Walden University

College of Psychology and Community Services

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Janis Boyer Kirkland

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Walden University
2023

Abstract

Mediating Role of Joyful Disposition in the Relationship Between Caregivers of Children With Autism and Experiential Avoidance and Unwanted Intrusive Thoughts

by

Janis Boyer Kirkland

MA, Argosy University, 2006

BS, University of Utah, 2003

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Psychology

Walden University

November 2023

Abstract

Caregivers of children with autism spectrum disorder can experience excessive stressors from their children's autistic symptoms, self-injurious behaviors, and/or morbidity events. This population of caregivers often suffers from coping and psychological issues such as experiential avoidance and unwanted intrusive thoughts that can lead to decreased quality of life and lower trait joy well-being. The purpose of this quantitative nonexperimental study was to determine the extent to which joyful disposition mediated the relationship between type of caregiver (caregivers of autistic children and caregivers of neurotypical children) and experiential avoidance and unwanted intrusive thoughts. The joyful life approach served as the theoretical foundation. The sample, recruited through SurveyMonkey, had sixty-six (74.2%) caregivers of boys and twenty-three (25.8%) caregivers with girls. Results from multiple regression analyses did not show significant relationships between type of caregiver and experiential avoidance, and type of caregiver and unwanted intrusive thoughts. Joyful disposition was not a mediator between type of caregiver and experiential avoidance, or type of caregiver and unwanted intrusive thoughts. Positive social change may occur through the development of educational programs and resources for caregivers focused on positive psychology to mitigate caregiver stress. Social change may also occur at the state level through outreach programs such as educational workshops and in-home visits from organizational advocates for caregivers and their children.

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Dedication

I dedicate this dissertation to my late brother, Albert Boyer, who was there for me as my best friend and an academic supporter. His abiding interest and passion in so many interests inspired me to welcome new perspectives and better ways to adapt to changing realities. His positive attitude refreshed and encouraged me to attain academic goals and find solutions for changing realities, whether challenging or easy. I will always be indebted to him for his commendable worldview and the numerous ways that he fostered and exemplified positive social change throughout his life. I am honored to dedicate this dissertation to my brother, who was an Eagle Scout, a missionary in a war zone for 2 years, a National Guardsman for 6 years, an optometrist, and a community health advocate for marginalized and diverse patients. He uniquely personified the meaning of striving for positive social change by appreciating and accepting different realities, as well as opening his heart to other possibilities. He was truly exemplary, dedicated, and caring. I cannot ever express how much he helped me in so many ways. God Bless him.

Acknowledgments

I have so many people to thank for their support. First, I want to express my gratefulness to Dr. Brent Robbins for helping me find a topic for the dissertation. This aid introduced a new area of thinking and doing that has captivated me through the purview of positive and dispositional psychology. I am deeply grateful to Dr. Robbins for introducing me to a whole new world.

I would also like to thank Dr. Anthony Perry for always being there and giving me his extensive help with writing and understanding statistics. It was invaluable and desperately needed. He was patient and supportive, which greatly eased my dissertation journey. I will always remember his assistance and the example that he set as a dedicated and encouraging mentor.

I also want to thank Dr. Amy Sickel for being my program director and helping me in so many ways. She was caring, helpful, and encouraging when circumstances became difficult. In addition, I want to acknowledge Catherine Heck, my academic advisor, for her guidance and unwavering support. I will miss having discussions with her about school and the challenges of adapting to different circumstances related to family and school. In addition, I want to extend my appreciation to Walden University for the assistance I received in multiple ways, especially in making allowances for me to continue in school.

Lastly, I want to thank my family for understanding that I could not attend some of the activities and trips. Although there was some disappointment on their part, they repeatedly assured me that all was well and not to worry. God Bless them, too.

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Chapter 1: Introduction to the Study

Caregivers of children with autism spectrum disorder (ASD) frequently contend with significant mental health issues elicited by their children's autistic symptoms, such as the core symptoms of social-communication impairments and adverse repetitive behaviors (American Psychiatric Association), 2013; Benson et al., 2014; Del Bianco et al., 2018; Jaswal et al., 2020; ten Hoopen et al., 2020). Although some caregivers experience self-fulfillment and pride in caring for their children through positive thinking and ample support (Cascio et al., 2012; Papadopoulos, 2021), many caregivers are beleaguered by despair, mental health distress, and caregiver burnout, which often leads to caregivers using a coping style referred to as experiential avoidance (Bonis, 2016; Catalano et al., 2018; Estes et al., 2019; Kirk et al., 2017). Because this coping style can help caregivers manage anxiety in the short term, excessive and chronic use often causes more anxiety and leads to unpleasant psychological issues in the long term (Catalano et al., 2018; Estes et al., 2019; Singh et al., 2019). As a result, many caregivers experience declining quality of life and trait joy well-being, which exacerbate caregiver stressors and cause more caregiver burden (Bonis, 2016).

Multiple studies have emphasized the gravity of caregivers using excessive experiential avoidance by reporting that 20%–30% of caregivers experienced increased avoidance of anxiety, decreased mental health wellbeing, and worsening psychopathology (Schnabel et al., 2020; Taylor et al., 2021). Moreover, other studies reported that 18%–25% of caregivers met the criteria for a provisional diagnosis of post-traumatic stress disorder (PTSD), which revealed that excessive use of experiential avoidance led to more serious caregiver psychopathology and additional caregiver stress (APA, 2013; Taylor et al., 2021; Schnabel et al., 2020).

Experiential avoidance is used by many caregivers to avoid or suppress thoughts, memories, or contextual triggers associated with the original anxiety, caregiver overreliance on this coping style can cause more severe anxiety and distress by inducing unwanted intrusive thoughts, which result from the thought suppression in the avoidant coping style (Kashdan et al., 2009; Marks et al., 2018). These thoughts frequently dismay caregivers because they are often repulsed by the thought content and internalize that they must be terrible people to think such things (Iyadurai et al., 2019; Riskind et al., 2018). The disturbing thoughts can range from reliving traumatic events to thoughts of harming others, which cause despair in some caregivers (APA, 2013). Due to this ironic and close relationship between experiential avoidance and unwanted intrusive thoughts, both constructs frequently present together across mental health diagnoses of anxiety and mood disorders and cause a great deal of psychopathology and debilitating effects on many stressed caregivers of children with ASD (APA, 2013; Norton et al., 2017; Schnabel, 2020).

As a result of concerns about caregiver burden, the current study was conducted to determine whether joyful disposition is a significant mediator in the relationship between type of caregiver and the variables of experiential avoidance and unwanted intrusive thoughts. Discovering that potential mediation of a joyful disposition may be used by mental health advocates, social workers, and other professionals who provide support to caregivers to inform them of the value in conveying a joyful disposition to challenges and stressful situations. Because a joyful disposition is an inborn tendency to be hopeful, positive, self-fulfilled, grateful, awe-filled, and appreciative, professionals may be able to emphasize the importance of joyful disposition to caregivers for counteracting the hopelessness and helplessness of chronic exposure to stressors evoked by autistic symptoms (Watkins et al., 2018; Zeng et al., 2017).

The implications of a significant mediating role of a joyful disposition between type of caregiver and the constructs may help caregivers: (a) extend a joyful disposition to caring for their children for counteracting the negativity of hopelessness, (b) dissuade faulty thinking that caregiving is pointless, and (c) prevent false conclusions that living a caregiver life is fraught with insurmountable challenges (Pandey & Sharma, 2018; Picardi et al., 2018). The results of the current study could be used by professionals and individuals who provide resources to caregivers of children with ASD for emphasizing the importance of caregivers to: (a) appreciate the stressful and negative impact of excessive experiential avoidance and unwanted intrusive thoughts in their lives, (b) convey the clarity and adaptive perspective taking of joyful disposition to difficult issues associated with autistic symptoms, (c) be encouraged to convey joyful disposition every day to their caregiving challenges, and (d) strive to enjoy a more enriched life and improved trait joy well-being in their families.

The results of the current study may influence positive social change in community and governmental organizations through less caregiver need for finite resources or by freeing up services that can be used by other caregivers. As caregivers learn to rely more on extending joyful disposition to caregiver burden, they may need less support from community and governmental organizations and their respective or services. These benefits may reduce the financial burden on these agencies, taxpayers, and other vested parties. Positive social change may be a function of the degree that caregivers transmit joyful disposition to their caregiving realities, as well as a function of the help that professionals can give caregivers by using the results of this study.

In Chapter 1, I explain why the study is needed for potentially offering more information to caregivers of children with ASD to experience less experiential avoidance and fewer unwanted intrusive thoughts, followed by the problem statement, which presents the need for understanding the potential mediating effects of a joyful disposition in the relationship between the constructs. The purpose of the study and the research design are explained, followed by the research questions and hypotheses, including independent, dependent, and mediating variables. Furthermore, the theoretical framework, definitions, and significance of the study are presented. The potential contributions of the study in advancing positive social change are explained. A brief chapter summary concludes Chapter 1.

Background

Since the beginning of the 21st century, research in caregiver stress coping, positive dispositions/personality traits, transdiagnostic constructs, and caregiver burden involving autistic children has been influencing social-behavioral research and clinical psychology to shift their focus from psychopathology in the medical model toward a wellness approach espoused by positive philosophies (Lai & Oei, 2014; McKee et al., 2019). Dyskoorn and Cornier (2019) concurred that preoccupation with psychopathology by clinicians and researchers has been gravitating toward focusing on individuals' trait joy experiences of well-being, hopefulness for future events, joy, optimism, appreciation of current circumstances, and satisfaction with how previous events transpired. Dyskoorn and Cornier emphasized that focus placed on dispositions and personality strengths instead of weaknesses confer more benefits to caregivers of children with ASD, whom they deemed as the "responsibility holders of the family unit" (p. 3). Dyskoorn and Cormier also revealed the importance of caregivers experiencing and expressing positive emotions for the entire family to thrive. Positive emotions such as joy, hopefulness, optimism, and awe enable caregivers of children with ASD and their families to capture more quality-of-life and trait joy well-being because focusing on strengths reveals possibilities, encourages resilience, and deters dispositional negativity that leads to psychological distress (Dyskoorn & Cormier, 2019; Kurtz-Nelson & McIntyre, 2017; Shenaar-Golan, 2016).

Other researchers observed that caregivers of children with ASD who have and use joyful disposition increase the likelihood of experiencing enriched benefits from a more satisfying, optimistic, and meaningful life despite having numerous stressors that amplify caregiver burden (Allen et al., 2013; Carapito et al., 2018; Ekas et al., 2010; Myers et al., 2009; Picardi et al., 2018; Stewart et al., 2020). As the integration of caregiver burden in autism research and positive psychology garnered more interest, caregivers with high joy were noted to navigate through the uncertainties of life, ubiquitous challenges, numerous barriers, and heavy caregiver burden more effectively than caregivers with lower joy (Baird et al., 2018; Bozkurt et al., 2019; Carapito et al., 2018; Hampson, 2012; Lyons et al., 2010; Myers et al., 2009; Picardi et al., 2018). While these caregivers used a joyful disposition to catalyze and elicit other positive dispositions and personality traits, as well as adaptive coping styles and beneficial behavioral functioning in diverse situations, caregivers with low joy adapted less successfully to stressors due to evoking a downward spiral of increasing dispositional negativity (Garland et al., 2010; Willis et al., 2016). As research increased through the first part of the 21st century, researchers noted the positive upward spiral of dispositional positivity that resisted maladaptive responses to stressors while amplifying adaptive coping skills and improving mental health (Bozkurt et al., 2019; Fredrickson & Joiner, 2002; Lyons et al., 2010; Shackman et al., 2018; Watkins et al., 2018). Evolving research revealed that caregivers could use joy to protect themselves from developing experiential avoidance and unwanted intrusive thoughts by increasing dispositional mindfulness and dispositional positivity (Hoefman et al., 2014; Kiken et al., 2017; Shackman et al., 2018).

Researchers have also discovered that one of the most stress-challenged populations is caregivers of children with ASD (Bradshaw et al., 2021; Carapito et al., 2018; Ezzat et al., 2017; Picardi et al., 2018), which motivated positive psychology research of beneficial interventions for reducing caregiver burden, such as nurturing and amplifying joyful disposition through self-reflection and dispositional mindfulness (Allen et al., 2013; Campos et al., 2019; Carapito et al., 2018; Hoefman et al., 2014; Lindsay et al., 2018; Picardi et al., 2018). Because joyful disposition underlies the personality and supports positive and adaptive ways of experiencing and responding to the environment, it is one of the most effective dispositions to help caregivers of children with ASD manage autistic stressors while enjoying their children (Gentles et al., 2020; Kiken et al., 2017; Myers et al., 2009; Uchida et al., 2018). In contrast, caregivers who do not have sufficient joyful disposition often fail to appreciate their children because they do not successfully handle their caregiver burden with positive coping and healthy perspective taking (Ooi et al., 2016). The mediating role of low joy may be insufficient to act as a stress-dampening agent, which translates to caregivers often having unmitigated avoidance coping and uncontrollable thoughts (Ooi et al., 2016).

According to growing interest in caregiver burden in autism research, increasing scrutiny since the turn of the century has concentrated on autistic symptoms that besiege caregivers, causing them to feel weighed down by significant, even overwhelming, caregiver burden, financial strain, decreased health status, increasing experiential avoidance, and worsening intrusive thoughts (Autism Spectrum Disorder Foundation, 2016; Keenan et al., 2016; Kirby et al., 2015; Lovell & Wetherell, 2016; Marsack-Topolewski & Church, 2019; Ooi et al., 2016; Picardi et al., 2018). Caregivers of children with ASD often perceive and experience caregiving as an unrelenting process marked by various distresses such as fatigue, psychological and emotional instability, disturbances of affect (abnormal, outward displays of emotion), and decreasing mind–body well-being (Bozkurt et al., 2019; Carapito et al., 2018; Cetinbakis et al., 2016; Lyons et al., 2010; Mason et al., 2019; Picardi et al., 2018; Schieve et al., 2007).

Caregiver burden involving children with ASD is frequently associated with fatigue, exhaustion, depression, and discouragement caused by the unrelenting care that is required to keep them nurtured, healthy, and safe (Alex et al., 2020; Alibekova et al., 2022; Carapito et al., 2018; Kirby et al., 2015; Marsack-Topolewski & Church, 2019; Mason et al., 2019; Ooi et al., 2016; Picardi et al., 2018). Caregivers of ASD children also struggle with sleep deprivation from their children's tendencies to have chronic sleep disturbances, such as frequently waking up during the night, crying for long periods of time, and increased behavioral problems (APA, 2013; Barchel et al., 2019; Devnani & Hegde, 2015; Hoefman et al., 2014; May et al., 2015). Furthermore, caregivers also need to manage the exacerbation of the children's autistic symptoms, comorbid factors (e.g., depression), or morbidity events that frequently correspond with worsening neurobiological and psychophysiological factors in the autistic children (Al-Farsi et al., 2016; Billeci et al., 2016; Craig et al., 2019; Hoefman et al., 2014; Lovell & Wetherell, 2016; van Heijst et al., 2019).

Caregiver fatigue often leads to emotional distress, such as feeling overwhelmed, excessively anxious, hopeless, helpless, depressed, or dispirited (Ooi et a., 2016; Lai & Oei, 2014; Yorke et al., 2018). As emotional instability increases over time, disturbances in caregiver affect result, both of which have been found to be associated with decreasing stress resilience, declining health, heart disease, and gastrointestinal problems (Carapito et al., 2018; Kirby et al., 2015; Marsack-Topolewski & Church, 2019; Mason et al., 2019; Picardi et al., 2018). The mind and body can become adversely affected, resulting in unfavorable changes in organs, cellular processes, and psychophysiological functioning through bidirectional dynamics between the mind and the body (Aschbacher et al., 2017; Dykens & Lambert, 2013; Estes et al., 2009; Mason et al., 2019; Radin et al., 2019; Shackman et al., 2016). The study was needed to help fill the literature gap and to potentially enable caregivers of children with ASD to enjoy improved mental health functioning and enhanced quality of life with their children despite caregiving challenges. Determining the mediating role of joyful disposition may guide caregivers to use the unique taking of positive perspectives conferred by a joyful disposition to decrease caregiver burden, experiential avoidance, and unwanted intrusive thoughts.

Problem Statement

The current study addressed the relationship between type of caregiver (caregivers of children with ASD and caregivers of neurotypical children) and experiential avoidance, and type of caregiver (caregivers of children with ASD and caregivers of neurotypical children) and unwanted intrusive thoughts. Determining the mediating role of joyful disposition is important in caregiver research, especially between caregivers of children with ASD and the transdiagnostic constructs that affect the caregivers. Caregivers experience excessive stress from caring for children with autistic symptoms, as well as contending with their own maladaptive avoidance coping and disturbing thoughts (Blackledge & Hayes, 2006; Estes et al., 2019; Hahs, 2013; Lai & Oei, 2014). Although caregivers of neurotypical children experience stressors related to their children, recent research addressed the magnitude of the differences between children's autistic stressors and children's neurotypically derived stressors on caregivers (Jaswal et al., 2020). Caregivers of ASD children frequently have more stress when contending with their children's self-injurious behavior than caregivers dealing with self-injury in most neurotypical children (APA, 2013; Centers for Disease Control and Prevention, 2020a; Kim et al., 2018; Moseley et al., 2019; Richards et al., 2016).

Caregivers of ASD children often deal with more severe self-injury with morbidity events (Moseley et al., 2019; Summers et al., 2017) because neurotypical children (a) do not have the core symptoms of autism that cause children with ASD to self-injure themselves, such as engaging in restricted interests to the point of self-aggressively resisting transitioning to another activity (APA, 2013; Carter et al., 2020; Devine, 2013); (b) manage their emotions more effectively and experience less anxiety and depression as a result (Moseley et al., 2019); (c) engage in mindfulness and self-awareness of psychic pain more often than autistic children (Edelson & Johnson, 2016); (d) resist causing themselves excessive pain through self-injury, while children with ASD often disregard pain (APA, 2013; Moseley et al., 2019); and (e) tend to experience more positive psychological traits (optimism) relative to negative traits (pessimism) at a neurotypical developmental level (Sirgy, 2019). Autistic children without intellectual impairment tend to resemble neurotypical children in their self-injury motivations and patterns, often depicting self-injury driven by insufficient coping strategies instead of diminished self-awareness and significant emotional dysregulation common in autistic children with lower intelligence (Maddox et al., 2016; Moseley et al., 2019). As a result, caregivers of autistic children and teens with normal intellectual functioning tend to experience stress more closely related to caregivers of neurotypical children, with fewer caregiver depressive symptoms and feelings of chronic hopelessness (Picardi et al., 2018; Singh et al., 2019).

Although caregivers of children with ASD tend to experience more stress from autistic symptoms than caregivers dealing with nonautistic issues, caregivers who convey joyful disposition to their caregiver burden and autistic behaviors can benefit in unexpected ways, such as gaining increased dispositional resilience, higher dispositional positivity, and lower dispositional negativity (Carroll et al., 2014; Craig et al., 2019; Eapen & Guan, 2016; Girli, 2018; Licence et al., 2019; Myers et al., 2009; Rose et al., 2018). Determining the mediating role of joyful disposition is relevant in caregiver research because joy can offset dispositional negativity that underlies avoidance coping and malignant thought processes by encouraging more dispositional positivity, dispositional resilience, and joyful living (Estes et al., 2019; Shackman et al., 2016).

The mediating role of joyful disposition is significant to positive psychology and the precepts of a joyful life insomuch as caregivers with joyful disposition can integrate and benefit from various positive dispositions for mitigating various mental health disorders, such as decreasing excessive experiential avoidance and unwanted intrusive thoughts for enjoying an enriched life with their children (Conversano et al., 2010; Willis et al., 2016). Furthermore, focusing on the mediating role between caregivers of children with ASD and the transdiagnostic constructs was intended to extend recent research. Jaswal et al. (2020) emphasized the power of mothers of children with ASD to remain socially connected to their children despite challenging behavioral issues. Jaswal et al. reported that the mothers practiced joyful appreciation and positively reframed their children's actions by increasing their understanding of their children's unexpressed motivations. Moreover, Jaswal et al. asserted that mothers who joyfully extended this positive understanding to their children improved social connection with them and enabled a higher quality of life for their families.

Experiential avoidance is often used by caregivers to avoid or suppress thoughts, memories, or contextual triggers associated with the original anxiety (i.e., caregiver burden elicited by overwhelming challenges) (Goodman et al., 2019). Overreliance on this coping style can cause more severe anxiety and distress by inducing unwanted intrusive thoughts, which result from the thought suppression inherent in the avoidant coping style (Kashdan et al., 2009; Marks et al., 2018). Few studies have addressed the role of joyful disposition in caregivers of children with disabilities. In addition, there were no studies that examined whether a joyful disposition mediates the relationship between caregiver burden and the transdiagnostic constructs of experiential avoidance and unwanted intrusive thoughts. The current study was intended to fill this gap by determining the extent to which a joyful disposition mediates the relationship between the type of caregiver and the variables of experiential avoidance and unwanted intrusive thoughts.

Purpose of the Study

The purpose of this nonexperimental quantitative study was to determine whether joyful disposition mediates the relationship between the type of caregiver (caregivers of children with ASD and caregivers of neurotypical children) and experiential avoidance, and the type of caregiver (caregivers of children with ASD and caregivers of neurotypical children) and unwanted intrusive thoughts. The independent variables were type of caregiver and joyful disposition. Caregiver joyful disposition also served as the mediating variable in the analyses. The dependent variables were caregiver experiential avoidance and caregiver unwanted intrusive thoughts. Experiential acceptance aims to reduce experiential avoidance, while suppression of thoughts reduces disturbing unwanted ideas. All data were analyzed with multiple regression and mediation analysis. Clarifying the mediating role of a joyful disposition may improve quality of life and subjective well-being for caregivers and their families.

Research Questions and Hypotheses

RQ1: To what extent is the relationship between type of caregiver (caregivers of children of ASD and caregivers of neurotypical children) and caregiver experiential avoidance mediated by caregiver joyful disposition?

H_o1: Caregiver joyful disposition is not a significant mediator of the relationship between type of caregiver and caregiver experiential avoidance.

H_a1: Caregiver joyful disposition is a significant mediator of the relationship between type of caregiver and caregiver experiential avoidance.

RQ2: To what extent is the relationship between type of caregiver (caregivers of children of ASD and caregivers of neurotypical children) and caregiver unwanted intrusive thoughts mediated by caregiver joyful disposition?

H_o2: Caregiver joyful disposition is not a significant mediator of the relationship between type of caregiver and caregiver unwanted intrusive thoughts.

H_a2: Caregiver joyful disposition is a significant mediator of the relationship between type of caregiver and caregiver unwanted intrusive thoughts.

Theoretical Framework

The joyful life approach served as the theoretical framework of the study for exploring and understanding the mediating role of a joyful disposition in the relationship between experiential avoidance and unwanted intrusive thoughts. Robbins (2021) asserted that the joyful life approach arises from the precepts of dispositional joy (i.e., a joyful disposition) and may span the distance between positive psychology and other types of psychology such as humanistic and existential types. A joyful life can confer transpsychological benefits to caregivers through different perspectives of human functioning and the integration of these benefits to guide optimal human flourishing (Robbins, 2014; Robbins, 2021). Because a joyful disposition is an innate character trait that underlies the personality, the joyful life approach is also associated with the personality and may guide how individuals react to their environment and the means they use to manage contextual conditions (Robbins, 2021). Subscribing to the joyful life may help caregivers live with acceptance, gratitude, appreciation, and awe despite exposure to difficult and challenging circumstances (Robbins, 2021). A joyful life was the most relevant and vital theoretical framework for this study examining the benefits of caregivers having a joyful disposition and flourishing throughout a joyful life. The joyful life framework is explained in greater detail in Chapter 2.

Nature of the Study

The nature of the study was a nonexperimental quantitative design using multiple regression with mediation analysis to conduct an initial analysis of the predictor variable of type of caregiver (caregivers of children with ASD and caregivers of children with neurotypical development) and the outcome variables of experiential avoidance and unwanted intrusive thoughts. The next step in the multiple regression analysis was to evaluate the mediating variable (a predictor variable) of a joyful disposition and the dependent variables of experiential avoidance and unwanted intrusive thoughts. The variables were operationalized and quantified by the (a) Joyful Life Scale for a joyful disposition (Robbins, 2019), (b) the Acceptance and Action Questionnaire for experiential avoidance (Hayes et al., 2004), and (c) the White Bear Suppression Inventory for thought suppression of unwanted intrusive thoughts (Wegner & Zanakos, 1994). I sought to determine whether caregiver joyful disposition served a mediating role in the relationships between type of caregiver and experiential avoidance and type of caregiver and unwanted intrusive thoughts. I used the Joyful Life Scale to measure the personality trait of unconditional joy (Robbins, 2006; Robbins et al., 2014). The Acceptance and Action Questionnaire was used to measure the willingness of both groups of caregivers to experience the form, frequency, or sensitivity of unwanted private events, especially events associated with experiencing trauma (Bond et al., 2011; Hayes et al., 1996; Hayes, 2021). Lastly, the White Bear Suppression Inventory was used to measure chronic thought suppression relevant to unwanted intrusive thoughts (Wegner & Zanakos, 1994).

I used these instruments to investigate how caregivers manage stressors related to their children’s behaviors and how joy and joyful living relate to this management. The study was designed to gain information about the relationship between the type of caregiver and their experiential avoidance and unwanted intrusive thoughts, and the role that the caregivers’ joyful dispositions play in the relationship between experiential avoidance and unwanted intrusive thoughts. Determining the mediating role of a joyful disposition could be used by caregivers to adopt strategies for mitigating adverse reactions to stressors, such as their children's behaviors, excessive caregiver avoidance coping, and development of disturbing thought processes evoked by thought suppression in caregivers (APA, 2013; K. Kim et al., 2018). As caregivers learn to capitalize on their inherent joy, they may ensure a better quality of life and enhanced subjective well-being for themselves and their families (Hoefman et al., 2014). A joyful disposition could serve a direct role in reducing experiential avoidance and an indirect role in decreasing unwanted intrusive thoughts via the reduction of avoidance.

Definitions

Autism spectrum disorder (ASD): A neurodevelopmental disorder that is characterized by impairments in social communication and interactions with other people, as well as the characterized by the presence of restricted interests and repetitive patterns of behaviors and actions (APA, 2013; Bishop et al., 2019; Carter et al., 2020; Tager-Flusberg et al., 2013).

Caregiver burden: The psychological, physical, and social challenges experienced by caregivers marked by imbalances between caregiving demands and other demands placed on caregivers (Adib-Hajbaghery & Ahmadi, 2019; Carapito et al., 2018; Picardi et al., 2018).

Caregivers of children with ASD: Parents, guardians, or other designated persons who care for children and adults physically, medically, and socially who fall on the autism spectrum, but not on the spectrum of any other neurodevelopmental disorders (ten Hoopen et al., 2020).

Dispositional negativity: An overarching personality disposition that is a stable and enduring tendency to feel a negative mood and respond to the environment and situations in negative and pessimistic ways, such as having a negative mood (Clark & Watson, 1991; Fernandez et al., 2020; Watson & Clark, 1984). The disposition subsumes various negative personality traits, such as pessimism, hopelessness, irritability, helplessness, anger, disgust, and many other traits (Fernandes et al., 2017).

Dispositional positivity: An overarching personality disposition or category that is a stable and enduring tendency to feel a positive mood to respond to the environment and situations in positive and optimistic ways (Fernandes et al., 2017; Watson & Clark, 1992; Zagorski, 2013).

Dispositional resiliency: An overarching personality disposition that is a stable and enduring tendency to withstand challenging circumstances by using self-protective strategies such as accessing social support, positive perspective taking, and optimism (Bekhet et al., 2012).

Dispositions: An individual's inherent qualities of mind and character, such as dispositional joy, which enables the individual to embrace obstacles and various challenges (Robbins, 2021).

Environmental processes: Influences from outside an individual that can affect genetic and epigenetic processes (Pacheva & Ivanova, 2019; Vorstman et al., 2017).

Experiential avoidance: A coping mechanism used by people who try to avoid memories, recall, or talk about traumatic experiences, and avoid private experiences (autonomic discomfort) that cause anxiety and discomfiture (Nielsen et al., 2016).

General temperament: A broad construct of consistent individual differences in behavior that integrates various dispositions such as dispositional positivity and dispositional negativity (Caprar et al., 2016; Trofimova & Robbins, 2016).

Hedonic well-being or happiness: Fleeting happiness with little meaning attached to it and orientation toward maximizing pleasure by avoiding pain (Maddux, 2017).

Joyful disposition: An innate tendency to feel, cause, or extend joy to oneself and others (Watkins et al., 2018; Zeng et al., 2017).

Joyful life: A dispositional construct that dispositional joy elicits joyful living and functioning (Robbins, 2021).

Morbidity events: Injuries or illnesses that occur in a population, such as concussions that frequently occur in children with ASD (Shkedy et al., 2019).

Neurodevelopmental processes: Processes throughout the brain and body that develop the nervous system in embryogenesis and shape, as well as reshape, the nervous system throughout life (Croteau-Chonka et al., 2015; Cubells & Moreno-De-Luca, 2011; Dionne-Dostie et al., 2015).

Prudential happiness or well-being: Thriving through the achievement of goals without associated moral or ethical concerns (Robbins, 2021).

Self-injurious behaviors: Self-delivered injuries that lead to decreased well-being, infection, or morbidity events that are frequently caused by headbanging, using an object to self, self-biting, or self-spraining fingers (Schweitzer et al., 2017; Shkedy et al., 2019).

Trait joy well-being: Increased positive affect and contentment from having a joyful disposition (Ali, 2019; Zheng et al., 2019).

Unwanted intrusive thoughts: Persistent and insistent thoughts that cause dismay, discomfort, and/or diminished self-esteem because the thoughts are often distasteful and disturbing, frequently causing sufferers to dislike themselves for entertaining the thoughts in the first place (APA, 2013; Wahl et al., 2019).

Assumptions

The first assumption of the study was that all caregivers would realize that ethical considerations were carefully incorporated into the study to protect their interests as valued research participants as much as possible. The second assumption was that caregivers would read the informed consent form and the inclusion/exclusion criteria for participation. I did not verify ASD diagnoses of the children, but I assumed that caregivers were accurate in reporting clinical diagnosis of ASD and the date of diagnosis. The third assumption was that the participants would understand the items on each survey instrument and respond accurately and honestly to all questions. Although the instruments that measured the constructs of interest were reliable and valid, participants may have had certain response biases in completing the survey. These assumptions were necessary because data collection occurred anonymously online through SurveyMonkey. I also assumed that the participants would understand their rights through the in-survey informed consent form because anonymity was one of the main goals of data collection. Although I could have answered participants' questions anonymously through a personal university email account, this would not have been the same as answering their questions face-to-face or through Zoom. I also relied on participants filling out the measurements and demographic forms as honestly and completely as possible. One of the main reasons for anonymity was to achieve valid responses.

Scope and Delimitations

An important aspect of the research involved the potential benefits conferred to caregivers by using a joyful disposition to mediate the relationship between experiential avoidance and unwanted intrusive thoughts in a positive and adaptive direction. Another aspect concerned the advantages of a beneficial role of joyful disposition in determining whether the disposition influences the interplay between experiential avoidance and unwanted intrusive thoughts. This focus was important because the presence of a mediating role of joyful disposition must be established before determining the presence of a moderating role in the relationship between experiential avoidance and unwanted intrusive thoughts. The scope of the study was also limited to caregivers of children in the United States who has children aged 5–17 years, caregivers of children with ASD, and caregivers of children with neurotypical neurodevelopment. The population of caregivers with autistic children who also had other neurodevelopmental disorders was excluded due to the threat of introducing confounding variables into the study and confusing research results. Furthermore, caregivers of neurotypical children who had certain neurological disorders were excluded to ensure external validity and valid research results as much as possible. Applying these parameters showed potential utility to increase the generalizability of the sample of both types of caregivers to the population of both types of caretakers.

Limitations

The study had two design and methodological weaknesses that pertained to the caregivers' subjective responses when filling out the Joyful Life Scale, the Acceptance and Action Questionnaire, and the White Bear Suppression Inventory. Subjective answers can lead to various types of validity and reliability problems evoked by participants' unique motivations to answer in particular ways and their potential difficulties in answering accurately and truthfully (Haberer et al., 2013). Social desirability bias may also have occurred in the survey responses of caregivers. That is, caregivers may have tended to overreport good caregiver behavior and underreport undesirable caregiver behavior. For example, some caregivers could have answered questions on the measurements by underestimating socially unacceptable, shameful thoughts, or they could have overestimated socially acceptable ones (see Haberer et al., 2013). Another methodological weakness was the possibility of caregiver self-report bias that could have led to inaccurate responses on the measurements from possible diminished self-awareness or self-insight; that is, some caregivers suffering from psychological and behavioral issues may have decreased mindfulness and clarity of thought to answer correctly and ensure valid responses (see APA, 2013; Haberer et al., 2013). A potentially effective method to counteract caregiver carelessness in filling out the survey was to inform them in the informed consent form of the importance of truthfully and mindfully answering each item and that their answers would be anonymous.

Another limitation of the study was a threat to external validity referred to as recruitment bias in which purposive recruitment of the caregivers may not have represented the population due to specific kinds of individuals being more likely to be recruited than others (see Bryman, 2016; Nour & Plourde, 2019). Counteracting this bias was the purpose of the inclusion and exclusion criteria, which I relied on. This method of sampling posed a threat to validity because nonrandom samples have weaker external validity than random samples (Donnelly & Trochim, 2008). Another limitation was a threat to ecological validity, which results from generalizing the study's results to the conditions and contexts of the caregivers' children. That is, the children in the sample of caregivers need to adequately represent children of caregivers in the population (Luby et al., 2019). Although I had specific inclusion and exclusion criteria, I hoped to collect data from diverse caregivers related to ethnicity, age, gender, geographic location, and socioeconomic status so the sample would represent the population of caregivers.

Another limitation to any quantitative study involves possible confounding variables. In the current study, there were other variables that may have contributed to caregiver burden and the experience of the transdiagnostic constructs of experiential avoidance and unwanted intrusive thoughts. For example, the types and amount of social support that caregivers received could have impacted the results of this study. Similarly, adequate financial resources in the family may have reduced caregiver burden (Autism Spectrum Disorder Foundation, 2016). Although these types of variables may have impacted caregiver burden, they were not the essential variables of interest in this study. Although I am a parent raising a child with ASD, researcher bias did not pose a threat given my self-awareness and the fact that I had no direct contact with the participants.

Significance

Although numerous studies provided extensive associations between the effects of ASD stressors on caregivers who have developed various types of stress-induced psychopathology (Al-Oran & Al-Sagarat, 2016; Bluth et al., 2013; Hayes & Watson, 2013; Lai & Oei, 2014; Sairanen et al., 2018), fewer studies focused on the role of a joyful disposition in caregivers of children with ASD who suffer from adverse psychopathology (Brown et al., 2015). The current study was also significant by emphasizing the importance of joyful disposition and the potential power of the disposition to mediate the relationship between type of caregiver and the constructs of experiential avoidance and unwanted intrusive thoughts.

Another reason for conducting the study was the possibility that individual caregivers would utilize joyful disposition, thereby reducing psychological distress. The results of this study may have several positive social change implications. First, the results may be used by mental health professionals or those who provide resources to caregivers by developing interventions and/or resources that focus on aspects of positive psychology including joyful disposition. If that happens, then the study may benefit community and governmental organizations through less demand on resources such as counseling and crisis intervention organizations. The study also addressed the dynamics of how joyful disposition encourages caregivers to help themselves elicit the positive personality traits of hopefulness, self-efficacy, and determination to offset caregiver burden and mitigate the transdiagnostic constructs. Less strain on community and governmental resources, a higher quality of life, and more trait joy well-being for caregivers and their children could result from understanding the mediating role of a joyful disposition (see Carapito et al., 2018; Picardi et al., 2018; Zaidman-Zait et al., 2020).

Summary

In Chapter 1, I explained that the study addressed the beneficial and protective role that having a joyful disposition can play in the lives of caregivers of children with ASD and caregivers of children with neurotypical development by counteracting the adverse effects of trying to cope with their children’s autistic symptoms, in addition to their own psychopathology associated with the constructs of experiential avoidance and unwanted intrusive thoughts. The role of a joyful disposition was explored as a possible mitigator of caregiver burden due to its capacity to elicit other positive personality dispositions, traits, and states. Having a joyful disposition was also discussed relative to the constructs exhibited by caregivers of children with ASD, as well as the reasons for these issues arising from autistic stressors. Five adverse stressors were credited with causing the most stress on caregivers of children with ASD, which are core and sub-core ASD symptoms, comorbid issues, self-injurious behavior, and morbidity events. The research design was explained as a regression analysis mediation design of the predictor variable of type of caregiver, the outcome variables of experiential avoidance and unwanted intrusive thoughts, and the mediating variable of a joyful disposition. The significance of the study was clarified, as well as the implications for positive social change. In Chapter 2, I describe the literature search strategy explain the theoretical foundation of joyful life and joyful disposition and provide a literature review related to the key variables of joyful life, joyful disposition, caregiver burden, experiential avoidance, and unwanted intrusive thoughts.

Chapter 2: Literature Review

The research problem was concerned with determining the mediating role of joyful disposition in the relationship between the type of caregiver (caregivers of children with ASD and caregivers of neurotypical children) and experiential avoidance, and type of caregiver (caregivers of children with ASD and caregivers of neurotypical children) and unwanted intrusive thoughts. Better understanding of this relationship may inform caregivers of the impact of stressors in generating avoidance coping and adverse thoughts, as well as inform them of the importance of utilizing joy to reduce caregiver burden and relevant stressors (Ciarrochi et al., 2016). Caregivers of children with ASD who realize what the protective role of joyful disposition entails may also empower themselves to become more educated and competent in managing excessive experiential avoidance and unwanted intrusive thoughts (Goodman et al., 2019; Kashdan et al., 2006). Due to extensive stressors that caregivers often face from their children's autistic symptoms and relevant issues (Kirby et al., 2015), determining the mediating effects of joy between caregivers and the transdiagnostic constructs may inform mental health professionals and caregiver advocates of effective solutions for managing ASD symptoms, which they can then pass on to caregivers (Cloninger & Cloninger, 2019; Kashdan et al., 2006; Watkins et al., 2018).

The study may also suggest ideas for positive social change that can help caregivers of children with ASD and caregivers of children with neurotypical development to suffer less from the ill effects of the transdiagnostic constructs, become less debilitated from traumatic events and possible PTSD, and be more cognitively, emotionally, and behaviorally available to their families, friends, and community (APA, 2013; Tathgur & Kang, 2021. Positive social change could enable caregivers to identify the stress-driven challenges that generate the transdiagnostic constructs, which may assist them in preventing or managing stressors that undermine their quality of life and trait joy well-being (Brown et al., 2015; Carapito et al., 2018; Hartley et al., 2019; Picardi et al., 2018). In the case of caregivers of children with ASD who have had a sharply rising prevalence rate due to their children being diagnosed with ASD (Centers for Disease Control and Prevention, 2012; Poirier & Vallee-Ouimet, 2015), the results of the study could be used by mental health professionals to help caregivers experience less caregiver burden, which may ensure beneficial changes that extend from individual caregivers to society (Carapito et al., 2018; Hoefman et al., 2014; Picardi et al., 2018). The current literature review established the relevance of the research problem.

In Chapter 2, I describe the literature search strategy including hard- and soft-foraging strategies for gathering peer-reviewed journal articles and other scholarly sources. The next section addresses the theoretical foundation, which includes the positive psychology of joyful life and joyful disposition. Next, the historical foundations of positive psychology, experiential avoidance, unwanted intrusive thoughts, ASD, and caregiver burden are presented. The summary provides a synopsis of the major themes of the review, followed by information about the gap in the literature that the study was conducted to address.

Literature Search Strategy

Conducting a search to determine whether having a joyful disposition serves a mediating role between caregivers of children with ASD and the transdiagnostic concepts required some strategies that narrowed the literature of positive psychology, ASD, and caregiver research to include only those concerns relevant to caregivers and the stressors they experience from having children with ASD, as well as resulting transdiagnostic constructs. These strategies were then used to integrate the latest in positive psychology; the growing literature base of the effects of ASD stressors on caregivers of children with ASD; the changing dynamics of autism research that reveal ASD to be a heterogeneous, genetic, complex, and evolving disorder that influences caregivers in countless ways (APA, 2013; Hassan, 2019; Vorstman et al., 2017); the effects of avoidance coping and adverse thoughts on all caregivers in the study; differences between both groups of caregivers concerning stressors; and strategies for caregivers of children with ASD to maximize a joyful disposition. Because the primary focus of the study was to determine the mediating role of joyful disposition between caregivers of children with ASD and experiential avoidance, as well as between caregivers of ASD children and unwanted intrusive thoughts, the implications include caregivers transmitting joy to their unique environmental conditions and receiving protection from stressors that trigger avoidance coping and unpleasant thought (see Barchel et al., 2019; Musalek, 2015).

