

ABSTRACT

Stress and Self-Compassion in Parents of Children with Autism Spectrum Disorders

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This past decade, the prevalence of children diagnosed with an autism spectrum disorder (ASD) has increased from 0.6%-0.7% to 0.9%, meaning more families are experiencing the stress of having a child with an ASD. Researchers found that levels of parenting stress are consistently considerably higher in parents of children with an ASD compared to parents of healthy children and parents of children with other disabilities or health problems. This stress has several negative effects, such as poor parenting behavior. Given that research has shown that parents' beliefs about themselves affect how they experience stress as well as their overall psychological well-being, addressing how parents relate to themselves may be beneficial. This study explored the relationship between stress and self-compassion in parents of children with ASDs as a first step to finding a potential intervention for parental stress. It was found that levels of stress were higher in parents of children with diabetes and parents of neurotypical children without a chronic illness than in parents of children with ASDs. Levels of self-compassion in parents of children with ASDs were lower than in parents of children with diabetes but

comparable to levels of self-compassion in parents of neurotypical children without a chronic illness. Differences in stress and self-compassion were found to have a small to medium effect size. A small, positive relationship was found between stress and self-compassion. Additionally, guilt was not found to be a mediator of the relationship between stress and self-compassion.

Stress and Self-Compassion in Parents of Children with Autism Spectrum Disorders

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CHAPTER ONE

Introduction

Over the past decade, there has been an unprecedented increase in the number of children diagnosed with an autism spectrum disorder (ASD). In the 1990s, the Centers for Disease Control (CDC) reported the prevalence of ASDs to be approximately six or seven out of every 1,000 (0.6%-0.7%) for children ages eight to nine (Center for Disease Control, 2011). The most recent statistic reported by the CDC in 2012, based off of a study done in 2008 of children ages eight to nine years, suggests that the prevalence rate is now one in every 88 (approximately 1.14%; Center for Disease Control, 2012). With higher prevalence rates, more families across the nation are experiencing the stress of having a child with an ASD.

Levels of parenting stress are consistently and considerably higher in parents of children with an ASD compared to parents of children in the general population as well as parents of children with other disabilities or health problems (Blacher & McIntyre, 2006; Dunn, Burbine, Bowers, & Tantleff-Dunn, 2001; Eisenhower, Baker, & Blacher 2005; Hastings & Johnson, 2001; Koegel, Schriebman, Loos, Dirlich-Wilhelm, & Dunlap, 1992; Rao & Bleidel, 2009). Specifically, parents of children with ASDs report higher levels of stress, depression, anxiety, and emotional exhaustion compared to parents of children with Down Syndrome or other types of intellectual disability (Olsson & Hwang, 2001; Weiss, 2002) and parents of children with another chronic illness, cystic fibrosis (Bouma & Schweitzer, 1990). This also held true when comparing parents of

children with ASDs to parents of children with externalizing behavioral problems (Dumas, Wolf, Fisman, & Culligan, 1991) and children with conduct disorders (Noh, Dumas, Wolf, & Fisman, 1989).

Causes of Parental Stress

There has been much research conducted on the causes of stress in parents of children with ASDs. It is impossible to pinpoint just one source of stress for these parents; unfortunately, there are numerous stressors. One of the undisputed burdens of having a child with an ASD is the astronomical cost of caring for the child. According to the CDC, the estimated lifetime cost to care for an individual with an ASD is \$3.2 million (Center for Disease Control, 2011). Additionally, the CDC reported that

Individuals with an ASD had average medical expenditures that exceeded those without an ASD by \$4,110–\$6,200 per year. On average, medical expenditures for individuals with an ASD were 4.1–6.2 times greater than for those without an ASD. Differences in median expenditures ranged from \$2,240 to \$3,360 per year with median expenditures 8.4–9.5 times greater. (<http://www.cdc.gov/ncbddd/autism/data.html>.)

These monumental costs of caring for a child with an ASD are a source of stress for families with children with an ASD (Sharpe & Baker, 2007). Additionally, in a study looking at the family lives of families with a child with an ASD, mothers reported moderate to serious limitations in their careers as a result of their child's limitations (Gray, 1997). Mothers reported needing to give up their jobs in order to become a full-time caretaker for their child with autism. High costs of caring for a child with an ASD compounded by being unable to depend on two incomes leave parents with serious financial stressors.

