuk basmaları					
Sizi korkuttuğu için bazı eşya, yer, etkinliklerden uzak kalmaya çalışma					
Kafanızın bomboş kalması					
Bedeninizin bazı bölgelerinde uyuşmalar karıncalanmalar					
Günahlarınız için cezalandırılmanız gerektiği düşüncesi					
Gelecekle ilgili umutsuzluk duyguları içinde olmak					
Konsantrasyonda (dikkati bir şey üzerinde toplama) güçlük/zorlanma					

Bedenin bazı bölgelerinde zayıflık, güçsüzlük hissi					
Kendini gergin ve tedirgin hissetme					
Ölme ve ölüm üzerinde düşünceler					
Birini dövme, ona zarar verme, yaralama isteği					
Bir şeyleri kırma/dökme isteği					
Diğerlerinin yanındayken kendinin çok fazla farkındaolmak, yanlış bir şeyler yapmamaya çalışmak					
Kalabalıklarda rahatsızlık duymak					
Bir başka insana hiç yakınlık duymamak					
Dehşet ve panik nöbetleri					
Sık sık tartışmaya girme					
Yalnız bırakıldığında/kalındığında sinirlilik hissetme					
Başarılarınız için diğerlerinden yeterince takdir görmediğiniz düşüncesi					
Yerinde duramayacak kadar tedirgin hissetme.					
Kendini değersiz görme, değersizlik duyguları					
İzin verdiğiniz takdirde insanların sizi sömüreceği duygusu					
Suçluluk duyguları					
Aklınızda bir bozukluk olduğu fikri					

Appendix G: Shortened Level of Expressed Emotion Scale (SLEES)

Aşağıda, başkalarının size karşı davranış biçimlerini açıklayan ifadeler bulunmaktadır. Her açıklamayı dikkatli bir şekilde okuyunuz ve **son 3 ayda "ANNENİZİN/BABANIZIN" davranışlarını düşünerek** en uygun seçeneği işaretleyiniz.

	Doğru değil	Kısmen doğru	Büyük ölçüde doğru	Doğru
Moralim bozuk olduğu zaman beni sakinleştiriyor.				
Hasta veya moralim bozuk olduğu zaman bana karşı sempatiktir.				
Ona çok sorun yarattığımı hissetmiyor.				
Bir kişi olarak kendimi değerli hissetmemi sağlıyor.				
Stresli durumlarda kontrollü olmayı başarır.				
Moralim bozuk veya hasta olduğum zaman kendimi daha iyi hissetmemi sağlamaya çalışıyor.				
Yapabileceklerim ve yapamayacaklarım hakkında gerçekçidir.				
Beni sonuna kadar dinliyor.				
Yakınımda olduğu zaman rahatlamış hissetmemi sağlıyor.				
İşler iyi gitmese bile bana iyi davranır, beni zorlamaz.				
Hasta veya moralim bozuk olduğu zaman düşüncelidir.				
İhtiyacım olduğu zaman beni destekler.				
Kendimi iyi hissetmediğim zaman durumumu anlamak için daha fazla bilgi toplamaya isteklidir.				
Ben bir hata yapsam bile anlayışlı davranır.				
Kendimi kötü hissettiğimde bana güven vermeye çalışır.				
İyi olmadığımı söylediğim zaman sadece dikkat çekmek istiyorsun der.				
Beklentilerini gerçekleştiremediğimde beni aşağılar.				

Moralim bozuk olduğu veya kötü hissettiğim zaman bana yardımcı olmaz.				
Beklentilerine uygun bir şekilde yaşamazsam beni eleştirir.				
Kendimi iyi hissetmediğim zaman duygularımla nasıl baş edeceğini bilmiyor.				
İşler yolunda gitmediğinde bana kızar.				
İyi olmadığım zaman beni durumu abartmakla suçlar.				
İşler yolunda gitmediği zaman meseleleri daha da kötüleştirir.				
Kendimi iyi hissetmediğim zaman beni, olayları uydurmakla suçlar.				
Bir işi iyi yapmadığım zaman çılgına döner.				
İşler yolunda gitmediği zaman gergin hale gelir.				
Kendimi iyi hissetmediğim zaman aynı düzeyde çaba bekler.				
Her zaman işlerime burnunu sokar.				
Her zaman, hakkımdaki her şeyi bilmek zorundadır.				
Özel meselelerime burnunu sokar.				
Hayatıma burnunu sokmaz.				
Benden çok fazla şey bekler.				
Çok fazla kişisel soru sormaz.				