The literature search was conducted in a stepwise, integrated fashion to ensure the effects of stressors on caregivers could be examined within the perspectives of a joyful disposition, experiential avoidance, and unwanted intrusive thoughts (Clark et al., 2014;

Kable et al., 2012; Sturm & Sunyaev, 2019). Incorporating a stepwise search was necessary because autism and positive psychology research covered large bases, and narrowing these down required careful, methodical steps (see Krupski et al., 2008). Systematic integration and review of numerous articles was useful for relating and comparing the stressors and the coping/mental health issues of caregivers of children with ASD with the challenges of caregivers of neurotypically developing children to facilitate an in-depth scrutiny of the differences between autistic and nonautistic stressors (see Atkinson & Cipriani, 2018; Musalek, 2015; Scherer et al., 2019). Examining the mediating role that a joyful disposition may serve in helping caregivers of children with ASD manage stressors may inform them of strategies to employ for suffering less often from the transdiagnostic constructs, as well as benefitting from a better quality-of-life and higher trait joy well-being on their journey through a joyful life (see Bonis & Sawin, 2016; Catalano et al., 2018; Marsack-Topolewski & Church, 2019; Musalek, 2015).

Hard-Copy Foraging

The literature search began at the Marriott Library and the Spencer S. Eccles Health Sciences Library at the University of Utah in Salt Lake City, as well as the Lied Library of the University of Nevada, Las Vegas. Hard-copy foraging enabled me to obtain difficult-to-find books not available at county libraries or community colleges, as well as psychology journals that did not require a purchase to access. The medical libraries provided medical journals and books about autism and adult psychopathology, including detailed information about experiential avoidance and unwanted intrusive thoughts. Peer-reviewed and seminal works were prolific and easily accessible. Hard-copy foraging provided additional references for the literature search, which facilitated research and writing. Although visiting the brick-and-mortar libraries required extra travel and time, I was able to access difficult-to-find research articles on caregivers and their unique challenges in raising autistic children. This phase of the literature search required approximately 1 year of time-consuming searching in library basements and sifting through numerous journals.

Soft-Copy Foraging

The literature search also proceeded electronically over several years through various main avenues that were invaluable for providing information and evidence of the connection between positive psychology, unique stressors borne by caregivers of children with ASD, the differences between both groups of caregivers, in addition to the presence of experiential avoidance and unwanted intrusive thoughts. Due to rapid advances in technology and educational/research resources, the literature search for this study extended in various directions that culminated in some difficult-to-find research that could not have been obtained even a few years ago.

Search Engines, Databases, and Information Retrieval Systems

Soft-copy research articles were obtained through various search engines, databases, webpages, and online library retrieval systems—all of which provided a multidisciplinary wealth of information and literature-based discovery ranging across multiple disciplines (Gopalakrishnan et al., 2019; Henry & McInnes, 2017). Furthermore, soft-copy material was viewed online through webpages, in the Cloud, downloaded from the journal site, in addition to being printed and transformed into hard-copy material.

With the advent of phenomenally evolving technology, novel search strategies through multiple avenues are available for accessing full-text, peer-reviewed research articles, abstracts, and bibliographies (Henry & McInnes, 2017). Three essential avenues of finding academic and research articles comprised web-based search engines that provided access to large databases for obtaining peer-reviewed articles, library-hosted databases that accessed subscription sub- databases, and independent search engines for obtaining certain data bases of certain organizations (Gopalakrishnan et al., 2019; Henry & McInnes, 2017).

Web-Based Academic Search Engines. These search engines allowed me to access their indexed PDF files of academic and research articles from any publisher on the Web, which allowed for free access to a significant number of articles not limited by classic digital libraries, such as PubMed, according to Beel and Gipp (2010). I used the following web-paged search engines. First, Google Scholar provided access to books, dissertations, abstracts, and articles from academic and research publishers, professional societies, universities, and various websites, with a complement of at least 160 million documents (Paperpile, 2019). Second, Microsoft Academic Search enabled me to access their complement of at least 40 million publications and 20 million authors through object-level vertical search, data mining (i.e., observing trends and patterns in datasets), entity linking (definite identities), and data visualization (i.e., graphs and charts) (Microsoft, 2018). One of the most valuable benefits that I received by using this search engine was the entity linking features that provided definite linking or identities between the search terms, “caregivers of children with autism” (Microsoft, 2018). This feature saved a great deal of time, enabled search specificity, and prevented substantial frustration, since the literature base for the stressors experienced by caregivers of children with ASD is not large. Third, Bielefeld Academic Search Engine (BASE) is hosted by Bielefeld University in Germany, which proved valuable in accessing some hard-to-find articles on caregiver stressors. It has approximately 136 million articles with abstracts and links to full text articles in about 60% of indexed material. BASE can be accessed at https://base-search.net/. Fourth, CORE was accessed for the largest collection of open-access articles in the world, which means that I had access to a staggering 136 million full-text articles, which was useful and convenient (Paperpile, 2019). CORE can be accessed at https://core.ac.uk/. Fifth, Science.gov was useful for providing prevalence rates of different populations, as it is a government site that accesses more than 60 databases and 2200 websites from 15 federal agencies with information not necessarily available anywhere else (Techreviewpro.com, 2020). The data base can be accessed at https://www.science.gov/.

Library Database Hosts and Research Databases. These database hosts and the research database repositories that can be accessed through the hosts involve peer-reviewed published information from numerous journal articles and e-books. The hosts and databases were accessed through Walden University, which include some useful resources. First, *EBSCO,* a database host or provider, was accessed to find articles in various databases, which included Academic Search Complete, Academic Search Elite, CINAHL Plus with Full Text, Cochrane Database of Systematic Reviews, EBSCO eBooks, PsycINFO, PsycEXTRA, PsycARTICLES, PsycBOOKS, PsycTests, SocINDEX with Full Text, and MEDLINE with Full Text. Second, Elsevier Science Direct was heavily accessed due to the repository of cutting-edge articles, easy searching enablement, and numerous free full-text articles. EMBASE, Elsevier Science Direct, and Scholar Works proved to be valuable databases. Third, Proquest provided multiple databases with multiple articles from Academic Video Online (AVON), Proquest Central, to name a couple. Fourth, SAGE, PMC, and Springer offered a nice selection of peer-reviewed articles in their data bases. Fifth, Taylor & Francis Publishing with its online access provided several articles that were quickly and easily discovered in this database.

Online Libraries. Online libraries offered a rich supply of research articles that were rented as read-only for a short period of time, purchased through the Cloud, and bought online with printing privileges. There were also open access articles, e-books, and videos that were read or viewed free-of-charge, making the following online libraries valuable areas to obtain research information that was less expensive or free than information accessed through other means: 1) Wiley Online Library at http://onlinelibrary.wiley.com/; 2) Taylor and Francis Online at http://www.standfonline.com/page/librarians; 3) HighWire Library at http://highwire.stanford.edu/lists/freeart.dtl; 4) Questia Library at http://landing.questia.com/ proved especially valuable in the literature search; and 5) eBrary at Walden University.

Online Publishing Companies. Some research was procured from publishing companies, such as Nova Science Publishers, Academic Science, Academic Press, and

Oxford University Press. Some articles were purchased, but more Open Access articles have been appearing.

Associations, Foundations, and Societies

The American Psychological Association and the American Psychiatric Association provided an ample supply of subscription journals and books that could be purchased, such as the *DSM-5* (APA, 2013) and the *APA Publication Manual, 7th Edition* (2020). Foundations such as the Autism Partnership Foundation (2021) provided specific and relevant information through current news articles, whereas societies, such as the Autism Society (2021) and the Society for Personality and Social Psychology (2021), provided links to publications offering information that would have been difficult to find in external resources. The hard-copy and soft-copy strategies utilized in this literature search significantly and effectively narrowed the research topic to address those caregivers of autistic children from 5 to 17 years old who were diagnosed with ASD, demonstrated self-injurious behaviors, or experienced morbidity events. Additionally, the caregivers presented with experiential avoidance and unwanted intrusive thoughts, which narrowed the search field even more. These strategies revealed a rich literature landscape that emerged from theories related to personality/dispositional psychology and autism. In other words, the landscape not only constituted a rich body of personality theories, but robust autism research, which enriched the study and more effectively addressed salient and specific caregiver concerns.

Search Terms

The search process was straightforward and focused on caregiver burden, positive psychology, ASD, experiential avoidance, and unwanted intrusive thoughts. The search terms that elicited the most that accessed the most research literature include: 1) Relationship of caregiver burden with experiential avoidance, unwanted intrusive thoughts, and a joyful disposition; 2) a joyful disposition in caregivers of children with experiential avoidance and unwanted intrusive thoughts; 3) dispositional positivity in caregivers of autistic children; 4) dispositional negativity in caregivers of autistic children; 5) history of positive psychology, the medical model, and autism spectrum disorder; 6) history of transdiagnostic constructs of experiential avoidance and unwanted intrusive thoughts; 7) history of personality theories and the Big 5; 8) symptoms of ASD and caregiver burden; 9) benefits of a joyful disposition in caregivers; and 10) self-injurious behavior and medical care in children with ASD.

Theoretical Foundation of the Study

The Joyful Life approach was developed by Robbins (2021) and will serve as the theoretical foundation of the study, because the approach promotes the benefits of conveying joyful disposition to all types of situations, whether the events and experiences are positive, negative, or a combination thereof. (Please refer to Appendix A for a list of benefits associated with a joyful disposition). Because the Joyful Life approach is supported by theoretical propositions that clarify the dynamics and advantages of transmitting trait joy (used interchangeably with joyful disposition) to difficult situations, the approach serves as a dispositional guide and solution identifier for helping individuals who struggle with daunting circumstances to gain more peace and trait joy well-being (i.e., enduring well-being driven by joyful disposition) (Robbins, 2021). Since the Joyful Life's unique approach is profound, it will be used as the theoretical foundation for studying caregivers' needs to culture more joy in their lives, convey more joy to enrich meaning and acceptance of situational aspects, and gain more knowledge about accessing the trait joy that they innately possess. Furthermore, the approach extends the concept that embracing negative contextual factors along with positive ones can literally condition the conveyance of joyful disposition to a wider range of future environmental challenges (Robbins, 2021). The Joyful Life approach is, therefore, considered the best theoretical framework for this study to address the challenges of a population frequently beleaguered by unrelenting caregiving and disturbing transdiagnostic constructs, such as experiential avoidance and unwanted intrusive thoughts. Robbins' approach is also considered the best theoretical framework to achieve positive social change through caregiver advocates becoming more educated to inform and help caregivers to use the Joyful Life approach in their lives.

The conceptualization of the Joyful Life approach stemmed from phenomenological qualitative research by Robbins (2006) on trait joy. The initial research began nearly two decades ago, when Robbins (2006) observed that individuals with trait joy experienced awe, wonder, and gratitude for being alive despite having trying times in their lives. In stark contrast, individuals with insufficient trait joy neither appeared to have as much appreciation for experiencing and overcoming difficult events nor appeared to gain as much meaning from their responses to these events (Robbins, 2006). In short, many challenged individuals appeared to not assign meaning to their state joy, which would have informed them of the benefits of conveying joyful appraisals and conclusions to their positive and negative experiences (Robbins, 2006). In other words, the individuals stymied their management of difficult experiences by not assigning enough meaning to their state joy, which impeded subsequent enrichment of their trait joy (Robbins, 2006). Furthermore, the author explained in his seminal research that trait joy oriented toward individuals who understood the value of applying their state joy to different environmental demands and attaching meaning to their responses to these different contexts. In essence, the individuals' state joy evolved from a temporary state of feeling happiness to a fundamental condition involving trait joy to manage difficult circumstances with more equanimity and success (Robbins, 2006). In other words, evolving state joy captured more meaning and facilitated the application of trait joy to positive and negative events--as asserted by the author who argued that state joy without meaning cannot elicit sufficient a joyful disposition for ensuring a higher quality of life and enriched trait joy well-being (Robbins, 2006).

Additional studies by Robbins (2021) contributed to the value of embracing all aspects of experiences and events despite the existential discomfort and dismay that may result. The author profoundly stated that denying or avoiding the negative aspects of the here and now may ultimately inhibit or block the comfort and reassurance garnered from using trait joy or a joyful disposition to manage difficult events in the future. Moreover, Robbins (2021) indicated that embracing negative events instead of avoiding these situational aspects paved the way for joyful disposition to temper future distressful situational aspects (Robbins, 2021). Although obtaining future comfort from tempered trait joy in the past (willingly embracing negative events) appears ironic or contradictory, conveying joyful disposition to painful and negative aspects of current events can ensure that future negative events can be managed more effectively (Robbins, 2021). This seeming irony occurs through the Joyful Life approach by associating joyful disposition and its positive components with whatever situational factors arise over time (Robbins, 2021). As individuals experience and understand these connections between trait joy and negative experiences, they have potentially ensured that future management of stressful events can be mediated by conveying a joyful disposition to whatever may be experienced (Robbins, 2021).

Joyful Life Theoretical Proposition of the Importance of Trait Joy

There are several theoretical propositions and underlying assumptions of the Joyful Life approach that apply to this study and may help determine the mediating role of a joyful disposition in the relationship between type of caregiver and the transdiagnostic constructs of experiential avoidance and unwanted intrusive thoughts. The first Joyful Life proposition claims that a joyful disposition is a particularly important dispositional trait for eliciting happiness and well-being in individuals who suffer from challenging situations and difficult-to-manage situations (Robbins, 2021). This study relates to this theoretical proposition, insomuch as the main trait of interest is a joyful disposition and the promise it gives as an important mediating and moderating factor to help individuals manage difficult events (Robbins, 2021). An underlying assumption of this theoretical proposition concerns the nature of joy as an evolving neurobiological motivator for regulating cognitive, emotional, and behavioral processes of continuing development continues across the lifespan (Robbins, 2021). As state joy can evolve over time to motivate more adaptive behaviors in difficult situations, individuals can use their upsetting and challenging events to condition their joy to evolve into enhanced trait joy for increased adaptive responses to contextual challenges (Robbins, 2021). Hence, evolving state joy assigns more meaning to individuals' responses to events--in turn conditioning their joyful disposition to be readily conveyed to all types of situations whether positive or negative aspects predominate (Robbins, 2021).

Theoretical Proposition of the Bridging Capacity of the Joyful Life Approach

Another theoretical proposition addresses the capacity of the Joyful Life approach to serve as a bridge between positive psychology and perspectives of the good life, which are existential, humanistic, and spiritual views couched within their respective psychologies (Robbins, 2021). In other words, the approach can span multiple psychologies and the associated perspectives for enabling individuals to gain more knowledge about enriching their quality of life and increasing trait joy well-being (Robbins, 2021). For example, early psychodynamic theorists trained by Freud, including his own daughter, learned more about psychodynamic psychology by connecting it to ego psychology, which ironically arose out of psychodynamic psychology and Freud's drive theories. Additional knowledge resulted and was imbued in a widening research base that culminated in additional psychologies, such as humanistic psychology. Ironically, additional knowledge spurred further interest in psychodynamic therapy, which persists today, while new psychologies emerged from rejecting the additional knowledge afforded by bridging psychodynamic and ego psychology. The same dynamic has played out by connecting the perspectives of positive psychology with those of humanistic, existential, and spiritual psychology, such as the shift from over-emphasizing positive events common in positive psychology to neither over-emphasizing positive events nor under-emphasizing negative ones seen in the Joyful Life perspective (Robbins, 2021). The author, therefore, concluded that bridging various literature bases of different psychology fields is essential for capturing truths that may be clouded or ignored by focusing solely on the perspectives of one psychology (Robbins, 2021).

Capacity of the Joyful Life Approach to Integrate Visions of the Good Life

Another proposition addressed the concept that hedonic, prudential, eudaimonic, and chaironic visions of the good life and joyful living can be integrated to disseminate knowledge related to trait joy well-being and happiness (Robbins, 2021). The four visions of the good life will be shortly clarified but, for now, propagating knowledge by bridging these visions or understanding happiness is the paramount focus--due to the benefit of augmenting knowledge from multiple sources for identifying problems and solutions to attain optimal functioning across the lifespan (Robbins, 2021). An underlying assumption of this third proposition addresses the pleasure to pain ratio between the cost of hedonic happiness and the benefit of trait joy well-being. Hedonic well-being or happiness exacts a steep price because it is only fleeting with impoverished meaning that cannot elicit enduring trait joy well-being (Robbins, 2021). Another assumption is that eudaimonic well-being has a low cost since it can induce enduring ways of well-being characterized by self-actualization, meaning, and trait joy (Robbins, 2021).

Theoretical Proposition of Embracing Negative Events

The fourth theoretical proposition may be the most profound and important of all, because Robbins (2021) espoused the Joyful Life advantages afforded by embracing positive and negative aspects of situations instead of the disadvantages associated with over-emphasizing positive aspects while under-emphasizing negative aspects, which is the stance promulgated by positive psychology. Although Joyful Life concepts may appear contradictory with the address of mutually exclusive positive and negative contextual aspects, the approach has the capacity to reveal hedonic, prudential, eudaimonic, and chaironic explanations of why individuals can benefit and thrive from embracing negative events and not avoiding them (Robbins, 2021). As the author poignantly explained the seemingly contradictory assumption of benefiting from not downplaying or suppressing negative events, he clarified that addressing and embracing negative aspects can prevent psychopathology and decreased vitality and enthusiasm for living (Robbins, 2021).

Analysis of Similarities Between the Joyful Life Approach and this Study

Various research studies conducted by Robbins (2021 inspired the concepts that will be applied in this study, especially those rooted in positive psychology which prioritize the value of positive traits for enhancing quality of life and trait joy well-being. This study will also use Robbin’s (2021) Joyful Life approach to address the value in not downplaying negative events and focusing on ways that these events can elicit several advantages. As Robbins (2021) disclosed the capacity of joyful disposition to metamorphose suffering into the meaning of life experiences, potential challenges, and responses to the events, the author concluded that the Joyful Life approach is central to developing resiliency and enabling personal growth. Since Joyful Life postulations elicited concepts of interest in this study--especially the idea of the power of caregivers to convey their joyful disposition to temper future negative events associated with autistic symptoms—the study will emphasize the phenomenological emphasis on deriving meaning of lived experiences and responses to environmental vicissitudes and resulting challenges (Robbins, 2021). In a recent study conducted by Robbins (2021), dispositional traits that can be cultivated to create resiliency despite profound loss, suffering, and distress were identified. The author conducted a group-based analysis of 17 volunteer students and their autobiographical narrative descriptions, which are stories that people remember and relate about the events in their lives (Robbins, 2021). The group analysis used a dialogical phenomenological approach integrated with the Imagery in Movement Method, which used expressive drawing and psychodrama to relate the autobiographic narratives and identify themes within the stories (Robbins, 2021). Robbins' (2021) analyses revealed 10 themes derived from the narrative descriptions which showed different meaning orientations to happiness that included: 1) being grounded in tragic experiences by having humility and commitment; 2) being broken and feeling unworthy of happiness and joy; 3) being centered by joy through empowerment and inspiration offered by others and self; 4) in the state of breaking open wherein intense realizations resulting from having accomplished an aspiration; 5) being uplifted from experiential burdens and feeling subsequent jubilation; 6) being supertemporal by fully living in the here and now and extending this joyful memory into future living; 7) being open to mystery from understanding that a profound moment cannot be retrieved but can be captured through ongoing feelings of awe, veneration, and blessedness; 8) being grateful for having the gift or blessing of joy; 9) in the state of opening up and out by opening up the self and feeling warmth moving up and outward from the body toward the production and meaning of many new ideas; and 10) being together in a community and experiencing oneness with others.

Analyses of the 10 themes that emerged from the autobiographical narrative descriptions aligned with the orientation of meaning to happiness, which is consistent with the emphasis in this study on finding the meaning of joyful disposition as a mediator in the relationship between caregivers and the transdiagnostic constructs. As caregivers consign meaning to hedonic prudential, eudaimonic, or chaironic experiences of joy to autistic symptoms, caregivers may experience impoverished, sufficient, or exceptional trait joy well-being (Robbins, 2021). Moreover, caregivers who engage in a meaningful orientation to happiness can appreciate the value of conveying joyful disposition and its positive components to moderate any unpleasantness and distress associated with negative events (Robbins, 2021). Therefore, personal narrative descriptions identified themes of meaning attached to the remembered events by the student participants, whereas an item on the Acceptance and Action Questionnaire can identify the meaning ascribed to caregivers' painful experiences across their lifespan in this study. Whereas the 17 students related the meaning of 10 themes across the autobiographical narrative descriptions, caregiver participants will be asked to rate a question on the Acceptance and Action Questionnaire that reads: If I could magically remove all the painful experiences I've had in my life, I would do so (Hayes, 2004). Although this item is not asked within the perspective of an autobiographical narrative description, the item does tap into memories of painful experiences, the meaning attached to those events, and the willingness of caregivers to accept their negative events (Hayes, 2004).

Rationale for Choosing the Joyful Life Approach

I chose the Joyful Life approach due to its capacity to explain the meaning attached by individuals to their joyful responses or lack thereof to challenging events (Robbins, 2021). The approach attests that individuals who assign meaning to their state joy initiate evolvement of their joy beyond a fleeting feeling of being happy to a deeper level that has the potential to enrich their trait joy (Robbins, 2021). As cogently explained by Robbins (2021), defining and clarifying the four visions of the Joyful Life approach can proceed from the fleeting qualities of hedonic and prudential visions of the good life to the more profoundly and permanent eudaimonic and chaironic visions—all of which serve to bridge positive psychology with existential, humanistic, and spiritual meanings of the good life. The advantages of this bridging function constitute the reason I chose the Joyful Life approach for the study, since caregivers can employ hedonic, prudential, eudaimonic, or chaironic visions of the good life to manage caregiver burden and appreciate the joy that can result from managing unrelenting or frequent challenges (Brandel, Vescovelli, & Ruini, 2017; Robbins, 2021). Since the Joyful Life approach is rooted in positive psychology and imbued with existential, humanistic, and spiritual meaning, I also chose the approach to access the positive psychology base that emphasizes the benefits of joyful disposition in managing stressful challenges (Robbins, 2021).

As such, caregivers can temporarily experience hedonic well-being by tempering the pain of unrelenting caregiving as much as possible through pleasure and satisfaction garnered from conscientiously helping their children to the best of their ability while ignoring the negative aspects (Berridge & Kringelbach, 2015). Caregivers can also experience prudential well-being, as they struggle with their children's autistic symptoms that do not often enable reinforcing gratification from relating to the children (Marino, Haley, & Roth, 2017). Human relationships are usually characterized by reinforcing interactions--such as children who interact with their caregivers with smiles, exclamations of joy, and other pro-social behaviors, while caregivers respond to the children's behaviors by wanting more pleasant interactions and closeness (Waugh, Brownell, & Pollock, 2015). Unfortunately, many caregivers of autistic children do not experience enough reinforcing interactions with their children and must prudently realize that caring for the children may proceed somewhat matter-of-factly due to their children's impaired social communication (APA, 2013; Jaswal et al., 2020). Although prudential well-being is not as enriched as other forms of well-being, it does serve to help caregivers face several harsh realities about their children's autistic symptoms and living with those symptoms (e.g., increased caregiver fatigue and lack of sleep) (Giallo et al., 2013). Prudential well-being can ease caregiver distress and other unpleasant emotions by enabling self-compassion that deters caregivers from feeling guilty that their stress-induced reactions to their children are less than ideal (Crowell, Keluskar, & Gorecki, 2018; Lodder et al., 2020).

Literature Review Related to Key Variables and Concepts

Plato and the Concept of Joyful Disposition

The concept of joyful disposition and positive psychology can trace its developmental roots back to ancient Greece, where various philosophers described their views of what defined personality characteristics of people and their actions (Merenda, 1987; Plato, Rouse, & Santirocco, 2015). Several centuries before Christ, Plato developed his concepts of the Inner Republic of the Soul, with the individual having entities or personality types that correspond to modern-day concepts of subpersonalities and less well-developed protopersonalities (Jones, Wirth, & Schwartz, 2010, pp. 34-35; Kamtekar, 2018). Due to Plato's unique perspective of the human soul and his incisive philosophy on human motivation and conduct classified him as the premier philosopher of ancient Greece, partly because he appreciated the concept of personality integration by realizing ultimate truths, observance of morality, and the different persons within the soul (Annas, 1999; Gill, 2019; Jones et al., 2010). Even after approximately 2,400 years, Plato's postulations of personality development partly align with some of modern-day subpersonality theorists (Jones et al., 2010; Rowan, 1990; Satyagraha, 2020; Urwick, 1920, 2013). Furthermore, Plato's ideas involving the concepts of multiple persons within the soul with their specific ways of facing the world and responding to it uncannily corresponds to dispositions and personality traits which are addressed by positive psychology (Hall, 1992). Even more compellingly, Plato's perspectives on character integration correspond to current constructs of dispositions or subpersonalities that allow individuals to cope with various psychosocial situations and personality states that arise as functions of contexts (Jones et al., 2010; Rowan, 1990). Hence, Plato laid part of the foundation for modern-day trait and state personality theories and the concepts of joyful disposition, love, and awe, as shown by his famous quote: “Love is the joy of the good, the wonder of the wise, the amazement of the God” (Naar, 2017). Plato’s insight into the character and the soul identified the significance of the different persons (personality dispositions and traits) that inhabit the individual and govern how behaviors are conducted (Cooper, 1997; Naar, 2017). His insight also extended across nearly two and one-half millennia to influence personality theorists and researchers to study the “little persons” of the soul (Annas, 1999; Gill, 2019; Jones et al., 2010). Hence, one of the persons in the soul, a joyful person, embraces love and awe despite contextual challenges and adversity, according to Plato, who appreciated the successful integration of the sub-personalities into the entire personality (Annas, 1999; Gill, 2019).

Allport and the Fundamental Traits or Dispositions of the Personality

Plato’s concept of the “little persons” of the soul was expanded upon by the “Father of Personality Psychology”, Gordon Allport, in his development of the first significant theory of personality referred to as trait theory (Allport, 1937). Allport developed trait theory through his seminal discovery in 1936 of more than 4000 words in the English language describing personality traits, which laid the foundation for factor analysis (Allport, 1937; Nicholson, 1998; Pettigrew, 2015). Allport defined the personality as a constituent of fundamental traits (dispositions), characteristic behaviors, and conscious motives, due to his intensifying interest by the mid-1920s in changing the focus from the Victorian concept of character to the concept of dispositional traits that contribute to the development of the personality (Allport, 1937). Allport realized through his paradigm shift that the rigid and unambiguous concepts of the Victorian morality of character were replaced by scientific explanations of the traits or dispositions which compose the personality (Allport, 1937; Nicholson, 1998). Due to Allport's tireless work over several decades, he evolved the Victorian cultural view of the inner qualities of an individual grounded in morality to the underlying personality traits that explain the characteristic ways of responding to the environment (Nicholson, 1998). Therefore, Allport is credited with promulgating the understanding of the personality through dispositional components of the personality, such as joyful disposition, dispositional positivity, dispositional negativity, or dispositional resilience (Hur, Stockbridge, & Shackman, 1998; Nicholson, 1998).

As the character-to-personality paradigm moved from the conceptualization of a moral character to the scientific address of personality factors during the cultural evolution (Nicholson, 1998), Allport realized that Victorian concepts of moral-based character problems could be treated more effectively through the concepts of scientific-based problem-solving of disturbed personality traits and associated psychopathology (Allport, 1961). This shift enabled social workers, psychologists, and psychiatrists to address the needs of an increasingly diverse and complex society, because treating disturbed personality traits was more concrete than solving intangible morality problems (Matthews, 2017; Nicholson, 1998). Allport (1927) asserted that moral traits do not manifest until the influences of cultural trends on personality are evaluated, because morality varies according to cultural standards. In essence, Allport (1936) operationalized the study of Plato's "little persons" of the soul through a paradigm shift guided by scientific scrutiny of dispositions and how they form the personality.

Through Allport's extensive work over several decades, he developed strategies for treating patients to overcome the ill effects of adverse and maladaptive dispositions (Allport, 1927). In essence, Allport realized that positive dispositions often elicit more realistic contextual perspective-taking and often mitigate negative dispositions through more rational thinking, fewer disturbed emotions, and more adaptive behaviors (Allport, 1927; Allport, 1968, Matthews, 2018). Hence, Allport's accomplishment of instituting a paradigm shift laid the foundation for the discipline of personality psychology and by extension, positive psychology (Cervone & Pervin, 2018, pp. 181-206). As such, the "Father of Personality Psychology" laid an impressive foundation for helping people in innumerable ways to manage their contextual challenges more adaptively for a more joyful life.

Seligman and the Expansion of Joyful Disposition to Positive Psychology

Positive psychology can explain the dynamics between being joyful and having despair--that is, the dynamics involved in using the disposition to mitigate negativity, increase positivity, and protect against adverse effects from chronic exposure to autistic stressors (Shackman et al., 2016). As a naturally emerging paradigm from a humanistic personality perspective, positive psychology was developed in 1998 by Martin Seligman as an area of psychology focused more on wellness principles than on psychopathology for eliciting more possibilities to treat mental and behavioral problems to attain human well-being and flourishing (Croom, 2012; Seligman & Csikszentmihalyi, 2000). Seligman's new psychology coordinated well with various personality theories that significantly attributed dispositions or character strengths to genetic and neurobiological processes (Briley & Tucker-Drob, 2015; Deyoung & Gray, 2009; Gibbon, 2020). Believing strongly in the neurobiological determination of positive character strengths, Seligman developed the following formula for happiness: $H = S + C + V$ which translates as "Happiness equals your genetic set point plus the circumstances of your life plus factors under voluntary control" (Gibbon, 2020). Interestingly, this equation can be aptly applied to, "Happiness = genetic set point of a joyful disposition + caregiver circumstances + voluntary self-control of caregiver decisions."

In his groundbreaking work, Seligman poignantly described the coupling of neurobiologically or genetically derived character strengths with contextual factors that are voluntarily mediated by the individual (Gibbon, 2020; Seligman et al., 2004). Realizing the importance of genetics in positive dispositions, Seligman asserted that human flourishing significantly depended on incorporating inborn positive strengths with positively perceived situational factors (Gibbon, 2020; Seligman et al., 2004). He ultimately realized that positive human growth depended on disseminating positive dispositions to environmental conditions and doing so wholeheartedly and voluntarily for achieving a more successful way of existing (Peterson & Seligman, 2004, p. 269). As a result, Seligman revealed that positive psychology enables individuals struggling with serious stressors to enrich and increase their flourishing more effectively through a focus on positivity instead of merely mitigating their negative challenges (Briley & Tucker-Drob, 2015; Gibbon, 2020). In short, positive psychology seminally established the connection between psychological processes and dispositional affect, which is the stable and predictable tendency to respond negatively or positively to stressors (e.g., a joyful disposition) (DeYoung & Gray, 2009). Identifying this connection laid the groundwork for research on caregiver burden conducted within the context of the expansion of possibilities for wellness instead of the diminishing options often associated with psychopathology (Dykshoorn & Cormier, 2019; Shah, Gianeetti, & Pfalzgrafa, 2013).

Caregiving Burden Associated With Autistic Symptoms

Numerous authors have noted that clinicians and researchers largely neglected the study of caregiver burden associated with children who had ASD during the late 1980s and throughout the 1990s for various reasons (Howlin & Asgharian, 1999). Before 1980, researchers did not differentiate autism from childhood schizophrenia and did not receive a diagnostic checklist until 1987, which did not benefit caregivers before 1987 as they agonized over what was causing their children’s issues and wondered how to help them (Howlin & Asgharian, 1999). During the 1960s and 1970s, the prevalence rate of autism was 0.5 per one thousand children, so the rarity of the disorder substantially precluded sufficient research (Gurney et al., 2003). After 1980 the rate increased to one per 1000 children, with more media interest and research attention directed to the children, caregivers, and other family members to a noticeable degree (Gurney et al., 2003). During the early1990s, the prevalence of ASD increased to three children per 1000, which motivated more interest in the rising prevalence rate and spurred increased funding for research by the Centers for Disease Control and Prevention and the National Institutes of Health, according to Gurney and colleagues (2003).

Contingent with a steadily rising prevalence rate of children with autism throughout the late 1990s and early 2000s, many caregivers waited years for a diagnosis, which exacerbated their caregiver burden since they did could not access enough professional knowledge to sufficiently generate short- and long-term plans for helping their children (Casey et al., 2012; Howlin & Moore, 1997; Myers et al., 2015; Navot et al., 2016). Since autism was an esoteric disorder, shrouded in mystery, and largely known by only pediatric clinicians and psychology researchers until the late 1980s to the early 1990s, research on caregiver burden was slow to start and did not make inroads until the early 2000s; after scientifically guided positive psychology principles induced scrutiny of caregiver stressors that did not ascribe to the medical model (McKee et al., 2019).

As research disclosed from numerous research studies since 1980, three of the most significant reasons for caregiver burden were conveyed by the 1) relative obscurity of autism before 1990 with many caregivers struggling to understand the symptoms and implications of the disorder (Howlin & Moore, 1997; 2) substantial lack of understanding by clinicians of the effects on caregivers from receiving their children's diagnoses of ASD (Howlin & Asgharian, 1999); and 3) and the challenges associated with the steep learning curve of caregivers as they cared for their children (Howlin & Asgharian, 1999; Kraus-Mars & Lachman, 1994; Quine & Pahl, 1987). As more research on ASD advanced through the late 1990s and early 2000s, caregiver burden became more recognized as a significant problem at the family, community, state, national, and global levels, which warned many professionals of the need for positive social change to competently help caregivers and their children (Cadman et al., 2012; Leff & Walizer, 1992). Clinicians increasingly realized that caregivers experienced ambiguous feelings at the time of their children's diagnoses of ASD, when caregivers reported having more stress from additional demands exerted on them from doctor, school, and other appointments elicited by the new diagnoses (Stuart & McGrew, 2009). Alternatively, caregivers reported having more hope and reassurance from autism professionals after their children's diagnoses, as the caregivers gained access to resources and collaborative support, as explained by Leff and Walizer, 1992.

Professionals also increasingly realized that caregivers dealing with autistic symptoms in their children had a greater need for information and support than caregivers who dealt with their children's symptoms from other developmental, cognitive, or neurological disorders. (Cadman et al., 2012). Because caring for children with ASD tended to be more time-consuming and stressful than other caregiver duties related to non-ASD children (Cadman et al., 2012; Marsack-Topolewski, 2021), caregiver burden quickly captured research interest, especially with the rapidly rising prevalence of caregivers of children with ASD from 2000 to 2018 in the United States (Centers for Disease Control and Prevention (2020a). As caregivers struggled to face the reality of autism diagnoses throughout the late 20th century, psychologists began to refer to unpleasant, obsessive thoughts as unwanted intrusive thoughts by the late 1980s (Edwards & Dickerson, 1987) and avoidance behaviors as experiential avoidance by the mid-1990s; as they delved into stress coping in caregiver burden and other challenges

(Hayes, Strosahl, & Wilson, 1999). Concurrently, research of mental health disorders associated with the transdiagnostic constructs intensified by the mid-to-late 1990s, in tandem with increasing research on the preponderance of PTSD, CPTSD, MDD, and OCD in caregivers of children with ASD throughout the decade (Dumas, Wolf, Fisman, & Culligan, 1991; Herman, 1992).

By the early 2000s, caregiver burden became better known, especially in relation to autism, and the literature base has markedly amplified to the present--with researchers and clinicians recognizing current caregiver research as a valuable tool for increasing understanding of the nature of ASD and caregiver burden (Fletcher-Watson et al., 2019). When psychologists realized the import of excessive experiential avoidance in various mental health disorders (e.g., PTSD and OCD), they were able to understand the dynamics of avoidance coping that leads to adverse thoughts, psychological distress in caregivers of children with ASD, and the adverse effects of autistic stressors on the caregiving endeavors (Coyne & Wilson, 2004). As more researchers learned about experiential avoidance and unwanted intrusive thoughts in caregiver burden during the early 2000s, research progressively gravitated from the medical model toward positive psychology; when the power of a joyful disposition in managing and mitigating transdiagnostic issues became more apparent (Fletcher-Watson et al., 2019). With the emerging evidence of the benefits afforded by dispositional positivity, stress resilience, and joy in caregiver burden, caregivers were better informed and armed to adaptively face diagnostic stressors, use positive narrative to increase self-understanding for managing day-to-day challenges, and instill more positive changes in their families' situations (Fletcher-Watson et al., 2019; Mason et al., 2019).

Since the time that the earliest pioneers in autism exploration and research, such as psychiatrists Bleuler and Minkowski in the early 1900s, posited that autism was one of the four schizophrenias, caregivers were highly regarded for their challenges in managing affective disturbances and withdrawal in their autistic children (Hoch, 1910; Kuhn, 2022). Although caregivers and autism pioneers did not understand the nature of autism at that time, all involved individuals noted a lack of functional attunement between the children and the environment (Bleuler, 1911/2014; Bleuler, 1939; Bleuler, 1950; Feinstein, 2010; McNally, 2009; Minkowski, 1933; Scahill, Turin, & Evans, 2014). Bleuler (1911/2014) commented: "autistic withdrawal of the schizophrenic patient to his fantasies, against which any influence from outside becomes an intolerable disturbance". These pioneers particularly noted affective anomalies accompanied by self-abusive actions, when the individuals' intense focus on circumscribed interests and repetitive actions was interrupted (Scahill et al., 2014). Although Bleuler's emphasis centered on the psychology of autism in people with schizophrenia as they tried to avoid reality (Blueler, 1911/2014; Bleuler, 1939; Bleuler, 1950; McNally, 2009), Minkowski focused more on the deficits observed in people with schizophrenia who showed autistic behaviors (Minkowski, 2010). Both psychiatrists ultimately noted, however, the presence of serious difficulties between the adaptation of schizophrenic patients with autistic traits to their environments, especially within their families (Bleuler, 1911/2014; Bleuler, 1939; Crespi, 2010; McNally, 2009; Minkowski, 1933; Parna, Bovet, & Zahavi, 2002). Bleuler and Minkowski observed in various circumstances adverse interplay between the children and their world and hypothesized that these patients often experienced worsening affective disturbance, whenever their worlds impinged on their autistic routines (Bleuler, 1939; Feinstein, 2010; McNally, 2009; Minkowski, 1933; Scahill et al., 2014). Therefore, Bleuler and Minkowski's work on autism in schizophrenia regarding the awareness of patients, who did not respond to reality, resisted changes in their routines, or experienced affective irregularities, primed the discoveries of later psychiatrists and psychologists and enabled those observers to conceptualize autism as a distinct disorder from schizophrenia (Ashwal & Rust, 2003; Feinstein, 2011; Bleuler, Cutting, & Shepherd, 1987). Distinguishing autism from schizophrenia was a significant step forward for understanding autism during the mid-20th century as autism researchers applied biomedical principles to psychological/behavioral observations (Deacon, 2013; Scahill et al., 2014; Volkmar & McPartland, 2014). During this early time, numerous doctors noted repeatedly that caring for these children was usually difficult and disheartening for parents, because the children did not respond to direction or showed refractory resistance to guidance (Bleuler, 1911/2014; Bleuler, 1939). Hence, interest in caregiver burden relevant to autistic children emerged as one of the more serious concerns professionals had for their patients and their parents (Bleuler, 1911/2014; Bleuler, 1939).