Behaviors displayed by children with an ASD are another source of stress for parents and families (Glasberg, Martins, & Harris, 2006; Herring, Gray, Taffe, Tonge, Sweeney, & Einfeld, 2006). Several researchers have found that child behavior is the most important factor in parenting stress, even above intelligence and other cognitive abilities (Baker, Blacher, Crnic, & Edelbrock, 2002; Floyd & Gallagher, 1997; Weiss, 1991). Externalizing behaviors especially appear to be an influential factor when comparing stress in parents of children with disabilities and parents of children without disabilities (Fischer, 1990; Lecavalier, Leone, & Wiltz, 2006). Frequently, externalizing behaviors exhibited by children with ASDs may be inappropriate, repetitive, aggressive, and/or dangerous (Koegel, Koegel, & Surratt, 1992). Kasari and Sigman (1997) found that the more autistic symptomatology exhibited, the more difficult the parents perceive their children to be to parent. Hastings (2003) as well as Herring and colleagues (2006) found that level of autistic behaviors positively correlated with levels of stress in parents. There is also research that stipulates that the greatest stress parents experience is the result of their child's inappropriate behavior oddities, such as hand flapping, rocking, finger gazing, pacing, and self-injurious behaviors (Kostantareas & Homatidis, 1989). In addition to behavioral difficulties, the children's restricted social, communicative, and emotional competencies as well as their usually uneven cognitive development create stress for parents of children with ASDs (Davis & Carter, 2008).

A study by Bitsika and Sharpley (2004) suggests that behavior problems and the parents' inability to manage or alter these negative behaviors significantly increases parental stress and hinders psychosocial well-being. Moreover, the guilt associated with others' views that the parents of children with ASDs are mismanaging their children's

behavior contributes to parent stress (Randall & Parker, 1999). This is supported by a study from Phetrasuwan and Miles (2009), whose findings indicate that demanding behaviors, upset feelings, discipline, and managing behavior in public places are reportedly the highest sources of parental stress.

Parental stress associated with managing difficult behavior in public places is related to the social stigma that parents with children with ASDs sometimes face. Because children with ASDs physical appearances are normative, the public will often attribute negative behaviors of the children to the parent (Gray & Holden, 1992; Sander & Morgan, 1997). This often leads the parents of children with ASDs to feel rejected and stigmatized (Farrugia, 2009; Gray, 1993, 2002a, 2002b). Addressing parents' guilty feelings and experience of social stigma may be a possible place to intervene and lower levels of stress.

Beyond external behaviors, caregiver strain is also associated with the extreme dependence of the child on the parent (Sharpley & Bitsika, 1997). Sharpley and Bitsika (1997) found that caregiver strain was related to the child's attachment and affection being expressed in ways that the parents might not have anticipated. For example, van Ijzendoorn et al. (2007) observed that children with ASD had more disorganized attachments and engaged in fewer reciprocal interactions with their parents, despite the parents being as sensitive to their needs as parents of children with mental retardation, delayed language development, and typical development. Even though the child with autism is highly dependent upon parents for daily care giving, because of lack of reciprocal interactions, these parent-child interactions are a source of strain and stress for parents.

However, not all research supports that child characteristics influence levels of parental stress. An early study by Bradshaw and Lawton (1978) looked at the relationship between levels of parent stress and severity of child's disability; disabilities included mental, physical, and medical. Severity of child's disability was measured looking at multiple aspects of the child's disability: mobility, communication, and capacity for self-care or independence. The researchers found no relationship between the severity of the child's disability and parental stress (Bradshaw & Lawton, 1978). A more recent study by Reyns (2006) looked at perceived parent stress specifically in relation to severity of autistic symptomatology, rather than disability characteristics in general; she also found no correlation between severity of disorder and parental stress (Reyns, 2006). This suggests that perhaps parental characteristics are involved in determining how much stress is experienced, which lends more credence to the idea of intervening at the parent level to lower levels of stress.

Self-Criticism

Self-criticism may be a parental characteristic that contributes to perceived stress and decreased psychological well-being. To the best of this author's knowledge, self-criticism has not been studied specifically with parents of children with ASDs beyond looking at parental cognitions such as guilt and lowered self-efficacy, which may be considered closely related to self-criticism. There has been general research that demonstrates the importance of self-criticism when looking at experienced stress and psychological well-being, which suggests that self-criticism may be a viable place to intervene to address parental stress.

Hammen, Ellicott, Gitlin and Jamison (1989) found that those who are self-critical are likely to become depressed in the face of stressful situations. Lakey and Ross (1994) found that self-criticism displayed stress-enhancing effects, meaning that being self-critical exacerbated the subjects' response to stressful situations. Several other researchers also found that self-criticism is linked to poor psychological functioning (Blatt & Zuroff, 1992; Gilbert, Baldwin, Irons, Baccus, & Palmer, 2006; Greenberg, Elliott, & Foerster, 1990; Schore, 1994; Whelton & Greenberg, 2005). It could be hypothesized that parents who are prone to being self-critical are more likely to become depressed when faced with the stresses of raising a child with an ASD.

Gruen, Silva, Ehrlich, Schweitzer, and Friedhoff (1997) also found a relationship between self-criticism and stress. They examined self-criticism in relation to changes in biochemistry during stress exposure; plasma homovanillic acid (HVA), a primary metabolite of dopamine, was used as the measure of biochemistry. They found that self-criticism was related to an increase in HVA during stress exposure, suggesting that individuals who are highly self-critical also experience high levels of stress when exposed to stressful situations. This research raises the possibility that parents who are self-critical actually experience stress at more heightened levels than parents who are not self-critical. Given this possibility, it appears important to address self-criticism in parents of children with ASDs.