Appendix H: Strengths and Difficulties Questionnaire (SDQ)

Son 6 ay içerisindeki durumunuzu göz önüne alarak okuduğunuz her cümle için, "Doğru Değil", "Kısmen Doğru", "Tamamen Doğru" kutularından size en uygun olanını işaretleyiniz. Kesin olarak emin olamasanız ya da size anlamsız görünse de elinizden geldiğince tüm cümleleri yanıtlamanız bize yardımcı olacaktır.

	Doğru Değil	Kısmen Doğru	Tamamen Doğru
İnsanlara karşı iyi davranmaya çalışırım. Onların duygularını önemserim.			
Uzun süre kıpırdamadan oturamam, huzursuz olurum.			
Çok fazla baş ağrım, karın ağrım ya da bulantım olur.			
Genellikle başkalarıyla paylaşırım (Örneğin; yiyeceklerimi, oyunlarımı, kalemimi vb.)			
Çok öfkelenirim ve sıkça kontrolümü kaybederim.			
Genellikle kendi başımayım. Genelde yalnız oynarım ya da başkalarıyla birlikte olmaktan kaçınırım.			
Genellikle bana söyleneni yaparım.			
Çok endişelenirim.			
Eğer birisi incinmiş, morali bozulmuş ya da kendini kötü hissediyor ise ona yardım ederim.			
Sürekli, ellerim ve ayaklarım kıpır kıpırdır, ya da oturduğum yerde kıpırdanıp dururum.			
En az bir yakın arkadaşım var.			

Çok kavga ederim. Diğer insanlara istediğimi yaptırabilirim.			
Sıkça mutsuz, kederli ya da ağlamaklıyım.			
Yaşıtlarım genelde beni sever.			
Dikkatim kolayca dağılır, dikkatimi toplamakta güçlük çekerim.			
Yeni ortamlarda gerginim. Kendime güvenimi kolayca kaybederim.			
Kendimden küçüklere iyi davranırım.			
Sıkça hile yapmak ya da yalan söylemekle suçlanırım.			
Diğer çocuklar ya da gençler bana takarlar ya da benimle alay ederler			
Sıkça başkalarına (anne baba, öğretmen, çocuklar) yardım etmeye istekli olurum.			
Bir şeyi yapmadan önce düşünürüm.			
Ev, okul ya da başka bir yerden benim olmayan şeyleri alırım.			
Erişkinlerle yaşıtlarımdan daha iyi geçinirim.			
Pek çok korkum var. Kolayca ürkerim.			
Yaptığım işleri bitiririm. Dikkatim iyidir.			

Appendix I: Bivariate Correlations Among Variables (Mother-Sibling)

Table 6. *Bivariate Correlations Among Variables (Mother-Sibling)*

Variable	1	2	3	4	5	6	7	8	9	10
1. Maternal Stress	—									
2. Parental Reward	.70**	—								
3. Parental Stressors	.78**	.17*	—							
4. Lack of Control	.81**	.44**	.57**	—						
5. Parental Satisfaction	.57**	.60**	.12	.36**	—					
6. Perceived Maternal EE	.19*	.24**	.05	.12	.21**	—				
7. Lack of Emotional Support	.15	.18*	.04	.09	.22**	.86**	—			
8. Irritability	.18*	.21**	.07	.13	.13	.83**	.50**	—		
9. Intrusiveness	.13	.21*	.02	.08	.13	.69**	.32**	.58**	—	
10. Sibling Psychosocial Difficulties	.21**	.25**	.08	.16*	.19*	.41**	.24**	.53**	.26**	—

Note. *$p < .05$, **$p < .01$.

Appendix J: Bivariate Correlations Among Variables (Father-Sibling)

Table 7. *Bivariate Correlations Among Variables (Father-Sibling)*

Variable	1	2	3	4	5	6	7	8	9	10
1. Paternal Stress	—									
2. Parental Reward	.71**	—								
3. Parental Stressors	.78**	.20*	—							
4. Lack of Control	.79**	.45**	.54**	—						
5. Parental Satisfaction	.60**	.58**	.17*	.42**	—					
6. Perceived Paternal EE	.19*	.25**	.03	.21**	.12	—				
7. Lack of Emotional Support	.21**	.27**	.05	.21**	.13	.86**	—			
8. Irritability	.11	.17*	-.01	.14	.08	.88**	.55**	—		
9. Intrusiveness	.14	.13	.05	.19*	.08	.77**	.41**	.76**	—	
10. Sibling Psychosocial Difficulties	.14	.15	.04	.13	.11	.38**	.25**	.43**	.32**	—

Note. *$p < .05$, **$p < .01$.