During the 1940s, Asperger and Kanner also noted the affective disturbances and intolerances of children who appeared to live in their own world to various degrees and often resisted being distracted from that world (Asperger, 1943; Frith, 1991; Kanner, 1943). Both authors borrowed the term "autism" from Bleuler to refer to the disorder and began to move their inquiry from schizophrenic connotations to psychological and behavioral ones that consisted of restricted interests, motor stereotypies, and self-injurious actions (Asperger, 1943; Kanner, 1943; Kanner, 1954; Ritvo, 2006; Waltz, 2013). The evolution of conceptualizing and understanding autism and its various forms significantly advanced when Asperger and Kanner began to emphasize that neither innate dysfunction nor schizophrenic psychopathology could entirely account for the affective and behavioral symptoms commonly observed in autism and Asperger syndrome (Adler, Minshawi, & Erickson, 2014; Frith, 1991; Goldstein, Minshew, Allen, & Seaton, 2002). An interesting example of this pathoetiological shift in the evolvement of understanding autism was offered by Kanner when he noticed that cold and emotionally distant mothers, or “refrigerator moms” (Kanner, 1943) of his patients may have been partially responsible for evoking the manifestation of autism in their susceptible children (Kanner, 1943; Waltz, 2013). Kanner (1943) noted that the mothers often emanated a lack of happiness, joy, hope, or optimism, but he could not ascertain the causal nature of the association between mothers and their children, unless there were character deficits or caregiving fatigue shown by the mothers. That is, Kanner questioned if the mothers interacted with their children because of their proclivity to be emotionally cold and uninvolved, or whether the children’s stressful autistic challenges caused the mothers to become fatigued, emotionally unavailable, and unresponsive to their children (Kanner, 1943). Kanner’s refrigerator terminology was later disseminated by Bettleheim (1967), which ushered in several decades of mother-blaming that not only derailed research along important tracks but delayed adequate inquiry into the etiology of autism and caregiver research for years (Kanner, 1949; Haney, 2013; Waltz, 2013). Unfortunately, caregiver burden increased significantly during this time due to mothers feeling unfairly judged and implicated in causing their children’s autism (Blakemore, 2018; Sousa, 2011).

By 1949, Kanner firmly rejected the “refrigerator mom theory” and focused mostly on brain mechanisms which he credited with eliciting the social, cognitive, emotional, and behavioral symptoms seen in autism. Particularly noteworthy in the slowly changing paradigm of autism from Bleuler’s research in the early 1900s (Bleuler, 2011) to the 1960s, Kanner addressed the Autism Society of America and explicitly stated:

> From the very first publication until the last, I spoke of this condition in no uncertain terms as “innate.” But because I described some of the characteristics of the caregivers as persons, I was misquoted often as having said that “it is all the caregivers’ fault” (Feinstein, 2007).

Although Kanner’s observations of his patients’ mothers may have been misconstrued by other psychiatrists, psychologists, and researchers, the “father of autism” firmly upheld the medical model as the most accurate and comprehensive explanation of autistic symptoms (Kanner, 1943). It was fortuitous that Kanner maintained his views on the inherency of autism, as these served as the foundation for later research into the neurobiological and neurodevelopmental contributors of autism. Interestingly, Kanner also observed that the “refrigerator mothers” may have been affected by the rigorous care their children required; hence, he had another perspective of the cold demeanor of the mothers.

Although the “dark days of autism” ended in the late 1950s with research originated by Bernard Rimland, the “father of modern autism research,” Kanner’s emphasis of innate processes that cause autism served to motivate hierarchical research of what underlies innate processes and subsequent neurodevelopmental inquiry (Baron-Cohen, 2015; Feinstein, 2010; Ozonoff et al., 2003). Without inquiry into the innate and neurodevelopmental underpinnings of autism, research appeared to have been hampered for decades, as environmental etiologies would have been focused on to the exclusion of neurobiological contributions (Bauman & Kemper, 2006; Fuld, 2018; Schultz et al., 2006). Unfortunately, 20 years of progressive research was lost during the middle part of the 20th century, while many psychiatrists and researchers focused on defective parenting causing autism in their children, which caused some researchers interested in biological causes of autism to become marginalized from the research mainstream, such as developmental researchers interested in the role of noxious substances on fetal development and development of fetal stress (Arndt et al., 2005; Baker, 2013; Bettelheim, 1967; Li, Gonzalez, & Zhang, 2012; Matson & Sturmey, 2011; Rimland, 1966; Waltz, 2015). Consequently, the advancement of autism research and revealing the role of neurobiological processes in autistic functioning were delayed and misguided far too long (Arndt et al., 2005; Cohmer, 2014; Shirley, 2005). Paradoxically, research of caregiver burden was less stymied, because the refrigerator mom’s theory was slow to be dismissed by numerous researchers and doctors well into the 1970s, as some autism experts attributed some of the mothers’ aloofness to deep-seated fatigue and discouragement (Katz, 1979). As a sensitive and caring physician and researcher, Kanner rigorously and passionately refuted that mothers cause autism and insisted on the etiology of autism as being primarily innate and neurobiologically caused (Klin & Volkmar, 1995; Steinman & Mankuta, 2019; Synapse, 2021).

Although autism research during the 20th century was wrought with problems and hindrances from over-reliance on the medical model and too many faulty assumptions about the strict dichotomy of the mind and the body, Kanner's description, reconceptualization, and coining of autistic schizophrenia as "infantile autism" in 1943 enabled awareness, inquiry, and research into an obscure disorder that had been observed to have periods of worsening symptoms with self-injury that responded well to caregiver positivity (Baren-Cohen, 2015; Bodfish et al., 2000; Mesibov, Adams, & Schopler, 2000). Additionally, increasing knowledge about autism revealed the inadequacies of the medical model in explaining even some of the external manifestations of the disorder, not to mention internal ones (Silva et al., 2013). By the late 1960s, many researchers conceded that a more comprehensive model and newer experimental research methods were needed for the autism literature base to increase (Anthony, 1958; Creak, 1964; Lotter, 1966; Rutter, 1968; Rotter, Lockyer, & Greenfeld, 1967; Minshew & Dombrowski, 1994; Wing, 1966). Even though Geschwind (2009) claimed that autism was considered from the 1950s to the 1970s to comprise a form of pediatric psychosis consistent with childhood schizophrenia and was credited with being caused by organic issues and impaired parenting style, various researchers began to recognize the value of the biopsychosocial model neurodevelopmental research, neuroimaging, and genetic observations in the integration of biological, psychological, personality, and social factors that contributed to the expression of autistic symptoms (Carter, 1967; Folstein & Rutter, 1977; Rimland, 1964; Steck & Steck, 2016; Thurm, 2012; Vorstman et al., 2017). By the end of the 1970s, the medical model was considered too reductionistic and dualistic to satisfactorily disclose the etiology of autism and explanations for the mind-body symptoms of autism (Perez, 2015). Therefore, biopsychosocial factors captured increasing interest of clinicians and researchers in the late 1970s and through the 1980s as research of behavioral analysis began to dominate the interest in autism inquiry and treatments (Gitterman, 2014; Perez, 2015; Smith & Eikeseth, 2011). The domination of behavioral analysis scrutiny then laid the foundation for extensive ASD research of the interface between autistic symptoms, environmental, and family systems stressors during the last two decades of the 20th century (Boyd et al., 2013). In addition, autism research began to focus on caregiver attributes that benefit their children and themselves by the end of the 1990s and has accelerated to the present (Weiss et al., 2012).

Rimland and Advocacy for Parents’ Challenges With Autistic Symptoms

In 1964, research psychologist Bernard Rimland, who has been referred to as the “father of modern autism research”, became interested in the disorder and began conducting research into the causes of autism and its different types (Edelson, 2015; Ong-Dean, 2009; Rimland, 1964; Rimland, 1981). From observations of his own son who had ASD, Rimland (1964) ascertained that “refrigerator moms” neither caused the disorder nor did any related psychogenic factors. As a result, Rimland fiercely advocated for parents and the caregiving challenges that consumed their lives, as he illuminated the effects of autistic symptoms on caregivers, their families, and other levels of society.

Consequently, Rimland extensively advocated for caregivers and their children at community, state, and national levels by founding the Autism Society of America and the Autism Research Institute (Carey, 2006; Rimland, 1981). In addition to many other accomplishments, Rimland achieved significant positive social change that persists to the current time by highlighting the profound effects of autistic symptoms on families and proposing strategies and treatments to provide help and relief to caregivers and family members (Carey, 2006; Cook & Willmerdinger, 2015).

Core Symptoms of Autism and the Effects on Caregivers

Extensive research of the core symptoms of ASD spans the past 80 years, with the formation of a robust literature base that supports interdisciplinary research in multiple fields--including stress, personality, family systems, and the hard sciences, such as neuroscience, molecular genetics, and imaging studies (Vorstman et al., 2017). The core symptoms include impairments in social communication, as well as restricted and repetitive interests, behaviors, or activities (APA, 2013; Bishop et al., 2019).

Deficits and Excesses in Social Communication. These symptoms are credited with causing the most caregiver burden and stress, because communication between caregivers and children is significantly hampered in many cases, with caregivers being unable to adequately comfort, instruct, assist, and nurture their children in numerous facets of life (APA, 2013; Kim et al., 2018). Social-communication impairment reflect difficulties with reciprocal social communication which include social attention, spatial attention relevant to other people, visual social attention, social orienting, joint attention, and social-emotional reciprocity (APA, 2013; Frye, 2018; Gernsbacher, Stevenson, Khandakar, & Goldsmith, 2008; Hedger & Chakrabarti, 2021). Social-communication impairments present as excesses and deficits in relating to other people with understanding, empathy, and reciprocity, as well as constitute one of the core symptoms resulting from atypical neurodevelopment (APA, 2013; Jones et al., 2014; Matson, Matson, & Rivet, 2007; Solomon et al., 2011). Excesses in social communication usually present as being too friendly and demonstrative, which paradoxically can result in children having difficulties in effectively communicate with others. Excesses commonly present in children who are mildly affected by ASD have been included under the Asperger Syndrome label in earlier versions of the Diagnostic and Statistical Manual of Mental Health Disorders (APA, 2013). Conversely, deficits consist of being unable to communicate in ways that advance social relatedness, enable social reciprocity, and extend the meaning of social cues—all three of which are essential for children with ASD to understand others and themselves in relation to others (APA, 2013).

Excesses in Social Communication. These impairments involve being overfriendly with associated vulnerability to victimization, intrusive, demanding, overbearing, excessively verbose, and not easily directed to more adaptive behaviors (Adams, Green, Gilchrist, & Cox, 2002; Fisher, Moskowitz, & Hodapp, 2013; Laugeson & Ellingsen, 2014), easily approaching others for social interaction but unaware of others' boundaries, and showing tendencies to converse in one-sided conversations without allowing others to participate in the conversation (Laugeson & Ellingsen, 2014; Paul, Orlovski, Marcinko, & Volkmar, 2009). Adams and colleagues (2002) and Loukusa and Moilanen (2009) noted in their research that children with Asperger Syndrome (AS) showed more problems when talking with others in general conversations than having conversations with more emotional and social overtones, with some of the children displaying blunted affect, monotone-type speech inflections, extreme verbosity, difficulty with understanding non-literal sentences, and significant reluctance to participate in conversational reciprocity. Stothers and Cardy (2012) further commented that children with AS have better linguistic ability and more structural language ability than children who have more severe ASD, but those with AS can become just as frustrated as non-verbal children, due to fair-to-poor integration of executive processing abilities and well-documented pragmatic speech impairments. In many cases, children with AS have more cognitive ability than those with more severe ASD, which leads to frustration when trying to express themselves while having various difficulties, because they tend to have enough self-awareness to feel impatient and impotent that getting their point across is stymied and difficult (Loukusa & Moilanen, 2009; Mirkovic & Gérardin, 2018). Unfortunately, children with autism often experience frustration caused by impairments in conversing with others and then deflect it onto caregivers in the form of behavioral problems, resistance to re-direction, and obstinance (Helland, et al., 2014).

Stressors that adversely affect caregivers of children with ASD often involve the children's excesses in social communication which commonly include conversation fatigue in caregivers from having lengthy one-sided conversations with their children—with this usually consisting of the children not allowing the caregivers to participate in the conversation (Grollier, et al., 2016). Often, caregivers try to intervene, which the children may tolerate or become antagonistic from their caregivers' interruptions. This antagonism can lead to the children having meltdowns and rising autonomic arousal associated with increasing anxiety and stress, as extensively observed by clinicians and behavioral analysts (Adler et al., 2015; Barnhardt et al., 2020; Sevin, Rieske, & Matson, 2015; Stevanovic et al., 2019). At this point, caregivers experience stress from conversation fatigue and reluctance to try to continue the conversation, which can lead to increasing agitation, anger, self-injurious behaviors, and meltdowns in their children (Adler et al., 2015; Barnhardt et al., 2020; Stevanovic et al., 2019). Caregivers who have dealt with their children's self-injury and subsequent morbidity have learned to dread these conversations, autistic outbursts, and the effects of morbidity on the children's bodies (Barnhardt et al., 2020). As these experiences repeat over and over, chronic post-traumatic stress disorder or chronic major depressive disorder can develop in caregivers from the overriding effects of trauma-induced decreases in dispositional resilience and prioritization of positivity (Catalino, Algoe, & Fredrickson, 2011; Dykens, 2015; Ford, Grasso, Elhai, & Courtois, 2015; Walker et al., 2017).

Children may also struggle with excesses in social communication that show the children do not understand the concepts of being quiet, attentive, and supportive while others speak (Laugeson, 2014; Laugeson & Ellingsen, 2014; Llaneza et al., 2010; van Ommeren, Begeer, Scheeren, & Koot, 2012). Therefore, these children tend to not only participate in one-sided conversations, they can also become aggressive to caregivers, which directly results from the children not realizing that other individuals have contributions to offer to the conversation (Laugeson, 2014; Laugeson & Ellingsen, 2014; Laugeson & Frankel, 2010; Llaneza et al., 2010; Mandelberg et al., 2014; Nadig et al., 2010; Shiri et al., 2019). Caregivers of neurotypically developing children usually become distressed and apprehensive, if their children threaten others with harm; while caregivers of children with ASD tend to feel more distress, because they believe their children's aggressiveness is difficult to prevent or stop, particularly when the caregivers have difficulty communicating with their children about being aggressive and hostile (Osborne & Reed, 2010). Unfortunately, caregivers often feel hopeless, incompetent in parenting their children, and helpless to address their children's aggressiveness, wherein researchers have documented these maladaptive beliefs in numerous studies to comprise various psychological disorders, experiential avoidance, and unwanted intrusive thoughts (Osborne & Reed, 2010). A noteworthy study conducted by Osborne and Reed over a period of 9 to 10 months with 138 caregivers of children with ASD clearly showed that the relationship between parenting stress and caregivers' perceptions of their parenting behaviors is of paramount importance in determining caregiver stress levels. Osborne and Reed (2010) determined that elevated levels of parenting stress often result in poorer communication with the children--which is often the case with many children who are nonverbal, cognitively challenged, and more severely affected by ASD.

Another difficulty related to social-communication excesses involves overly talkative children who do not have the verbal ability to express themselves as much as they would like and become excessively frustrated and angry. Unfortunately, these children frequently lash out at caregivers in physical ways or attack themselves—all of which increases caregiver burden and stress (Bauminger, Schulman, & Agam, 2003; Berstein et al., 2011; Ozonoff, Dawson, & McPartland, 2002; White, Schry, & Kreiser, 2014). Since, these children can become inordinately distressed, frustrated, and moody, they can severely impact their caregivers' peace of mind through hyperactivity, antagonism, uncooperativeness, or single-minded insistence of their caregiver undivided attention (APA, 2013; Shiri et al., 2019). More severely affected children are more vulnerable to experiencing overwhelming frustration when trying to communicate their interests or needs and are unable to do so, with caregivers usually taking the brunt force of their children's frustration and agitation (Grollier, Leblanc, & Michel, 2016; Hollocks et al., 2014). Unfortunately, caregivers who struggle with stress-related psychopathology, such as experiential avoidance and unwanted intrusive thoughts, may not have enough mental resources or dispositional resilience to manage their children's frustrations from social-communication excesses (Levine & Warman, 2016; Toth, 2019). Since children with ASD have been credited by numerous studies with having higher self- and other-aggression rates than children with other developmental disabilities and neurotypically developing children, research has also revealed many caregivers having a lower quality-of-life from contending with aggressive children (Catalano et al., 2018; Fitzpatrick et al., 2016).

Social-Communication Deficits. Although excesses in social communication exert significant stress on caregivers, deficits tend to cause even more serious challenges, due to children with lower cognitive functioning and more severe autistic symptoms showing many deficits in relating and communicating with others (APA, 2013). Deficits in social communication present as difficulties in understanding others' motives and being socially awkward (APA, 2013; Foggo & Webster, 2017). Many children with ASD are deficient in social communication skills to the point of being completely nonverbal, extremely withdrawn, and significantly low functioning (APA, 2013; Baron, 2006; Campbell et al., 2017; Volkmar et al., 2014). Children with these severe deficits frequently have extreme stressors that their caregivers and other family members experience firsthand, because the children require a significant amount of care, vigilance to keep them and others safe, and a great deal of their caregivers' time and energy (Carroll et al., 2014; Minshawi et al., 2014; Soke et al., 2018).

Social communication and interaction are components of social relatedness, which is an umbrella construct that addresses how people connect with one another in meaningful ways to elicit mutual understanding (Trajkovski, 2020; Volkmar, Paul, & Rogers, 2014). Social relatedness consists of verbal and nonverbal expressions which enable children to communicate and interact with caregivers, family members, other people, and the community by realizing that the self is distinct and separate from others, as garnered through reciprocal communication and interacting with others (APA, 2013; Cridland et al., 2014; Kaale, Fagerland, Martinsen, & Smith, 2014; Trajkovski, 2020; Walters, Barrett, & Feinstein, 1990). Social communicative and interactive processes enable children to attain neurodevelopmental milestones in social relatedness through the utilization of the following actions (Bernardini et al., 2014; Hanley et al., 2014; Trajkovski, 2020): making requests or refusals; asking for help; expressing preferences, attitudes, and personality; understanding others' attitudes, preferences, and personalities; making decisions (Coyne et al., 2014); and learning how to conduct themselves in society--all of which comprise only a fraction of cognitive, emotional, and behavioral milestones (APA, 2013; Bottema-Beutel, Yoder, Hochman, & Watson, 2014; Kasari et al., 2010; Psaltis & Zapiti, 2014).

When these milestones are not met in an appropriate length of time or not at all due to deficient or excessive neurodevelopment in the social brain and other CNS areas (e.g., overconnectivity or overgrowth of cortical neurons) (Thomason et al., 2013), pervasive effects almost entirely influence the children's functioning across childhood and adolescence, even into adulthood (APA, 2013; Courchesne & Pierce, 2005; Fink, 2016; Gliga et al., 2014; Johnson et al., 2005; Matson & Wilkins, 2007; Woodman, Smith, Greenberg, & Mailick, 2014). The associated symptoms of impaired social communication and interaction constitute the central feature of autistic symptomatology and include deficits in approaching other people for help or companionship, initiating interactions and conversations with others, utilizing verbal and nonverbal cues for social interaction, or making friends with other children (APA, 2013; Bishop et al., 2019; Maximo, Cadena, & Kana, 2014; Sato et al., 2019; Trajkovski, 2020). Children who have these types of deficits often experience stressors that arise from having an impoverished support network invoked by isolating tendencies, reduced ability to seek help from others, a dearth of peer friendships, and unenriched social interactions (Laugeson et al., 2014; McDonnell, 2002; Romanczyk, Callahan, Turner, & Cavalari, 2014; Trajkovski, 2020). As stressors increase and remain unmoderated in the children, they are ill-equipped to solve problems, manage the emotions that environmental stimuli induce, and react adaptively through effective behaviors to environmental vicissitudes (Corbett et al., 2009; Figueroa, Youmans, & Shaw, 2014; Fuld, 2018; Grabrucker, 2012; Ionescu, 2012;

Lopata et al., 2008; Mojeni et al., 2015; Simon & Corbett, 2013; Stone & Iguchi, 2013; White et al., 2014). Accordingly, caregivers try to compensate for their children's neurodevelopmental delays through myriad strategies, but caregiver burden rapidly amplifies as caregivers observe many seemingly insurmountable challenges for their children that can begin as early as 12 months of age (Germain et al., 2017). As caregivers have reported in numerous studies, the realization that their children will probably struggle the rest of their lives in making social contact with others was the most distressful realization of all (Carapito et al., 2018; Eapen & Guan, 2016; Jaswal et al., 2020; Picardi et al., 2018).

Social Attention With Spatial Attention Deficits. These deficits are associated with significant stress in caregivers, since their children do not appear to notice or interact with others in adaptive ways caused by deficits in sustained attentive abilities (APA, 2013; Hedger & Chakrabarti, 2021; Trajovsky, 2020). Social attention is the cognitive allocation of mental resources (e.g., spatial attention) to certain social stimuli, with selective disregard of other stimuli (Dawson, Bernier, & Ring, 2012; Bukatko & Daehler, 2011; Laidlaw, Foulsham, Kuhn, and Kingstone, 2011; Santos et al., 2012; Trajkovski, 2020). That is, neurotypical individuals practice social attention by focusing on socially derived stimuli, while they utilize spatial attention to locate the position of others in relation to themselves (Birmingham & Kingstone, 2009; Krauzlas, Lovejoy, & Zenon, 2013; New et al., 2010; Pomianowska, Gerneys, Verfaillie, & Newell, 2012; Trajkovski, 2020). Children who employ spatial attention to socially attend to others is vital, because interactions cannot proceed if both parties are not aware of one another or or where they are spatially related to one another (Birmingham & Kingstone, 2009; Dawson, Bernier, & Ring, 2012; Trajkovski, 2020). Furthermore, Birmingham and Kingstone (2009) determined that typically developing individuals engage in social attention when they selectively concentrate on certain aspects of socially derived stimuli, such as social cues (e.g., facial expressions or nonverbal gestures). Children who do not develop neurotypically struggle to attend to naturally occurring social stimuli that is relevant while intensely and solely paying attention to stimuli that is not related to the relevant interests and tasks (APA, 2013; Hedger & Chakrabarti, 2021; New et al., 2010). Children with ASD often have difficulties in locating their position relative to others, as they struggle to control the size of the visual field by attending to relevant stimuli, attempting to socially manage their environment, and selectively limiting the enormous number of social stimuli bombarding them from various directions (APA, 2013; Grubb et al., 2013; Robertson et al., 2013). Moreover, most children with ASD contend with deficits in directing their social attention to facial features (e.g., the eyes), while they evince difficulties in identifying and discriminating among different faces, showing decreased duration of maintaining eye contact with social targets, and relating to faces as if these were inanimate objects instead of parts of live beings (Arkush, Smith-Collins, Fiorentini, & Skuse, 2013; Hedger & Chakrabarti, 2021; Kliemann et al., 2012; New et al., 2010; Weigelt, Koldewyn, & Kanwisher, 2013).

Multifarious studies by independent researchers revealed that deficits in spatial and social attention contribute to the core symptoms of impairment in social communication and interaction in ASD to such an extent that serious co-morbid issues, secondary symptoms, self-injurious behavior, and morbidity events frequently result from impaired spatial and social awareness of dangerous objects, threatening people, little or no understanding of social cues that indicate threats from other people, and increasing self-injury related to worsening anxiety from impaired social attention and social skills (i.e., social threat) (Bryson, Wainwright-Sharp, & Smith, 1990; Fein, 2011; Matson, Matson, & Rivet, 2007; New et al., 2010; Teder-Sälejärvi, Pierce, Courchesne, & Hillyard, 2005; Townsend, Courchesne, & Egaas, 2009). Some of the self-injuries in these circumstances may not be intentionally delivered, but children still render themselves susceptible to dangers from deficits in spatial and social attention (Cavalari & Romanczyk, 2012b; Dickson, Bergstrom, Smith, & Tarbox, 2014; Gomot & Wicker, 2012; Jain et al., 2014; Mahatmya, Zobel, & Valdovinos, McNellis & Harris, 2014). Thus, children with ASD, who focus excessively on one aspect of the social environment while disregarding other aspects, may put themselves at significant risk from inattention of spatial and social risks (Bryson, 2010; Townsend et al., 1999).

Since children with ASD struggle to integrate spatial and social attention through cognitive, emotional, behavioral, and physiological means, because different types of attention are highly selective and prioritized processes that require a in numerous studies that their children became vulnerable to being bullied, coping with stress, and learning about different things (e.g., dangers), when they failed to participate in social attention and failed to maintain their attention spans long enough to heed their caregivers' directions and suggestions (Frye, 2018; Lee, Harrington, Louie, & Newschatter, 2008). Unfortunately, caregivers who cannot warn their children about dangers due to social attention deficits are frequently stressed from worrying about their children eloping to unsafe places, falling from high places, falling prey to bullying and abuse, drowning in bodies of water, or being run over by traffic (Guan & Li, 2017; Lee et al., 2008; Solomon & Lawlor, 2013). This type of stress is difficult for caregivers to manage, because apprehension associated with their children getting hurt or possibly dying causes many caregivers to feel profound hopelessness and disempowerment (Anderson et al., 2012; Solomon & Lawlor, 2013)

To emphasize the stressors that often plague caregivers regarding elopement, Anderson and colleagues (2012) conducted a survey of 1,218 caregivers of children with ASD and discovered that 49% of the sample had attempted to elope since the age of 4 years, with 26% missing long enough to cause significant caregiver concern. Since this study was not subject to recruitment biases considering an adequate sample size, methodological weaknesses were counteracted to a certain degree, which translated to any potential weaknesses of the survey and analysis of the data probably led to underestimation of the true prevalence rates of representative population (Anderson et al., 2012). Of those children who eloped, 24% were at risk for drowning, and 65% were in danger of traffic injury, with these elopement risks associated with autism severity (Anderson et al., 2012; Solomon & Lawlor, 2013).

Another study conducted by Pereira-Smith and colleagues (2019) involved 394 caregivers of children with ASD between the ages of 2 and 17 years, who were recruited from the Developmental-Behavioral Pediatrics Clinic in a medical center. Of the 394 caregivers, 267 reported their children had eloped at one time or another, which showed a prevalence rate of 68% for elopement in this sample (2019). Interestingly, this study highly correlated with the study done by Anderson and colleagues (2019) regarding the observation that children with more severe ASD showed a higher proclivity for elopement (Andersen et al., 2019; Anderson et al., 2012; Pereira-Smith et al., 2019). Another corellate of the study involved a similar prevalence rate because Anderson and colleagues (2012) asserted that their rate was probably underestimated due to methodological issues. Two factors were clearly demonstrated by both studies: the dangers of morbidity events and/or death occurring due to the children eloping to unsafe environments; and the dire stressors that affect caregivers (Anderson et al., 2012; Pereira-Smith et al., 2019). Many caregivers who have had children elope can attest to the fear and helplessness that overwhelm them, especially the longer that their children are gone in unfavorable weather conditions and dangerous locales (Angell & Solomon, 2018; Solomon & Lawlor, 2013).

Caregivers who cannot typically share attention with their children to focus together on an object or situation is stressful for them in numerous ways (APA, 2013; Gernsbacher et al., 2008; Lawton & Kasari, 2011). Since children with ASD frequently struggle to make eye contact with others, understand their verbal cues, and respond to caregivers' nonverbal actions (i.e., pointing at an object) (Freeth, Morgan, Bugembe, & Brown, 2020), the children do not neurotypically respond to caregivers' indications to keep them safe because deficits in joint attention do not sufficiently convey caregivers' warnings to their children (APA, 2013; Frye, 2018). Furthermore, many children with ASD do not participate in "face-to-face line-of-sight judgements" (Freeth et al., 2020, p.

1482; Pisula & Porebowicz- Dörsmann, 2017) and thereby experience decreased awareness of danger that is being pointed out to them). Many male and female caregivers have attested in numerous studies, documentaries, and books of the extensive frustration and fear in not being able to adequately warn their children about bodies of water, heights, machinery, traffic, and strangers (Autism Society of America, 2021). Caregivers have commented at length that their children appear to live in an alternate and unreachable reality in which the caregivers are not welcome or wanted, causing many caregivers to experience profound loss and increased stress from being unable to adequately communicate with their children (Al-Oran & Al Sagarat, 2016; Anderson et al., 2012; APA, 2013; Autism Speaks, 2021). In addition, male caregivers have expressed frustration in having difficulties communicating with autism clinicians and other professionals and receiving assistance in managing their children's autistic symptoms and associated stressors (Burrell, Ives, & Unwin, 2017).

As many caregivers have fearfully learned in dangerous situations involving their children, simply telling their children not to get close to the danger often goes unheeded (Autism Society of America, 2021). Another way that caregivers experience excessive stress from their children's deficits in joint attention can be understood by observing the positive affect (i.e., outward expression of positive emotions and subjective moods) that neurotypically developing children experience when participating in joint attention with their caregivers (Key et al., 2014; Katsimerou, Redi, & Heynderickx, 2014; Lalani et al., 2014). Hence, caregivers of children with neurotypical development and their children are not only at liberty to be able to enjoy one another, but they can also experience the closeness of shared positive affect, due to the absence of impairments in joint attention (Lalani et al., 2018). In contrast, caregivers of children with ASD frequently despair from knowing that reaching their children through eye contact and shared understanding of a situation is frequently unattainable, especially those contexts where danger is present and the children are unaware of the peril that threatens them (APA, 2013; Lalani et al., 2014). Furthermore, caregivers also learn that deficits in joint attention also fan out to include deficits in orienting to joint attention, attending to other's distress as indicated by verbal and nonverbal cues, and decreased opportunities for shared positive affect (Dawson & colleagues, 2004; Hobson, Lee, & Hobson, 2009; Key et al., 2014; Frye, 2018; Sanders et al., 2008). Caregivers who cannot establish joint attention with their children lose a vital reference point from which to interact with their children in adaptive ways, often culminating in severe stress for caregivers who literally struggle to connect with their children (Mundy, 2016).

Children who have deficits with adopting a common frame of reference with caregivers can begin to show these problems by 12 months-of-age, when they demonstrate difficulty by not engaging with their caregivers in common endeavors (Mundy, 2016; Piven et al., 2018). For example, caregivers who shake a rattle in front of neurotypically developing babies will notice the babies' eyes tend to shift back and forth from the rattle to the caregiver (Mount Alvernia Hospital, 2021). In contrast, babies who are not developing neurotypically will tend to lock their gaze onto the rattle and not share the event of the sounds emanating from the rattle with their caregivers (Mount Alvernia Hospital, 2021). As caregivers notice these deficits in their children's development, unease begins to build in many cases; since they perceive typical behaviors as not occurring in a timely manner, if at all (APA, 2013; Ben-Sasson & Yom-Tov, 2016; Mundy, 2016). When the children are eventually diagnosed with ASD, caregivers may experience relief to know what is finally responsible for their children's delayed development, but relief can be quite short-lived as the caregivers begin to realize that there may be decades of caring for their children (Cariello, 2020). As time passes, caregivers mourn for the children who cannot relate to them through joint attention and some caregivers throughout the world feel that this deficit may be the most upsetting ASD symptom of all (Ahmad, 2020; Jaswal et al., 2020; Kuzminski et al., 2019

Core Symptoms of Perseverative Psychopathologies and the Effects on Caregivers

These psychopathologies are mental and behavioral processes that cycle beyond any adaptive purpose and evolve into dysfunctional cognitive and behavioral functioning (Brosschot et al., 2010; Meeten & Davey, 2011). Perseverative psychopathologies comprise the core symptoms with a range or spectrum of symptoms which frequently catalyze self-injurious behaviors and morbidity events in the children, as well as convey excessive stressors to caregivers (APA, 2013; Burack & Enns, 2012; Evans et al., 2014; Mazefsky et al., 2012; Memari et al., 2013; Murphy et al., 2009; Vanegas & Davidson, 2015). The repetitive or perseverative processes are cognitive and behavioral perseveration and are ubiquitously observed in autism (Caldwell-Harris, 2021).

Cognitive Perseveration and the Toll on Caregivers. This type of perseveration includes repetitive executive processes such as 1) excessively thinking about a single concept with little or no switching (i.e., set-shifting) to other ideas, otherwise known as restricted interests (APA, 2013; Caldwell-Harris, 2021; Carter et al., 2020; Memari et al., 2013; Russo et al., 2007); 2) extreme focus on one idea to the exclusion of attending to other ideas (New et al., 2010; Russo et al., 2007); 3) deficits in working memory capacity with diminished memory loading and updating, resulting in difficulties with problem-solving (Barendse et al., 2013; Henckens et al., 2009; Kercood, Grskovic, Banda, & Bergeske, 2014; Williams et al., 2005); and 4) deficits in planning and executing goals (Gowen & Hamilton, 2012; Russo et al., 2007; Vanegas & Davidson, 2015; Xu et al., 2019). Cognitive perseveration, therefore, evinces its “spinning of the mental wheels” in children who show intense interest in only a few activities and fail to branch out to embrace other interests in timely neurodevelopmental ways (Keenan, Gotham, & Lerner, 2016; Memari et al., 2013; Russo et al., 2007; Russo et al., 2018). Repetitive cognitions are frequently pervasive, persistent, and dangerous, as children can literally fail to function in important areas that sustain health, promote safety, and satisfy a multitude of basic needs (Caldwell-Harris, 2021; Laud et al., 2009; Memari et al., 2013; Vanegas & Davidson, 2015). Unfortunately, caregivers frequently experience difficulties in trying to redirect their children from focusing on dangerous objects, or they try to encourage the children to transition from one activity to another, such as leaving a spinning object to eat dinner (Ting & Weiss, 2017; Xu et al., 2019). One of the more challenging stressors that caregivers strive to manage are meltdowns in the children triggered by requiring them to switch their attention or make necessary transitions for their sustenance, nurturing, and protection (APA, 2013). Hence, cognitive perseveration is strongly associated with cognitive rigidity, resistance to transitioning from one activity to another, and significant inability to direct one's activities or self-regulate adaptively (APA, 2013; Nuske et al., 2020; Petrolini et al., 2023). Cognitive perseveration can be one of the most stressful autistic symptoms that caregivers manage, because thoughts drive behaviors, with rigid, restricted thinking driving the most distressful behaviors (APA, 2013). Although some researchers allege that children express cognitive rigidity from being resistant to processing socio-emotional information rather than having pervasive disruptions in cognitive flexibility, many caregivers still experience profound sorrow, exhaustion, and hopelessness from trying to manage the autistic-induced behaviors that invariably result, as well as their maladaptive and avoidant reactions to those behaviors (Jacoby et al., 2018; Latinus et al., 2019; Petrolini et al., 2023).

Behavioral Perseveration and Stressors Associated With Self-Injurious Behaviors. Repetitive behaviors that serve no apparent purpose or direction and usually reflect restricted interests are commonly observed in ASD (Lubetsky, Handen, & McGonigle, p. 190, 2011; Volkmar, Klin, & Cohen, 2005). Typical perseverative behaviors displayed by children are repetitive verbalizations, hand-movements, bizarre posturing, rocking, and using objects to self-stimulate (Caldwell-Harris, 2021; Ekas & Whitman, 2007). Furthermore, behavioral perseveration has two forms which are driven by different brain processes: lower and higher processing in different brain areas. Higher processing areas produce rigid compliance with schedules and order, whereas lower areas elicit motor stereotypies, such as self-stimulatory actions (e.g., hand flapping and twirling objects) (APA, 2013). As with cognitive perseveration, repetitive behaviors unduly tax caregivers when children cannot be redirected from a schedule, an ordering program (e.g., meticulously lining objects for extended periods of time), or using motor stereotypies for self-injurious behavior (APA, 2013). In some cases, the morbidity events are so severe from self-aggressive behavioral perseveration (e.g., repetitively self-hitting with objects) that hospitalization is required, with tormented caregivers developing PTSD and CPTSD from the sheer weight of wondering if their children have dangerous concussions or life-threatening internal bleeding, to name a few problems (Singh et al., 2017; Schweitzer et al., 2017). Obviously, these caregivers' attempts at adaptive experiential avoidance, and they probably developed problems with adverse thoughts from aggressive attempts at thought suppression to avoid unwanted intrusive thoughts (APA, 2013).

Sub-core Symptoms

These symptoms include impairments in 1) communication, articulating words, inner speech, and using language adaptively; and 2) sensory disturbances, such as being able to decipher and understand incoming stimuli (Alderson-Day & Fernyhough, 2015; APA, 2013; Schauder & Bennetto, 2016). Sub-core symptoms cause an inordinate amount of caregiver burden through meltdowns thrown by children who cannot adequately express themselves and become frustrated, angry, and defensive (Adler et al., 2015). Adversely, these children are at risk for self-injurious behavior and morbidity events from showing self-aggression, carelessly throwing themselves around hard objects, or eloping to unsafe places (Andersen et al., 2019; Pereira-Smith, 2019). Furthermore, children who show deficits in inner speech fail to self-soothe themselves enough to prevent frustration and can show emotional distress and disruptive behaviors

(Alderson-Day & Fernyhough, 2015). Also, children who suffer from sensory processing issues can participate in self-injurious behavior as a coping strategy to distract themselves from not being able to understand or tolerate confusing stimuli (APA, 2013; Moseley et al., 2019; Neil, Olsson, & Pellicano, 2016).

Secondary Symptoms and Worsening Caregiver Stress

These symptoms arise from the effects of core and sub-core symptoms on the children and often include anxiety, depression, emotional distress, agitation, intolerance of uncertainty, and many more symptoms that are difficult for the children to manage—often leading to self-injurious behavior and morbidity events (Jenkinson, Milne, & Thompson, 2020; Moseley et al., 2019; Neil et al., 2016). Untreated anxiety is particularly troublesome, because children tend to develop depression, aggression, self-injurious behavior, morbidity events, and exacerbating core and sub-core symptoms (Burchi & Hollander, 2018). Unfortunately, caregivers suffer to a significant degree, since anxiety-induced self-injury in their children can be impulsive, severe, and associated with avoidance behaviors, such as withdrawing from the family, various problem behaviors, unresponsiveness, eloping, or refusing to seek help for urgent needs (Burchi & Hollander, 2018; Miranda et al., 2019; O’Nions et al., 2017). Some caregivers have reported that their self-injuring, withdrawn children worsened their experiential avoidance, because refusing to think about their children’s risk of serious injury was necessary to decrease fears of their children enduring concussions, blood loss, and a multitude of other injuries (Brown et al., 2015). Caregivers further reported that their avoidance coping also worsened their children’s anxiety and maladaptive behaviors, due to caregiver intrinsic or extrinsic avoidance strategies—with intrinsic avoidance strategies consisting of caregiver self-talk or self-distraction and extrinsic avoidance strategies involving coercing or submitting to the children to end the upsetting interaction (Brown, et al., 2015). In contrast, caregivers have also reported that trying to avoid thinking about the threat and danger of self-injurious behaviors invariably led to intrusive images and thoughts of their children's potential injuries or memories of their children's actual injuries, both of which caused additional caregiver stressors (Brown et al., 2015). Although caregivers who used these intrinsic or extrinsic strategies to decrease their experiential avoidance may have temporarily mitigated their distress and helped their children desist from performing various harmful behaviors, the long-term effects invariably consisted of perpetuation of the children's self-injury and anxiety, as well as worsening caregiver transdiagnostic constructs of experiential avoidance and unwanted intrusive thoughts (Brown et al., 2015).

Comorbid Symptoms and Overwhelming Effects on Caregivers

ASD is associated with other disorders, such as epilepsy, intestinal problems, intellectual disability, and many other co-morbid disorders and associated symptoms (APA, 2013; Buckley & Holmes, 2016; Rice et al., 2016; Rose et al., 2018; Srikantha & Mohajeri, 2019; Van Eeghen et al., 2013). As if core, sub-core, and secondary symptoms are not enough for caregivers and their children to manage as many as 24 hours a day on occasion, further assault from co-morbid symptoms can overwhelm caregivers and their entire families (Ko et al., 2016). One of the most challenging co-morbid issues is epilepsy, which can be extremely disruptive and concerning for the children's physical health and their caregivers' mental health (APA, 2013; Buckley & Holmes, 2016; Frye & Rossignol, 2016; Ko et al., 2016). Even more sobering and concerning, more than one co-morbid disorder significantly impairs the children, such as those who have epilepsy, gastrointestinal problems, or intellectual disability (Ko et al., 2016; Levy et al., 2019; Rose et al., 2018). The argument has been made by various clinicians and researchers that co-morbid issues influence children with greater degrees of impairment than children who have just one co-morbidity, in addition to evoking more severe experiential avoidance and unwanted intrusive thoughts in caregivers (Ko et al., 2016; Lai & Oei, 2014). Hence, caregiver burden amplifies substantially as co-morbid disorders increase in number in the children, while caregivers possibly contend with more serious symptoms from the interaction of the co-morbid disorders, contingent medical or metabolic issues, and debilitating morbidity events (Frye & Rossignol, 2016; Lai & Oei, 2014). As sequelae to these concerns, caregivers must also manage their increasing susceptibility to more avoidance coping and unwanted thoughts, since more symptoms in their children positively correlate to caregivers' increasing mental health and coping problems (Lai, Goh, Oei, & Sung, 2015).