Impact of Parental Stress

Parenting stress is thought to impact behaviors of children (Baxter, Cummins, & Yiolitis, 2000; Hodapp, Fidler, & Smith, 1998; Lecavalier, Leone, & Wiltz, 2006; Stores, Stores, Fellow, & Buckley, 1998). Lecavalier and colleagues (2006) found that high

initial levels of parenting stress can lead to subsequent worsening of child behavior problems, and Robbins and colleagues (1991) found that high parent stress resulted in poorer child outcomes following early teaching interventions. There is some evidence that this interaction between stress and child behavior is true specifically for children with ASDs (Osborne, McHugh, Saunders, & Reed, 2008).

Rodgers (1998) reported that parenting stress directly and indirectly affects parenting behavior. Baker and Heller (1996) discussed the effects of parent stress in relation to ASDs, stating that a reciprocal relationship exists between parental stress and the child's externalizing behaviors, which leads to more problems for the child and parents. Children who exhibit high levels of externalizing problems negatively affect parent morale, which contributes to an increase in authoritarian parenting (Baker & Heller, 1996; Dumas & Wekerie, 1995). Therefore, intervening at either the level of parents' stress or the level of child's behaviors should reduce problems exacerbated by this reciprocal interaction.

Several interventions that target parents as well as their children with ASDs have found improvements in the children's behavior and functioning as a result of reduced parental stress (Harris, Handleman, Arnold, & Gordon, 2000; Lovaas & Smith, 2003; Spaccarelli, Cotler, & Penman, 1992; Brookman-Frazee, Stahmer, Baker-Ericzen, & Tsai, 2006). Kuhn and Carter (2006) as well as Rao and Beidel (2009) recommend that addressing stress and maternal well-being is an important factor when thinking about maximizing intervention outcome for children with ASDs. They suggest that, if not addressed, stress and depressive symptoms may interfere with the mother's ability to fully engage in interventions with her child.

Correlates of Parental Stress

Studies have found that parental stress is negatively associated with parenting cognitions, such as parental self-efficacy (Hassal, Rose, & McDonald, 2005; Jackson & Huang, 2000; Scheel & Rieckmann, 1998); self-efficacy refers to the judgments of one's capability to perform competently and effectively as a parent (Teti & Gelfand, 1991). Kuhn and Carter (2006) looked at the relationship between maternal self-efficacy and other parenting cognitions for mothers of children with ASDs. They found that mothers who reported more feelings of guilt also had lower self-efficacy. They suggested that self-efficacy and feelings of guilt may be especially prominent for mothers of children with an ASD. This is important because self-efficacy has been found to act as a mediator between psychosocial variables, such as maternal depression, and parental competence (Teti & Gelfand, 1991); how competent a parent feels in her parenting skills affects her feelings of self-efficacy, which in turn affects her levels of maternal depression. Given the relationship between guilt and self-efficacy as well as self-efficacy and maternal depression, intervening with maternal guilt may be helpful in addressing poor maternal psychological functioning.

Having a child with an ASD often times affects the well-being of the family as a system, not just the parents. Numerous researchers (Gray, 1994; Gray, 1997; Hutton & Caron, 2005; Montes & Halterman, 2007; Myers, Mackintosh, & Goin-Kochel, 2009) have documented impairments of family functioning, such as giving up normal family activities and outings, lack of flexibility in family life, lack of personal social activities, and stress surrounding the marital relationship. Hutton and Caron's 2005 study reported that the majority of caregivers reported that parenting stress specifically affected family

factors such as having little time for family activities, limited flexibility because of the need to plan ahead, and marital stress.

Meirsschaut, Roeyers, and Warreyn (2010) looked at mother's stress and their parental cognitions (e.g., self-efficacy and guilt) concerning their neurotypical child as well as their child with an ASD. They found strong associations between mothers' stress and their parental cognitions (i.e., self-efficacy and guilt) for both groups of children; distressed feelings were not limited to just the child with an ASD. This suggests that negative parental cognitions are not limited to just the child with ASDs; it also negatively affects parents' feelings about their ability to parent their other children. Thoughts and feelings parents have about themselves are far-reaching and may be an important place of intervention in helping relieve parental stress.

Phetrasuwan and Miles (2009) suggest that interventions aimed at reducing parental stress are important because of the aforementioned problems associated with parental stress. They found that mothers reported stress relating to being unable to find time for their own activities and needs. This difficulty meeting their personal needs was reportedly a result of the inability to give themselves permission to meet such needs. Theoretically speaking, if there were a way to enable parents to give themselves permission to meet their own needs, this will help lower their levels of stress and positively affect the family system.