Appendix K: Bivariate Correlations between BSI and Study Variables (Mothers)

Table 8. *Bivariate Correlations between BSI and Study Variables (Mothers)*

Variable	1	2	3	4
1. Maternal Stress	—			
2. Perceived Maternal EE	.19*	—		
3. Maternal Psychological Symptoms (BSI)	.41**	.29**	—	
4. Sibling Psychosocial Difficulties	.21**	.41**	.29**	—

Note. *$p < .05$, **$p < .01$.

Appendix L: Bivariate Correlations between BSI and Study Variables (Fathers)

Table 9. *Bivariate Correlations between BSI and Study Variables (Fathers)*

Variable	1	2	3	4
1. Paternal Stress	—			
2. Perceived Paternal EE	.19*	—		
3. Paternal Psychological Symptoms (BSI)	.28**	.34**	—	
4. Sibling Psychosocial Difficulties	.14	.38**	.20*	—

Note. *$p < .05$, **$p < .01$.

Appendix M: Ethics Committee Approval

TED ÜNİVERSİTESİ
İNSAN ARAŞTIRMALARI ETİK KURULU
ETİK KURUL KARARLARI
Sayı: 2024-21 Tarih: 05.01.2024

Toplantı Sayısı: 2024-21

Toplantı Tarihi: 05 Ocak 2024

Toplantı Saati: 11.00

Toplantı Yeri: Zoom üzerinden yapılmıştır.

Katılanlar: Dr. Öğr. Üyesi Kıymet Duygu ERDAŞ - Başkan
Dr. Öğr. Üyesi Duygu Onay Çoker - Raportör
Dr. Öğr. Üyesi Çağla Öneren ŞENDİL - Üye
Doç. Dr. Melike Ünal GEZER - Üye
Dr. Öğr. Üyesi Elçin Emre AKDOĞAN - Üye
Dr. Öğr. Üyesi Beril Türkoğlu DEMİREL - Üye

Raportör: Dr. Öğr. Üyesi Duygu Onay Çoker - Raportör

GÖRÜŞME MADDELERİ

G.05 : TED Üniversitesi, Psikoloji Bölümü Öğretim Üyesi Doç. Dr. İbrahim Yiğit' in "Özel Gereksinimli Çocukların Ailelerinde Ebeveyn Stresi ve Kardeşlerin Psikososyal Çıktıları Arasındaki İlişkiyi Anlamak: Duygu Dışavurumu ve Ebeveyn Duygu Düzenlemesinin Rolü (Understanding Relationship Between Parental Stress and Psychosocial Outcomes of Siblings in Families of Children with Special Needs: Role of Expressed Emotion and Parental Emotion Regulation)" başlıklı çalışmasının araştırma etiğine uygunluğu görüşüldü.

Karar 2024-21/05 : TED Üniversitesi, Psikoloji Bölümü Öğretim Üyesi Doç. Dr. İbrahim Yiğit' in "Özel Gereksinimli Çocukların Ailelerinde Ebeveyn Stresi ve Kardeşlerin Psikososyal Çıktıları Arasındaki İlişkiyi Anlamak: Duygu Dışavurumu ve Ebeveyn Duygu Düzenlemesinin Rolü (Understanding Relationship Between Parental Stress and Psychosocial Outcomes of Siblings in Families of Children with Special Needs: Role of Expressed Emotion and Parental Emotion Regulation)" başlıklı çalışmasına,

KOŞULLU ONAY KARARI VERİLDİ.

TED ÜNİVERSİTESİ
İNSAN ARAŞTIRMALARI ETİK KURULU
ETİK KURUL KARARLARI
Sayı: 2024-21 Tarih: 05.01.2024

e-imzalıdır
Dr. Öğr. Üyesi Kıymet Duygu ERDAŞ
Başkan

e-imzalıdır
Dr. Öğr. Üyesi Çağla Öneren ŞENDİL
Üye

e-imzalıdır
Dr. Öğr. Üyesi Duygu Onay Çöker
Raportör

e-imzalıdır
Dr. Öğr. Üyesi Beril Türkoğlu DEMİREL
Üye

e-imzalıdır
Doç. Dr. Melike Ünal GEZER
Üye

e-imzalıdır
Dr. Öğr. Üyesi Elçin Emre AKDOĞAN
Üye