Effects of ASD on Caregiver Burden and Implications for Social Change

The prevalence of children with ASD has been increasing markedly since the late 1990s (Centers for Disease Control and Prevention, 2012), and by extension, the current relevance of autistic stressors on caregivers, as various studies have noted from the increasing prevalence of PTSD, CPTSD, OCD, Panic Disorder, and MDD (Zhou et al., 2019). The global burden of ASD consists of 52 million cases, which translates to 1 in

132 of 8-year-old children, with a gender representation of 4.5 boys to 1 girl (Baxter et al., 2015). In addition to global burden and the implications for refractorily increasing ASD, other types of burdens increase stressors for caregivers, as well as limited community, state, and government resources and insufficient collaborative support from various levels of society (Zaidman-Zait et al., 2017). Rising depressive and anxiety disorders in caregivers correlate with the rising prevalence of ASD and severity of the children's symptoms, which contribute to caregiver burden more than any other developmental disorder through neurophysiological problems, cognitive delay issues, chromosome abnormalities, mental health disorders, and systemic disorders in many cases (Alex et al., 2020; Alibekova et al., 2022; Rowland, 2020; Zhou et al., 2019). In other words, the neurobiology of ASD exacts a tremendous cost on caregiver peace-of-mind and on families to enjoy even a rudimentary quality of life and trait joy well-being in many cases, because ASD is heterogeneous, pervasive, and usually chronic across the lifespan (APA, 2013; Hassan, 2019; Krakovich et al., 2016). Even mildly affected children can experience symptoms that easily exacerbate during stressful circumstances, until caregivers are overwhelmed by the more severe core and sub-core symptoms (APA, 2013; Durán-Pacheco et al., 2023). Wherever a child functions on the spectrum, there are autistic symptoms that impede communication between caregivers and their children, which makes it difficult for children to approach caregivers for help, explain their distress, heed guidance, and develop strategies for adapting to the stressors (APA, 2013). Although core symptoms are mild in less severely affected children, exacerbating core symptoms 1) increase hyper-focus on objects or certain activities (APA, 2013; Ashinoff

& Abu-Akel, 2021); 2) increase restricted interests with diminished problem-solving (APA, 2013; Carter et al., 2020); and 3) increase difficulties for children to relate to their caregivers through socio-communication cues in many children (APA, 2013). As is readily apparent, caregivers can be stressed out as much by some mildly affected children, as they can by more severely affected children (APA, 2013).

Herein lies the absolute need for strategies based on joy, collaborative support from community, state, and national organizations, and continued follow-up actions to determine how the caregivers and their children are faring over time. Of these three strategies, the one most likely to empower caregivers the most for attaining a higher quality of life and trait joy well-being is the ability to transmit their joy to stressful situations, reflect on that joy by using dispositional mindfulness, and feel grateful for any positive attributions in the situation despite attendant stressors (Crane, Jandric, Barnhofer, & Williams, 2010; Kiken et al., 2017).

Summary, Conclusions, and Transition to Chapter 3

I explained the literature search strategies for narrowing the huge literature bases of positive psychology and autism research to a joyful disposition and caregivers of children with ASD and caregivers of neurotypically developing children with experiential avoidance and unwanted intrusive thoughts were explained. The main goal of Chapter 2 aimed to gather evidence to aid in answering the research questions. A historical background of the developers of various trait theories and the relationship of a joyful disposition among the different theories were provided. The literature search delineated the autistic stressors that numerous researchers and clinicians have credited with causing the probable manifestations of psychopathology and the transdiagnostic constructs in caregivers (Otero et al., 2019).

I also mentioned that an emerging focus in the last two decades has been increasingly addressing caregiver burden within a positive psychology stance while gravitating from a psychopathological or medical approach, which has elicited more knowledge of effective and positive interventions for caregivers to reduce stressors induced by autistic symptoms (Irene, 2015; McKee et al., 2019; Nik Adib et al., 2019). Although advances in helping caregivers have been notable in recent years, there is still a dearth of information about 1) using positive psychology and the concept of a joyful disposition to manage autistic symptoms (Neff & Faso, 2015); 2) the increasing demands on caregivers of children with ASD to manage stressors in a more complex global society (Makati Medical Center, 2020; and 3) the need for collaborative and positive social change at all levels of society.

The present study will aim to help fill at least one of the gaps in the literature concerning the mediating role of a joyful disposition in experiential avoidance and adverse thoughts in caregivers of children with ASD. The study will try to determine if having a joyful disposition can mitigate the effects of these transdiagnostic constructs on caregiver difficulties in experiencing and expressing traumatic memories, tolerating internal physiological processes that arise from the memories, thoughts, and emotions, and withstanding the torment associated with disturbing thoughts. Contributing to filling the gap in the literature may disclose the protective and beneficial role of a joyful disposition in helping caregivers transmit joy to their unique circumstances and challenges by providing new perspectives and reframing of negative realities. Furthermore, knowing how the degree of caregiver burden differs between both groups of caregivers may motivate future research of the advantages of joy in all caregivers, although the nature of these benefits may differ markedly between each group.

Moving on to Chapter 3, the goals of answering the research questions and filling in the literature gap will be continued through research design, data collection, and data analysis—all of which will be achieved through a regression mediational analysis which will be justified as the best design for this study. Recruiting caregivers of children with ASD and caregivers of neurotypically developing children, collecting assessment results, and conducting data analysis will be detailed. Ethical considerations will be explained so all caregivers and their children can be assured that their best interests will be protected as much as possible.

Chapter 3: Research Method

The primary purpose of the study was to determine whether joyful disposition mediates the relationship between the type of caregiver (caregivers of children with ASD and caregivers of neurotypical children) and experiential avoidance, and type of caregiver (caregivers of children with ASD and caregivers of neurotypical children) and unwanted intrusive thoughts. Determining the extent that a joyful disposition mediates this relationship may provide knowledge for helping caregivers manage these distressful transdiagnostic constructs (Lyaduraia et al., 2019), the numerous challenges evoked by having children with ASD (Irene, 2015; Nik Adib et al., 2019), and the stressors associated with having children with neurotypical development (APA, 2013; Da Paz & Wallander, 2017; Nik Adib et al., 2019; Whitmore et al., 2016). Knowing the dynamics of the mediating role of a joyful disposition may inform caregivers of children with ASD of strategies for reducing caregiver burden, increasing their quality of life, and sustaining more trait joy well-being despite ongoing challenges that do not lessen in intensity or resolve to any significant degree (Adib-Hajbaghery & Ahmadi, 2019; Catalano et al., 2018; Johnson, 2019). Determining the extent of a protective role provided by a joyful disposition may also reveal the advantages that neutralize malignant stressors and ensure that all caregivers can manage their challenges more effectively (Irene, 2015; Johnson, 2019; Nik Adib et al., 2019).

Chapter 3 will present the rationale for using a nonexperimental, correlational design and multiple regression with mediation analysis. I will identify the independent, dependent, and mediating variable for each research question and describe the way that mediation analysis related to the research questions. Next, the methodology is described, including the size and description of the population and justification for using a convenience sample. Additional procedures are presented concerning the recruitment of caregivers, their participation, and data collection. A description of each survey and corresponding reliability and validity information is presented in the instrumentation and operationalization of constructs section. Next, the data analysis plan is described, including the software for analyses, the cleaning and screening procedures, and the research questions and hypotheses. This is followed by a detailed description of the mediation analysis using multiple regression. Validity issues, ethical procedures, a chapter summary, and a transition to Chapter 4 conclude Chapter 3.

Research Design and Rationale

Regression mediation analysis using multiple regression with mediation analysis was conducted to answer the research questions by testing the hypotheses. The independent variables were type of caregiver (caregivers of children of ASD and caregivers of neurotypical children) and caregiver joyful disposition. Caregiver joyful disposition also served as the mediating variable in the analyses. Dependent variables were caregiver experiential avoidance and caregiver unwanted intrusive thoughts. Multiple regression with mediation analysis was appropriate to answer the research questions because type of caregiver could be used to predict caregiver experiential avoidance and unwanted intrusive thoughts. This design also allowed for caregiver joyful disposition to be evaluated as a mediator of the relationship between type of caregiver, experiential avoidance, and caregiver unwanted intrusive thoughts. Because this was a cross-sectional study conducted at one point in time, there were no time or resource constraints. Regression mediation analysis was used in other studies that advanced knowledge in positive psychology and stress research concerning the mediating role of a joyful disposition in the relationship between stressors and decreasing mental health experienced by caregivers of children with traumatic brain injury (Catalano et al., 2018; Roberts et al., 2014).

Methodology

Population

The population comprised caregivers of children between 5 and 17 years of age in the United States. The population of interest constituted caregivers of children with ASD, and the comparison group consisted of caregivers of children with neurotypical development. The United States Census Bureau (2021) projected that by the middle of 2021 the population of children ages 5 to 17 years who live in the United States will be approximately 55,540,000. Of that population, 1,028,518 will have ASD, with 709,677 children living with two parents or caregivers (United States Census Bureau, 2021). This translates to 1,419,354 caregivers who tend their children in the same household (ChildStats, 2021; United States Census Bureau, 2021). The number of neurotypically developing children in this age range is 46,709,140, with 69% of them (32,229,306 children) living with two parents or caregivers (Kids Count Data Center, 2021; United States Census Bureau, 2021; United States Environmental Protection Agency, 2015). This translates to 64,458,613 caregivers of children without any type of neurodevelopmental disorder (Disabled World, 2017; Kids Count Data Center, 2021;

United States Census Bureau, 2021; United States Environmental Protection Agency, 2015).

Sampling and Sampling Procedures

A nonprobability convenience sampling technique with a convenience sample was used in the study. Random sampling could not be used in this study because I was recruiting volunteers (self-selection) and could not manipulate the variables that were being investigated. The sample was recruited from parenting social media sites (e.g., Facebook). I posted a short description of the study and a SurveyMonkey link on those social media sites. The post described the study and the exclusion and inclusion criteria for potential participants.

This was a cross-sectional study in which participants were assessed at a single point in time. The inclusion criteria for the caregivers of children with ASD included (a) the age of the children was 5–17 years, (b) the children were diagnosed with ASD at least 12 months prior to the study, (c) the children were diagnosed by clinician or licensed therapist as meeting the criteria for ASD according to the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (APA, 2013), (d) the children had lived with the caregivers/parents continuously for at least 12 months prior to the study, and (e) all participants were citizens and resided in the United States. The exclusion criteria for the caregivers of children with ASD included a) children who had any comorbid conditions such as serious mental health issues and (b) children who had not lived continuously with the caregivers/parents for the past 12 months. The inclusion criteria for the caregivers of children with neurotypical development included (a) age of the children was 5–17 years,

(b) children had lived with the caregivers/parents continuously for at least 12 months prior to the study, and (c) participants were citizens and resided in the United States. The exclusion criteria for the caregivers of children with neurotypical development included (a) children who had any diagnosis of a developmental disability and (b) children who had not lived continuously with the caregivers/parents for the past 12 months.

A power analysis was performed using G*Power 3.1.9.2 software to calculate the recommended sample size for multiple regression using a fixed model and R^2 deviation from zero (Faul, Erdfelder, Lang, & Buchner, 2007). The parameters for calculating recommended sample size included an alpha level of 0.05, a power level of 0.95, two predictor variables, and a medium-to-large effect size of 0.30. Several studies have reported that effect sizes of .30 and .35 have shown high reliability in comparative studies between caregivers of children with ASD and caregivers of neurotypically developing children regarding quality of life, trait joy well-being, and other factors (Alenazai et al., 2020; Kiani & Nami, 2016; Khorshidian & Dousti, 2018; Vasilopoulou & Nisbet, 2016). The power analysis resulted in a recommended sample size of 55. However, a minimum sample size of at least 100 participants will be used to ensure that the statistical power of multiple regression is acceptable (Cohen, 1988, pp. 1-17; Hanley, 2016; Tabachnick & Fidell, 2013).

Procedures for Recruitment, Participation, and Data Collection

Permission to conduct the study will be obtained from Walden IRB committee prior to recruitment and data collection. Before recruitment begins, I will contact administrators of caregiver support/education groups for those who have autistic or neurotypical developing children on Facebook to post a description of the study with the Survey Monkey link to the survey. I will communicate with the administrators through Facebook messenger, because it is secure and confidential for submitting any documents they request, such as proof of the Walden University IRB's approval of my study. I will explain the study to the administrators and my desire to reach prospective caregiver participants by: 1) posting a brief description of the study and the Survey Monkey link on their sites; and 2) describing the inclusion and exclusion criteria for potential parent participants to determine if they are eligible to be in the study. If I obtain permission from the administrators, I will provide them with my institutional (Walden University) email address and Walden's IRB contact information.

If any eligible caregivers are interested in participating in the study, they will click on the Survey Monkey link. The Survey Monkey link will be included in the Facebook post that describes the purpose of the study and the exclusion/inclusion criteria. The first page of the survey will contain the informed consent form. After reading the consent form, participants will select the "agree" button to begin the survey. By selecting "agree", participants are acknowledging that they have read the consent form and agree to participate. The informed consent form protects research participants by enabling them to make informed and voluntary decisions to participate in the study. Informed consent also facilitates the participants' understanding of their role in the research process, any potential risks and benefits accrued from their participation, and ongoing support from vested parties if they require it (De Sutter et al., 2020). Hence, informed consent empowers participants to protect themselves more effectively, due to the ethical implications embedded in the informed consent process (Kaye et al., 2015). One of the essential advantages of informed consent is allowing the participants ample time to consider the information presented to them and extending opportunities for them to ask questions and have answers that are understandable and timely (Kaye et al., 2015). It is essential at this juncture that I do not convey any possibility of coercion or undue influence. To provide the caregivers opportunities to ask me questions about informed consent or any other aspects of the research process can be accomplished anonymously through my institutional email account.

After participants agree to the consent form, participants will be directed to fill out two short demographic questionnaires (Appendices L and M). The consent form will specifically tell the participants that all their responses will be anonymous and remain confidential. The demographic questionnaires will ask caregivers if their child has ASD or is neurotypical, the child's age, age at ASD diagnosis (if applicable), gender, grade level, race/ethnicity, number of siblings in the home, and presence of self-injurious behaviors. The caregivers will also be asked to provide their age, gender, race/ethnicity, part-time or full-time work status, domestic information (i.e., part-or full-time homemaking status), the number of years caring for the child, and whether the caregiver receives any type of respite care for their child.

After caregivers complete the demographic questionnaires, they will complete the survey instruments in the following order: 1) the 19-item Joyful Life Scale; 2) the 9-item Acceptance and Action Questionnaire; and 3) the 15-item White Bear Suppression Inventory. At the conclusion of the survey, a debriefing page will provide the participants with a summary of the nature and purpose of the study. In addition, the debriefing page will explain to the participants that a summary of the results will be posted to the Facebook group when the study is concluded. The entire survey will take 30 to 45 minutes to complete.

Instrumentation and Operationalization of Transdiagnostic Constructs

Joyful Life Scale

The Joyful Life Scale is the appropriate instrument for the study because the scale measures the experience and expression of joy, which is an innate tendency to convey inner contentment, hopefulness, satisfaction, and positivity to external circumstances (Robbins, 2018). (Please refer to Appendix B for permission to use the scale). Since the study uses joyful disposition as the mediating variable, measuring it is important for the study. The scale consists of 19 items and participants respond to each item using a 7-point Likert-type scale (1 = Strongly disagree; 2 = Disagree; 3 = Slightly disagree; 4 = Neither agree nor disagree; 5 = Slightly agree; 6 = Agree; and 7 = Strongly agree). Example items include: “Joy is possible even during times of suffering”, and “I delight in most circumstances of my life.” A total score is calculated on the Joyful Life Scale with possible scores ranging from a minimum of 16 to a maximum of 133, with higher scores indicating a greater capacity to have a joyful disposition (Robbins, 2019).

The Joyful Life Scale was developed and scaled on humanistic constructs which were tested on 235 students in psychology courses and on social media (Robbins, 2019). The scale showed strong internal consistency with Cronbach’s alpha of .92. Other measures were included in the study to determine the validity of the Joyful Life Scale which included: 1) the Big Five Inventory (John & Srivastava, 1999); 2) the Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985); 3) the Subjective Happiness Scale (Lyubomirsky & Lepper, 1999); 4) the Bradford Scale of Psychological Well-being (Bradburn, 1969); 5) the Dispositional Positive Emotion Scales—Awe Subscale (Shiota, Keltner, & John, 2006); 6) the Gratitude Questionnaire (McCullough, Emmons, & Tsang, 2002); 7) the Short Index of Self-Actualization (Faraci & Cannistraci, 2015; James & Crandall, 1986); and 8) the Material Values Scale (Richins, 2015).

The scores on the Joyful Life Scale were correlated with scores on the related constructs noted above to assess construct validity (Robbins, 2019). The result showed that the scale significantly and positively correlated with the extraversion (r =.42) and agreeableness (r =.50) dimensions of the Big Five Inventory, whereas the scale significantly and negatively related to the Neuroticism (r = -.61) dimension (Robbins, 2019). Furthermore, the Joyful Life Scale positively and significantly related to the Satisfaction with Life Scale (r =.58), the Subjective Happiness Scale (r =.77), and the Bradford Scale of Psychological Well-being (r =.50). The Joyful Life Scale also positively and significantly related to the Awe subscales of the Dispositional Positive Emotion Scales (r =.43), Gratitude (r =.46), and Self-Actualization (r =.45). Furthermore, the Joyful Life Scale negatively and significantly related to the possession-based subscale of the Material Values Scale (r = -.15). These results demonstrated that the scale is a reliable and valid measure of joyful disposition. Although the Joyful Life Scale is in the public domain, I will still contact the author to request permission to use the scale.

Acceptance and Action Questionnaire

The Acceptance and Action Questionnaire is the appropriate instrument for the study, since it measures experiential avoidance, which is one of the dependent or outcome variables (Hayes et al., 2004). The questionnaire measures the degree of experiential avoidance used by individuals to eschew or mitigate anxiety and distress related to upsetting thoughts, traumatic memories, and unsettling internal private events, such as autonomic nervous system overexcitement (Hayes et al., 2004). The Acceptance and Action Questionnaire consists of nine items and provides a total score that measures the extent of experiential avoidance. Participants respond to each item using a 7-point Likert-type scale (1 = Never true; 2 = Very seldom true; 3 =Seldom true; 4 = Sometimes True; 5 = Frequently true; 6 = Almost always true; and 7 = Always true). Example items include: "I'm not afraid of my feelings", and "Anxiety is bad." Moreover, higher scores on the scale represent lower degrees of experiential avoidance. (Please refer to Appendix D for Dr. Haye's permission to use his scale).

Hayes and colleagues conducted an initial exploratory factor analysis of thirty-two items using structural equation modeling to determine if the items were grouped into single factors relating to the construct of experiential avoidance (Hayes et al., 2004). The analysis was conducted on a large clinical sample, after which a confirmatory factor analysis was conducted on a second clinical sample (Hayes et al., 2004). After both studies, the Acceptance and Action Questionnaire evolved from thirty-two items to a nine-item questionnaire, with the questions rated on a seven-point Likert-type scale that involved the following considerations: 1) lower scores on the scale indicate lower experiential avoidance with more psychological flexibility, increased willingness and capacity to tolerate painful thoughts, emotions, memories, and contextual triggers; and 2) higher scores reflect psychological inflexibility and greater avoidance of upsetting and difficult internal events, as well as contextual triggers (Hayes et al., 2004). Hayes and colleagues initially reported a Cronbach alpha of .70, and test-retest reliability over a four-month period of $r = .64$. In a series of other studies that included over 2,400 people, Hayes and colleagues (2004) replicated the factor analysis of the 9-item scale as representing a single dimension of experiential avoidance. Construct validity was also established, demonstrating that higher scores on the questionnaire were positively and significantly associated with measures of psychopathology and lower levels of quality of life and lower trait joy.

Boelen and Reijinties (2008) examined the factor structure, internal consistency, short-term stability of the Acceptance and Action Questionnaire, and relatedness to other instruments with a sample of 403 grieving adults. The scale showed good concurrent validity by positively and significantly correlating with the complicated grief dimension of the Inventory of Complicated Grief-Revised ($r=.63$, $p<.001$), and with the depression dimension of the Symptom Checklist scale ($r=.63$, $p<0.001$). Consequently, this study had predicted that higher scores on the scale would be positively associated with symptoms of depression and complicated grief, which significant statistical analysis showed to be a valid prediction (Boelen & Reijnties, 2008).

Moreover, Boelen & Reijntjes (2008) conducted a second study assessing the Acceptance and Action Questionnaire with a sample of ninety-seven undergraduate students at Ultrich University. In this study, the researchers reported a Cronbach alpha of 0.94, which showed good internal consistency**.** Boelen and Reijntjes (2008) also reported that the scale positively and significantly correlated with the depression dimension of the Symptom Checklist scale (*r*= .56) and with the State-Trait Anxiety Inventory (*r*= 0.59). In addition, the Acceptance and Action Questionnaire positively and significantly correlated with the neuroticism dimension of the NEO Five-Factor Inventory (0.66). These results demonstrated that the questionnaire had satisfactory levels of reliability and validity, as alleged by Boelen and Reijntjes (2008).

White Bear Suppression Inventory

The White Bear Suppression Inventory is also the appropriate instrument for the study because it measures thought suppression and the propensity for caregivers to experience unwanted intrusive thoughts (Wegner & Zanakos, 1994). Wegner and Zanakos (1994) developed the scale to measure thought suppression that is observed in people who suffer from distressful unwanted intrusive thoughts, obsessive, ruminative cognitions, and negative affect—all of which are frequently observed in depressive and anxiety disorders, such as posttraumatic stress disorder, major depressive disorder, and obsessive-compulsive disorder. The White Bear Suppression Inventory contains 15 items and participants respond to each item using a 5-point Likert-type scale (1= Strongly disagree; 2 = Somewhat disagree; 3 = Neither agree nor disagree; 4 = Somewhat agree; and 5 = Strongly agree). An example of an item on the measurement is: “There are images that come to mind that I cannot erase**.**” The inventory provides a total score with a possible range of 15 to 75, with higher scores reflecting greater tendencies for thought suppression (Wegner & Zanakos, 1994).

Wegner and Zanakos (1994) also assessed the psychometric properties of the White Bear Suppression Inventory and reported good internal consistency with alphas ranging from .87 to .89. They also reported good one-week test-retest reliability (*r*=.92) with a three-week and a three-month test-retest correlation of .69. The measurement also showed excellent convergent validity by significantly and statistically correlating with Beck's Depression Inventory, the State-Trait Anxiety Inventory, and the Maudsley Obsessive-Compulsive Inventory. These data demonstrated the scale was a reliable and valid measure of thought suppression and propensity to experience unwanted intrusive thoughts. The White Bear Suppression Inventory is in the public domain, although I will contact the authors for permission to use the survey.

Data Analysis Plan

The Statistical Package for Social Sciences version 27.0 software will be used to analyze the data, after data preparation and screening procedures have been satisfied. Data analysis will also be used to answer the research questions and test the hypotheses, which include the following:

RQ1: To what extent is the relationship between type of caregiver (caregivers of children of ASD and caregivers of neurotypical children) and caregiver experiential avoidance, mediated by caregiver joyful disposition?

$H_0$1: Caregiver joyful disposition is not a significant mediator of the relationship between type of caregiver and caregiver experiential avoidance.

H_a1: Caregiver joyful disposition is a significant mediator of the relationship between type of caregiver and caregiver experiential avoidance.

RQ2: To what extent is the relationship between type of caregiver (caregivers of children of ASD and caregivers of neurotypical children) and caregiver unwanted intrusive thoughts, mediated by caregiver joyful disposition?

H_o2: Caregiver joyful disposition is not a significant mediator of the relationship between type of caregiver and caregiver unwanted intrusive thoughts.

H_a2: Caregiver joyful disposition is a significant mediator of the relationship between type of caregiver and caregiver unwanted intrusive thoughts.

Moreover, data cleaning, a subset of data preparation, will also be conducted to ensure that any uncompleted or incomplete measurements are followed up with the caregivers to determine if the caregivers accidentally did not answer the questions or intended not to respond to the items. If data on any instrument remains incomplete after this screening process, the data will not be used in analyses. Furthermore, data files will be carefully matched to the appropriate caregiver during data preparation, followed by double-checking the files in the data cleaning process.

Other data screening processes include determining if the data satisfies the assumptions of multiple regression with mediation analysis, which includes several considerations (Cohen, Cohen, West, and Aiken, 2003; Frost, 2019, p. 194). The linearity assumption will be evaluated, wherein the relationship between the independent and dependent variables is linear (Frost, 2019, pp. 195-197; Kearns et al., 2019). This screening can be accomplished using scatter plots to determine if there is either a positive or negative linear trend of the data, according to Frost, 2019, pp. 144-145). The assumption of normality will be evaluated, wherein the residuals (errors between observed and predicted values) are normally distributed by looking at histograms or Q-Q Plots (Jamshidian & Jalal, 2010; Schreiber-Gregory & Bader, 2018). Normality will also be tested by examining skewness and kurtosis values to test for presence of outliers (Hanucz &Tarasinska, 2014).

The assumption of multicollinearity will also be evaluated, wherein the independent variables are correlated, meaning that the variables cannot be independent and, subsequently, cause problems with interpreting statistical results (Frost, 2019, pp. 149-150; Kim, 2019). Using the variance inflation factor will inform of the correlation and the strength of the correlation between the independent variables (Penn State Eberly College of Science, n. d.). Factors less than five will indicate critical levels of multicollinearity, poorly estimated coefficients, and questionable p-values (James, Witten, Hastie, & Tibshirani, 2021). In addition, a Durbin-Watson d test will be done to demonstrate no autocorrelation (Durbin & Watson, 1950). The assumption of homoscedasticity will be evaluated, wherein scatterplots of those residuals versus predicted values will be exempt (Yang, Tu, & Chen, 2019). As noted previously, two multiple regressions using mediation analysis will be conducted. The first analysis (Model 1) will predict the outcome variable of experiential avoidance. The second analysis (Model 2) will predict the outcome variable of unwanted intrusive thoughts. The following research questions and hypotheses will be tested.

Ethical Vigilance and Observing Ethics Codes

Guaranteeing that no harm will be caused to the caregivers and their families as much as possible will depend on my vigilance in observing and being committed to ethical codes of psychological research, as espoused by the Utah Psychological Association, the American Psychological Association, Utah Administrative Codes and Statues, and pertinent federal laws. First, I will contact my dissertation committee for consultation if problems arise that I find difficult to solve or should not solve according to ethical principles. I will observe state and federal laws pertaining to research participants' protection and exercise vigilance of impending or emerging problems. This could include caregivers' respective state laws and statutes as well. Other ethical actions that I can offer the caregiver participants include the following important goals.

First, I will provide the link and toll-free number for the National Institute of Mental Health for free counseling services, if the caregivers have any negative experience due to participating in the study (https://www.nimh.nih.gov/health/find-help/index.shtml; 866-415-8051, toll free). In addition, participants will be told that they can withdraw at any time for any reason without any negative consequences. Second, prioritizing the safety, dignity, and well-being of the caregivers above the research process by realizing that unethical means do not justify the end results of earning a degree or gathering additional knowledge. More importantly, I will impress upon the participants that their well-being is the most important goal of the study. Third, realizing that research participants have inviolable rights, such as the right to privacy and confidentiality, freedom from exploitation, and the guarantee of deserving and having human rights in each circumstance.

Threats to Validity

Threats to internal validity include several concerns, such as self-report and social desirability biases, selection bias, instrumentation issues, and experimental mortality (Bryman, 2016; Jackson, 2015). Validity concerns and methods to compensate for these threats to internal validity will be addressed by me through various strategies that will be strictly observed.

Self-Report and Social Desirability Biases

Social desirability bias may occur in surveying caregivers and negatively impact the internal validity of the study. That is, caregivers may tend to overreport “good” caregiver behavior and underreport “undesirable” caregiver behavior. For example, some caregivers could answer questions on the measurements by underestimating socially unacceptable, shameful thoughts, or they could overestimate socially acceptable ones (Haberer et al., 2013). Another methodological weakness concerns the possibility of caregiver self-report bias that could lead to inaccurate responses on the measurements from possible diminished self-awareness or self-insight; that is, some caregivers suffering from psychological and behavioral issues may have decreased mindfulness and clarity of thought to be able to answer correctly and ensure valid responses (APA, 2013; Haberer et al., 2013). A potentially effective method to counteract caregiver carelessness in filling out the survey is to inform them in the informed consent form of the importance of truthfully and mindfully answering each item and that their answers will be anonymous and confidential.

Selection Bias and Threat to Validity

This bias occurs in convenience self-selection sampling, wherein the participants may have characteristics that affect the dependent variables, leading to the study not measuring what should be measured (Bryman, 2016). While I will be using a convenience sample, it is also purposive in that I am recruiting caregivers with specific characteristics. In addition, self-selected volunteers also typically have different characteristics than individuals who do not volunteer for studies. For example, caregivers of children with ASD who experience higher levels of stress or caregiver burden may be less likely to volunteer, which could impact the results. Selection bias may be a problem in this study because non-random selection of caregivers of children with ASD will be recruited according to specific requirements.

Instrumentation Issues

Due to caregivers filling out the Joyful Life Scale, the Acceptance and Action Questionnaire, and the White Bear Suppression Inventory to reflect their subjective observations and judgments of joyful disposition, experiential avoidance, and unwanted intrusive thoughts, an instrumentation concern involves the psychological and cognitive effects that the caregivers may experience from completing the surveys. Thus, participants may experience unpleasant emotions, thoughts, or memories triggered by the questions on the survey, which then may invoke more episodes of experiential avoidance and unwanted intrusive thoughts (Bryman, 2016). Moreover, these caregivers could rush through the survey with less thoughtful and mindful dispatch with decreased accuracy, or they could spend too much time agonizing over the questions, which could impact the internal validity of the study. With these concerns in mind, I will include instructions for the participants to avoid these issues in the informed consent form integrated into the online survey.

Ethical Procedures

Due to the importance of research ethics, I will ensure every effort is undertaken to conduct ethical and honest research by ensuring the following actions are strictly adhered to and practiced rigorously for 1) causing no harm to participants medically, psychologically, emotionally, and civilly; 2) observing the rules of the Walden University IRB and any other institutional entities involved in research ethics, such as the Center for Research Quality at Walden.; 3) participating in research that is free of plagiarism, falsity, and deception; and 4) striving to effect positive social change through dissemination of research results to professionals that are as valid and reliable as possible for the potential benefit to caregivers. Attaining these four goals requires that ethical considerations in research are governed by the principles of honesty, integrity, objectivity, conscientiousness, care, openness, respect for intellectual property, confidentiality, and legality, as asserted by Resnik (2011) of the National Institute of Environmental Health Sciences. Not attaining these goals results from failing to follow an ethical protocol that is essential for observing beneficence or causing no harm to research participants, their families, and society.

Ethical Principle of Causing No Harm

This principle begins with obtaining approval from the Walden University Institutional Review Board (12-15-21-0115734), before data collection begins to ensure that my research has a sound foundation to prevent harming the participants. The Board identifies any problems with the procedures in the study that could compromise participant safety because, foremost, ethical considerations insist that the research process does not cause harm to participants and their families; as a result, causing no harm must be diligently strived for throughout the research period. which includes the time from selection and recruitment of participants to the shredding of caregivers' data six years later. Furthermore, causing no harm is optimally ensured, when confidentiality is never breached, despite the passage of time.

Ethics of Informed Consent and Beneficence

Ensuring that beneficence, or any action done for the benefit of others, is maximized as much as possible for research participants involves many considerations--which will be initially addressed in my study by obtaining informed consent from the caregivers. Through the informed-consent process, I will impress upon them that they are in control of the decision to participate in the study, and that I will respect their rights as research participants. Beneficence requires that I thoroughly inform the caregivers of the research process and what their participation will entail, as well as risks and benefits afforded by the study. They will be advised of their responsibilities and legal/ethical rights, so they can provide informed consent for maximal protection from harm and, by extension, their families. An important part of obtaining informed consent that confers freedom and autonomy to the caregivers is to advise them that they can freely withdraw at any time from the study without fearing my disapproval or withholding of any deserved research benefits. Furthermore, the caregivers will be assured that their complete freedom to act in their best interests will always be the main goal of this study and will never be overlooked or minimized. I will also inform the caregivers to contact 1) me if they have questions or concerns of the research process; and 2) the IRB board if their concerns are beyond my ethical address.

Privacy and Confidentiality

Causing no harm to the caregivers will also be maximized as much as possible by having them fill out the measurements confidentially in the privacy of their own homes, with reassurance from me that they can email me at my Walden address. Communication between the caregivers and me will be conducted as confidentially as possible so other family members in my household and the caregivers' homes are not privy to caregiver information unless the caregivers choose to tell their family members about their participation in the study. The consent form will specifically tell the participants that all their responses will be anonymous and remain confidential. I will instruct the caregivers to fill out the survey away from other family members for less distraction and maximum confidentiality if they decide that they do not want to share their experiences with others in their households.

Summary

The research design and methodology for this study are intended to determine if having a joyful disposition serves a mediating role in caregivers with experiential avoidance and unwanted intrusive thoughts who have children with ASD. The research design is a quantitative mediation analysis. Multiple regression with mediation analysis will be used to determine the extent to which joyful disposition mediates the relationship between the: 1) type of caregiver and caregiver experiential avoidance; and 2) type of caregiver and caregiver unwanted intrusive thoughts. Chapter 4 will discuss the response rates and any attrition that has occurred, and the time frame for data collection and any associated discrepancies. Data analyses, including descriptive and inferential statistics, will also be presented.

Chapter 4: Introduction

I designed this quantitative study to determine whether caregiver joyful disposition served a mediating relationship between the type of caregiver (caregivers of children with ASD and caregivers of neurotypical children) and experiential avoidance, and the type of caregiver (caregivers of children with ASD and caregivers of neurotypical children) and unwanted intrusive thoughts. The independent or predictor variables were type of caregiver (caregivers of children with ASD and caregivers of neurotypical children) and joyful disposition. Joyful disposition also served as the mediating variable in the analyses. The dependent variables included experiential avoidance and unwanted intrusive thoughts and were analyzed using multiple regression with mediation analysis. Results may be used to clarify the possibilities of caregivers of children with ASD using a joyful disposition to improve the quality of life and trait joy well-being for themselves and, by extension, their children and other family members.

The research questions and the relevant hypotheses that formed the backbone of the research model included the following:

RQ1: To what extent is the relationship between type of caregiver (caregivers of children with ASD and caregivers of neurotypical children) and caregiver experiential avoidance mediated by caregiver joyful disposition?

H_o1: Caregiver joyful disposition is not a significant mediator of the relationship between type of caregiver and caregiver experiential avoidance.

H_a1: Caregiver joyful disposition is a significant mediator of the relationship between type of caregiver and caregiver experiential avoidance.

RQ2: To what extent is the relationship between type of caregiver (caregivers of children of ASD and caregivers of neurotypical children) and caregiver unwanted intrusive thoughts mediated by caregiver joyful disposition?

H_o2: Caregiver joyful disposition is not a significant mediator of the relationship between type of caregiver and caregiver unwanted intrusive thoughts.

H_a2: Caregiver joyful disposition is a significant mediator of the relationship between type of caregiver and caregiver unwanted intrusive thoughts.

In Chapter 4, I discuss the details concerning data collection, screening procedures, and recruitment, including discrepancies in the recruitment methods. I also discuss the sample demographics. Following this, the descriptive statistics of the caregivers and their children are presented. I also evaluate the statistical assumptions and present the results of multiple regression analysis and mediation analysis. The chapter ends with a summary.

Data Collection

Collecting data proceeded after I obtained approval from Walden's Institutional Review Board to conduct research. Authorization allowed me to contact prospective participants, select those who met certain criteria, and collect their response data on several measurements through the online platform SurveyMonkey over a 3-day period. Prospective participants were contacted through the Buying Targeted Responses service of the Survey Monkey platform. Those caregivers who decided to accept the survey invitation were directed to the welcome page, which explained the study and the type of survey takers being sought. At the bottom of the page, two screening questions were presented that directed each potential participant to the informed consent page or to the end of the survey for exclusion from taking the survey. Those participants who qualified to take the survey gave their consent and received information about their rights to exit the survey at any time without repercussions by not clicking on the “next” button at the bottom of the page.

Following the informed consent page, a Child Neurodevelopment Questionnaire (see Appendix K), a Caregiver and Child demographic Questionnaire (see Appendix L), the Joyful Life Scale, the Acceptance and Action Questionnaire, and the White Bear Suppression Inventory were presented to collect essential data. The Child Neurodevelopment Questionnaire included five questions about autism diagnosis relevant to the child, neurotypical development in the child, and severity of ASD symptoms. The Caregiver and Child Demographic Questionnaire included 20 questions about caregiver U.S. citizenry, age and gender of the caregivers and children, regions of the United States where caregivers and children lived, and race or ethnicity of the caregiver. The Joyful Life Scale (Robbins, 2018) included 19 questions about the capacity to feel joy while embracing contextual challenges. The Acceptance and Action Questionnaire (Hayes, 2004) included nine questions gauging the presence and degree of experiential avoidance. Lastly, the White Bear Suppression Inventory (Wegner & Zanakos, 1994) included 15 questions that tested for unwanted intrusive thoughts in caregivers and the extent of thought suppression.

There were 151 respondents, of whom 60.4% satisfied the screening questions. The disqualification rate was 30.6% for those who did not meet the inclusion criteria based on responses to the following questions: (a) Have you been a caregiver of a child between the ages of 5 and 17, who has either autism spectrum disorder or is a neurotypically developing child, for a minimum of 1 year? and (b) Are you a U.S. citizen? Any prospective participant who answered “no” to either question was disqualified because both inclusion requirements concerning caregiver experience and citizenry had not been satisfied.

Discrepancies in Data Collection

There were some discrepancies in the data collection plan presented in Chapter 3 due to widespread changes in policies regarding vulnerable members in social media sites and other venues. The plan in Chapter 3 pertained to finding interested participants through Facebook, autism organizations, or special education departments by presenting an announcement flyer to inform prospective caregiver participants of the study. Although the Chapter 3 plan was abandoned and the SurveyMonkey platform was accessed, problems in data collection were avoided in several ways.

First, not recruiting participants through social media autism sites and other venues resulted in more timely data collection through targeted responses in Survey Monkey. A total of 151 interested caregivers participated in the study or did not qualify to be in the study within 3 days, which promoted efficient data collection. Second, all potential participants answered two important screening questions, which reduced irrelevant and invalid caregiver and child information. The SurveyMonkey platform directed caregivers who were not U.S. citizens or had not cared for a child with autism or a neurotypically developing child for a minimum of 1 year to a disqualification page, whereupon the caregivers were unable to participate in the survey. Third, buying targeted responses in the SurveyMonkey platform enabled me access to the Contribute and Rewards Panels of prospective participants who tended to represent the population of interest (i.e., caregivers). Furthermore, prospective participants tended to take their survey efforts more seriously, which ensured more thoughtful and valid responses to the survey questions. For example, SurveyMonkey's Contribute panelists take surveys for charity and a chance to win sweepstakes prizes for charitable gifts, whereas Rewards panelists can earn credits for completing surveys, which can be redeemed for gift cards for personal use or donated to charitable organizations for community benefits.

All caregivers who responded to the "targeted responses" platform of Survey Monkey had to meet the inclusion criteria of being United States citizens and having lived with their children for at least one year to qualify for participation in the study. Inclusion parameters helped the sample generalize to the population by excluding confounding, cultural influences from other countries and differences in stressors experienced by caregivers with limited time caring for their children as compared to stressors garnered by those caregivers with more time caring for their children. Qualifying respondents who satisfied the inclusion criteria were directed to complete the Informed Consent form, followed by the Caregiver and Child Demographic form, where questions were presented about 1) caregiver age, gender, race, and demographic region; and 2) child age, gender, and neurodevelopmental status. Of the 151 caregivers who responded to Survey Monkey's targeted responses, sixty-two respondents did not satisfy the criteria and could not complete the survey. Of the eighty-nine caregivers (59.8%) who successfully completed the survey, fifty-four (60.7%) caregivers had children with autism, whereas thirty-five (39.3%) had neurotypically developing children.

The sample also had sixty-six (74.2%) caregivers of boys and twenty-three (25.8%) caregivers with girls, which translated to thirty boys and eleven girls with autism and thirty-three boys and twelve girls with neurotypical development. Interestingly, the 30 to 11 or 3 to 1.1 ratio of autistic boys to girls was close to the prevalence ratio of 4.5 boys to one girl (CDC, 2023). Furthermore, female and male caregiver respondents numbered sixty-three (70.8%) and twenty-six (29.2%), respectively. This male frequency statistic aligned with several studies that have reported increasing participation of fathers in autism surveys and research in recent years, further generalizing the sample to a population subgroup of paternal caregivers who are referred to as the "new fathers" (Yogman et al., 2016, p. e3) because of their increasing interest, attunement, and involvement in caregiver interests, perspectives, and duties (Di Renzi et al., 2021; Giallo & Wood, 2017; Picardi et al., 2018; Seymour et al., 2018).