Coping Strategies and Parents of Children with ASDs

Lyons, Leon, Phelps, and Dunleavy (2010) did a study looking at the moderating effect of coping styles on symptom severity and stress in parents of children with ASDs. They found that coping styles moderated the effect of symptom severity on parental

stress. This gives hope that parental stress may be lessened, even if child symptom severity cannot be significantly decreased. The finding in this study suggests that addressing parent coping skills may be another avenue to alleviate parental stress.

Some research has shown that higher levels of problem-solving predict fewer depressive symptoms and spousal relationship difficulties, while emotion-focused coping predicts more depressive symptoms and spousal difficulties (Dunn, Burbine, Bowers, & Tantleff-Dunn, 2001; Smith, Seltzer, Tager-Flusberg, Greenberg, & Carter, 2008).

Problem-solving coping is using strategies that attempt to solve a problem, reconceptualize a problem, or minimize the effects of a problem, and emotion-focused coping consists of behaviors such as having emotional responses, fantasizing reactions, and becoming preoccupied with oneself. Pottie and Ingram (2008) found that emotional regulation coping is associated with lower levels of daily negative mood; emotional regulation coping is defined as expressing or controlling emotions in a constructive manner. This research suggests that helping parents with task-oriented and emotional regulation coping skills may positively influence parents' mood.

Hassal, Rose, and McDonald (2005) looked at parental cognitions in relation to parenting stress in mothers of children with intellectual disabilities. Specifically, the parental cognitions they studied were parenting self esteem and parental locus of control. They found that mothers with higher levels of parenting self-esteem experienced lower levels of parenting stress. These findings suggest that addressing parenting self-esteem (or, inversely, parent self-criticism) will influence levels of parenting stress.

When compared to parents of neurotypical children, parents of children with ASDs tend to use more “non-constructive” coping skills, such as distancing (e.g. mental

avoidance) and escape (e.g., physical avoidance) (Sivberg, 2002). The use of these coping skills is associated with higher level of strain on the family system. The results of this research indicate that teaching parents of children with ASDs more constructive ways of coping may help lower levels of stress.

Self Compassion

Self-compassion is a way of thinking about relating to one's self; it is seen as a healthy alternative to self-esteem. Although self-esteem is associated with positive psychological well being (Kelly, Zuroff, & Shapira, 2009; Neff, Kirkpatrick, & Rude, 2007; Neff, 2009), it is also linked with many negative aspects of human functioning. For example, Cushman (1990) criticizes the egocentric nature of self-esteem, where emphasis is placed on self-favoring differentiation from others. This leads people to put down others in order for them to maintain favorable separation from peers and, therefore, positive self-esteem. The attempt to maintain self-esteem is also associated with narcissism and feelings of superiority (Seligman, 1995), inflated and unrealistic views of one's self (Seligman, 1995), prejudice (Aberson, Healy, & Romero, 2000), and bullying (Salmivalli, Kauaiainen, Kaistaniemi, & Lagerspetz, 1999).

The way that self-compassion is conceptualized by Neff (2003) makes it difficult for one to be self-compassionate and still maintain the negative aspects of pursuing high self-esteem. Self-compassion is composed of three components: self-kindness, belief in a common humanity, and mindfulness (Neff, 2003). Self-kindness is defined by the tendency to be caring and understanding with oneself instead of being critical or judgmental (Neff, 2003). For example, when faced with pain, people who are self-kind offer themselves comfort and soothing rather than pushing through their pain or being

critical of it. Belief in a common humanity, with respect to self-compassion, refers to the belief that all humans are flawed and are imperfect (Neff, 2003). Rather than feeling isolated when confronted with making a mistake or feeling flawed, people who believe in a common humanity feel connected to others because they recognize that all humans are struggling with these same feelings. Mindfulness involves being fully present and experiencing the moment with clarity and balance, instead of being swept away by the feelings or ignoring the feelings (Neff, 2003). Neff (2003) further conceptualizes mindfulness as taking “meta-perspective”, so as to help keep objectivity and perspective towards the feelings being experienced.

Self-compassion is positively associated with many positive aspects of psychological functioning and negatively associated with several negative aspects of psychological functioning. For example, Neff et al. (2007) found that self-compassionate individuals engage in less rumination, have greater feelings of social connectedness, and higher levels of life satisfaction. Additionally, Seligman and Csikszentmihalyi (2000) found that self-compassionate people have greater happiness, optimism, wisdom, curiosity and exploration, and personal initiative. Neff (2003) found that self-compassion is a robust negative predictor of anxiety and depression, even after controlling for self-criticism. Furthermore, Neff and colleagues (2007) found that self-compassion is a negative predictor of anxiety, even when controlling for negative affect. Self-compassion is also negatively related to neurotic perfectionism and narcissism (Neff, 2003), whereas self-esteem is positively related to narcissism (Seligman, 1995). Given these findings, it appears that addressing a person’s self-compassion may be an efficacious intervention for those who aim to improve their psychological well-being.

Self-Compassion as an Intervention

As described earlier, parents' thoughts and beliefs about themselves affect how they experience stress as well as their overall psychological well-being. Parents may feel guilty or incompetent in their parenting skills, which increases their perceived stress and decreases psychological well-being. Additionally, as mentioned earlier, being self-critical is associated with being more prone to feelings of depression and experiencing stress more easily. Teaching parents about self-compassion and how to be self-compassionate in their everyday life may prove helpful in managing stress and maintaining psychological well-being.

The majority of the above research on self-compassion studied correlates of self-compassion, but researchers of self-compassion are beginning to go beyond examining correlates of self-compassion and are investigating using self-compassion as an intervention. A search for appropriate self-compassion intervention articles began with an electronic database search using PsycINFO and PsycARTICLES in August of 2010. The keyword used was "self-compassion" and 74 possible research studies were found. An intervention called Compassionate Mind Training was discovered while reading through the initial articles, so another search on PsycINFO and PsycArticles was completed, using the keyword "compassionate mind training"; ten more studies were found, for a total of 84 possible research studies. A search using the keyword "self-compassion", a separate search using the keyword "Kristin Neff", and another separate search using the keyword "compassionate mind training" were used on Google Scholar to uncover more potential articles. The majority of these articles had already been found via searches on PsycInfo and PsycArticles; another six articles were found. Additionally, a

list of research articles pertaining to self-compassion was found on Dr. Kristin Neff's professional website. All of these articles were found via previous search efforts. In total, 90 potential articles were found.

The majority of these articles were excluded because self-compassion was used as a corollary variable or an outcome measure (as opposed to being used as an intervention). To be considered a self-compassion intervention, the study needed to include self-compassion as a component of the intervention used. Additionally, pre- and post-data of psychological well-being or self-compassion needed to be conducted. After these criteria were implemented, only seven studies were included. Of the seven studies included, five studies used self-compassion as the primary intervention. Thus far, there are studies that look at self-compassion as an intervention for depression (Gilbert & Procter, 2006; Kelly, Zuroff, & Shapira, 2009), self-criticism (Gilbert & Procter, 2006; Adams & Leary, 2007), guilt (Adams & Leary, 2007), and psychosocial stress (Kabat-Zinn, 1990; Shapiro, Astin, Bishop, & Cordova, 2005; Shapiro, Brown, & Biegel, 2007). One study was conducted examining the effects of self-compassion on physiological correlates of stress (Pace et al., 2009). Since the construct is relatively new, the number of studies is rather small, but the results are very promising.

One such study was done by Gilbert and Procter (2006) using Compassionate Mind Training (CMT) in a group therapy setting with patients who had "severe", "complex", and "chronic" difficulties in an intensive out-patient hospital setting in the United Kingdom. Compassionate Mind Training aims to help individuals shift towards a more caring and supportive stance towards oneself. This is done with the purpose of enabling a person to become more self-soothing and self-regulating of internal and

external threats. Techniques such as compassionate imagery, compassionate letter writing, and third-chair practice are used to help develop self-compassion. In this particular study of CMT, after completing CMT, the patients were found to have significant reductions in depression, anxiety, self-criticism, shame, inferiority, and submissive behavior. Additionally, a significant increase in ability to self-soothe via self-compassion was found.

Kelly, Zuroff, and Shapira (2009) used CMT with a less pathological population: individuals with skin problems who were self-critical and suffered from depressive symptoms. After treatment, participants had a reduction in depressive symptomatology; CMT was found to be especially effective for individuals who were very self-critical. This is encouraging, as it appears that self-compassion is especially helpful for those who tend to be critical of themselves. It suggests there is the possibility that self-compassion training will be efficacious for parents who are prone to feeling self-critical or guilty.

Adams and Leary (2007) used the concept of self-compassion to address guilt and shame in college women with restrictive and/or guilty eating. They did not use CMT as treatment but rather used general self-compassion exercises, such as using a self-compassionate mantra. They found that participants who received the self-compassion condition had reduced self-criticism associated with eating. This was especially true of participants who had higher scores regarding restrictive eating.

Mindfulness-Based Stress Reduction (MBSR) is another treatment associated with self-compassion. Mindfulness-Based Stress Reduction was first created at the University of Massachusetts Medical Center as a treatment to help reduce stress via loving-kindness mindfulness and meditation techniques (Kabat-Zinn, 1990). It is an

eight-week manualized treatment that was originally used for stress and pain management in patients with chronic illness. Since its creation, MBSR's use has extended from patients with chronic illness to patients with psychological disorders (e.g. anxiety and depression) to anyone who has problems with stress.