Demographic Characteristics of the Sample

The study sample aimed to generalize the sample to the population of caregivers in the US who have children aged five to seventeen. As of March of 2023, there were approximately 42,835,500 caregivers of children between this age range, with Table 1 showing more detailed information about families with two caregivers, as well as families with single female and male heads of household. Notably, the sample of eighty-nine caregivers adequately generalized to the population considering the relatively small sample size (n = 89), as depicted by Table 1 (population) and Table 2 (sample). For example, the population parameter showed that 65% of caregivers in the US comprise two caregiver families, whereas 45% of the sample consisted of two-caregiver families. There is a 20% difference between the population parameter and the sample statistics, but there is also an enormous difference between the population and sample numbers. Although the sample was non-randomly selected, it generalized in surprising ways, such as representation from Native Americans and multiracial participants. For example, Native Americans make up approximately 2% of the population, whereas Native American representation in the sample was 2.20%.

Furthermore, Tables 3 and 4 also show some generalization of the sample to the population through racial, caregiver age, and regional area descriptives. For instance, the Atlantic seaboard states are heavily represented in the sample, consistent with some states with higher rates of autism in the population of caregivers (World Population Review, 2023). Although various factors explain the higher concentration of children with autism in the eastern regions (e.g., higher population density and improved diagnostic techniques for ASD), the differences in autism rates tend align along similar regional areas.

Table 1

Familial Frequencies of Caregiver Population With Children Ages 5–17

Familial heads of household	Race	ASD caregiver *n*	ASD caregiver %	Neurotypical caregiver *n*	Neurotypl caregiver %	All caregivers *n*	All caregiver %
All caregivers		1,189,872	2.70	41,645,528	97.30	42,835,400	100.00
	White	928,374	2.40	24,715,554	59.20	25,401,392	61.60
	Black	1,242,227	2.90	5,268,754	12.30	6,510,981	15.20
	Hispanic	1,370,733	3.20	6,639,487	18.90	8,095,891	18.90
	Asian	81,500	3.34	2,359,824	2.36	2,441,618	5.70
	Pacific	46,500	3.31	9,453,500	2.40	1,500,000	.46
	Native	94,000	2.00	9,506,000	98.00	9,700,000	.50
Two caregivers		809,589	2.70	29,175,190	97.30	29,984,779	100.00
	White	719,634	2.40	16,971,385	97.60	17,691,019	59.20
	Black	130,433	2.90	4,367,716	97.10	4,498,100	12.30
	Hispanic	181,347	3.20	5,432,403	96.80	5,613,750	18.90
	Asian	58,111	3.34	1,651,022	96.70	1,709,133	5.70
	Pacific	2,758	3.31	135,172	96.70	139,921	.46
	Native	2,995	3.31	135,172	98.00	149,921	.50
Single female caregivers		273,290	2.70	9,150,498	97.30	9,423,788	59.20
	White	133,441	2.40	5,426,593	97.60	2,613,750	19.10
	Black	40,933	2.90	1,391,423	97.10	1,432,356	12.90
	Hispanic	56,995	3.20	1,724,101	96.80	2,315,899	18.75
	Asian	27,941	3.34	565,097	96.70	590,465	5.70
	Pacific	1,343	3.31	538,500	96.80	539,843	.46
	Native	4,636	3.31	42,482	96.70	46,785	.50
Single male caregivers		92,524	2.70	3,334,307	97.30	4,108,658	50.20
	White	48,688	2.40	1,979,997	97.60	2,028,685	50.20
	Black	15,105	2.90	505,772	97.10	520,878	15.20
	Hispanic	20,726	3.20	626,946	96.80	626,946	18.90
	Asian	6,251	3.34	189,078	96.70	195,329	5.70
	Pacific	519	3.31	15,243	96.70	15,763	.46
	Native	745	3.31	16,569	96.70	17,134	.50

Table 2

Frequencies of Familial Characteristics of Sample of Caregivers with Children 5 to 17

Characteristic	Caregiver of child with ASD		Caregiver of neurotypical child		All caregivers in sample	
	n	%	*n*	%	*n*	%
`	54	60.7	35	39.3	89	100.0
Families with Two Caregivers	28	31.50	19	21.30	47	55.00
Caucasian	11	12.40	7	7.90	20	22.40
Black	2	2.50	2	2.50	4	4.50
Hispanic/ Latino	8	9.00	7	7.70	13	
Asian American	4	4.50	3	3.40	6	6.70
Native American	1		0		1	
Pacific Islander	2	2.50	0	0.00	2	2.20
Families with a Single Female Caregiver	21	23.60	15	16.90	18	40.10
Caucasian	7	7.70	5	5.60	12	13.50
African American	6	6.70	1		10	11.00
Hispanic/ Latino	3		0	0.00	6	6.70
Asian American	2	2.50	3	3.40	5	5.60
Pacific Islander	1	1.10	0	0.00	0	0.00
Families with a Single Male Caregiver	5	5.60	2	2.50	7	8.40
Caucasian	1		2		3	
Black	1	1.10	1	1.10	2	2.50
Hispanic/ Latino	1	1.10	0		3	3.40
Asian American	2	2.50	2	2.20	4	4.50
Pacific Islander	0	0.00	0	0.00	0	0.00
Native American	0	0.00	0	0.00	0	0.00

Table 2

Sociodemographic, Gender, and Age Frequencies of Caregivers in the Sample

Characteristic	Caregiver of child with ASD		Caregiver of neurotypical child		All caregivers in sample	
	n	%	*n*	%	*n*	%
Gender						
Female	35	64.8	28	80.00	63	63.00
Male	19	35.2	7	20.00	26	26.00
Total	54	100.00	35	100.00	89	100.00
Race						
White	17	34.00	12	30.80	29	32.60
African American	10	20.00	6	15.40	16	18.00
Hispanic/Latino	10	20.00	12	30.80	22	24.80
Asian American	8	16.00	3	7.70	11	12.40
Pacific Islander	1	2.00	2	5.10	3	3.40
Caribbean Islander	1	2.00	0	0.00	1	1.10
Native American	1	2.00	0	0.00	1	1.10
Multiracial	2	4.00	4	10.30	6	6.70
Caregiver age						
25 to 29	17	34.00	9	23.10	26	29.20
30 to 34	7	14.00	11	28.20	18	20.20
35 to 39	12	24.00	4	10.30	16	18.00
40 to 44	5	10.00	3	7.70	8	9.00
45 to 49	5	10.00	8	20.50	13	14.60
50 to 54	2	4.00	2	5.10	4	4.50
55 to 59	2	4.00	0	0.00	2	2.25
60 to 64	0	0.00	1	2.55	1	1.10
65 to 69	0	0.00	1	2.55	1	1.10
U.S. region						
New England	4	11.40	0	0.00	4	5.00
Mid Atlantic	10	28.60	5	14.30	15	17.00
South Atlantic	8	22.90	5	14.30	13	15.00
Southeast	3	8.60	1	2.90	4	4.50
East North Central	6	17.1	5	14.30	11	12.40
West North Central	3	8.60	1	2.90	4	4.50
East South Central	4	11.40	1	2.90	5	5.60
West South Central	2	5.70	3	8.60	5	5.60
Mountain	7	20.0	4	11.40	11	12.40
Pacific	7	20.0	10	28.6	17	19.00

Table 3

Gender Frequencies of the Caregivers' Children in the Sample

Characteristic	Children with ASD		Neurotypical children		Sample	
	n	%	*n*	%	*n*	%
Gender						
Female	13	25.5	10	26.4	23	25.80
Male	38	74.5	28	73.6	66	64.20
Age						
5	5	9.80	10	26.30	15	16.90
6	12	23.50	5	10.50	16	18.00
7	3	3.40	4	13.20	8	9.00
8	7	13.70	3	7.90	10	11.20
9	5	9.80	2	5.20	7	7.90
10	3	5.90	2	5.20	4	4.50
11	3	5.90	2	5.20	5	5.60
12	1	1.90	3	7.90	5	5.60
13	1	1.90	2	5.20	4	4.50
14	1	1.90	1	2.60	4	4.50
15	2	3.90	1	2.60	3	3.40

Results

Descriptive Statistics

Frequency statistics for caregivers of children with ASD and caregivers of children with neurotypical development are displayed in Table 5. The original study plan sought to enlist 50 caregivers of children with autism and 50 caregivers of children with neurotypical children for a total of 100 participant caregivers. However, screening criteria limited the enlistment of caregivers with neurotypical children and slightly expanded the number of caregivers of autistic children. Table 5 shows that the bivariate correlation between the joyful disposition scores and unwanted intrusive thoughts scores was statistically significant and positively associated (r (89) = .512, p<.05), suggesting that as levels of joyful disposition increased, levels of effective thought suppression increased. The bivariate correlation between joyful disposition between joyful disposition scores and experiential avoidance scores was statistically significant and positively associated (*r* (89) = .515, *p* < .05), indicating that as caregiver joyful disposition increased, more adaptive degrees of experiential avoidance increased. Lastly, the correlation between unwanted intrusive thoughts and experiential avoidance was not statistically significant, *r* (89) = .151, *p* > .05.

Table 4

Means, Standard Deviations, and Correlations for Study Variables

				Significant (2-tailed)	
	M	5% trimmed	*SD*	Unwanted intrusive thoughts	Experiential avoidance
Caregiver of ASD child	98.30	99.39	2.624		
Caregiver of neurotypical	93.41	99.36	3.033		
Joyful disposition	98.80	49.60	18.674	.512	.515
Experiential avoidance	35.64	35.60	7.128		.151

Statistical Assumptions of Multiple Regression

Employing multiple regression for statistical analysis required that five assumptions be satisfied, which was accomplished by dummy coding the nominal data and using the interval data (scores on the three measurements). The data was assessed for continuity of measurement, normality, linearity, multicollinearity, homoscedasticity, and independence of residuals in the following systematic steps.

Continuous Measurement of Outcome Variables Assumption

The first assumption of multiple regression is that the outcome variable should be measured on an interval or a ratio scale (Laerd Statistics, 2023). The outcome variable of experiential avoidance was measured by the Acceptance and Action Questionnaire which was based on a type of scale referred to as a Likert scale. Likert scales have not been generally assigned a continuous level of measurement until the confidence offered by robust statistical methods in recent decades (Adroher et al., 2018; Lionello et al., 2021). As a result of increasing confidence, numerous researchers have attested that combining all the elements in the Likert items to compose a measure of a participant's response to the question leads to a reasonable and measurable distance across the participant's integrated ratings (Anjaria, 2022). Since there is directionality and actual distance between each ranked item, the measurements can be confidently labelled as interval data, according to a growing body of researchers (Anjaria, 2022). Lionello and colleagues (2021) also confirmed that using Likert scales to collect data on attitudes, opinions, or perceptions shows a sorted sequence and integration of ranked categories that can be inferred and interpreted as having equidistance between the categories. The other outcome variable of unwanted intrusive thoughts was measured by the White Bear Suppression Inventory with a nine-item Likert scale that showed directionality across each participant's ratings, which Anjaria (2022) asserted has more confidently assigned interval measurements as items increase on a Likert scale. Fortunately, the Acceptance and Action Questionnaire and the White Bear Suppression Inventory consisted of five and nine items respectively, which lent weight to the argument that a higher number of Likert scale ratings yield a higher probability of equidistant metrics than scales with very few items. Another aspect of confidently assigning interval status to the Likert scales in this study is due to the Sullivan's and Artino's postulations (2013) that parametric tests are adequately robust to yield unbiased and sufficiently valid responses from Likert scales.

Continuous Measurement of Predictor Variables Assumption

The predictor variable should also be measured on a continuous scale (e.g., interval or ratio scales), as mentioned by Laerd Statistics (2023). Although type of caregiver is a dichotomous variable consisting of a caregiver of a child with ASD and caregiver of a neurotypical child, a dummy variable has been assigned to each type of caregiver to create a definitive linear relationship between type of caregiver (predictor variable) and the outcome variables of experiential avoidance and unwanted intrusive thoughts. Furthermore, the variable of joyful disposition may be treated as a mediator variable if regression analysis determines there is a statistically significant relationship between the variable and the outcome variables. Hence, data from the Joyful Life Scale has 9 rating items and can be confidently used as interval data, since additional Likert-scale points approximate the underlying distribution more closely as Likert items increase (Wu & Leung, 2015).

Normal Distribution of Residuals Assumption

A third assumption is that the distribution of the residuals should show normality for multiple regression to be confidently used. That is, the errors between observed and predicted values, or the residuals of the regression, should approximate a bell curve on a histogram. The data from the three survey questionnaires satisfied the normality assumption. Figures 1, 2, and 3 illustrate scores on the Joyful Life Scale, the Acceptance and Action Questionnaire, and the White Bear Suppression Inventory that approximate a bell curve.

Figure 1

Histogram of Distribution of Residuals of Joyful Life Scale Scores

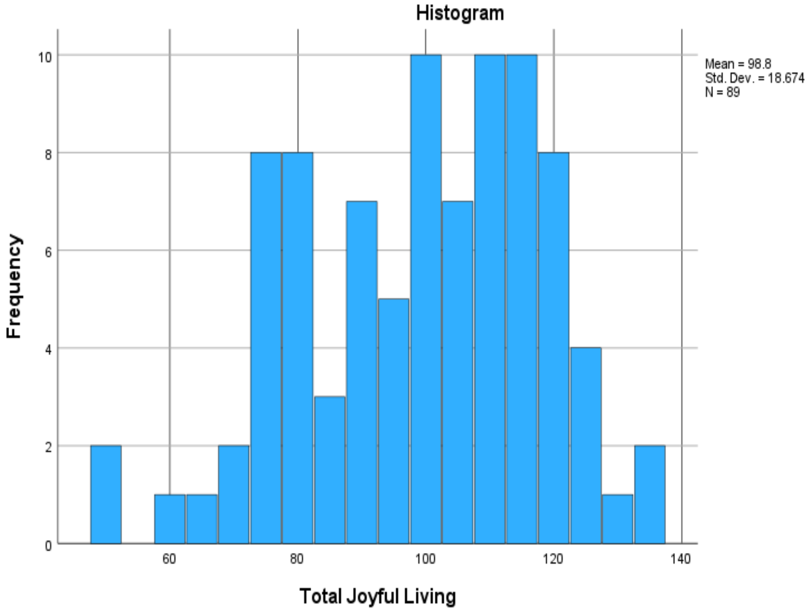


Figure 2

Histogram of Distribution of Residuals of Acceptance and Action Questionnaire Scores

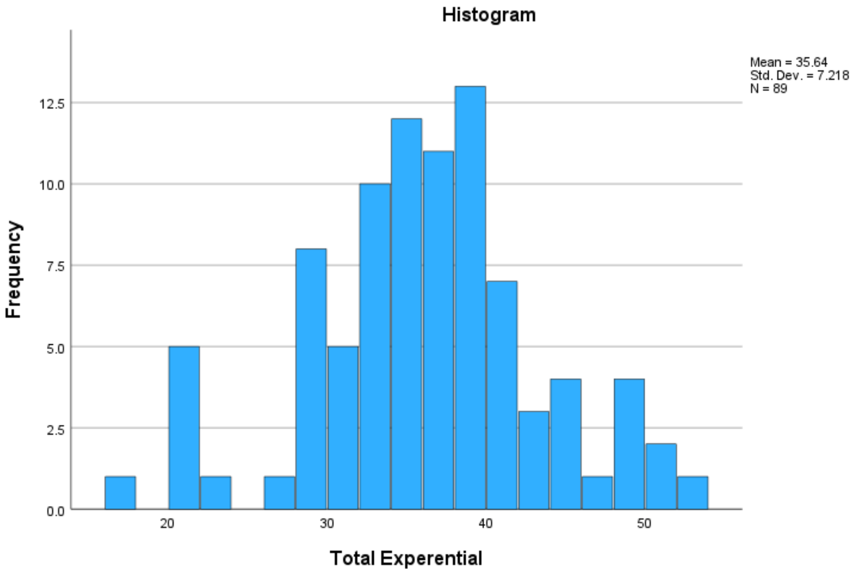
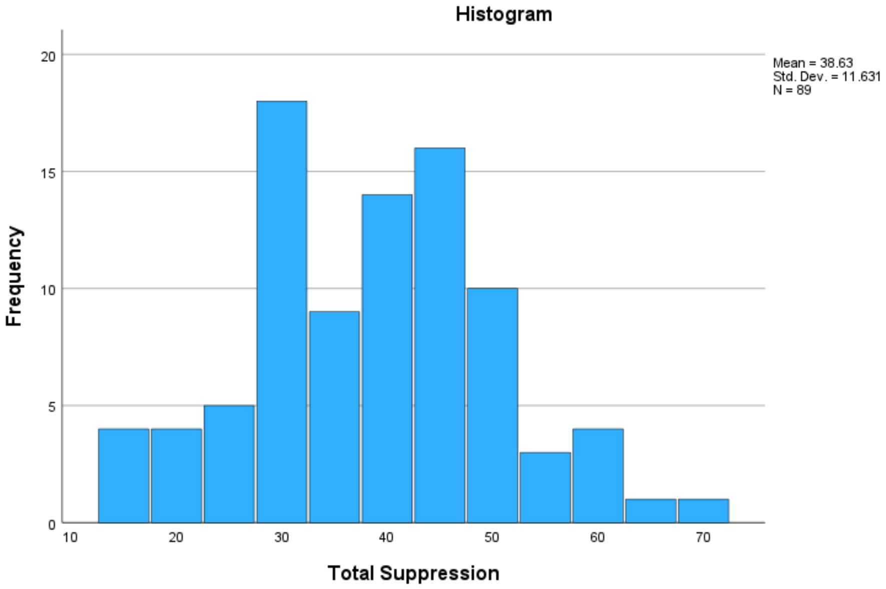


Figure 3

Histogram of Distribution of Residuals of White Bear Suppression Inventory Scores



In addition to graphical measures (e.g., histograms) or numerical tools, two other methods can be used to offer support for the presence of normality. These include the Kolmogorov-Smirnov statistic and the Shapiro-Wilk test. The Kolmogorov-Smirnov statistic is a non-parametric test that determines the greatest difference between an expected cumulative probability distribution and an observed frequency distribution of a sample. The expected distribution is the normal probability distribution with a mean and variance that equals the mean and variance of the sample data. In contrast, the observed frequency distribution is a stepped function of number of values in the sample data. With each step, the difference between the bottom of the step and the normal curve, as well as the difference between the top of the step and the normal curve, constitute the Kolmogorov-Smirnov statistic. To determine if the statistic is significant at the 0.05 level, the *p*-value must be lower than this level. As shown in Table 6, all three Kolmogorov-Smirnov statistics were not significant, indicating that I failed to reject the null hypothesis, and the distributions of the data were normal.

The Shapiro-Wilk test also tested the null hypothesis of the sample representing a normal distribution. As depicted in Table 7, the experiential avoidance data was normally distributed (p = .125), which means that the null hypothesis was not rejected at the 0.05 level. The distribution of unwanted intrusive thought data (p = .504*)* was normal, but the Shapiro-Wilk statistic for the joyful disposition data was significant (p = .041*)*, indicating that the distribution was slightly asymmetrical. However, Figure 1 suggests that joyful disposition data adequately followed a normal distribution for meeting the requirement of normality.

Table 5

Kolmogorov Status for Joyful Living, Experiential Avoidance, and Unwanted Intrusive Thoughts

	Skewness kurtosis									
	N	Ran	Mi	Max	Std. Err Mean	Var	Stat	Std Err	Stat	Std Err
Total joyful living	89	93	50	133	1.979	348.731	-.402	.255	-.456	.506
Total experiential avoidance	89	36	17	53	.765	52.097	-.123	.255	.367	.506
Unwanted intrusive thoughts	89	54	15	1.233	134.28	1.31	.255	-.185	.506	.511

Table 6

Kolmogorov-Smirnov and Shapiro-Wilk Statistical Tests for Normality

	Kolmogorov-Smirnov			Sharpiro-Wilk		
	Statistic	*df*	Sig.	Statistic	*df*	Sig.
Total joyful disposition	.085	89	.135	.971	89	.041*
Total experiential avoidance	.088	89	.089	.978	89	.125
Total unwanted intrusive thoughts	.070	89	.200	.987	89	.504

Note. * $p < .05$.

Another method for determining if the residuals were normally distributed looked for outliers in scatterplots (see Figures 5, 6, and 7). Dependent variable values that differed significantly from the values predicted by the regression equation were examined for vertical distance from the regression line and any associated large residuals. In short, the outliers were assessed for their power to skew the bell curve and cause asymmetry. As shown previously in Table 6, joyful disposition (.255), experiential avoidance (-.123) and unwanted intrusive thoughts (.255) have manageable outliers and low positive or negative skewness, indicating that the distributions are approximately normal. Kurtosis values were also used to assess the data, with joyful disposition (-.456), experiential avoidance (.367), and unwanted intrusive thoughts (-.185) showing that the distributions of residuals resembled a bell curve (see Table 6).

Linearity of Residuals Between the Predictor and Outcome Variables Assumption

Linearity between the outcome variable and the predictor variables is another assumption of multiple regression. The P-P Plot shown in Figure 4 shows a linear relationship between the predictor variables and the outcome variable of experiential avoidance. Likewise, a scatterplot between the predictor variables and experiential avoidance shows a linear arrangement, as depicted in Figure 5. As for linearity between the predictor variables and the outcome variable of unwanted intrusive thoughts, Figures 6 and 7 also depicted a linear relationship between the variables.

Figure 4

P-P Plot Showing Linearity Between Predictor Variables and Experiential Avoidance

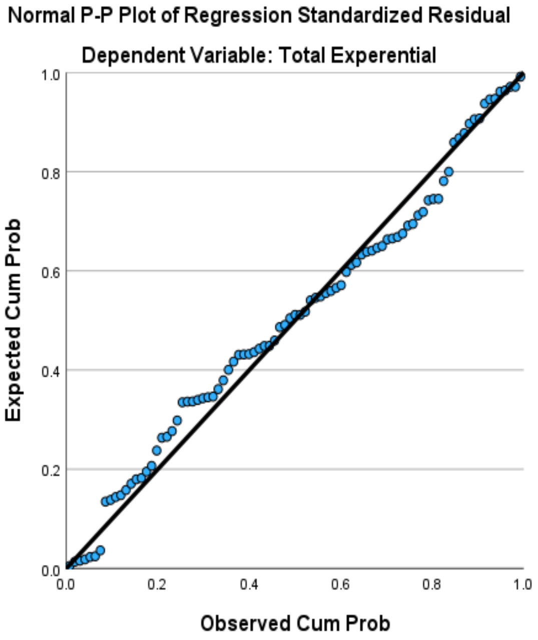


Figure 5

Scatterplot of Linearity Between Predictor Variables and Experiential Avoidance

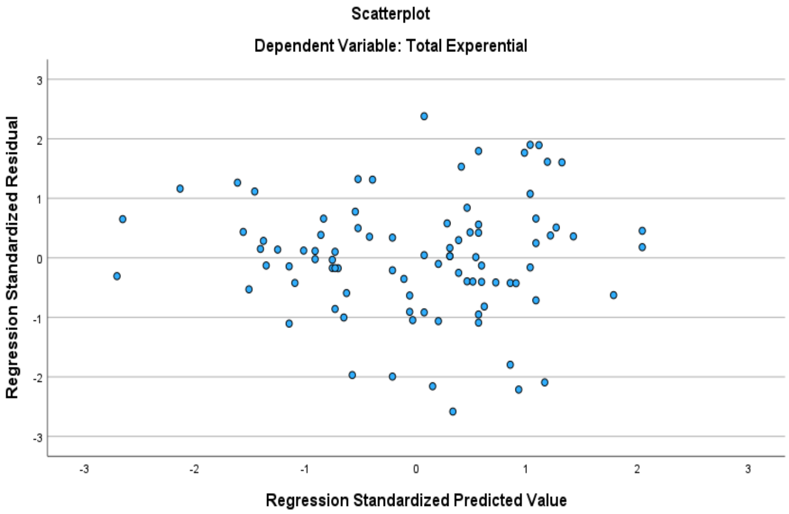


Figure 6

P-P Plot Showing Linearity Between Predictors and Unwanted Intrusive Thoughts

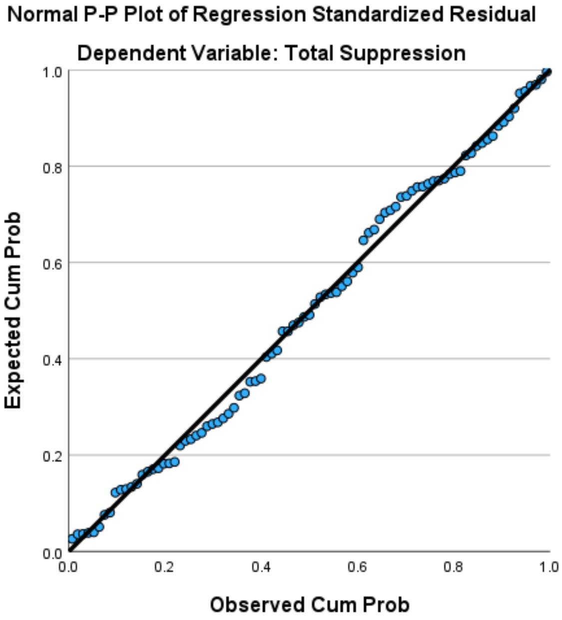
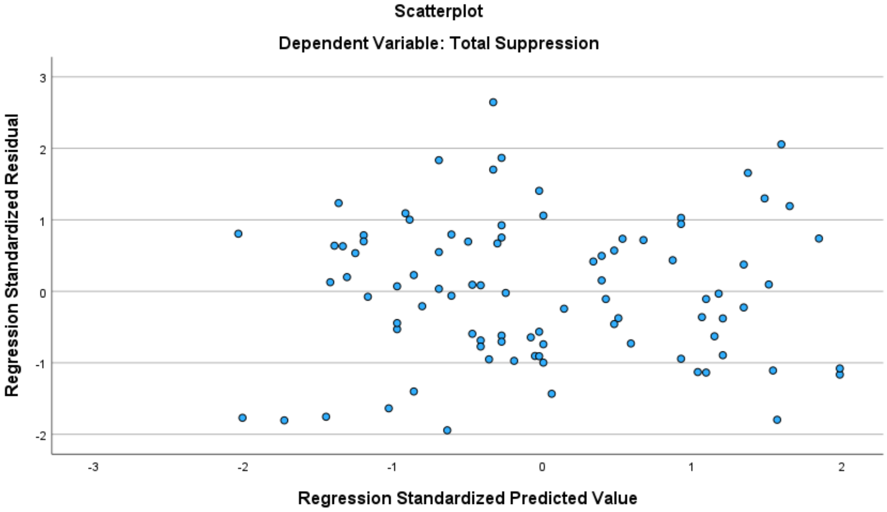


Figure 7

Scatterplot of Linear Relationship Between Predictor Variables and Intrusive Thoughts



Multicollinearity Values of Predictor Variables Assumption

Multiple regression also assumes that predictor variables do not highly correlate with each other, as high correlation could lead to faulty interpretation of the model due to a lack of independent information about the predictor variables. When the outcome variable of unwanted intrusive thoughts was regressed on the predictor variables of type of caregiver and joyful disposition, the VIF statistics (1.001) were very low, indicating that multicollinearity did not present a problem in Model 1. Furthermore, regressing the outcome variable of experiential avoidance on the predictor variables showed that VIF statistics (1.001) did not indicate a problem with multicollinearity in Model 2. In addition to VIF statistics, tolerance values of .999 in both regressions also supported low multicollinearity between type of caregiver and joyful disposition, as exhibited by Tables 8 and 9. Hence, the assumption of multicollinearity was met in both models.

Table 7

Multicollinearity Values for Experiential Avoidance, Type of Caregiver, and Joyful Disposition

	Unstandardized coefficients		Standardized coefficients			Correlations			Collinearity statistics	
Model	B	Std. Error	Beta	*t*	Sig.	Zero-order	Partial	Part	Tolerance	VIF
Type of caregiver	.229	1.581	.016	.145	.885	.018	.016	.016	.999	1.001
Total joyful disposition	.027	.042	.069	.645	.521	.070	.069	.069	.999	1.001

a. Dependent variable: Experiential Avoidance

Table 8

Multicollinearity Values for Unwanted Intrusive Thoughts, Type of Caregiver, and Joyful Disposition

Model	Unstandardized coefficients		Standardized coefficients			Correlations			Collinearity statistics	
	B	Std. Error	Beta	*t*	Sig.	Zero-order	Partial	Part	Tolerance	VIF
Type of caregiver	2.536	2.534	.107	1.001	.320	.109	.107	.107	.999	1.001
Total joyful disposition	.042	.067	.067	.624	.534	.070	.067	.067	.999	1.001

a. Dependent variable: Unwanted Intrusive Thoughts

Another way used to assess multicollinearity was to interpret condition index values in a collinearity diagnostic table. A value of 15 to 30 indicates problems with multicollinearity, whereas a value above 30 argues for high correlation of the predictor variables. Tables 10 and 11 indicate that all condition index values are well below 30, suggesting that multicollinearity did not present a problem in the model. Therefore, VIF statistics, tolerances, and condition index values met the multicollinearity assumption for multiple regression.

Table 9

Collinearity for Type of Caregiver and Joyful Disposition with Experiential Avoidance

				Variance proportions		
Model	Dimension	Eigenvalue	Condition index	(Constant)	Type of caregiver	Total joyful disposition
1	1`	2.904	1.000	.00	.01	.00
	2	.080	6.035	.03	.91	.10
	3	.016	13.426	.96	.08	.89

a. Dependent variable: Experiential Avoidance

Table 10

Collinearity Diagnostics for Type of Caregiver and Joyful Disposition With Unwanted Intrusive Thoughts

				Variance proportions		
Model	Dimension	Eigenvalue	Condition index	(Constant)	Type of caregiver	Total joyful disposition
2	1`	2.904	1.000	.00	.01	.00
	2	.080	6.035	.03	.91	.10
	3	.016	13.426	.96	.08	.89

a. Dependent variable: Unwanted Intrusive Thoughts

Homoscedasticity of the Values of Predictor Variables Assumption

The assumption of homoscedasticity refers to the variance of error terms being similar across the values of the predictor variables. That is, the residuals show homoscedasticity as these homogeneously scatter across the plot. A plot of standardized residuals compared to predicted values was used to show whether points were equally distributed across all values of the predictor variables. Figures 8 and 9 demonstrate that the assumption of homoscedasticity-was met in both models.

Figure 8

Homoscedasticity of Unwanted Intrusive Thoughts

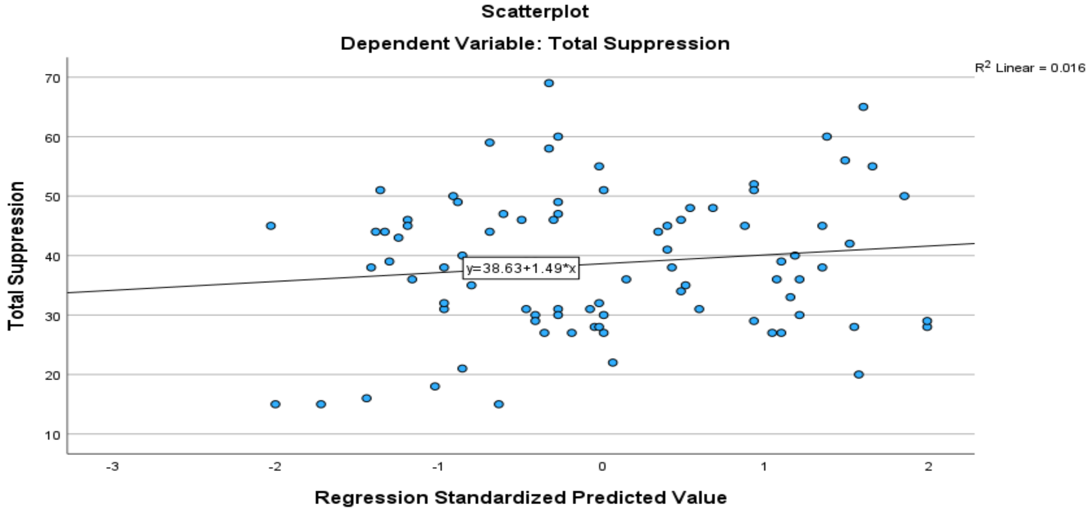
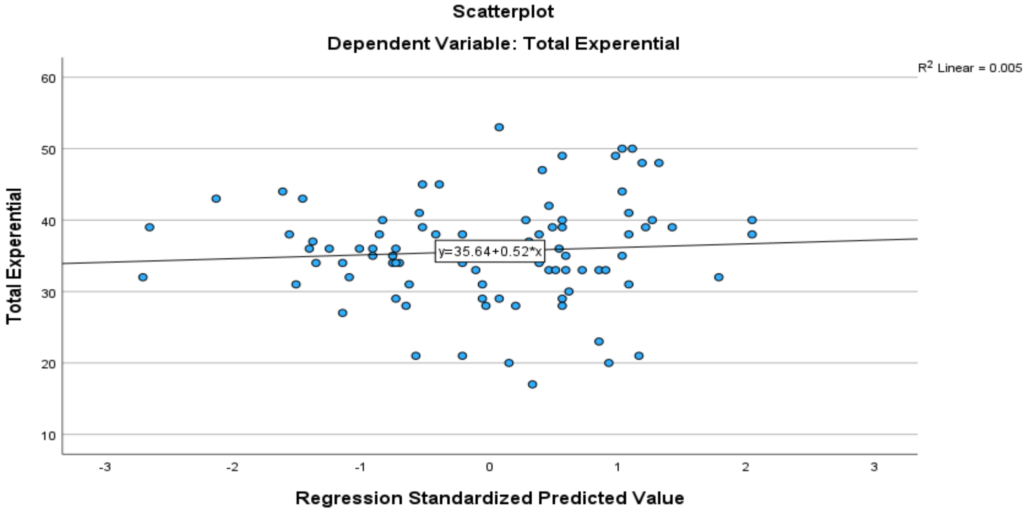


Figure 9

Homoscedasticity of Experiential Avoidance Variances as Predicted by Type of Caregiver and Joyful Disposition Data



A Durbin-Watson test was also conducted to determine if autocorrelation was a problem in Models 1 and 2. As shown in Table 12, Model 1 (1.915) and Model 2 (21.26) fall in a normal range of Durbin-Watson values, so autocorrelation is not expected to be a problem in both models. No significant multivariate outliers were observed.

Table 11

Summary of the Durbin-Watson Test for Model 1 and Model 2

Model	*R*	*R* square	Adjusted *R* square	Std. error of the estimate	Durbin-Watson
1 Experiential avoidance	.072[a]	.005	-.018	7.282	2.126
2 Unwanted intrusive thoughts	.128[a]	.016	-.066	11.669	1.915

a. Predictors: (Constant), Type of Caregiver, Total Joyful Disposition

Reliability of Measurements

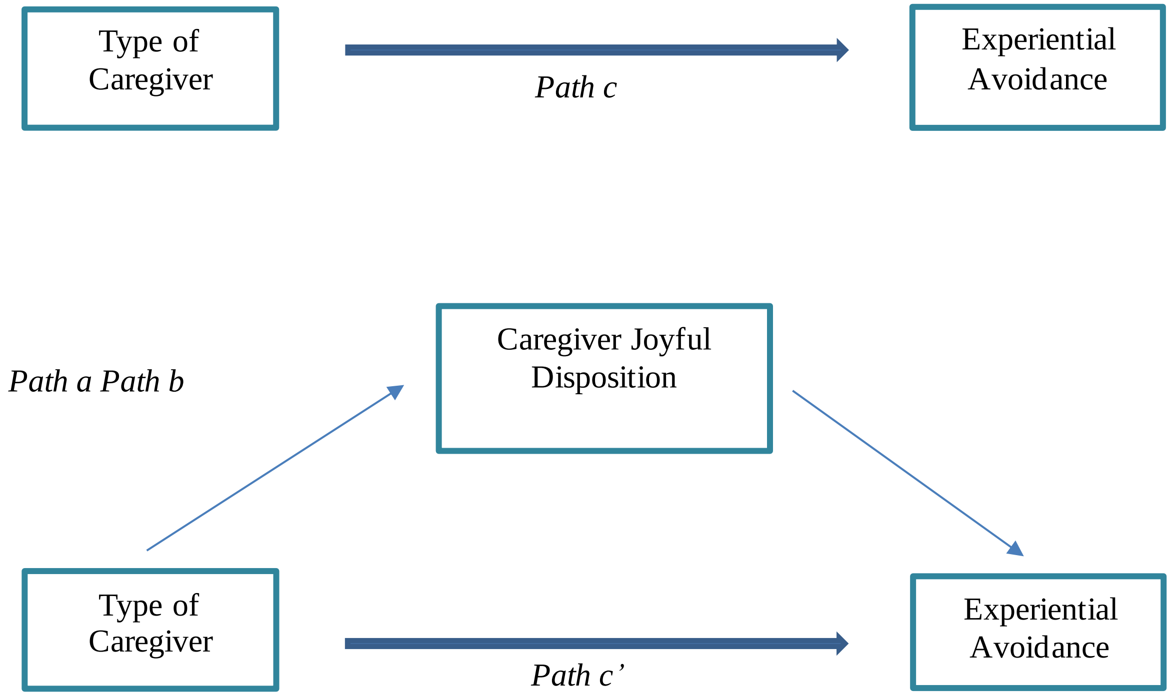
Reliability analyses were conducted to determine the internal consistency of the instruments in the study, as shown by a reliability coefficient referred to as Cronbach's alpha. The following coefficients showed the degree of internal consistency for each measurement: the Joyful Life Scale (α = .941), the Acceptance and Action Questionnaire (α = .610), and the White Bear Suppression Inventory (α = .912). The Cronbach's alphas were excellent for the Joyful Life Scale and the White Bear Suppression Inventory, which suggested high internal consistency, whereas the reliability coefficient for the Acceptance and Action Questionnaire was lower, but acceptable.

Multiple Regression With Mediation Analysis

Data analysis required several steps to determine if caregiver joyful disposition mediated the relationship between type of caregiver and caregiver experiential avoidance, as well as type of caregiver and caregiver unwanted intrusive thoughts. Figure 10 is a schematic that simplifies these steps and renders more clarity in the process. In model 1, Path c is the main effect of type of caregiver on experiential avoidance. Path c in Model 2 embodies the direct effect of type of caregiver on unwanted intrusive thoughts. Path a involves the indirect effect of type of caregiver on joyful disposition, whereas Path c represents the indirect effect of caregiver joyful disposition on caregiver unwanted intrusive thoughts.

Figure 10

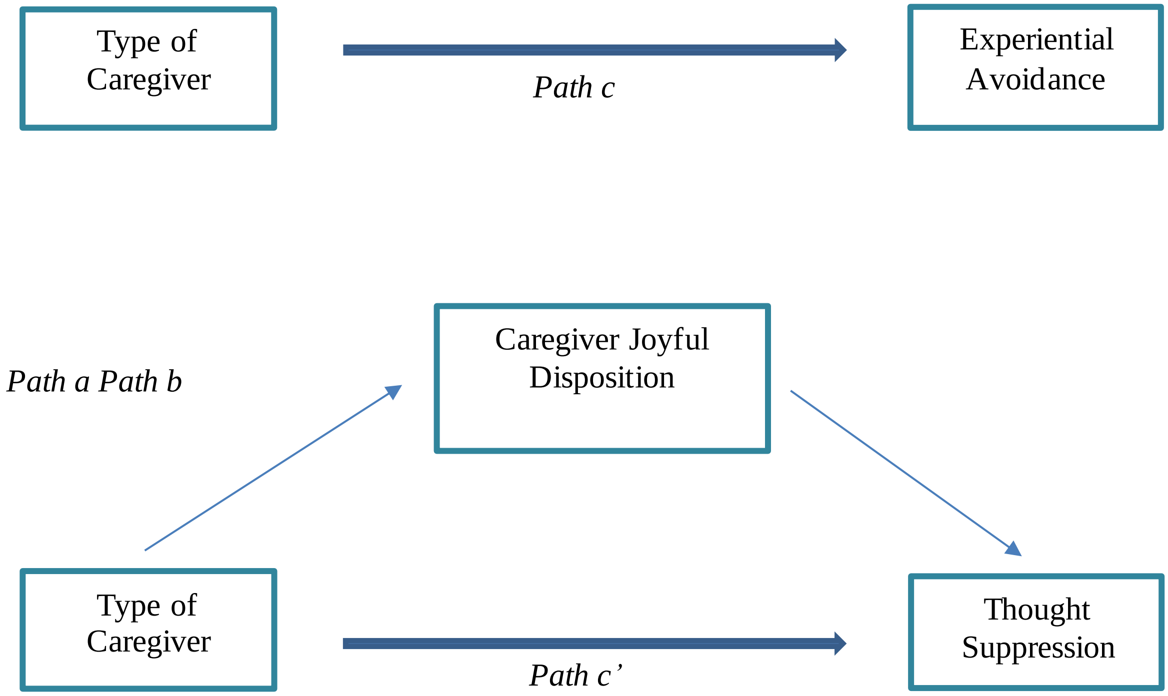
Model 1: Representation of Mediation Analysis and Paths of Direct and Indirect Effects



Note. Top graphic denotes the total direct effect of type of caregiver on experiential avoidance through *path c*. The lower graphic denotes the direct effect of path c' from type of caregiver on experiential avoidance after the mediated indirect effects of Path a and Path b on experiential avoidance. Adapted from D. A. Kenny's *Mediation Handbook* (2023) with his permission in his seminar webpage to use the handbook for academic purposes dependent on referencing his work.