For example, Shapiro, Astin, Bishop, and Cordova (2005) conducted a study that used MBSR with mental health professionals at the Palo Alto and Menlo Park Divisions of the Veterans Affairs Palo Alto Health Care System. They found that MBSR reduced stress and increased self-compassion in the participants. These findings were replicated by Shapiro, Brown, and Biegel (2007), who used MBSR with therapists in training and found that it resulted in stress reduction and increased self-compassion.

There is some initial evidence that suggests that compassion meditation may affect innate immune, neuroendocrine, and behavioral responses to psychosocial stress (Pace et al., 2009). Pace et al. (2009) measured plasma concentrations of interleukin-6 and cortisol, as well as scores from the Profile of Mood States. No differences were found between the control group and the compassion meditation group; however, differences were found within the compassion meditation group. The researchers suggest that the effect of compassion meditation on stress responses is dose dependent and is only shows significant effects in individuals who practice over a "minimum amount of time", which was not specified in the study.

The above research shows the potential for interventions based on principles of self-compassion to promote positive psychological functioning and decrease negative psychological functioning. If this study confirms that parental stress and self-compassion

are inversely related, then it would pave the way for future research on using self-compassion-based interventions to lower parental stress.

Purpose of Study

This study intends to investigate the relationship between stress and self-compassion in parents of children with ASDs compared to two control groups: parents of children with diabetes and parents of neurotypical children without a chronic-illness diagnosis. Parents will be given the Parenting Stress Index, Third Edition to measure parental stress and the Self-Compassion Scale to identify level of self-compassion.

It is hypothesized that:

1. Levels of stress in parents of children with ASDs will be higher than in parents of children with diabetes.
2. Levels of stress in parents of children with ASDs will be higher than in parents of neurotypical children without a chronic-illness diagnosis.
3. Levels of self-compassion in parents of children with ASDs will be lower than in parents of children with diabetes.
4. Levels of self-compassion in parents of children with ASDs will be lower than in parents of neurotypical children without a chronic-illness diagnosis.
5. Each of the above four comparisons will have a medium effect size.
6. Stress will have a negative association with self-compassion, across all parent groups, after controlling for length of time since diagnosis.
7. Guilt will act as a mediator of the relationship between stress and self-compassion.

Given the above literature review, if the hypotheses are confirmed, the next step would be to look at self-compassion as an efficacious intervention to lower levels of parental stress and promote overall psychological well-being in highly stressed parents.

CHAPTER TWO

Methods

Participants

Participants included three samples: one of parents of children with an ASD diagnosis, one of parents of children with Type 1 diabetes, and one of parents of neurotypical children without a chronic illness. All three samples were limited to parents of children ages five to twelve years. Parents of children with an ASD diagnosis were solicited from multiple sources, such as parent support groups (e.g., Heart of Texas Autism Network), parents of children with autism blogs (e.g., Autisable), treatment programs (e.g., UCLA's Early Childhood Partial Hospitalization Program), and national autism groups (e.g., Autism Speaks). Parents of children with Type 1 Diabetes were solicited in a similar manner, targeting parent support groups (e.g., Daily Strength Type 1 Diabetes Support Group), endocrinology associations (e.g., American Association of Clinical Endocrinologists), state chapters of national diabetes associations (e.g., Juvenile Diabetes Research Foundation), and diabetes Facebook groups (e.g., Tyler Type 1 Diabetes Foundation). Parents of children with no diagnosis were solicited via parenting blogs (e.g., Moomaroo), national parenting organizations (e.g., International MOMS Club), and Facebook posts. All participants were encouraged to forward the online survey to other parents. Participants were given the opportunity to participate in a drawing for one of three \$50 Amazon gift cards. Participants who successfully referred

additional participants had their name entered into the drawing an additional time for each successful referral.

Typically, parents of children with Down Syndrome are used as a comparison group when studying parents of children with ASDs; however, it can be argued that parents of children with Down Syndrome are an inappropriate comparison sample since children with Down Syndrome are generally more rewarding to parents and engage in less negative externalizing behaviors than children with ASDs (Hodapp, Ly, Fidler, & Ricci, 2001). Given these key differences, using parents of children with Down Syndrome would likely artificially skew the data; a more appropriate comparison group was needed.