Figure 11

Model 2: Mediation Analysis and Paths of Direct and Indirect Effects



Note. Top graphic denotes the total direct effect of type of caregiver on experiential avoidance through *path c*. The lower graphic denotes the direct effect of path c' of type of caregiver on experiential avoidance as mediated through the indirect paths of path a and path b. Adapted from D. A. Kenny's *Mediation Handbook* (2023) with his permission in his seminar webpage to use the handbook for academic purposes dependent on referencing his work.

Step 1

Model 1. Data analysis began by answering Research Question 1: To what extent is the relationship between type of caregiver (caregivers of children with ASD and caregivers of neurotypical children) and caregiver experiential avoidance mediated by caregiver joyful disposition? First, a simple linear regression was conducted with type of caregiver predicting caregiver experiential avoidance to test the direct effect between the two variables. Table 13 shows that type of caregiver did not significantly predict caregiver experiential avoidance in Model 1.

Model 2. Data was also analyzed to answer Research Question 2: To what extent is the relationship between type of caregiver (caregivers of children of ASD and caregivers of neurotypical children) and caregiver unwanted intrusive thoughts mediated by caregiver joyful disposition? Table 13 shows that type of caregiver did not statistically significantly predict caregiver unwanted intrusive thoughts.

Table 12

Coefficients from Testing Path C of Type of Caregiver Predicting Outcome Variables

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	*t*	*p*
1: Total Experiential Avoidance	Constant	35.274	2.325		15.169	<.001
	Type of Caregiver	.263	1.575	.018	.167	.868
2: Total Unwanted Intrusive Thoughts	(Constant)	35.022	3.725		9.401	<.001
	Type of Caregiver	2.589	2.523	.109	1.026	.308

Step 2

The next step in data analysis began with assessing the indirect pathway, *Path a*, with type of caregiver predicting caregiver joyful disposition. This regression was not statistically significant (p = .755), so joyful disposition was not a meaningful mediator between type of caregiver and experiential avoidance, or type of caregiver and unwanted intrusive thoughts. Therefore, I failed to reject the null hypotheses.

Summary

The data was analyzed using multiple regression with mediation analysis to determine the extent to which joyful disposition mediated the relationship between type of caregiver, experiential avoidance, and unwanted intrusive thoughts. Mediation analysis was used ~~to~~ determine if joyful disposition transmitted or mediated the effects of caring for autistic children or neurotypical children on avoiding internal events and obsessing over unwanted intrusive thoughts. No statistically significant relationship was established among type of caregiver, joyful disposition, experiential avoidance, and unwanted intrusive thoughts. Chapter 5 includes interpretation of the findings, limitations of the study, recommendations for future research, and the implication for social change.

Chapter 5: Discussion

The purpose of the current study was to determine the mediating role of a joyful disposition in helping type of caregiver manage experiential avoidance and unwanted intrusive thoughts; add to the knowledge base of positive psychology, holistic medicine, and clinical psychology regarding the contributing role of a joyful disposition in caregivers who are adversely affected by their children’s behaviors and caregiver burden; and inform mental health educators, clinicians, and autism/caregiver programs of the benefits of caregivers using a joyful disposition to manage stressors to prevent experiential avoidance and unwanted intrusive thoughts from developing as much as possible. Although caregivers of neurotypical children can experience overwhelming caregiver burden and stress, research revealed the extreme stressors associated with caring for children with autism, such as elopement, fascination with whirling dangerous machine parts, reduced awareness of dangerous situations, meltdowns, shutting down to the point of dehydration, other- and self-aggression, suicidal ideation, and suicidal attempt (Anderson, 2010; APA, 2013; Leisman et al., 2023). A robust body of research credited these caregivers as contending with more trauma and stressors than any of the following types of caregivers (Di Renzo et al., 2020): caregivers who have neurotypical children with medical issues, caregivers of children with mental or physical issues, caregivers of children with nonautistic neurodevelopmental disorders, and caregivers who have children with serious genetic or chromosomal issues.

In addition to autistic and behavioral stressors, many caregivers are tormented by mental and physical problems such as debilitating fatigue, serious psychopathology, despair, and the fatalistic realization that their children have a lifetime of autistic symptoms that must be addressed and managed (Picardi et al., 2018). More sobering than these issues are the morbidity and mortality rates that are higher in caregivers of children with ASD than in any other type of caregiver (Picardi et al., 2018). For example, cardiometabolic problems, cardiovascular diseases, and various types of cancer range from 35% to 50% higher in caregivers of autistic children than in caregivers of neurotypical children and caregivers of children with nonautistic neurodevelopmental disorders (Picardi et al., 2018). Caregivers of autistic children have unique, ongoing duties that other types of caregivers do not struggle with (Di Renzo et al., 2020), particularly when trying to control their children's aggression toward others and self-injury (APA, 2013).

The nature of the current study was quantitative and involved examining the relationship between two types of caregivers and their experiential avoidance and unwanted intrusive thoughts, as well as the mediating role of a joyful disposition in the management of the transdiagnostic concepts. The study involved two types of caregivers and quantitative data from three psychological measurements to determine the extent of the relationship between type of caregiver and experiential avoidance, the extent of the relationship between type of caregiver and unwanted intrusive thoughts, the mediating effects of a joyful disposition in the relationship of type of caregiver and experiential avoidance, and the mediating effects of a joyful disposition in the relationship between type of caregiver and unwanted intrusive thoughts. To clarify the extent of these relationships and explain the contribution to the literature in positive psychology and other relevant disciplines, Chapter 5 includes the interpretation of the findings, limitations of the study, recommendations for future research, and implications for social change.

Interpretation of the Findings

Type of Caregiver and Experiential Avoidance

Interpretation of the results of type of caregiver regressed on experiential avoidance began with answering the first research question: What is the extent of the relationship between type of caregiver (caregivers of autistic children and caregivers of neurotypical children) and experiential avoidance as mediated by a joyful disposition? First, regression analysis was conducted to examine the direct or main effect between type of caregiver (caregivers of autistic children and caregivers of neurotypical children) and experiential avoidance. The results were not statistically significant at the .05 level (see Figure 10). The findings showed that caregivers of autistic children who experienced the unique stressors associated with ASD did not predict experiential avoidance significantly differently than caregivers of neurotypical children predicted their avoidance issues. The findings disconfirm a portion of the knowledge base that ascribed the occurrence of more extreme stressors and problems with experiential avoidance in caregivers of children with ASD than in caregivers of neurotypical children (Anderson et al., 2012; Gur & Reich, 2023; Holmberg Bergman et al., 2023; Pereira-Smith et al., 2019).

The findings of the current study that disconfirm a portion of the research base made up of autism studies, positive psychology, and clinical psychology are puzzling.

For example, one well-researched stressor in autism studies involved the high risk of elopement often observed in children with autism as they grow older (Andersen et al., 2019; Pereira-Smith et al., 2019; Wiggins et al., 2020). Although many preschool children can elope to explore other places, neurotypical children tend to mature and desist from their elopement activities by the middle of the elementary years (Berk, 2018). However, children with autism do not develop in age-typical ways and continue their elopement long after most children outgrow these activities by becoming more mature, independent, and able to conduct themselves more safely in dangerous situations (APA, 2013; Berk, 2018). Caregivers in many studies described the terror and stress of their missing children who eloped to dangerous areas and were not found for hours or days (Andersen et al., 2019; Anderson et al., 2012; Pereira-Smith et al., 2019). Many of these caregivers were diagnosed with transdiagnostic constructs such as experiential avoidance, PTSD issues, and severe unwanted intrusive thoughts.

Type of Caregiver and Unwanted Intrusive Thoughts

Interpretation of the findings also began by answering the second research question: What is the extent of the relationship between type of caregiver (caregivers of children with autism and caregivers of neurotypical children) and unwanted intrusive thoughts? Regression analysis was performed to examine the main effect between type of caregiver and unwanted intrusive thoughts. The results were not statistically significant at the .05 level (see Figure 11). This finding also disconfirms the knowledge base. Research showed that caregivers of autistic children suffered inordinately from disturbing unwanted intrusive thoughts, which emerge from caregivers trying to escape their memories, thoughts, emotions, and bodily sensations connected to traumatic events (Jacoby et al., 2018). Traumatic memories and the sequelae of these memories can elicit unwanted intrusive thoughts when caregivers are unwilling to accept these mental and bodily events and not resist excessive experiential avoidance (Jacoby et al., 2018).

Mediating Role of a Joyful Disposition

Answering both research questions revealed that caregivers of autistic children and caregivers of neurotypical children did not significantly predict experiential avoidance or unwanted intrusive thoughts, which negated further analysis of the mediating role of a joyful disposition in the relationships between type of caregiver and the transdiagnostic constructs. The reason for this involved the risk of introducing irrelevant variables (confounders) into the study caused by too few differences between the type of caregiver, which could lead to spurious findings and problems with construct validity.

Limitations of the Study

The study had four limitations that related to generalizability, non-random selection (convenience sampling), complex issues related to heterogeneity of autism and neurotypical functioning, and failure to realize that using mixed-method research could have yielded better understanding of how a joyful disposition affects and benefits caregivers.

Generalizability Issues

Issues with generalizing the sample to the population concerned the extremely large difference in size between the population of approximately 42,200,000 caregivers of children aged 5 through 17 and the sample size of 89 caregivers of children between the same ages. Although descriptive data showed similarities between sample statistics and population parameters regarding the prevalence of various races, ratio of male to female autistic children, and sociodemographic factors (e. g., regions of residence), a sample size of eighty-nine participants cannot possibly generalize to all the characteristics of a population composed of tens of millions of caregivers. One difficulty encountered in sampling as many caregivers as possible arose with posting a participant self-selection flyer in various social media groups. Due to increasing use of these groups by researchers for recruitment purposes in recent years, group administrators have changed their bylaws to significantly decrease recruitment of participants on their sites. Although I arranged months in advance with six administrators to use their platform for sampling purposes, I went to Survey Monkey instead and was fortunate to have obtained a sample of eighty-nine caregivers.

Convenience Sampling

Another limitation arose from the need to conduct a type of non-probability sampling referred to as convenience sampling, which involved caregiver self-selection after they qualified for the study. That is, the caregivers of autistic children and neurotypical children were required to have children from the ages of five through seventeen, have United States citizenship, and live in the same household with their children for at least one year. Moreover, the caregivers of autistic children needed their children to have only been diagnosed with ASD and no other neurodevelopmental disorder, such as Williams Syndrome. Also, the caregivers of neurotypical children needed to have children who had never been diagnosed with any type of neurodevelopmental disorder. Since reaching enough caregivers with these criteria was challenging enough, it would have been difficult to sample enough participants for random sampling. Although convenience sampling has drawbacks such as potential introduction of researcher bias into the study, random sampling was not practical for fifty-four caregivers of autistic children and thirty-five caregivers of neurotypical children, as it would have further reduced the sample size.

Heterogeneity of Autism and Neurotypical Functioning

Controlling all factors was not possible due to the heterogenous nature of ASD and neurotypical functioning (APA, 2013). Qualification of the participants relied heavily on their ability to understand the differences between ASD and other neurodevelopmental disorders and certainly the overlap of these issues. Qualifying caregivers to enter the study who have children diagnosed with autism and Prader-Willi syndrome, for example, would not have been appropriate for this study due to the introduction of confounding factors from two different neurodevelopmental disorders with overlapping characteristics (Fountain & Schaaf, 2016). Furthermore, qualifying participants also depended on their realization that neurotypical functioning could hide mild neurodevelopmental issues, with these neurodiverse factors possibly invalidating the results of the study.

Finally, the complexity of autism and neurotypical functioning in a large, diverse population of caregivers and their children introduces myriad factors that can complicate sampling in a study, particularly when the sample size is small. One factor that affected this study was the similar effects on caregivers from their children’s autistic symptoms, whether mild, moderate, or severe. A larger sample size could have ferreted out more effects on caregivers relative to different levels of autistic functioning, such as high experiential avoidance in a caregiver with a mildly affected child.

Mixed-Methods Methodology

The results from a quantitative study are objectively derived from valid measurements, even when the measurements use subjective items—all of which ameliorate different types of bias in the research process. However, quantitative focus is often limited when in-depth understanding is sought about a phenomenon, such as the meaning of high experiential avoidance observed in overwhelmed caregivers of autistic children. This study would have been better served using a mixed method methodology. In essence, a mixed-method study would have helped generalize the sample to the population through caregivers identifying patterns of thoughts, feelings, and behaviors involved in raising their children, and it could have helped support the need for convenience sampling since grounding a theory is often tied to non-probability research.

Recommendations

I recommend incorporation of another transdiagnostic construct and scale in future research of caregiver research of experiential avoidance and unwanted intrusive thoughts. More research is needed because caregiver burden is increasing exponentially from in the prevalence of ASD in the last twenty-five years. Since autism studies have significantly outpaced caregiver studies, caregiver burden and associated stressors have largely overlooked until the past ten years; whereupon researchers, advocates, and clinicians began to realize that caregivers need advocacy and assistance as much as their children. Realization also extended to a rapidly expanding focus on positive psychology that beneficial dispositional traits and positive attitudes can help caregivers achieve a delicate balance between experiential acceptance and avoidance.

In addition to studying autistic stressors, various psychology disciplines have increasingly focused on transdiagnostic concepts observed in caregivers, especially the interplay between experiential avoidance and unwanted intrusive thoughts (Bergman et al., 2023; Fletcher-Watson et al., 2019; Jacoby et al., 2018; Roberts et al., 2015). Adversely, the gap in the literature concerning caregiver burden and psychopathology in carers of children with ASD has resulted from the lag between the pace of autism studies concerning psychopathology in the children and psychological difficulties in the caregivers. A substantial body of research over the past twenty years has shown glaring differences between the types of caregivers and avoidance dynamics, as autistic symptoms were credited with causing traumatic experiences.

Although the results of the extent of the predictive relationship between type of caregiver and experiential avoidance and unwanted intrusive thoughts did not show statistical significance, additional questions arose about the mediating role of a joyful disposition in relation to different variables. For instance, was the construct of experiential avoidance too broad to differentiate stress levels between caregivers of autistic children and caregivers of neurotypical children? More so, could the construct have been constricted to capture specific characteristics that were more relevant to a joyful disposition if the results between type of caregiver and the transdiagnostic constructs had been statistically significant? Finally, could the inclusion of another transdiagnostic construct result in more pertinent findings? Perhaps, these questions could have been answered by incorporating another outcome variable in the study, such as the transdiagnostic construct of activation which is the therapeutic process of maintaining contact with disturbing memories, thoughts, and emotions while behaving effectively (Fernandez-Rodriguez, 2018). Recommending a fourth measurement could be used in future research to ferret out more explicit avoidance dynamics and reveal actions that empower or activate caregivers to manage and mitigate their experiential avoidance. At that point, mediating dynamics of a joyful disposition could have been examined more effectively. With this in mind, the study is needed to help fill the literature gap of the relationship between dispositional joy and transdiagnostic constructs through its counterintuitive findings that caregivers of neurotypical children did not significantly differ from caregivers of autistic children in predicting experiential avoidance.

Implications

Caregiver research has an extensive impact on positive social change at all levels of society--such as the individual caregiver, the child, the family, autism support organizations, schools, communities, state programs, autism advocacy foundations, and federal support agencies. Across these levels of society, the most important level by far is the individual caregiver, because a caring bottleneck occurs quickly when the caregiver does not provide care in an effective and timely manner. Another perspective that clarifies the bottleneck effect is that all levels of society do not offer caring provisions to a child even remotely close to the caregiver. Unfortunately, failure of this care to reach the child has costly repercussions across societal levels and agencies, whereupon beneficial social change falters and even regresses.

Level of Individual Caregivers

Asserting that the most important level comprises individual caregivers was not easily claimed by me, as apprehension that the reader might assume that the child deserves less care or focus. This is entirely faulty reasoning, because importance of a particular entity or level relies on what it has to offer to other levels. Caregivers literally ensure that their children survive mentally, physically, and medically more than any other facet of society. In other words, children rely the most on their caregivers, which is one of the main points of this study, particularly where autistic children are involved. Therefore, the main implication of the study is that eliciting positive social change begins at the level of the caregiver, with building the knowledge base of strategies for helping caregivers overcome experiential avoidance and the torment of unwanted intrusive thoughts.

Levels of the Children and Families

One of the repeating observations by numerous studies listed throughout the study addressed the extra stress on caregivers by managing their children's autistic symptoms—not neurotypical children or those with other disabilities, but children with serious autistic behavioral disorders that disrupt daily life even more than sick children, those with non-autistic neurodevelopmental disorders, and those with other types of disabilities. Although many conditions prevail in different types of caregivers and their children, autistic behaviors can worsen quickly into life-threatening conditions. I cannot think of anything more pressing than the need for social change that can help a caregiver calm down from ongoing emergencies and maintain a measure of calm for the next emergency while ensuring the child's best interests. The second implication for the importance of social change is to improve the quality of the children's lives by improving the caregivers' stress levels.

Levels of Communities, State Programs, Autism Advocacy Foundations, and Federal Agencies

Each one of these levels can aid in beneficial social change by improving existing programs, assistance, and adopting new programs for all types of caregivers. Community programs are invaluable for providing convenient resources for caregivers who need reassurance provided in support groups and education seminars provided by hospitals, to name a few. Assistance from social workers can be accessed at the community levels, as well as other organizations that operate within communities. Social change can also proceed at the state levels through disability agencies, autism advocacy foundations, and state ombudsmen. Furthermore, federal agencies are essential for adopting change through their capacity to affect policy, access to monetary resources, and extensive network of organizations interested in positive social change.

Conclusion

Knowing the dynamics of the mediating role of a joyful disposition may inform caregivers of children with ASD of strategies for reducing caregiver burden, increasing their quality-of-life, and sustaining their realization of the wonderful blessings that the children provide in their lives. Just as caregivers provide the most important activities in their children’s lives, a joyful disposition may imbue their lives more than anything else, because this type of joy transcends a world of negativity, despair, and hopelessness. Embracing a joyful disposition enables caregivers to embrace a plethora of challenges, but the journey begins with adopting and nurturing the joy that resides in most of us. Moreover, those caregivers who understand and appreciate the benefits of having a joyful disposition realize that drawing on the deeper positivity inherent in joyfulness can significantly offset the rigors of raising autistic children, keeping them safe, and helping them manage autistic symptoms (Picardi et al., 2018; Prime et al., 2023). Furthermore, some caregivers who not only accept the challenges of raising autistic children, but then embrace these challenges, have perceived a profound aspect of having a joyful disposition. That is, the nature of utilizing joyfulness relates to managing a challenge to mitigate it, and profoundly associated with appreciating and embracing the challenge to enrich joyful living.

References

Adib-Hajbaghery, M., & Ahmadi, B. (2019). Caregiver burden and its associated factors in caregivers of children and adolescents with chronic conditions. *International Journal of Community Based Nursing and Midwifery*, *7*(4), 258–269. https://doi.org/10.30476/IJCBNM.2019.73893.0

Adler, B. A., Wink, L. K., Early, M., Shaffer, R., Minshawi, N., McDougle, C. J., & Erickson, C. A. (2015). Drug-refractory aggression, self-injurious behavior, and severe tantrums in autism spectrum disorders: A chart review study. *Autism*, *19*(1), 102–106. https://doi:10.1177/1362361314524641

Adroher, N. D., Prodinger, B., Fellinghauer, C. S., & Tennant, A. (2018). All metrics are equal, but some metrics are more equal than others: A systematic search and review on the use of the term “metric.” *PLoS ONE*, *13*, Article e193861. https://doi.org/10.1371/journal.pone.0193861

Ahmad, E. S. N. (2020). The challenges faced by the parents of autistic children in Jordan. *Journal of Education and Practice*, *11*(28), 74–82. https://doi.org/ 10.7176/JEP/11-28-09

Alderson-Day, B., & Fernyhough, C. (2015). Inner speech: Development, cognitive functions, phenomenology, and neurobiology. *Psychological Bulletin*, *141*(5), 931–965. https://doi.org/10.1037/bul0000021

Alex, C., Titus, D. J., Venkateswaran, C., & Thomas, K. S. (2020). Assessing the prevalence of depressive disorder and anxiety disorder, in mothers of children with common childhood psychiatric disorders. *Journal of Critical Reviews*, *7*(19), 1878–1885. https://doi.org/10.31838/jcr.07.13.296

Al-Farsi, O. A., Al-Farsi, Y. M., Al-Sharbati, M. M., & Al-Adawi, S. (2016). Stress, anxiety, and depression among caregivers of children with autism spectrum disorder in Oman: A case-control study. *Neuropsychiatric Disease and Treatment*, *12*, 1943–1951. https://doi.org/10.2147/NDT.S107103

Ali, I. (2019). Personality traits, individual innovativeness and satisfaction with life. *Journal of Innovation & Knowledge*, *4*(1), 38–46. https://doi.org/10.1016/j.jik.2017.11.002

Alibekova, R., Kai Chan, C., Crape, B., Kadyrzhanuly, K., Gusmanov, A., An, S., Bulekbayeva, S., Akhmetzhanova, Z., Ainabekova, A., Yerubayev, Z., Yessimkulova, F., Bekisheva, A., Ospanova, Z., & Rakhimova, M. (2022). Stress, anxiety and depression in parents of children with autism spectrum disorders in Kazakhstan: Prevalence and associated factors. *Global Mental Health (Camb.),* 11(9), 472-482. https://doi.org/10.1017/gmh.2022.51

Allen, K. A., Bowles, T. V., & Weber, L. L. (2013). Mothers' and fathers' stress associated with parenting a child with autism spectrum disorder. *Autism Insights*, *5*, 1–11. https://doi.org/10.4137/AUI.S11094

Al-Oran, H., & Al-Sagarat, A. Y. (2016). Parenting stress of children with autistic disorder. *Open Access Library Journal*, 1–10. https://doi.org/10.4236/oalib.1102791

American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed.) (Revised). Washington, DC: Author.

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: Author.

Andersen, A. M., Law, J. K., Marvin, A. R., & Lipkin, P. H. (2019). Elopement patterns and caregiver strategies. *Journal of Autism Developmental Disorders*, *50*(6), 2053–2063. https://doi.org/10.1007/s10803-019-03961-x

Anderson, C., Law, J. K., Daniels, A., Rice, C., Mandell, D. S., Hagopian, L., & Law, P. A. (2012). Occurrence and family impact of elopement in children with autism spectrum disorders. *Pediatrics*, *130*(5), 870–877. https://doi.org/10.1542/peds.2012-0762

Andrade, C. (2018). Internal, external, and ecological validity in research design, conduct, and evaluation. *Indian Journal of Psychological Medicine*, *40*(5), 498–499. https://doi.org/10.4103/IJPSYM.IJPSYM_334_18

Annas, J. (1999). The inner city: Ethics without politics in the republic. In J. Annas (Ed.), *Platonic ethics, old and new* (pp. 72–95). USA: Cornell University Press.

Aschbacher, K., Milush, J. M., Gilbert, A., Almeida, E., Sinclair, E., Epling, L., & Epel, E. (2017). Chronic stress is associated with reduced circulating hematopoietic progenitor cell number: A maternal caregiving model. *Brain, Behavior, & Immunity*, *59*, 245–252. https://doi.org/10.1016/j.bbi.2016.09.009

Atkinson, L. Z., & Cipriani, A. (2018). How to carry out a literature search for a systematic review: A practical guide. *British Journal of Psychological Advances*, *24*(2). https://doi.org/10.1192/bja.2017.3

Ashinoff, B. K., & Abu-Akel, A. (2021). Hyperfocus: The forgotten frontier of attention.

Psychological Research, *85*(1), 1–19. https://doi.org/10.1007/s00426-019-01245-8

Autism and Developmental Disabilities Monitoring Network. (2012). Prevalence of autism spectrum disorder--Autism and developmental disabilities monitoring network, 14 sites, United States, 2008. *Surveillance Summaries*, *61*(SS03), 1–19. http://www.cdc.gov/mmwr/preview/mmwrhtml/ss6103a1.htm

Autism Partnership Foundation (2021). *Advancing excellence in autism treatment and research.* https://autismpartnershipfoundation.org/

Autism Spectrum Disorder Foundation (2016). *The financial impact of an autism diagnosis.* Schererville, Indiana: Author. http://www.myasdf.org/site/media-center/articles/

Autism Society of America (2021). *What is autism* [Web page]? https://www.autism-society.org/

Autism Speaks (2016). *Financial assistance*. New York, NY: Author. https://www.autismspeaks.org/family-services/community-

Baird, B. M., Lucas, R. E., & Donnellan, M. B. (2017). The role of response styles in the assessment of intraindividual personality variability. *Journal of Research in Personality, 69*, 170-179. https://doi.org/10.1016/j.jrp.2016.06.015

Barchel, D., Stolar, O., De-Haan, T., Ziv-Baran, T., Saban, N., Fuchs, D. O., & Berkovitch, M. (2019). Oral cannabidiol use in children with autism spectrum disorder to treat related symptoms and co-morbidities. *Frontiers in Pharmacology*, *9*, 1521. https://doi.org/10.3389/fphar.2018.01521

Barros, L., Goes, A. R., & Pereira, A. I. (2015). Parental self-regulation, emotional regulation, and temperament: Implications for intervention. *Students of Psychology, 32*(2). https://doi.org/10.1590/0103-166X2015000200013

Bateman, L. & Storch, E. (2017). Positive psychology theoretical framework. In A. Wenzel (Ed.), The Sage encyclopedia of abnormal and clinical psychology (Vol. 1, pp. 2598-2602). Thousand Oaks, CA: SAGE Publications, Inc. https://sk.sagepub.com/reference/the-sage-encyclopedia-of-abnormal-and-clinical-psychology/i29620.xml

Beel, J., & Gipp, B. (2010). Academic search engine spam and Google Scholar's resilience against it. *Journal of Electronic Publishing, 13*(3). https://doi.org/10.3998/3336451.0013.305

Begum, R., & Mamin, F. A. (2019). Impact of autism spectrum disorder on family. *Autism Open Access, 9*(4). https://doi.org/10.35248/2165- 7890.19.09.244

Beighton, C., & Wills, J. (2017). Are parents identifying positive aspects to parenting their child with an intellectual disability or are they just coping? A qualitative exploration. *Journal of Intellectual Disabilities, 21*(4), 325-345. https://doi.org/10.1177/1744629516656073

Bekhet, A. K., & Avery, (2017). Resilience from the perspectives of caregivers of persons with dementia. *Archives of Psychiatric Nursing, 32*(1), 19-23. https://doi.org/ 10.1016/j.apnu.2017.09.008

Ben-Sasson, A., & Yom-Tov, E. (2016). Online concerns of parents suspecting autism spectrum disorder in their child: Content analysis of signs and automated prediction of risk. *Journal of Medical Internet research*, *18*(11), e300. https://doi.org/10.2196/jmir.5439

Benson, V. K., Castelhano, M. S., Howard, P. L., Latif, N., & Rayner, K. (2014). Looking, seeing, and believing in autism: Eye movements reveal how subtle cognitive processing differences impact in the social domain. *Autism Research,* 9(8), 879-887. San Diego, CA: John Wiley & Sons. https://doi.org/10.1002/aur.1580

Berridge, K. C., & Kringelbach, M. L. (2015). Pleasure systems in the brain. *Neuron, 86*(3), 646-664. https://doi.org/10.1016/j.neuron.2015.02.018

Billeci, L., Calderoni, S., Conti, E., Gesi, C., Carmassi, C., Dell'Osso, L., Cioni, G., Muratori, F., & Guzzetta, A. (2016). The broad autism (endo) phenotype: Neurostructural and neurofunctional correlates in parents of individuals with autism spectrum disorders. *Frontiers in Neuroscience, 10*, 346. https://doi.org/ 10.3389/fnins.2016.00346

Bishop, S., Farmer, C., Kaat, A., Georgiades, S., Kanne, S., & Thurm, A. (2019). The need for a developmentally based measure of social communication skills. *Journal of the American Academy of Child and Adolescent Psychiatry*, *58*(6), 555–560. https://doi.org/10.1016/j.jaac.2018.12.010

Blackledge, J. T., & Hayes, S. C. (2006). Using Acceptance and Commitment Training in the support of parents of children diagnosed with autism. *Child and Family Behavior Therapy, 28*, 1-18. https://doi.org/10.1300/J019v28n01_01

Bleuler, E. (1911). Dementia praecox oder gruppe der schizophrenien. In: Aschaffenburg

G., (Ed.). *Handbuch der Psychiatrie.* Leipzig: Deuticke.

Bluth, K., Roberson, P. N. E., Billen, R. M., & Sams, J. M. (2013). A stress model for couples parenting children with autism spectrum disorders and the introduction of a mindfulness intervention. *Journal of Family Theory & Review*, *5*(3), 194–213. https://doi.org/10.1111/jftr.12015

Boelen, P.A., & Reijntjes, A. (2008). Measuring experiential avoidance: Reliability and validity of the Dutch 9-item Acceptance and Action Questionnaire (AAQ). *Journal of Psychopathological Behavioral Assessment*, *30*, 241-251. https://doi.org/10.1007/s10862-008-9082-4

Bond, F. W., Hayes, S. C., Baer, R. A., Carpenter, K. M., Guenole, N., Orcutt, H. K., … Zettle, R. D. (2011). Preliminary psychometric properties of the Acceptance and Action Questionnaire – II: A revised measure of psychological inflexibility and experiential avoidance. *Behavior Therapy, 42*, 676–688. https://doi.org/10.1016/j.beth.2011.03.007

Bonis, S. (2016). Stress and parents of children with autism: A review of literature. *Issues in Mental Health Nursing,37*(3), 153-163. https://doi.org/10.3109/01612840.2015.1116030

Bonis, S. A., & Sawin, K. J. (2016). Risks and protective factors for stress self-management in caregivers of children with autism spectrum disorder: An integrated review of the literature. *Journal of Pediatric Nursing, 31*(6), 567-579. https://doi.org/10.1016/j.pedn.2016.08.006

Bozkurt, G., Uysal, G., & Duzkaya, D. S. (2019). Examination of care burden and stress coping styles of caregivers of children with autism spectrum disorder. *Journal of Pediatric Nursing, 47*, 142-147. https://doi.org/10.1016/j.pedn.2019.05.005

Bradshaw, J., Gillespie, S., McCracken, C., King, B. H., McCracken, J. T., Johnson, C. R., Lecavalier, L., Smith, T., Swiezy, N., Bearss, K., Sikich, L., Donnelly, C., Hollander, E., McDougle, C. J, & Scahill, L. (2021). Predictors of caregiver strain for parents of children with autism spectrum disorder. *Journal of Autism Developmental Disorders, 51*(9), 3039-3049. https://doi.org/10.1007/s10803-020-04625-x.

Brandel, M., Vescovelli, F., & Ruini, C. (2017). Beyond Ryff's scale: Comprehensive measures of eudaimonic well-being in clinical populations. A systematic review. *Clinical Psychology & Psychotherapy, 24 6*, O1524-O1546. https://doi.org/10.1002/cpp.2104

Briley, D. A., & Tucker-Drob, E. M. (2015). Comparing the developmental genetics of cognition and personality over the life span. In *Journal of Personality, Special Issue* (pp. 51-61, 2017). https://doi.org/10.1111/jopy.12186

Brooks, M., Graham-Kevan, N., Robinson, S., & Lowe, M. (2019). Trauma characteristics and posttraumatic growth: The mediating role of avoidance coping, intrusive thoughts, and social support. *Psychological Trauma: Theory, Research, Practice, and Policy, 11*(2), 232-238. Washington, DC: American Psychological Association. https://doi.org/10.1037/tra0000372

Brosschot, J. F., Verkuil, B., Thayer, J. F. (2016). The default response to uncertainty and the importance of perceived safety in anxiety and stress: An evolution-theoretical perspective. *Journal of Anxiety Disorders, 41*, 22-34. https://doi.org/10.1016/j.janxdis.2016.04.012

Brown, F. L., Whittingham, K., & Sofronoff, K. (2015). Parental experiential avoidance as a potential mechanism of change in a parenting intervention for caregivers of children with pediatric acquired brain injury, *Journal of Pediatric Psychology*, *40*(4), 464–474. https://doi.org/10.1093/jpepsy/jsu109

Bryman, A. (2016). *Social research methods* (5th ed.). London: Oxford University Press.

Burack, J. A., & Enns, J. T. (Eds.). (2012). *Attention, development, and psychopathology: A merging of disciplines*, (pp. 74-94). New York, NY: Guilford Press.

Cadman, T., Eklund, H., Howley, D., Hayward, H., Clarke, H., Findon, J., Xenitidis, K…Glaser, K. (2012). Caregiver burden as people with autism spectrum disorder and Attention-Deficit/Hyperactivity Disorder Transition into Adolescence and adulthood in the United Kingdom. *Journal of the American Academy of Child & Adolescent Psychiatry, 51*(9), 879-888. https://doi.org/10.1016/j.beth.2011.03.007

Caldwell-Harris, C. L. (2021). An explanation for repetitive motor behaviors in autism: Facilitating inventions via trial-and-error discovery. *Frontiers in Psychiatry, 12*, Issue 657774. https://doi.org/10.3389/fpsyt.2021.657774

Campos, D., Modrego-Alarcón, M., López-del-Hoyo, Y., González-Panzano, M., Van Gordon, W., Shonin, E., … García-Campayo, J. (2019). Exploring the role of meditation and dispositional mindfulness on social cognition domains: A controlled study. *Frontiers in Psychology*, *10*, 809.

https://doi.org/10.3389/fpsyg.2019.00809

Caprar, G. V., Eisenberg, N., & Alessandri, G. (2016). Positivity: The dispositional basis of happiness. *Journal of Happiness Studies, 18*(2), 353-371. https://doi.org/10.1007/s10902-016-9728-y

Carapito, E., Ribeiro, M. T., Pereira, A. I., & Roberto, M. S. (2018). Parenting stress and preschoolers' socio-emotional adjustment: The mediating role of parenting styles in parent–child dyads. *Journal of Family Studies*, 26(4), 594-610. https://doi.org/10.1080/13229400.2018.1442737

Cariello, C. (2020). *My son has autism and I'll take care of him for the rest of his life* [Web page]. https://grownandflown.com/mother-son-with-autism-forever-mother/

Carroll, D., Hallett, V., McDougle, C. J., Aman, M. G., McCracken, J. T., Tierney, E., … Scahill, L. (2014). Examination of aggression and self-injurious behaviors in children with autism spectrum disorders and serious behaviors problems. *Child and Adolescent Psychiatric Clinics of North America*, *23*(1), 57–72. https://doi.org/10.1016/j.chc.2013.08.002

Carter, R. M., Jung, H., Reaven, J., Blakeley-Smith, A., & Dichter, G. S. (2020). A nexus model of restricted interests in autism spectrum disorder. *Frontiers in Human Neuroscience*, *14*(212), 1-11. https://doi.org/10.3389/fnhum.2020.00212

Cascio, C. J., Foss-Feig, J. H., Burnette, C. P., Heacock, J. L., & Cosby, A. A. (2012). The rubber hand illusion in children with autism spectrum disorders: delayed influence of combined tactile and visual input on proprioception. *Autism: The*

International Journal of Research and Practice, *16*(4), 406–419. https://doi.org/10.1177/1362361311430404

Casey, L. B., Zanksas, S., Meindl, J. N., Parra, G. R., Cogdal, P., & Powell, K. (2012). Parental symptoms of posttraumatic stress following a child's diagnosis of autism spectrum disorder: A pilot study. *Research in Autism Spectrum Disorders, 6*(3), 1186-1193. https://doi.org/10.1016/j.rasd.2012.03.008

Catalano, D., Holloway, L., & Mpofu, E. (2018). Interventions for parent carers of children with autistic spectrum disorder: Practice guidelines from a critical interpretive synthesis (CIS) systematic review. *International Journal of Environmental Research and Public Health Review*, *15*(2), 334. https://doi.org/10.3390/ijerph15020341

Catalino, L. I., Algoe, S. B., & Fredrickson, B. L. (2011). Prioritizing positivity: An effective approach to pursuing happiness? *Emotion*, *14*, 1155–1161. Atlanta, GA https://doi.org/ 10.1037/a0038029

Centers for Disease Control and Prevention (2012). Prevalence of autism spectrum disorders: Autism and developmental disabilities monitoring network, 14 sites, United States, 2008. *MMWR Surveillance Summaries 61*(3): 1–19. https://www.cdc.gov/mmwr/preview/mmwrhtml/ss6103a1.htm

Centers for Disease Control and Prevention. (2020a). *Data and statistics on autism spectrum disorder*. https://www.cdc.gov/ncbddd/autism/data.html

Centers for Disease Control and Prevention. (2020b). *Data & statistics on birth defects*. https://www.cdc.gov/ncbddd/birthdefects/data.html

Cervone, D., & Pervin, L. A. (2019). *Personality: Theory and research* (14th ed.) (pp. 3-5). New York, NY: John Wiley & Sons.

Cetinbakis, G., Bastug, G., & Ozel, E. T. (2018). Factors contributing to higher caregiving burden in Turkish mothers of children with autism spectrum disorders. *International Journal of Developmental Disabilities*, *66*(1). https://doi.org/10.1080/20473869.2018.1478630

ChildStats.gov (2021). *Child and family statistics* [Web page]. https://www.childstats.gov/americaschildren/tables/pop1.asp

Ciarrochi, J., Atkins, P. W. B., Hayes, L. L., Sahdra, B. K., & Parker, P. (2016). Contextual positive psychology: Policy recommendations for implementing positive psychology into school. *Frontiers in Psychology, 7*(1561), 1-16. https://doi.org/10.3389/fpsyg.2016.01561

Clark, D. A., & Radomsky, A. S. (2014). Introduction: A global perspective on unwanted intrusive thoughts. *Journal of Obsessive-Compulsive and Related Disorders*, *3*(3), 265-268. https://doi.org/10.1016/j.jocrd.2014.02.001

Clark, L. A., & Watson, D. (1991). Tripartite model of anxiety and depression: Psychometric evidence and taxonomic implications. *Journal of Abnormal Psychology, 100*(3), 316–336. https://doi.org/10.1037/0021-843X.100.3.316

Cloninger, C. R., & Cloninger, K. M. (2011). Person-centered therapeutics. *International Journal of Person-Centered Medicine, 1*, 43-52. https://doi.org10.5750ijpcm.v1i1.21

Cohen J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.) (pp. 1-

17). New York, NY: Erlbaum.

Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied multiple correlation/regression analysis for the behavioral sciences*. New York, NY: Erlbaum.

Conversano, C., Rotondo, A., Lensi, E., Vista, O. D., Arpone, F., & Reda, M. A. (2010). Optimism and its impact on mental and physical well-being. *Clinical Practice and Epidemiology in Mental Health*, *6*, 25–29. https://doi.org/10.2174/1745017901006010025

Cooper, J. M. (Ed.) (1997). *Symposium: Plato*. *Complete Works* (pp. 457-505). Indianapolis, Indiana: Hutchinson.