Parents of children with Type 1 diabetes were chosen as a comparison sample because they appeared to have some common characteristics with parents of children with ASDs. As with ASDs, the severity and presentation of diabetes in children can be seen as a spectrum (International Diabetes Federation, 2011). As with parents of children with ASDs, parents of children with diabetes also have heightened stress associated with caring for their special-needs children (Hillard, Monaghan, Cogen, & Streisand, 2010; Lindstrom, Aman, & Norberg, 2010; Streisand, Mackey, & Herge, 2010; Streisand, Swift, Wickmark, Chen, & Holmes, 2005; Streisand et al., 2008). Day to day management of the child's diabetes— such as frequent blood glucose monitoring, administering insulin injections, and paying careful attention to the child's nutrition and exercise (National Institutes of Health, 2008)—leads to stress in parents of children with diabetes (Hillard, Monaghan, Cogen, & Streisand, 2010; Streisand, Mackey, & Herge, 2010; Streisand et al., 2008). This can be compared to parents of children with ASDs day

to day management of their children's behaviors or therapies. Additionally, parental stress in parents of children with diabetes is associated with a negative impact on the physical and psychological well-being of parents of children with diabetes (Lindstrom, Aman, & Norberg, 2010; Streisand, Mackey, & Herge, 2010; Streisand, Swift, Wickmark, Chen, & Holmes, 2005; Streisand et al., 2008), just as with parents of children with ASDs. Moreover, research has found that stress in parents of children with diabetes is related to the parents' sense of competence for caring for a child with a physical illness (Streisand, Swift, Wickmark, Chen, & Holmes, 2005), which has also been found in parents of children with ASDs.

Despite the many similarities between the life circumstance of parents of children with ASDs and life circumstance of parents of children with diabetes, level of stress was hypothesized to be higher for parents of children with ASDs because of high levels of externalizing behaviors in children with ASDs and lower levels of social skills and communication skills (as mentioned earlier). Additionally, parents of children with ASDs have been shown to have higher levels of stress than parents of children with another chronic illness, cystic fibrosis (as mentioned earlier). Levels of self-compassion were hypothesized to be lower for parents of children with ASDs when compared to parents of children with diabetes because of high levels of guilt and low levels of self-efficacy (as mentioned earlier).

Procedure

Participants completed an online survey, which consisted of measures of parental stress, self-compassion, and guilt. The following demographic information was collected as well: age of parent, ethnicity of parent, marital status of parent, socioeconomic status

of parent, location of parent, number of children, ages of children, diagnoses of children (if applicable), age of diagnosis (if applicable), and who made the diagnosis (if applicable). Parents of children with ASDs answered additional questions to assess the severity of symptoms. These questions were written to assess the three major areas of difficulty for children with ASDs: language, socialization, and repetitive/restricted behaviors and/or interests.

Measures

Guilt

The Test of Self-Conscious Affect-3 (TOSCA-3) Short Version was used as a measure of situational guilt. Created by Tagney, Dearing, Wagner, and Gramzow (2000), the TOSCA-3 has been used in numerous studies of guilt (e.g. Baldwin, Baldwin, & Ewald, 2006; Fergus, Valentiner, McGrath, & Jencius, 2010; Gilliland, South, Carpenter, & Hardy, 2011; Kim, Thibodeau, & Jorgensen, 2011; Wolf, Cohen, Panter, & Insko, 2010). The short version of the measure is comprised of eleven scenarios. Each scenario is followed by four statements regarding how the participant would react to the scenario. Participants rate the likelihood of reacting as the statement suggests on a 5-point Likert scale (1 = not likely to 5 = very likely). Tagney, Dearing, Wagner, and Gramzow (2000) found adequate reliability for the guilt subscale, with a coefficient alpha of .78. In addition to the original authors, Fontaine, Luyten, Boeck, & Corveleyn (2001) studied the internal structure of the TOSCA-3 and concluded that its guilt subscale was a valid measure of guilt.

Parental Stress

The Parenting Stress Index, Third Edition (PSI) was used as a measure of the parental stress; it has been used in numerous studies to measure stress in parents of children with ASDs and diabetes (e.g. Meirsschaut, Roeyers, Warreyn, 2010; Powers, Byars, Mitchell, Patton, Standiford, & Dolan, 2002; Rao and Beidel, 2009). It is typically taken as a paper and pencil questionnaire; for the purposes of this study, items were formatted to be answered via an online questionnaire. The PSI is designed to be used with parents of children from one month through 12 years of age. Researchers have found positive correlations between this measure and other measures of family competence and discord (Abidin, 1995). Adequate test-retest reliability (.82-.89) has been found for each of the three subscale scores (parental distress, parent-child dysfunctional interaction, and difficult child) as well as the overall parenting stress score.

Self-Compassion

The Self Compassion Scale (SCS), created by Neff (2003), will be used to measure participant's level of self-compassion. It has been used by the majority of studies that measure self-compassion (e.g. Crocker & Canevello, 2008; Neff & Vonk, 2008; Neff, Rude, & Kirkpatrick, 2007; Shapiro, Astin, Bishop, & Cordova, 2005; Thompson & Waltz, 2008). The 26 item scale is made of six subscales: self-kindness (e.g. I'm tolerant of my own flaws and inadequacies), self-judgment (e.g. When times are really difficult, I tend to be tough on myself), common humanity (e.g. I try to see my failings as part of the human condition), isolation (e.g. When I'm really struggling, I tend to feel like other people must be having an easier time of it), mindfulness (e.g. When I fail at something important to me, I try to keep things in perspective), and over-

identification (e.g. When something upsets me, I get carried away with my feelings). Items are rated using a 5-point Likert scale (1 = almost never to 5 = almost always); then the mean scores on each subscale are totaled to create an overall self-compassion score. Neff (2003) found the SCS to be a valid and reliable measure of self-compassion, with a Comparative Fit Index ranging from .91 to .93 for the six-factor structure and internal consistency reliability ranging from .77 to .81. A test-retest reliability for the total score on the SCS was found to be .93.