Craig, F., Savino, R., & Trabacca, A. (2019). A systematic review of comorbidity between cerebral palsy, autism spectrum disorders, and attention deficit hyperactivity disorder. *European Journal of Paediatric Neurology,* 23(1), 31-42. https://doi.org/10.1016/j.ejpn.2018.10.005

Crane, C., Jandric, D., Barnhofer, T., & Williams, J. M. G. (2010). Dispositional mindfulness, meditation, and conditional goal setting. *Mindfulness*, *1*, 204-214. https://doi.org/10.1007/s12671-010-0029-y

Croom, A. M. (2012). Music, neuroscience, and the psychology of well-being: A precis. Frontiers in Psychology, *2,* 393. https://doi.org/10.3389/fpsyg.2011.00393

Croteau-Chonka, E. C., Dean, D. C., Remer, J., Dirks, H., O'Muircheartaigh, J., & Deoni S. C. L. (2015). Examining the relationships between cortical maturation and white matter myelination throughout early childhood. *Neuroimage, 15*(125), 413-

421. https://doi.org/10.1016/j.neuroimage.2015.10.03

Crowell, J. A., Keluskar, J., & Gorecki, A. (2019). Parenting behavior and the development of children with autism spectrum disorder. *Comprehensive Psychiatry, 90,* 21-29. https://doi.org/10.1016/j.comppsych.2018.11.007

Cubells, J. F., & Moreno De Luca, D. (2011). Copy number variants: A new molecular frontier in clinical psychiatry. *Current Psychiatry Reports, 13*(2), 129-137. https://doi.org/10.1007/s11920-011-0183-5

Da Paz, N. S., & Wallander, J. L. (2017). Interventions that target improvements in mental health for parents of children with autism spectrum disorders: A narrative review. *Journal of Clinical Psychology Review*, 51, 1-14. https://doi.org.10.1016/j.cpr.2016.10.006

Del Bianco, T., Ozturk, Y., Basadonne, I., Mazzoni, N., & Venuti, P. (2018). The thorn in the dyad: A vision on parent-child relationship in autism spectrum disorder. *Europe's Journal of Psychology*, *14*(3), 695–709. https://doi.org/10.5964/ejop.v14i3.1453

DeYoung, C. G., Hirsh, J. B., Shane, M. S., Papademetris, X., Rajeevan, N., & Gray, J. R. (2010). Testing predictions from personality neuroscience: Brain structure and the Big Five. *Psychological Science, 21*(6), 820-828. https://doi.org/10.1177/0956797610370159

Devine, D. P. (2014). Self-injurious behaviour in autistic children: A neuro-developmental theory of social and environmental isolation. *Psychopharmacology, 231*, 979-997.

https://doi.org/10.1007/s00213-013-3279-2

Devnani, P. A., & Hegde, A. U. (2015). Autism and sleep disorders. *Journal of Pediatric Neurosciences*, *10*(4), 304–307. https://doi.org/10.4103/1817-1745.174438

Psychophysiology, *72*(1), 61–66. https://doi.org/10.1016/j.ijpsycho.2008.03.012

Deyoung, C. G., & Gray, J. R. (2009). Personality neuroscience: Explaining individual differences in affect, behaviour and cognition. In P. J. Corr & G. Matthews (Eds.), *The Cambridge Handbook of Personality Psychology* (pp. 323–346). Cambridge University Press. https://doi.org/10.1017/CBO9780511596544.023

Dionne-Dostie, E., Paquette, N., Lassonde, M., & Gallagher, A. (2015). Multisensory integration and child neurodevelopment. *Brain Science,* 5(1), 32-57. https://doi.org/10.3390/brainsci5010032

Di Renzi, M., Guerriero, V., Pagnacco, A., Petrillo, M., Racinaro, L., D'Errico, S., & Bianchi di Castelbianco, F. (2021). Attunement and paternal characteristics in care relationships in the presence of children diagnosed with autism. *International Journal of Environmental Research and Public Health*, *18*(4), 2010. https://doi.org/10.3390/ijerph18042010

Disabled World (2017). *US disability statistics by type and age* [Web page]. https://www.disabled-world.com/disability/statistics/age-type.php

Durán-Pacheco, G., Silkey, M., Johnson, M., Liu, C., Clinch, S., Law, K., & Loss, G. (2023). Effect of children's autism spectrum disorder severity on family strain and sleep quality: A cross-sectional online survey in the U.S. *Journal of Autism and Developmental Disorders, 53*, 1795-1808.

https://doi.org/10.1007/s10803-022-05457-7

Durbin, J., & Watson, G. S. (1950). Testing for serial correlation in least squares regression: I. *Biometrika*, *37*(3-4), 409-428. Oxford, UK: Oxford University Press. https://www.oxfordjournals.org

Dykens, E. M. (2015). Family adjustment and interventions in neurodevelopmental disorders. *Current Opinions in Psychiatry*, 28(2), 121-126. https://doi.org/10.1097/YCO.0000000000000129

Dykens, E. M., & Lambert, W. (2013). Trajectories of diurnal cortisol in mothers of children with autism and other developmental disabilities: relations to health and mental health. *Journal of Autism and Developmental Disorders*, *43*(10), 2426–2434. https://doi.org/10.1007/s10803-013-1791-1

Dyskoorn, K. L., & Cormier, D. C. (2019). Autism spectrum disorder research: Time for positive psychology. *Autism-Open Access*, *9*(1), 235. Available at https://www.longdom.org/open-access/autism-spectrum-disorder-research-time-for-positive-psychology-2165-7890-1000235.pdf

Edelson, S. M. (Ed.), Johnson, J. B. (Ed.), Grandin, T., Bauman, M. L., Hardy, P. M., Miller, L. J., Curand, V. M., Groden, J., Coleman, M., Casanova, M., Casanova, E. L., Beiweiss, J. D., Jyonouchi, H., Green, J., O'Hara, N., Barnhill, K. M., Misher, K., Moskowitz, L. J., Walsh, C. E., Ritter, A. B., Weidenman, L., & Woodard, C. R. (2016). *Self-injurious behavior in autism: A multi-disciplinary perspective* (understanding and treating autism) (pp. 100-110). London, UK: Jessica Kingsley Publishing.

Edwards, S., & Dickerson, M. (1987). On the similarity of positive and negative intrusions. *Behaviour, Research, and Therapy*, *25*(3), 207–211. https://doi.org/10.1016/0005-7967(87)90047-7

Ekas, N., & Whitman, T. L. (2007). Autism symptom topography and maternal socioemotional functioning. *American Journal on Intellectual and Developmental Disabilities,115*(3), 234-249. USA: American Association on Intellectual and Developmental Disabilities. https://pdfs.semanticscholar.org/ae83/723932ecabf5431c904ddffab022c35ce253.pdf

Ekas, N. V., Lickenbrock, D. M., & Whitman, T. L. (2010). Optimism, social support, and well-being in mothers of children with autism spectrum disorder. *Journal of Autism and Developmental Disorders*, *40*(10), 1274-1284. https://doi.org/ 10.1007/s10803-010-0986-y

Eapen V, & Guan J. (2016). The quality of life of parents of children with autism spectrum disorder: Controversies, current status and future directions. *Acta Psychopathology*, *2*(5). https://www.doi.org/10.4172/2469-6676.100031

Estes, A., Munson, J., Dawson, G., Koehler, E., Zhou, X-H., & Abbott, R. (2009). Parenting stress and psychological functioning among mothers of preschool children with autism and developmental delay. *Autism*, *13*(4), 375-387. https://doi.org/10.1177/1362361309105658.

Estes, A., Swain, D. M., & MacDuffie, K. E. (2019). The effects of early autism intervention on parents and family adaptive functioning. *Pediatric Medicine*

(Hong Kong, China), *2*, 21. https://doi.org/10.21037/pm.2019.05.05

Evans, D. W., Kleinpeter, F. L., Slane, M. M., & Boomer, K. B. (2014). Adaptive and maladaptive correlates of repetitive behavior and restricted interests in persons with down syndrome and developmentally matched typical children: A two-year longitudinal sequential design. *PLoS One*, 9(4), e93951. https://doi.org/10.1371/journal.pone.0093951

Ezzat, O., Bayoumi, M., & Samarkand, O. A. (2017). Quality of life and subjective burden on family caregivers of children with autism. *American Journal of Nursing Science*, *6*(1), 33-39. https://doi.org/10.11648/j.ajns.20170601.15

Fernández-Sánchez, M., Pulido-Martos, M., & Lopez-Zafra, E. (2020). Measurement invariance across gender and age in the Connor-Davidson Resilience Scale (CD-RISC) in a Spanish general population. *Quality of Life Research: An International Journal of Quality-of-Life Aspects of Treatment, Care and Rehabilitation*, *29,* 1373–1384. https://doi.org/10.1007/s11136-019-02389-1

Figueroa, I. J., Youmans, R. J., & Shaw, T. H. (2014). Cognitive flexibility and sustained attention: See something, say something (even when it's not there). *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*, *58*(1), 954-958. https://doi.org/10.1177/1541931214581200

Fisher, M. H., Moskowitz, A. L., & Hodapp, R. M. (2013). Differences in social vulnerability among individuals with autism spectrum disorder, Williams Syndrome, and Down Syndrome. *Research into Autism Spectrum Disorders,* 7(8), 931-937. https://doi.org/10.1016/J.RASD.2013.04.009

Fletcher-Watson, S., Adams, J., Brook, K., Charman, T., Crane, L., Cusack, J., Leekam, S., Milton, D., Parr, J. R., & Pellicano, E. (2019). Making the future together: Shaping autism research through meaningful participation. *Autism: The International Journal of Research and Practice*, *23*(4), 943–953. https://doi.org/10.1177/1362361318786721

Folstein, S., & Rutter, M. (1977). Infantile autism: A genetic study of 21 twin pairs. *Journal of Child Psychology Psychiatry*, *18*(4), 297-321. https://doi.org/10.1111/j.1469-7610.1977.tb00443.x

Fountain, M. D., & Schaaf, C. P. (2016). Prader-Willi syndrome and Schaaf-Yang syndrome: Neurodevelopmental diseases intersecting at the *MAGEL2* gene. *Diseases (Basel, Switzerland)*, *4*(1). https://doi.org/10.3390/diseases4010002

Fredrickson, B. L., & Joiner, T. (2002). Positive emotions trigger upward spirals toward emotional well-being. *Psychological Science*, *13*(2), 172–175. https://doi.org/ 10.1111/1467-9280.00431

Freeth, M., Foulsham, T., & Kingstone, A. (2013). What affects social attention? Social presence, eye contact and autistic traits. *PLoS ONE 8*(1), e53286. http://doi.org/10.1371/journal.pone.0053286

Frost, J. (2019). *Regression analysis. An intuitive guide for using and interpreting linear models* (pp. 195-205). State College, PA: Statistics by Jim Publishing.

Frye, R. E. (2018). Social skills deficits in autism spectrum disorder: Potential biological origins and progress in developing therapeutic agents. *CNS Drugs*, *32*(8), 713–

734. https://doi.org/10.1007/s40263-018-0556-y

Garland, E. L., Fredrickson, B., Kring, A. M., Johnson, D. P., Meyer, P. S., & Penn, D. L. (2010). Upward spirals of positive emotions counter downward spirals of negativity: insights from the broaden-and-build theory and affective neuroscience on the treatment of emotion dysfunctions and deficits in psychopathology. *Clinical psychology review*, *30*(7), 849–864. https://doi.org/10.1016/j.cpr.2010.03.002

Gentles, S. J., Nicholas, D. B., Jack, S. M., McKibbon, K. M.G, & Szatmari, P. (2020). Coming to understand the child has autism: A process illustrating parents' evolving readiness for engaging in care. *Autism*, *24*(2), 470–483. https://doi.org/10.1177/1362361319874647

Gernsbacher, M. A., Stevenson, J. L., Khandakar, S., & Goldsmith, H. H. (2008). Autistics' atypical joint attention: Policy Implications and Empirical Nuance. *Child Development Perspectives*, *2*(1), 49–52. https://doi.org/10.1111/j.1750-8606.2008.00041.x

Gibbon, P. (2020). Martin Seligman and the rise of positive psychology. *Humanities, 41*(3). https://www.neh.gov/article/martin-seligman-and-rise-positive-psychology

Gill, N.S. (2023, April 5). An introduction to Plato and his philosophical ideas. https://www.thoughtco.com/plato-important-philosophers-120328

Girli, A. (2018). Being a parent of a child with autism from diagnosis to the university years. *Journal of Education and Training Studies, 6*(5), 55. https://doi.org/10.11114/jets.v6i5.314

Goodman, F. R., Larrazabal, M. A., West, J. T., & Kashdan, T. B. (2019). *Experiential avoidance.* In the Cambridge Handbook of Anxiety and Related Disorders (pp. 255-281). USA: Cambridge University Press. https://doi.org/10.1017/9781108140416.010

Gopalakrishnan, V., Jha, K., Jin, W., & Zhang, A. (2019). A survey on literature-based discovery approaches in biomedical domain. *Journal of Biomedical Informatics, 93*, 103141. https://doi.org/10.1016/j.jbi.2019.103141

Grabrucker A. M. (2013). Environmental factors in autism. *Frontiers in Psychiatry*, *3*, 118. https://doi.org/10.3389/fpsyt.2012.00118

Grollier, M., Leblanc, M., & Michel. S. (2016). Autisme sévère, syndrome d'Asperger, écarts et similitudes. *Journal of Evolutionary Psychiatry, 81*(2), 37-51. https://doi.org/10.1016/j.evopsy.2015.07.007

Gray, D. E. (2015). Ten years on: A longitudinal study of families of children with autism. *Journal of Intellectual & Developmental Disability, 27*(3), 215–222. https://doi.org/10.1080/1366825021000008639

Guan, J., & Li, G. (2017). Characteristics of unintentional drowning deaths in children with autism spectrum disorder. *Injury Epidemiology*, *4*(1), 32. https://doi.org/10.1186/s40621-017-0129-4

Gur, A., & Reich, A. (2023). Psychological flexibility of parents of children with disabilities: A systematic literature review. *Research in Developmental Disabilities, 136*,104490. https://doi.org/10.1016/j.ridd.2023.104490

Gurney, J. G., Fritz, M. S., Ness, K. K., Sievers, P., Newschaffer, C. J., & Shapiro, E. G.

(2003). Analysis of prevalence trends of autism spectrum disorder in Minnesota. *Archives of Pediatrics & Adolescent Medicine*, *157*(7), 622–627. https://doi.org/10.1001/archpedi.157.7.622

Haberer, J. E., Trabin, T., & Klinkman, M. (2013). Furthering the reliable and valid measurement of mental health screening, diagnoses, treatment, and outcomes through health information technology. *General Hospital Psychiatry*, *35*(4), 349–353. https://doi.org/10.1016/j.genhosppsych.2013.03.009

Hahs, A. (2013). *A comparative analysis of acceptance and commitment therapy and a mindfulness-based therapy with parents of individuals diagnosed with autism spectrum disorder* [Abstract of Dissertation]. USA: Southern Illinois University.

Hampson, S. E. (2012). Personality processes: Mechanisms by which personality traits get outside the skin. *Annual Reviews in Psychology, 10*(63), 315-339. https://doi.org/10.1146/annurev-psych-120710-100419

Hanley, G. P., Jin, C. S., Vanselow, N. R., & Hanratty, L. A. (2014). Producing meaningful improvements in problem behavior of children with autism via synthesized analyses and treatments. *Journal of Applied Behavior Analysis, 47*(1), 16-36. https://doi.org/10.1002/jaba.106

Hanucz, Z., & Tarasinska, J. (2014). On multivariate normality tests using skewness and kurtosis. *Colloquium Biometricum*, *44*, 139-144. https://collbiom.up.lublin/pl.pdf/cb44_139

Hartley, M., Dorstyn, D., & Due, C. (2019). Mindfulness for children and adults with autism spectrum disorder and their caregivers: A meta-analysis. *Journal of Autism* *and Developmental Disorders*, *49*(2). https://doi.org/10.1007/s10803-019-04145-

Hassan, A. (2019). Arab views on autism. *Springer Nature*, 1-5. https://doi.org/10.1007/978-1-4614-6435-8_102309-1

Hayes, S. C. (2004). *Acceptance and Action Questionnaire (AAQ)* [Database record]. APA PsycTests. https://doi.org/10.1037/t04346-000

Hayes, S. C., Strosahl, K. D., & Wilson, K. G. (1999). *Acceptance and commitment therapy: An experiential approach to behavior change.* USA: Guilford Press.

Hedger, N., & Chakrabarti, B. (2021). Autistic differences in the temporal dynamics of social attention. *Autism: The International Journal of Research and Practice*, *25*(6), 1615–1626. https://doi.org/10.1177/1362361321998573

Helland, W. A., Posserud, M. B., Helland, T., Heimann, M., & Lundervold, A. J. (2016). Language impairments in children with ADHD and in children with reading disorder. *Journal of Attention Disorders*, 20(7), 581-589. https://doi.org/10.1177/1087054712461530

Henry, S., & McInnes, B. T. (2017). Literature-based discovery: Models, methods, and trends. *Journal of Biomedical Informatics, 74*, 20-32. https://doi.org/10.1016/j.jbi.2017.08.011

Hoch, A. (1910). Constitutional factors in the dementia praecox group. *Review of Neurology and Psychiatry*, *8*, 463-474. Edinburgh, Scotland: Otto Shultz and Company.

Hoefman, R., Payakachat, N., van Exel, J., Kuhlthau, K., Kovacs, E., Pyne, J., & Tilford J.M. (2014). Caring for a child with autism spectrum disorder and parents' quality of life: Application of the CarerQol. *Journal of Autism Developmental Disorders, 44*(8), 1933-1945. https://doi.org/s10803-014-2066-1

Hollocks, M. J., Jones, C. R., Pickles, A., Baird, G., Happé, F., Charman, T., & Simonoff, E. (2014). The association between social cognition and executive functioning and symptoms of anxiety and depression in adolescents with autism spectrum disorders. *Autism Research*, 7(2), 216-228. https://doi.org/10.1002/aur.1361

Holmberg Bergman, T., Renhorn, E., Berg, B., Lappalainen, P., Ghaderi, A., & Hirvikoski, T. (2023). Acceptance and Commitment therapy group intervention for parents of children with disabilities (Navigator ACT): An open feasibility trial. *Journal of Autism Developmental Disorders*, 53, 1834–1849. https://doi.org/10.1007/s10803-022-05490-6

Howlin, P., & Asgharian, A. (1994). The diagnosis of autism and Asperger syndrome: Findings from a survey of 770 families. *Developmental Medical Child Neurology, 41*(12), 834-839. https://doi.org/10.1017/s0012162299001656.

Howlin, P., & Moore, A. (1997). Diagnosis in autism: A survey of over 1200 patients in the UK. *Autism*, *1*(2), 135–162. https://doi.org/10.1177/1362361397012003

Hur, J., Stockbridge, M. D., Fox, A. S., & Shackman, A. J. (2019). Chapter 16—Dispositional negativity, cognition, and anxiety disorders: An integrative translational neuroscience framework. *Progress in Brain Research, 247,* 375-436. https://doi.org/10.1016/bs.pbr.2019.03.012

Irene, D. (2015). The experiences of caregivers for emotional interaction with children with autism: A systemic approach. *Journal of Psychiatry, 18*(310).

https://doi.org/10.4172/2378-5756.1000310

Iyadurai, L., Visser, R. M., Lau-Zhu, A., Porcheret, K., Horsch, A., Holmes, E. A. & James, E. L. (2019). Intrusive memories of trauma: A target for research bridging cognitive science and its clinical application. *Journal of Clinical Psychology Reviews*, 69, 67-82. https://doi.org/10.1016/j.cpr.2018.08.005

Jacoby, R. J., Abramowitz, J. S., Bucholza, J., Reuman, L., & Blakey, S. M. (2018). Experiential avoidance in the context of obsessions: Development and validation of the Acceptance and Action Questionnaire for obsessions and compulsions. *Journal of Obsessive-Compulsive and Related Disorders, 19*, 34-43. https://doi.org/10.1016/j.jocrd.2018.07.003

James, G., Witten, J. G., Hastie, T., & Tibshirani, R. (2021). *An introduction to statistical learning: With applications in R* (2nd ed.) (pp. 59-68). USA: Springer.

Jamshidian, M., & Jalal, S. (2010). Tests of homoscedasticity, normality, and missing completely at random for incomplete multivariate data. *Psychometrika*, *75*(4), 649–674. https://doi.org/10.1007/s11336-010-9175-3

Jaswal, V. K., Dinishak, J., Stephan, C., & Akhtar, N. (2020). Experiencing social connection: A qualitative study of mothers of nonspeaking autistic children. *PloS one*, *15*(11), e0242661. https://doi.org/10.1371/journal.pone.0242661

Johnson, M. K. (2019). Joy: A review of the literature and suggestions for future directions. *The Journal of Positive Psychology*, 5-24. https://doi.org/10.1080/17439760.2019.1685581

Jones, L., Hastings, R. P., Totsika, V., Keane, L., & Rhule, N. (2014). Child behavior problems and parental well-being in families of children with autism: The mediating role of mindfulness and acceptance. *American Journal on Intellectual and Developmental Disabilities, 119,* 171–185. https://doi.org/10.1352/1944-7558-119.2

Jones, D., Wirth, J. S., & Schwartz, J. M. (2010). *The gift of Logos: Essays in continental philosophy hardcover* (pp. 34-35). Newcastle upon Tyne, NE: Cambridge Scholars Publishing.

Kable, A. K., Pich, J., Maslin-Prothero, S. E. (2012). A structured approach to documenting a search strategy for publication: A 12-step guideline for authors. *Nurse Education Today, 32,* 878-886. https://doi.org/10.1016/j.nedt.2012.02.022

Kamtekar, R. (2018). *Plato's moral psychology: Intellectualism, the divided soul, and the Desire for the good.* Oxford, UK: Oxford University Press.

Kashdan, T. B., Forsyth, J. P., & Steger, M. (2006). Experiential avoidance as a generalized psychological vulnerability: Comparisons with coping and emotion regulation strategies. *Behaviour Research and Therapy, 44*(9), 1301-1320. https://doi.org/m.brat.2005.10.003

Kashdan, T. B., & Kane, J. Q. (2011). Post-traumatic distress and the presence of post-traumatic growth and meaning in life: Experiential Avoidance as a moderator. *Personality and Individual Differences, 50*(1), 84-89. https://doi.org/10.1016/j.paid.2010.08.028

Kearns, B., Stevenson, M. D., Triantafyllopoulos, K., & Manca, A. (2019). Generalized linear models for flexible parametric modeling of the hazard function. *Medical*

Decision Making, *39*(7), 867-878. https://doi.org/10.1177/0272989X19873661

Keenan, E. G., Gotham, K., & Lerner, M. D. (2018). Hooked on a feeling: Repetitive cognition and internalizing symptomatology in relation to autism spectrum symptomatology. *Autism*, *22*(7), 814-824. https://doi.org/10.1177/1362361317709603

Keenan, B. M., Newman, L. K., Gray, K. M., & Rinehart, N. J. (2016). Parents of children with ASD experience more psychological distress, parenting stress, and attachment-related anxiety. *Journal of Autism and Developmental Disorders*, *46*(9), 2979-2991. https://doi.org/10.1007/s10803-016-2836-z

Kenny, D. A. (2023). Mediation analysis handbook. In D. A. Kenny, *Mediation analysis: Nearly 100 years of progress-online course.* https://davidakenny.et/cm/mediate.htm

Kids Count Data Center (2021). Child population by age in the United States [Web page]. USA: The Annie E. Casey Foundation. https://datacenter.kidscount.org/data/tables/101-child-population-by-age-group

Kiken, L. G., Lundberg, K. B., & Fredrickson, B. L. (2017). Being present and enjoying it: Dispositional mindfulness and savoring the moment are distinct, interactive predictors of positive emotions and psychological health. *Mindfulness*, *8*(5), 1280-1290. https://doi.org/10.1007/s12671-017-0704-3

Kim, J. H. (2019). Multicollinearity and misleading statistical results. *Korean Journal of Anesthesiology*, *72*(6), 558–569. https://doi.org/10.4097/kja.19087

Kim, K., Kim, J., Voight, A., & Ji, M. (2018). Listening to the screaming whisper: A voice of mother caregivers of children with autistic spectrum disorder (ASD). *International Journal of Qualitative Studies on Health and Well-being*, *13*(1), 1479585. https://doi.org/10.1080/17482631.2018.1479585

Kirby, A. V., White, T. J., & Baranek, G. T. (2015). Caregiver strain and sensory features in children with autism spectrum disorder and other developmental disabilities. *American Journal on Intellectual and Developmental Disabilities*, *120*(1), 32–45. https://doi.org/10.1352/1944-7558-120.1.32

Kirk, A., Meyer, J. M., Whisman, M. A., Deacon, B. J., & Arch, J. A. (2017). Safety behaviors, Experiential Avoidance, and anxiety: A path analysis approach. *Journal of Anxiety Disorders*, *64*, 9-15. https://doi.org/10.1016/j.janxdis.2019.03.002

Klin, A., & Volkmar, F. R. (1995). Autism and pervasive developmental disorders. *Child and Adolescent Psychiatric Clinics of North America*, *4*(3), 617-630. https://doi.org/10.1016/S1056-4993(18)30423-1

Krauss-Mars, A. H., & Lachman, P. (1994). Breaking bad news to parents with disabled children—a cross-cultural study. *Journal of Child, Health, Care, and Development*, *20*(2), 101-113. https://doi.org/10.1111/j.1365-2214.1994.tb00857.x

Kringelbach, M. L., & Berridge, K. C. (2010). The neuroscience of happiness and pleasure. *Social Research*, *77(*2), 659-678. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3008658/pdf/nihms257673.pdf

Krupski, T. L., Dahm, P., Fesperman, S. F., & Schardt, C. M. (2008). How to perform a literature search. *Journal of Urology, 179*(4), 1264-1270. https://doi.org/10.1016/j.juro.2007.11.087

Kuhn, R. (2004). Eugen Bleuler's concepts of psychopathology. *History of Psychiatry, 15*, 361-366. https://doi.org/10.1177/0957154X04044603

Kurtz-Nelson, E., & McIntyre, L. L. (2017). Optimism and positive and negative feelings in caregivers of young children with developmental delay. *Journal of Intellectual Disabilities Research, 61*(7), 719-725. https://doi.org/10.1111/jir.12378

Lai, W. W., Goh, T. J., Oei, T. P. S., & Sung, M. (2015). Coping and well-being in parents of children with autism spectrum disorders (ASD). *Journal of Autism Developmental Disorders,45*(8), 2582-2593. https://doi.org/ 10.1007/s10803-015-2430-9

Lee, L. C., Harrington, R. A., Louie, B. B., & Newschatter, C. J. (2008). Children with autism: Quality of life and parental concerns. *Journal of Autism and Developmental Disorders, 38*(6), 1147-1160. https://doi.org/10.1007/s10803-007

Lai, W. W., & Oei, T. P. S. (2014). Coping in parents and caregivers of children with autism spectrum disorders (ASD): A Review. *Review Journal of Developmental Disorders, 1*,207-224. https://doi.org/10.1007/s40489-014-0021-x

Leff, P. T., & Walizer, E. H. (1992). The uncommon wisdom of parents at the moment of diagnosis. *Family Systems Medicine, 21*, 147–167. https://doi.org/10.1037/h0089203

Levine, A. Z., & Warman, D. M. (2016). Appraisals of and recommendations for managing intrusive thoughts: An empirical investigation. *Psychiatry Research,* *245*, 207-216. https://doi.org/10.1016/j.psychres.2016.08.040

Levy, N. S., Umanah, G. K. E., Rogers, E. J., Jada, R., Lache, O., & Levy, A. P. (2019). IQSEC2-Associated intellectual disability and autism. *International Journal of Molecular Science, 20*(12), 3038. https://doi.org/10.3390/ijms20123038

Licence, L., Oliver, C., Moss, J., and Richards, C. (2020). Prevalence and risk-markers of self-harm in autistic children and adults. *Journal of Autism Developmental Disorders, 50*, 3561-3574. https://doi.org/10.1007/s10803-019-04260-1

Lindsay, E. K., Chin, B., Greco, C. M., Young, S., Brown, K. W., Wright, A., Smyth, J. M., Burkett, D., & Creswell, J. D. (2018). How mindfulness training promotes positive emotions: Dismantling acceptance skills training in two randomized controlled trials. *Journal of personality and social psychology*, *115*(6), 944–973. https://doi.org/10.1037/pspa0000134

Lionello, M., Aletta, F., Mitchell, A., & Kang, J. (2021). Introducing a method for intervals correction on multiple Likert scales: A case study on an urban soundscape data collection instrument. *Frontiers in Psychology*, *11*(1-18). https://doi.org/10.3389/fpsyg.2020.602831

Livingston, G. (2018). They're waiting longer, but U.S. women today more likely to have children than a decade ago. Washington DC: Pew Research Center. https:www.pewresearch.org/

Loukusa, S., & Moilanen, I. (2009). Pragmatic inference abilities in individuals with Asperger Syndrome or high-functioning autism. A review. *Research in Autism Spectrum Disorders, 3*(4), 890-904. https://eric.ed.gov/?id=EJ852809

Lourenco, F., & Casey, B. J. (2013). Adjusting behavior to changing environmental demands with development. *Neuroscience and Behavior Review,* 37(9 Pt B), 2233-2242. https://doi.org/ 10.1016/j.neubiorev.2013.03.003

Lovell, B., & Wetherell, M. A. (2016). Behaviour problems of children with ASD and perceived stress in their caregivers: The moderating role of trait emotional intelligence. *Research in Autism Spectrum Disorders, 28,* 1-6. https://doi.org/10.1016/j.rasd.2016.05.002

Lovell, B., & Wetherell, M. A. (2016). The psychophysiological impact of childhood autism spectrum disorder on siblings. *Research in Developmental Disabilities, 49-50,* 226-234. https://doi.org/10.1016/j.ridd.2015.11.023

Lubetsky, M. J., Handen, B. L., & McGonigle, J. J. (Eds.) (2011). *Autism spectrum disorder* (p. 190). USA: Oxford University Press.

Luby, J. L., Whalen, D., Tillman, R., & Barch, D. M. (2019). Clinical and psychosocial characteristics of young children with suicidal ideation, behaviors, and nonsuicidal self-injurious behaviors. *Journal of American Academy of Child and Adolescent Psychiatry, 1*, 117-127. https://doi.org/10.1016/j.jaac.2018.06.031

Ludlow, A., Skelly, C., & Rohleder, P. (2012). Challenges faced by caregivers of children diagnosed with autism spectrum disorder. *Journal of Health Psychology, 17*(5), 702-711. https://doi.org/10.1177/1359105311422955

Lyaduraia, L., Visserb, R. M., Lau-Zhub, A., Porcheretd, K., Horsche, A., Holmesg, E. A., & James, E. L. (2019). Intrusive memories of trauma: A target for research bridging cognitive science and its clinical application. *Clinical Psychology*

Review, *69*, 67-83. https://doi.org/10.1016/j.cpr.2018.08.005

Lyons, A. M., Leon, S. C., Roecker, P. C. E., & Dunleavy, A. M. (2010). The impact of child symptom severity on stress among caregivers of children with ASD: The moderating role of coping styles. Journal of Child and Family Studies, 19(4), 516-524. http://doi.org.ezaccess.libraries.psu.edu/10.1007/s10826-009-9323-5

Maddox, B. B., Trubanova, A., & White, S. W. (2016). Untended wounds: Non-suicidal self-injury in adults with autism spectrum disorder. *Autism*, *21*(4), 412-422. https://doi.org/10.1177/13623613. 2016

Maddux, R. E. (Ed.). *Social psychological foundations of well-being and life satisfaction* (pp. 451-472). New York: Routledge.

Malik, H. B., & Norman, J. B. (2023). Best practices and methodological strategies for addressing generalizability in neuropsychological assessment. *Journal of Pediatric Neuropsychology*, *9*(2), 47–63. https://doi.org/10.1007/s40817-023-00145-5

Marks, E. H., Franklin, A. R., & Zoellner, L. A. (2018). Can't get it out of my mind: A systematic review of predictors of intrusive memories of distressing events. *Psychological Bulletin*, *144*(6), 584–640. https://doi.org/10.1037/bul0000132

Marsack-Topolewski, C. N., & Church, H. L. (2019). Impact of caregiver burden on quality of life for caregivers of adult children autism spectrum disorder. *American Journal on Intellectual and Development Disabilities, 124*(2), 145-156. https://doi.org/10.1352/1944-7558-124.2.145

Marsack-Topolewski, C. N. (2021). Mediating effects of social support on caregiver burden and quality of life for compound and noncompound caregivers. *Families in Society: The Journal of Contemporary Social Services*, *102*(2), 240-252. https://doi.org/10.1177/1044389420947229

Mason, A. E., Adler, J. M., Puterman, E., Lakmazaheri, A., Brucker, M. Aschbacher, K., & Epel, E. S. (2018). Stress resilience: Narrative identity may buffer the longitudinal effects of chronic caregiving stress on mental health and telomere shortening. *Brain, Behavior, and Immunity*, *77*, 101-109. https://doi.org/10.1016/j.bbi.2018.12.010

Matson, J. L., Matson, M. L., & Rivet, T. T. (2007). Social-skills treatments for children with autism spectrum disorders: An Overview. *Behavior Modification, 31*(5), 682-707. https://doi.org/10.1177/0145445507301650

Maximo, J. O., Cadena, E. J., & Kana, R. K. (2014). The implications of brain connectivity in the neuropsychology of autism. *Neuropsychology Review*, *24*(1), 16-31. https://doi.org/10.1007/s11065-014-9250-0

May, T., Cornish, K., Conduit, R., Rajaratnam, S. M., & Rinehart, N. J. (2015). Sleep in high-functioning children with autism: Longitudinal developmental change and associations with behavior problems. *Behavioral Sleep Medicine, 13*(1), 2-18. https://doi.org/10.1080/15402002.2013.829064

Mazefsky, C. A., Pelphrey, K. A., & Dahl, R. E. (2012). The need for a broader approach to emotion regulation research in autism. *Journal of Child Development Perspectives, 6*(1), 92-97. https://doi.org/10.1111/j.1750-8606.2011.00229

McConkey, R., & Truesdale-Kennedy, M., & Cassidy, A. (2009). Mothers' recollections of early features of autism spectrum disorders. *Child Adolescent Mental Health, 14*(1), 31-36. https://doi.org/10.1111/j.1475-3588.2008.00495.x

McKee, L. G., Algoe, S. B., Faro, A. L., O'Leary, J. L., & O'Neal, C. W. (2019). *Picture this*! Bringing joy into focus and developing habits of mind: Rationale, design, and implementation of a randomized control trial for young adults. *Contemporary Clinical Trials Communications*, *15*, 1-7. https://doi.org/10.1016/j.conctc.2019.100391

Meeten, F., Davey, G. C. (2011). Mood-as-input hypothesis and perseverative psychopathologies. *Journal of Clinical Psychology Reviews*, *31*(8), 1259-1275. https://doi.org/10.1016/j.cpr.2011.08.002

Memari, A. H., Ziaee, V., Shayestehfar, M., Ghanouni, P., Mansournia, M. A, & Moshayedi, P.(2013). Cognitive flexibility impairments in children with autism spectrum disorders: links to age, gender and child outcomes. *Journal of Research Developmental Disabilities*, *10*, 3218-3225. https://doi.org/10.1016/j.ridd.2013.06.033

Merenda, P. F. (1987). Toward a four-factor theory of temperament and/or personality. *Journal of Personality Assessment, 51*(3), 367-374. https://doi.org/10.1207/s15327752jpa5103_4

Microsoft Academic (2018). *Microsoft Academic increases power of semantic search by adding more fields of study* [Web page]. https://www.microsoft.com/en-us/research/

Minshawi, N. F., Hurwitz, S., Fodstad, J. C., Biebl, S., Morriss, D. H., & McDougle, C. J. (2014). The association between self-injurious behaviors and autism spectrum disorders. *Psychology Research and Behavior Management*, *7*, 125–136. https://doi.org/10.2147/PRBM.S44635

Miranda, A., Berenguer, C., Roselló, B., Baixauli, I., & Colomer, C. (2017). Social cognition in children with high-functioning autism spectrum disorder and Attention-Deficit/Hyperactivity Disorder. Associations with executive functions. *Frontiers in Psychology*, *8*, 1035. https://doi.org/10.3389/fpsyg.2017.01035

Miranda, A., Mira, A., Berenguer, C., Rosello, B., Baixauli, I. (2019). Parenting stress in mothers of children with autism without intellectual disability. Mediation of behavioral problems and coping strategies. *Frontiers in Psychology*,*8*(10), 464. https://doi.org/10.3389/fpsyg.2019.00464

Mirkovic, B., & P.Gérardin, P. (2019). Asperger's syndrome: What to consider? *Journal of L'Encéphale*, *45*(2), 169-174. https://doi.org/10.1016/j.encep.2018.11.005

Mohsen, G., Rasoul, R. E., & Ali, M. (2015). Relationship between dispositional positive emotions and the role of trait positive affect. *Research Journal of Recent Sciences*, *4*(7),42-49.

Moseley, R. L., Gregory, N. J., Smith, P., Allison, C., & Baron-Cohen, S. (2019). A ‘choice’, an ‘addiction’, a way ‘out of the lost’: Exploring self-injury in autistic people without intellectual disability. *Molecular Autism*, *10*, 18. https://molecularautism.biomedcentral.com/articles/10.1186/s13229-019-0267-3

Mundy, P. (2016). *Autism and joint attention: Developmental neuroscience, and clinical fundamentals.* USA: Guilford Press. https://www.researchgate.net/publication/298214184_Autism_and_Joint_Attention

Murphy, O., Healy, O., & Leader, G. (2009). Risk factors for challenging behaviors among 157 children with autism spectrum disorder in Ireland. *Research in Autism Spectrum Disorders, 3*(2), 474-582. https://doi.org/10.1016/j.rasd.2008.09.008

Musalek, M. (2015). Treatment goal: Autonomy and joyful life. *European Psychiatry, 30*(1), 28-31. https://doi.org/10.1016/S0924-9338(15)30073-0

Myers, B. J., Mackintosh, V. H., & Goin-Kochel, R. P. (2009). My greatest joy and my greatest heart ache: Caregivers’ own words on how having a child in the autism spectrum has affected their lives and their families’ lives. *Research in Autism Disorders*, *3*(3), 670-684. https://doi.org/10.1016/j.rasd.2009.01.004

Naar, H. (2017). Love as a disposition. In C. Grau & Smuts, A. (Eds.), *The Oxford handbook of philosophy of love* (Chapter 7). https://doi.org/10.1093/oxfordhb/9780199395729.013.11

Navot, N., Jorgenson, A. G., Stoep, A. V., Toth, K., & Webb, S. J. (2016). Family planning and family vision in mothers after diagnosis of a child with autism spectrum disorder. *Autism: The International Journal of Research and*

Practice, *20*(5), 605–615. https://doi.org/10.1177/1362361315602134

Neil, L., Olsson, N. C., & Pellicano, E. (2016). The relationship between intolerance of uncertainty, sensory sensitivities, and anxiety in autistic and typically developing children. *Journal of Autism and Developmental Disorders*, *46*(6), 1962–1973. https://doi.org/10.1007/s10803-016-2721-9

Neil, L., White, H., Warren, K., & Pellicano, E. (2019). Anxiety and interpretation of ambiguity in autistic children, typical children and their mothers. *Journal of Autism and Developmental Disorders*, *49*, 1035–1047. https://doi.org/10.1007/s10803-018-3781-9

Nielsen, E., Sayal, K., & Townsend, E. (2016). Exploring the relationship between experiential avoidance, coping functions and the recency and the recency and frequency of self-harm. *PloS One*, *13*(2), e0159854. https://doi.org/10.1371/journal.pone.0192795

New, J. J., Schultzc, R. T., Wolf, J., Niehaus, J. L., Klinc, A., Germand, T. C., & Scholl, B. J. (2010). The scope of social attention deficits in autism: Prioritized orienting to people and animals in static natural scenes. *Psychoneurologia, 48*, 49-59. https://doi.org/ 10.1016/j.neuropsychologia.2009.08.008

Nik Adib, N. A., Ibrahim, M. I., Ab Rahman, A., Bakar, R. S., Yahaya, N. A., Hussin, S., & Wan Mansor, W. N. A. (2019). Perceived stress among caregivers of children with autism spectrum disorder: A state-wide study. *International Journal of Environmental Research and Public Health*, *16*(8), 1468. https://doi.org/10.3390/ijerph16081468

Norton, P. J., & Paulus, D. J. (2017). Transdiagnostic models of anxiety disorder: Theoretical and empirical underpinnings. *Journal of Clinical Psychology Review, 56*, 122-136. https://doi.org/10.1016/j.cpr.2017.03.004

Nour, S., & Plourde, G. (Eds.) (2019). *Pharmacoepidemiology and pharmacovigilance* (pp. 7-23). Cambridge, Maine: Academic Press.

O'Nions, E., Happe, F., Evers, K., Boonen, H., & Noens, I. (2018). How do caregivers manage irritability, challenging behavior, non-compliance and anxiety in children with autism spectrum disorders? A meta-synthesis. *Journal of Autism Developmental Disorders, 48,* 1272-1286. https://doi.org/10.1007/s10803-017-3361-4

Ooi, K. L., Ong, Y. S., Jacob, S. A., & Khan, T. M. (2016). A meta-synthesis on parenting a child with autism. *Neuropsychiatric Disease Treatment*, *12,* 745-762. https://doi.org/10.2147/NDT.S100634

Olatunjii, B. (2018). Anxiety sensitivity and post-traumatic stress reactions: Effects of time-varying intrusive thoughts and associated distress. *Journal of Behavior Therapy and Experimental Psychiatry*, *61*, 113-121. https://doi.org/10.1016/j.jbtep.2018.07.001

Pacheva, I., & Ivanov, I. (2019). Targeted biomedical treatment for Autism Spectrum Disorder. *Current Pharmaceutical Design, Ahead of print.* https://doi.org/10.2174/1381612825666191205091312

Pandey, S., & Sharma. C. (2018). Perceived burden in caregivers of children with autism spectrum disorder. *Journal of Nepal Health Research Council,* 16(2), 184-189.

https://pubmed.ncbi.nlm.nih.gov/29983435/

Papadopoulos, D. (2021). Mothers' Experiences and Challenges Raising a Child with Autism Spectrum Disorder: A Qualitative Study. *Brain sciences*, *11*(3), 309. https://doi.org/10.3390/brainsci11030309

Park, N., Peterson, C., Szvarca, D., Vander Molen, R. J., Kim, E. S., & Collon, K. (2014). Positive psychology and physical health: Research and applications. *American Journal of Lifestyle Medicine*, *10*(3), 200–206. https://doi.org/10.1177/1559827614550277

Paul, R., Orlovski, S. M., Marcinko, H. C., &. Volkmar, F. (2009). Conversational behaviors in youth with high-functioning ASD and Asperger Syndrome. *Journal of Autism and Developmental Disorders, 39*(1), 115-125. https://doi.org/10.1007/s10803-008-0607-1.

Penn State Eberly College of Science. (n. d.). Detecting multicollinearity using variance inflation factors. Lesson 10: Regression Pitfalls. [Web page]. Philadelphia, PA: Author. https://online.stat.psu.edu/stat462/node/180/

Pereira-Smith, S., Boan, A., Carpenter, L. A., Macias, M., & LaRosa, A. (2019). Preventing elopement in children with autism spectrum disorder. *Autism Research, 12*(7), 1139-1146. https://doi.org/10.1002/aur.2114

Peterson, C., & Seligman, M. E. P. (2004). *Character strengths and virtues: A handbook and classification.* New York: Oxford University Press and Washington DC: American Psychological Association. http://www.viacharacter.org

Petrolini, V., Jorba, M., & Vicente, A. 2023). What does it take to be rigid? Reflections on the notion of rigidity in autism. *Frontiers in Psychiatry*, *14*, 1072362. https://doi.org/10.3389/fpsyt.2023.1072362

Pettigrew, T. F. (2015). Allport, Gordon W (1897-1967). *International Encyclopedia of the Social & Behavioral Sciences* (2nd ed.) (pp. 562-565). https://doi.org/10.1016/B978-0-08-097086-8.61001-2

Picardi, A., Gigantesco, A., Tarolla, E., Stoppioni, V., Cerbo, L., Cremonte, M., & Nardocci, F. (2018). Parental burden and its correlates in families of children with autism spectrum disorder: A multicentre study with two comparison groups. *Clinical Practice and Epidemiology in Mental Health: CP & EMH*, *14*, 143–176. https://doi.org/10.2174/1745017901814010143

Pisula, E., & Porebowicz- Dörsmann, A. (2017). Family functioning, parenting stress and quality of life in mothers and fathers of Polish children with high functioning autism or Asperger syndrome. *PLoS ONE, 12*(10), e0186536. https://doi.org/10.1371/journal.pone.0186536

Poirier, N. P., &, Vallée-Ouimet, J. (2015). The life path of caregivers and of their children presenting an autism spectrum disorder (ASD). *Journal of Sante Ment Que*, *40*(1), 203-226. https://pubmed.ncbi.nlm.nih.gov/26355488/

Prime**,** H., Andrews, K., Markwell, A., Gonzalez, A., Janus, M., Tricco, A. C., Bennett, T., & Atkinson, L. (2023). Positive parenting and early childhood cognition: A systematic review and meta-analysis of randomized controlled trials. *Journal of Clinical Child and Family Psychological Review*, *26*(2), 362-400. https://doi.org/10.1007/s10567-022-00423-2

Quine, L., & Pahl, J. (1987). First diagnosis of severe handicap: A study of parental reactions. *Developmental Medical Child Neurology*, *29*(2), 232-242. https://doi.org/10.1111/j.1469-8749.1987.tb02141.x

Radin, R. M., Mason, A. E., Laudenslager, M. L., & Epel, E. S. (2019). Maternal caregivers have confluence of altered cortisol, high reward-driven eating, and worse metabolic health. *PloS one*, *14*(5), e0216541. https://doi.org/10.1371/journal.pone.0216541

Richards, C., Moss, J., Nelson, L., & Oliver, C. (2016). Persistence of self-injurious behaviour in autism spectrum disorder over 3 years: A prospective cohort study of risk markers. *Journal of Neurodevelopmental Disorders*, *8*(1), 21. https://doi.org/10.1186/s11689-016-9153-x

Rimland, B. (1964). Infantile autism: The syndrome and its implications for a neural theory of behavior. Englewood Cliff, NJ: Prentice-Hall.

Rimland, G. (1981). Citation classic—Infantile autism—The syndrome and its implications for a neural theory of behavior. *Citation Classic*, *22*, 24. https://garfield.library.upenn.edu/classics1981/A1981LQ21000001.pdf

Riskind, J. H., Wright, E. C., & Scott, M. (2018). Anticipated criticism/rejection and negative self-alppraisals: Do they independently predict OCD symptoms and the negative significance of intrusive thoughts? *International Journal of Cognitive Therapy*, *11*, 4-16. https://doi.org/10.1007/S41811-018-0006-0

Roberts, A. L., Koenen, K. C., Lyall, K., Ascherio, A., & Weisskopf, M. G. (2014). Women's posttraumatic stress symptoms and autism spectrum disorder in their children. *Research in Autism Spectrum Disorders*, *8*(6), 608–616. https://doi.org/10.1016/j.rasd.2014.02.004

Robbins, B. (2006). 7—An empirical, phenomenological study: Being joyful. In C. T. Fischer, *Qualitative research methods for psychologists: Introduction Through empirical studies* (pp. 173-211). USA: Academic Press. https://doi.org/10.1016/B978-012088470-4/50010-7

Robbins, B. D. (2014). Joy. In D. A. Leeming (Ed). *Encyclopedia of psychology and religion* (2nd ed.). New York, NY: Springer. https://doi.org/10.4324/9780429448751-1

Robbins, B. D. (2021). The Joyful Life: An existential-humanistic approach to positive psychology in the time of a pandemic. *Frontiers in Psychology,* 12, 648600. https://doi.org/10.3389/fpsyg.2021.648600

Robbins, B. D., Yuan, M. D., Harper, W., and Robbins, D. (2019). The Joyful Life Scale: Scale development and relationship with humanistic constructs, in Poster presentation at the American Psychological Association's Annual Convention, (Pittsburgh, PA: Point Park University).

Rose, D. R., Yang, H., Serena, G., Sturgeon, C., Ma, B., Careaga, M., & Ashwood, P. (2018). Differential immune responses and microbiota profiles in children with autism spectrum disorders and co-morbid gastrointestinal symptoms. *Brain, Behavior, and Immunity*, *70*, 354–368. https://doi.org/10.1016/j.bbi.2018.03.025

Rossignol, D. A., & Frye, R. E. (2012). Mitochondrial dysfunction in autism spectrum disorders: A systematic review and meta-analysis. *Molecular Psychiatry, 17*(3), 290-314. https://doi.org/ 10.1038/mp.2010.136.

Rowan, J. (1990). *Subpersonalities: The people inside us.* New York, NY: Routledge.

Rowland, D. (2020). The neurophysiological cause of autism. *Review Journal, 11*(5). https://www.iomcworld.org/open-access/the-neurophysiological-cause-of-autism-56090.html

Russo, D., Della Ragione, F., Rizzo, R., Sugiyama, E., Scalabri, F., Hori, K., Capasso, S., Sticco, L., Fioriniello, S., & De Gregorio, R., et al. (2018) Glycosphingolipid metabolic reprogramming drives neural differentiation. *EMBO Journal, 37,* e97674. https://doi.org/10.15252/embj.20179767

Russo, E. G., Guy, G. W., & Robson, P. J. (2007). Cannabis, pain, and sleep: Lessons from therapeutic clinical trials of Sativex, a cannabis-based medicine. *Journal of Chemistry and Biodiversity, 4*(8), 1729-1743. https://doi.org/10.1002/cbdv.200790150

Sairanen, E., Lappalainen, P., & Hiltunen, A. (2018) Psychological inflexibility explains distress in parents whose children have chronic conditions. *PLoS ONE 13*(7), e0201155. https://doi.org/10.1371/journal.pone.0201155

Sato, W., Kochiyama, T., Uono, S., Sawada, R., Kubota, Y., Yoshimura, S., & Toichi, M. (2019). Widespread and lateralized social brain activity for processing dynamic facial expressions. *Human brain mapping*, *40*(13), 3753–3768. https://doi.org/10.1002/hbm.24629

Schieve, L. A., Blumberg, S. J., Rice, C., Visser, S. N., & Boyle, C. (2007). The relationship between autism and parenting stress. *Pediatrics, 119*(1), S114-S121.

https://doi.org/10.1542/peds.2006-2089Q.

Schnabel, A., Youssef, G. J., Hallford, D. J., Hartley, E. J., McGillivray, J. A., Stewart, M., Forbes, D., & Austin, D. W. (2020) Psychopathology in parents of children with autism spectrum disorder: A systematic review and meta-analysis of prevalence. *Autism* 24, 26–40. https://doi.org/10.1177/1362361319844636psy

Schreiber-Gregory, D., & Bader, K. (October 1, 2018). Logistic and linear regression assumptions: Violation recognition and control. *Midwest SAS Users Group, AA-091* Conference Schedule. https://www.lexjansen.com/wuss/2018/130_Final_Paper_PDF.pdf

Schweitzer, J., James, C., Jenkins, W., Reiff, M. I., & Stein, M. T. (2017). Acute agitation and self-injury in a 5-year-old with autism. *Journal of Developmental & Behavioral Pediatrics, 37*(7), 592-594. https://doi.org/10.1097/DBP.0000000000000324

Seligman, M. E., & Csikszentmihalyi, M. (2000). Positive psychology. An introduction. *Journal of American Psychology*, 55(1), 5-14. https://doi.org/10.1037//0003-066x.55.1.5

Seligman, M. E., Parks, A. C., & Steen, T. (2004). A balanced psychology and a full life. *Philosophical transactions of the Royal Society of London. Series B, Biological sciences, 359*(1449), 1379–1381. https://doi.org/10.1098/rstb.2004.1513

Seymour, M., Giallo, R., & Wood, C. E. (2017). The psychological and physical health of fathers of children with autism spectrum disorder compared to fathers of children with long-term disabilities and fathers of children without disabilities. *Research in Developmental Disabilities, 69*, 8-17. https://doi.org/10.1016/j.ridd.2017.07.018

Shackman, A J., Tromp, D. P. M., Stockbridge, M. D., Kaplan, C. M., Tillman, R. M., & Fox, A. S. (2016). Dispositional negativity: An integrative psychological and neurobiological perspective. *Psychology Vulletin, 142*(12), 1275-1314. https://doi.org/10.1037/bul0000073

Shackman, A. J., Weinstein, J. S., Hudja, S. N., Bloomer, C. D., Barstead, M. G., Fox, A. S., Lemay, E. P. (2018). Dispositional negativity in the wild: Social environment governs momentary emotional experience. *Emotion, 18*(5), 707-724. https://doi.org/10.1037/emo0000339

Shah, D., Giannetti, V., & Pfalzgraf, A. (2013). Caregiver burden and social support in families of children with autism: A literature review. *Value in Health, 16*(3). https://doi.org/ 10.1016/j.jval.2013.03.1596

Shenaar-Golan, V. (2016). The subjective well-being of caregivers of children with developmental disabilities: The role of hope as predictor and fosterer of well-being. *Journal of Social Work in Disability & Rehabilitation,* 15(2). https://doi.org/10.1080/1536710X.2016.1162119

Scherer, N., Verhey, I., & Kuper, H. (2019). Depression and anxiety in parents of children with intellectual and developmental disabilities: A systematic review and meta-analysis. *PLoS ONE, 14*(7), e0219888. https://doi.org/10.1371/journal.pone.0219888

Shiota, M. N., Keltner, D., & John, O. P. (2006). Positive emotion dispositions differentially associated with the Big Five. *The Journal of Positive Psychology, 1*(2), 61–71. https://doi.org/10.1080/17439760500510833

Shiri, E., Pouretemad, H., Fathabadi, J., & Narimani, M. (2020). A pilot study of family-based management of behavioral excesses in young Iranian children with autism spectrum disorder. *Asian Journal of Psychiatry, 47,* 101845. https://doi.org/10.1016/j.ajp.2019.101845

Shkedy, G., Shkedy, D., Sandoval-Norton, A., & Cerniglia, L. (Reviewing editor). (2019) Treating self-injurious behaviors in autism spectrum disorder. *Cogent Psychology 6*(1). https://doi.org/10.1080/23311908.2019.1682766

Singh, N. N., Lancioni, G. E., Karazsia, B. T., Myers, R. E., Hwang, Y. S., & Anālayo, B. (2019). Effects of Mindfulness-Based Positive Behavior Support (MBPBS) training is equally beneficial for mothers and their children with autism spectrum disorder or with intellectual disabilities. *Frontiers in Psychology*, *10*, 385. https://doi.org/10.3389/fpsyg.2019.00385

Singh, R., Turner, R. C., Nguyen, L., Motwani, K., Swatek, M., & Lucke-Wold, B. P. (2017). Pediatric traumatic brain injury and autism: Elucidating shared mechanisms. *Journal of Behavioral Neurology*, Volume 8781725. https://doi.org/ 10.1155/2016/8781725.

Sirg**y**, M. J. (2019). Positive balance: A hierarchical perspective of positive mental health. *Quality of Life Research, 28*(7), 1921-1930. https://doi.org/10.1007/s11136-019-02145-5

Smith, L. E., Greenberg, J. S., & Seltzer, M. M. (2012). Social support and well-being at mid-life among mothers of adolescents and adults with autism spectrum disorders. *Journal of Developmental Disorders, 42, 1818-1826.* https://doi.org/10.1007/s10803-011-1420-9

Society for Personality and Social Psychology (2021). *Character and context* [Web page]. https://www.spsp.org/

Soke, G. N., Rosenberg, S. A., Rosenberg, C. R., Vasa, R. A., Lee, L. C., & DiGuiseppi, C. (2018). Self-injurious behaviors in children with autism spectrum disorder enrolled in the Study to Explore Early Development. *Autism: The International Journal of Research and Practice*, *22*(5), 625–635. https://doi.org/10.1177/1362361316689330

Solomon, O., & Lawlor, M. C. (2013). And I look down and he is gone: Narrating autism, elopement, and wandering in Los Angeles. *Social Science &Medicine*, *94*, 106–114. https://doi.org/10.1016/j.socscimed.2013.06.034

Solomon, M., Ozonoff, S. J., Ursu, S., Ravizza, S., Cummings, N., Ly, S., et al. (2009). The neural substrates of cognitive control deficits in autism spectrum disorders. *Neuropsychologia*, *47*, 2515–2526. https://doi.org/10.3758/s13415-011-0040-3

Stellar, J. E., John-Henderson, N., Anderson, C. L., Gordon, A. M., McNiel, G. D., & Keltner, D. (2015). Positive affect and markers of inflammation: Discrete positive emotions predict lower levels of inflammatory cytokine. *Journal of Emotion*, 15(2), 129-133. https://sites.lsa.umich.edu/whirl/wp-content/uploads/sites/792/2020/08/2015-Positive-affect-and-inflammation.pdf

Sterling, L., McLaughlin, A., & King, B. H. (2011). 'Stereotypy and Self-Injury', in

David Amaral, Daniel Geschwind, and Geraldine Dawson (eds), *Autism Spectrum Disorders* (pp. 339-354). New York, NY: Oxford Academic (online edition). https://doi.org/10.1093/med/9780195371826.003.0024

Stevanovic, M., Henttonen, P., Koskinen, E., Peräkylä, A., Nieminen von-Wendt, T., Sihvola, E., Tani, P., Ravaja, N., & Sams, M. (2019). Physiological responses to affiliation during conversation: Comparing neurotypical males and males with Asperger syndrome. *PLoS One, 18*(9), e0222084. https://doi.org/10.1371/journal.pone.0222084

Stewart, S. B., Greene, D. J., Lessov-Schlaggar, C. N., Church, J. A., & Schlaggar, B. L. (2015). Clinical correllates of parenting stress in children with Tourette syndrome and in typically developing children. *The Journal of pediatrics*, *166*(5), 1297–1302. https://doi.org/10.1016/j.jpeds.2015.01.041

Stothers, M. E., & Cardy, J. O. (2012). Oral language impairments in developmental disorders characterized by language strengths: A comparison of Asperger syndrome and nonverbal learning disabilities. *Research in Autism Spectrum Disorders*, *6*(1), 519-534. https://eric.ed.gov/?id=EJ947664

Stuart, M., & McGrew, J. H. (2009). Caregiver burden after receiving a diagnosis of an autism spectrum disorder. *Research in Autism Spectrum Disorder, 3*(1), 186-197.

Sturm, B, & Sunyaev, A. (2019). Design principles for systematic search systems: A holistic synthesis of a rigorous multi-cycle design science research journey. *Business & Information Systems Engineering, 16, 1*, 91-111. https://aisel.aisnet.org/bise/vol61/iss1/7

Summers, J., Shahrami, A., Cali, S., D'Mello, C., Kako, M., Palikucin-Reljin, A., Savage, M., Shaw, O., & Lunsky, Y. (2017). Self-injury in autism spectrum disorder and intellectual disability: Exploring the role of reactivity to pain and sensory input. *Journal of Brain Science, 7*(11), 140. https://doi.org/10.3390/brainsci7110140

Tager-Flusberg, H., & Kasari, C. (2013). Minimally verbal school-aged children with autism spectrum disorder: the neglected end of the spectrum. *Journal of Autism Research, 6*(6), 468–478. https://doi.org/10.1002/aur.1329

Tathgur, M. K., & Kang, H. K. (2021). Challenges of the caregivers in managing a child with autism spectrum disorder- A qualitative analysis. *Indian Journal of Psychological Medicine*, 43(5), 416-421. https://doi.org/10.1177/02537176211000769

Taylor, L. J., Luke, S. Y. L., Leadbitter, K., Moore, H. L., Charman, T., & The PACT-G Group (2021). Are child autism symptoms, developmental level and adaptive function associated with caregiver feelings of wellbeing and efficacy in the parenting role? *Research in Autism Spectrum Disorders, 83*, Volume 101738. https://doi.org/10.1016/j.rasd.2021.101738

TechReviewPro (2020). *Best deep web search engines to explore hidden web* [Web page]. https://techreviewpro.com/deep-web-search-engines-hidden-web-13884/#2_Infomine

ten Hoopen, L. W., de Nijs, P., Duvekot, J., Greaves-Lord, K., Hillegers, M., Brouwer, W., & Hakkaart-van Roijen, L. (2020). Children with an autism spectrum disorder and their caregivers: Capturing health-related and care-related quality of life.

Journal of Autism and Developmental disorders, 50(1), 263–277. https://doi.org/10.1007/s10803-019-04249-w

Toth M. The other side of the coin: Hypersociability. Genes Brain Behav. 2019 Jan;18(1), Volume 12512. https://doi.org/10.1111/gbb

Trajkovski, V. (2020). Neuropsychological research. Psychological aspects of autism spectrum disorder. *Journal for Reattachment Therapy and Neurodevelopmental Diversities*, 1-5. https://jrtdd.com/psychological-aspects-of-autism-spectrum-disorder/

Trochim, W. M. & Donnelly, J. P. (2008). *The Research Methods Knowledge Base* (3rd ed.). USA: Atomic Dog and Cengage Learning.

Trofimova, I., & Robbins, T. W. (2017). Temperament and arousal systems: A new synthesis of differential psychology and functional neurochemistry. *Neuroscience and Biobehavioral Reviews, 64*, 382-402. https://doi.org/10.1016/j.neubiorev.2016.03.008

Uchida, Y., Kitayama, S., Akutsu, S., Park, J., & Cole, S. W. (2018). Optimism and the conserved transcriptional response to adversity. *Health psychology: Official Journal of the Division of Health Psychology, 37*(11), 1077–1080. https://doi.org/10.1037/hea0000675

United States Census Bureau (2021). The majority of children live with two parents, census bureau reports [Web page]. https://www.census.gov/library/visualizations/interactive/adult-and-under-the-age-of-18-populations-2020-census.html

United States Environmental Protection Agency (2015). Neurodevelopmental disorders. In the EPA's, *America's children and the environment* (3rd ed.) (pp. 1-32). USA: EPA. https://www.epa.gov/sites/production/files/2015-10/documents/ace3_neurodevelopmental.pdf

U.S. Department of Veterans' Affairs (2020). *How common is PTSD in adults?* [Web page]. https://www.ptsd.va.gov/understand/common/common_adults.asp

USA Facts (2022). How has the racial and ethnic makeup of the US changed? https://usafacts.org/data/topics/people-society/population-and-demographics/our-changing-population?utm_source=bing&utm_medium=cpc&utm_campaign=ND-DemPop&msclkid=5dd59bc01f3b148cc542f83af3647349

Urwick, E. J. (1920, 2013). *The message of Plato: A reinterpretation of the republic.* USA: Methuen. Reproduced by Routledge Publishing.

Vanegas, S. B., & Davidson, D. (2015). Investigating distinct and related contributions of weak central coherence, executive dysfunction, and systemizing theories to the cognitive profiles of children with autism spectrum disorders and typically developing children. *Journal of Research in Autism Spectrum Disorders, 11*, 77-92. https://doi.org/10.1016/j.rasd.2014.12.005

van Heijst, B. F., Deserno, M. K., & Geurts, H. M. (2019). Autism and depression are connected: A report of two complimentary network studies. *Autism: The international journal of research and practice*, *24*(3), 680–692. https://doi.org/10.1177/1362361319872373

Vasilopoulou, E., & Nisbet, J. (2016). The quality of life of caregivers of children with autism spectrum disorder: A systematic review. *Research in Autism Spectrum Disorders, 23,* 36-49.

Volkmar, F. R., Paul, R., Klin, A., Cohen, D. J. (2005). *Handbook of autism and Pervasive developmental disorders, diagnosis, development, neurobiology, and behavior.* New York, NY: John Wiley & Sons.

Volkow, N. D., Wang, G. J., Fowler, J. S., Tomasi, D., Telang, F., & Baler, R. (2010). Addiction: decreased reward sensitivity and increased expectation sensitivity conspire to overwhelm the brain's control circuit. *BioEssays in the News and Reviews in Molecular, Cellular and Developmental Biology*, *32*(9), 748–755. https://doi.org/10.1002/bies.201000042

Vorstman, J. A. S., Parr, J. R., Moreno-De-Luca, D., Anney, R. J. L., Nurnberger, J. I, Jr., & Hallmayer, J. F. (2017). Autism genetics: opportunities and challenges for clinical translation. *National Review of Genetics, 18*(6), 362–376. https://doi.org/10.1038/nrg.2017.4

Wahl, K., den Hout, M., & Lieb, R. (2019). Rumination on unwanted intrusive thoughts affects the urge to neutralize in nonclinical individuals. *Journal of Obsessive-Compulsive and Related Disorders, 20,* 4-12. https://doi.org/10.1016/j.jocrd.2018.02.002

Watkins, P. D., Emmons, R. A., Greaves, M. R., & Bell, J. (2018). Joy is a distinct positive emotion: Assessment of joy and relationship to gratitude and well-being, *The Journal of Positive Psychology, 13*(5), 522-539. https://doi.org/10.1080/17439760.2017.1414298

Watson, D., & Clark, L. A. (1984). Negative affectivity: The disposition to experience aversive emotional states. *Psychological Bulletin*. 96(3), 465-490. https://doi.org/

Watson, D., Clark, L. (1992). On traits and temperament: General and specific factors of emotional experience and their relation to the five-factor model. *Journal of Personality, 60*, 441–476. http://doi.org/10.1111/j.1467-6494.1992.tb00980.x

Waugh, W., Brownell, C., & Pollock, B. (20150. Early socialization of prosocial behavior: Patterns in parents' encouragement of toddlers' helping in an everyday household task. *Infant Behavioral Development, 39*, 1-10. https://doi.org/10.1016/j.infbeh.2014.12.010

Wegner, D. M. & Zanakos, S. (1994). Chronic thought suppression. *Journal of Personality, 62*, 615-640. https://doi.org/10.1111/j.1467-6494.1994.tb00311.x

Weiss, J. A., Cappadocia, M. C., MacMullin, J. A., Viecili, M., & Lunsky, Y. (2012). The impact of child problem behaviors of children with ASD on parent mental health: The mediating role of acceptance and empowerment. *Autism*, *16*(3), 261-274. https://doi.org/10.1177/1362361311422708

Whitmore, K., Hart, H., & Willems, G. (Eds.). (2016). Neurodevelopmental approach to specific learning disorders. *Clinics in Developmental Medicine, 145*, 250-260. USA: Mac Keith Press.

Willis, K., Timmons, L., Pruitt, M. *et al.* (2016). The relationship between optimism, coping, and depressive symptoms in Hispanic mothers and fathers of children with autism spectrum disorder. *Journal of Autism Developmental Disorders, 46*, 2427–2440. https://doi.org/10.1007/s10803-016-2776-7

Yang, K., Tu, J., & Chen, T. (2019). Homoscedasticity: An overlooked critical assumption for linear regression. *General Psychiatry*, *32*(e100148), 1-5. https://doi.org/10.1136/gpsych-2019-100148

Yorke, I., White, P., Weston, A., Rafla, M., Charman, T., & Simonoff, E. (2018). The association between emotional and behavioral problems in children with autism spectrum disorder and psychological distress in their caregivers: 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

Zagorski L. (2013). Dispositional optimism. In: Gellman M.D., &Turner J.R. (eds.). Encyclopedia of Behavioral Medicine. Springer, New York, NY. https://doi.org/10.1007/978-1-4419-1005-9_1222

Zaidman-Zait, A., Mirenda, P., Duku, E., Vaillancourt, T., Smith, I. M., Szatmari, P., . . . Thompson, A. (2017). Impact of personal and social resources on parenting stress in mothers of children with autism spectrum disorder. *Autism 21*, 155–166. https://doi.org/10.1177/1362361316633033

Zeng X., Liao R., Zhang R., Oei T., Yao Z., Leung F., & Liu X. (2017). Development of the Appreciative Joy Scale. *Mindfulness*, *8*(2), 286–299. https://doi.org/10.1007/S12671-016-0599-4

Zhao, M., & Fu, W. (2020). The resilience of parents who have children with autism spectrum disorder in China: A social culture perspective. *International Journal of Developmental Disabilities*, *68*(2), 207-218. https://doi.org/10.1080/20473869.2020.1747761

Zhao, H., & Zhang, H. (2022). Why dispositional awe promotes psychosocial flourishing? An investigation of intrapersonal and interpersonal pathways among Chinese emerging adults. *Current Psychology*, 7, 1-13. https://doi.org/10.1007/s12144-021-02593-8

Zheng, S., Sun, S., Huang, C., & Zou, Z. (2019). Authenticity and subjective well-being: The mediating role of mindfulness. *Journal of Research in Personality, 84,* 103900. https://doi.org/10.1016/j.jrp.2019.103900

Zhou, W., Liu, D., Xiong, X., & Xu, H. (2019). Emotional problems in mothers of autistic children and their correlation with socioeconomic status and the children’s core symptoms. *Medicine, 98*(32), e16794. https://doi.org/10.1097/MD.0000000000016794

Appendix A

Benefits of a Joyful Disposition

Convey dispositional positivity to external events, mitigating adverse events through a positive perspective (Volkow et al., 2010).

Increase reward and expectation sensitivity for a positive event, which increases more positive emotions and affect (Volkow et al., 2010).

Increase life satisfaction by generating resilience and psychosocial flourishing by augmenting *dispositional resilience* (Zhao & Fu, 2020; Zhao & Zhang, 2022).

Interact synergistically *with dispositional positivity* to increase creativity and contentment (Mohsen et al., 2015).

Aid in counteracting psychological disorders and associated transdiagnostic constructs (Barros et al., 2015).

Influence caregivers to realize that happiness, positive emotions, and positive affect are not necessarily contingent on situations (Crane, Jandric, Barnhofer, & Williams, 2010).

Mediate stressors by being associated with activation of cortical processes and the nucleus accumbens in the dopamine/opioid reward system (Hagerty et al., 2013). Activation of these brain areas and pathways exerts positive reinforcement that neutralizes *dispositional negativity*.

Provide powerful bi-directional reinforcements that can dampen the adverse effects of stressors or heighten the effects of positive stressors (Stellar et al., 2015).

Positively reinforce motivation and reward which moderates adverse stressors through self-determination (Berridge & Kringelbach, 2015; Hagerty et al., 2013).

Work with dispositional positivity to elicit increased energy and engagement with others through release of euthymic neurotransmitters and activation of pathways involved in positive affect (Caprar et al., 2016; Mohsen et al., 2015).

Moderate stressors through beneficial changes in the brain that help with adaptivity to environmental vicissitudes (Lourenco & Casey, 2013).

Interact with other dispositions to mitigate negative ones and amplify positive ones (Lourenco & Casey, 2013).

Appendix B

Permission to Use the Joyful Life Scale

Dr. Robbins gave me permission to use his measurement, the Joyful Life Scale, for testing the research participants in an email.

Brent D. Robbins
Thu 7/1/2021 1:28 AM

To: Janis Kirkland
Cc: Anthony R. Perry

The Joyful Life Proof.pdf
514 KB
□
I’ve attached the proof.

Best wishes,
Dr. Robbins

Appendix C

Permission to Use the Acceptance and Action Questionnaire

PsycTESTS Citation: Hayes, S. C. (2004). Acceptance and Action Questionnaire
[Database record]. Retrieved from PsycTESTS.
https://doi.org/10.1037/t04346-000

Instrument Type: Inventory/Questionnaire

Test Format: Items on the Acceptance and Action Questionnaire are rated on a 7-point scale ranging from 1 (Never True) to 7 (Always True).

Source: Supplied by author.

Permissions: Test content may be reproduced and used for non-commercial research and educational purposes without seeking written permission. Distribution must be controlled, meaning only to the participants engaged in the research or enrolled in the educational activity. Any other type of reproduction or distribution of test content is not authorized without written permission from the author and publisher. Always include a credit line that contains the source citation and copyright owner when writing about or using any test. https://doi.org/10.1037/t04346/000 Items

Reference: PsycTESTS (2020). Acceptance and Action Questionnaire. USA: American Psychological Association.

https://web-ebscohost.com.ezp.waldenulibrary.org/pdfviewer/

Appendix D

Email Permission to Use the Acceptance and Action Questionnaire

On Sun, May 3, 2020, at 11:46 AM Janis Kirkland

Dear Dr. Hayes:

Could I have permission to use your AAQ in my dissertation, as well as a survey instrument with my participants? My research involves determining how dispositional joy provides a protective and hopeful role in caregivers with Experiential Avoidance and Unwanted Intrusive Thoughts. The participants will comprise two groups: caregivers with children with autism spectrum disorder and caregivers of children who are neurotypical.

I appreciate your time, Dr. Hayes.

Best wishes,

Janis Kirkland
General Psychology Doctoral Student at Walden University

Steven Hayes
Sun 5/3/2020 1:32 PM

To: Janis Kirkland

It is free to use.

Good luck with your project.

- S

Steven C. Hayes
Foundation Professor
Behavior Analysis Program
Department of Psychology /298
University of Nevada
Reno, Nevada

Appendix E

Permission to Use the White Bear Suppression Inventory

I tried repeatedly to contact the developers of the White Bear Suppression Inventory, who were Dr. Daniel Wegner and Dr. Sofia Zanakos. I never received a reply from Dr. Wegner because I learned later that he had passed away in 2013. I have also tried to contact Dr. Zanakos through social media and email and have never received a response. I have noted that the measurement appears in different psychology books and is easy to access online. Therefore, I concluded that it is in the public domain. However, I have given credit to the developers of the Joyful Life Scale, the Acceptance and Action Questionnaire, and the White Bear Suppression Inventory wherever it was needed.

Concern about the White Bear Suppression Inventory being in the public domain led to me become a member of the Association for Contextual Behavioral Science (ACBS) at https://contextualscience.org. The ACBS offers their members a copy of the WBSI as authorized by the developers, Dr. Wegner and Dr. Zanakos. One of the benefits of ACBS membership is the following notice at ttps://contextualscience.org/publications:

Publications
Below is a list of publications relevant to contextual behavioral science. Many publications are available for download by clicking “more info” and clicking the file link on the publication’s page. Please note that only paid ACBS Members are able to view and download files on this website.

Appendix F

Online Survey Study Seeks Caregiver Participants Who Have Children with ASD or Neurotypical Children

There is a new study called *"The Mediating Role of a Joyful Disposition in the Relationship Between Experiential Avoidance and Unwanted Intrusive Thoughts in Caregivers of Children with Autism Spectrum Disorder"* that could help these caregivers better understand how having a joyful disposition can ease their caregiving burden by improving coping skills and increasing mental health. Furthermore, caregivers of children with neurotypical development could also benefit from this study, because raising children is stressful at times. For this study, you are invited to fill out three measurements about having joy, coping skills, and enduring disturbing thoughts, as well as an informed consent form, and a demographic questionnaire—all five of which will require about 30 minutes to confidentially complete online in the convenience of your home.

This survey is part of a doctoral study being conducted by Janis Kirkland, a Ph.D. student at Walden University.

About the study:

- All caregivers will fill out the Informed Consent Form and the Demographic Questionnaire online.
- They will also complete three online measurements called the Joyful Life Scale, the Acceptance and Action Questionnaire, and the White Bear Suppression Inventory.
- To protect your privacy, all names of the caregiver participants will be anonymous by not being connected to their data. The researcher will never divulge your information, except to the Chair and the Institutional Review Board, if they require the information to ensure the researcher is conducting ethical and honest research.

Volunteer caregivers of children with ASD must meet these requirements:

- Their children have either been diagnosed by a professional or a clinician with ASD using the DSM-5 or the DSM-IV-TR, according to caregiver report, or undiagnosed children have had symptoms aligned with criteria in the DSM-5, according to the caregivers.

- Their children have not been diagnosed with another neurodevelopmental disorder that results from systemic, genetic, chromosomal, non-familial mutations, or mitochondrial disorders, according to caregiver or clinician/professional report.

- If the children have cerebral palsy, cognitive disability, ADHD, OCD, or Tourette syndrome with autistic symptoms, the volunteer caregivers will be included in the study.

- The caregivers and their children live in the United States or the territories, and the children are between the ages of 5 and 17.

- The caregivers currently live full-time with their children and have done so for at least 1 year.

,
Volunteer caregivers with children who have neurotypical development:

- The children have never been diagnosed by a professional or clinician with ASD or any other neurodevelopmental disorder using the DSM-5, according to caregiver report.

- Caregivers of neurotypical children have never noted any autistic symptoms or symptoms of any neurodevelopmental disorder, according to criteria listed in the DSM-5 or the ICD codes.

- Their children have met developmental milestones and have not shown widely varied abilities.

- The children range in age from 5 through 17 and live in the United States.
- The caregivers currently live full-time with their children for at least 1 year.

To confidentially volunteer, click the following link:

Janis.kirkland@waldenu.edu

Appendix G

Eligibility Criteria for Caregivers of Children With ASD

1. The child must meet the criteria in the DSM-5 for ASD and have a clinical diagnosis or a renewed diagnosis in the past 8 years.
2. The child must not have a co-occurring diagnosis of a serious non-autistic neurodevelopmental disorder, except for intellectual disability.
3. The child has no serious co-morbid disorders, such as severe epilepsy, a serious metabolic illness, or a genetic disorder that causes neurological symptoms, or serious, chromosomal issues that have systemic effects.
4. The child must be between the ages of 5 through 17.
5. The caregiver must have cared for the child continuously for at least 1 year.
6. The caregiver may live in the home with the child's other caregiver. The two caregivers can either be married or in another type of domestic arrangement. The caregivers can also be single caregivers.
7. The caregivers and child cannot be homeless.
8. The child lives with both or single caregivers and not in an institution or a group home.

Appendix H

Child Neurodevelopment Questionnaire

1. Has your child been professionally diagnosed with autism spectrum disorder according to the Diagnostic and Statistical Manual of Mental Health Disorders-5?

   Yes ______ No ______

2. Has your child met neurodevelopmental milestones in a timely manner and has never been diagnosed with autism?

   Yes ______ No ______

3. If your child has autism, does your child have a diagnosis of another serious neurodevelopmental disorder?

   Yes ______ No ______

4. Where on the autism spectrum do your child's autistic symptoms lie?

   Mild area ______ Moderate area ______ Severe area ______

5. What degree of stress do you have from managing autistic stressors?

   Minimal to none ______ Mild ______ Moderate ______ High ______

Appendix I

Caregiver and Child Demographic Questionnaire

1. What is your age?

20 to 29 ______ 30 to 39 ______ 40 to 49 ______ 50 to 59 ______

60 to 69 ______

2. What is your spouse’s or partner’s age if you have one?

20-29 ______ 30-39 ______ 40-49 ______ 50-59 ______

60-69 ______

3. What is your child’s age?

5-6 _______ 7-8 _______ 9-10 ______ 11-12 ______

13-14 ______ 15-16 _______ 17 _______

4. What is your gender?

Male ______ Female ______ Other ______

5. What is your spouse’s or partner’s gender?

Male ______ Female ______ I do not have a spouse or caregiver? ______

6. What is your child’s gender?

Male ______ Female _______

7. Are you a United States citizen?

Yes ______ No ______

8. If you have a spouse or partner, is he or she a United States citizen?

Yes ______ No ______

9. Is your child a United States citizen?

___ ______

Yes ______ No ______

10. What is your race or ethnicity?

White or Caucasian ______ Black or African American ______

American Indian or Alaskan Native ______ Asian American ______

Native Hawaiian or Other Pacific Islander ______ Hispanic or Latino ______

Prefer not to answer ______

11. What is your child's race or ethnicity?

White or Caucasian ______ Black or African American ______

American Indian or Alaskan Native ______ Asian or Asian American ______

Native Hawaiian or Other Pacific Islander ______ Hispanic or Latino ______

Prefer not to answer ______

12. Which demographic region of the United States do you live in?

______ New England Division of the Northeast Region: Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont

______ Mid-Atlantic Division of the Northeast Region: New York, New Jersey, and Pennsylvania

______ East North Central Division of the Midwest:

______ West North Central Division of the Midwest: Iowa, Nebraska, Kansas, North Dakota, Minnesota, South Dakota, and Missouri

______ South Atlantic Division of the South Region: Delaware, District of Columbia, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, and West Virginia

______ East South-Central Division of the South Region: Alabama, Kentucky, Mississippi, and Tennessee

______ West South-Central Division of the South Region: Arkansas, Louisiana, Oklahoma, and Texas

______ Mountain Division of the West: Arizona, Colorado, Idaho, New Mexico, Mexico, Montana, Utah, Nevada, and Wyoming

______ Pacific Division of the West: Alaska, California, Hawaii, Oregon, and Washington

13. Which type of population area do you live in?

Rural ______ Suburban ______ Urban ______

14. Are you currently married or in a significant relationship and living in the same home?

Yes ______ No ______

15. Have you lived with your child full-time for at least one year?

Yes ______ No ______

16. Do you care for your child full-time or part-time?

Full-time ______ Part-time ______

17. Do you work outside of the home?

Yes, part-time _____ Yes, fulltime ______ No ______

18. Do you have help managing your child's autistic symptoms and challenging behaviors?

Yes ________ No ______

19. Are you and your child homeless?

Yes ______ No ______

20. Does your child live in a group home or in an institution of any kind?

Yes ______ No ______