Data Analysis

Data were analyzed using SPSS 19.0 and SAS. The hypotheses regarding comparing levels of stress and self-compassion between parents of children with ASDs to levels of stress and self-compassion in parents of children with diabetes were analyzed using one-way analysis of covariance in order to control for length of time since diagnosis. The hypotheses regarding comparing levels of stress and self-compassion between parents of children with ASDs and parents of neurotypical children without a chronic-illness diagnosis were analyzed using t-tests. The hypothesis regarding effect sizes for each of the four comparisons was tested utilizing the Cohen's *d*. The hypothesis concerning the relationship between stress and self-compassion was analyzed using a partial correlation to enable controlling for length of time since diagnosis. The final hypothesis regarding guilt acting as a mediator for stress and self-compassion was analyzed using the macro "Indirect" (Preacher & Hayes, 2008), which is an "add-on" program used in conjunction with SPSS to conduct mediation modeling.

CHAPTER THREE

Results

Sample Characteristics

A total of 409 parents completed the online survey. In this sample, there were 172 parents of children with ASDs (42.1%), 113 parents of children with Type 1 Diabetes (27.6%), and 124 parents of neurotypical children without a chronic-illness (30.3%). In total, there were 388 mothers (94.9%) and 21 fathers (5.1%). One hundred forty-six participants were ages 41-50 (35.7%), 140 participants were ages 31-40 (34.2%), 28 participants were ages 21-30 (6.8%), 16 participants were ages 51-60 (3.9%), two participants were ages 60 or more (0.5%), and 77 declined to state their age (18.8%). There were 268 Caucasian participants (65.5%), 18 East Asian participants (4.4%), 14 Latino/Latina participants (3.4%), 11 participants who described their ethnicity as “other”, (2.7%), eight South Asian participants (2.0%), six biracial participants (1.5%), five African American participants (1.2%), and 77 participants who chose not to disclose their ethnicity (18.8%). Two hundred and seventy-two participants were married (66.5%), 23 were divorced (5.6%), 14 were single (3.4%), 13 were in long-term relationships (3.2%), 10 were separated (2.4%), and 77 declined to describe their marital status (18.8%). One hundred twenty-six participants had an annual income of \$100,001 or more (30.8%), 94 had an income from \$60,001-\$100,000 (23.0%), 47 had an income from \$40,001-\$60,001 (11.5%), 23 had an income from \$30,001-\$40,001 (5.6%), 22 had an income \$20,001-\$30,001 (5.4%), 20 had an income \$20,000 or below (4.9%), and 77

declined to state their annual income (18.8%). A breakdown of demographics for each parent group is given below in Table 1.

Table 1

Demographic Information by Parent Group

Characteristic	ASD (n = 172)	Diabetes (n = 113)	No Diagnosis (n = 124)
Gender			
Female	169 (98.3%)	105 (92.9%)	114 (91.9%)
Male	3 (1.7%)	8 (7.1%)	10 (8.1%)
Age			
18-20	0 (0%)	0 (0%)	0 (0%)
21-30	16 (9.3%)	6 (5.3%)	6 (4.8%)
31-40	64 (37.2%)	37 (32.7%)	39 (31.5%)
41-50	44 (25.6%)	50 (44.2%)	52 (41.9%)
51-60	6 (3.5%)	2 (1.8%)	8 (6.5%)
60+	2 (1.2%)	0 (0%)	0 (0%)
No Response	40 (23.3%)	18 (15.9%)	19 (15.3%)
Ethnicity			
Caucasian	118 (68.6%)	90 (79.6%)	60 (48.4%)
African/African Am.	2 (1.2%)	2 (1.8%)	1 (0.8%)
Latino/Latina	5 (2.9%)	0 (0%)	9 (7.3%)
East Asian	0 (0%)	0 (0%)	18 (14.5%)
South Asian	1 (0.6%)	0 (0%)	7 (5.6%)
Native American	2 (1.2%)	0 (0%)	0 (0%)
Biracial	3 (1.7%)	1 (0.9%)	0 (0%)
“Other”	1 (0.6%)	2 (1.8%)	8 (6.5%)
No Response	40 (23.3%)	18 (15.9%)	19 (15.3%)
Marital Status			
Married	101 (58.7%)	78 (69.0%)	93 (75.0%)
Single	7 (4.1%)	4 (3.5%)	3 (2.4%)
Separated	7 (4.1%)	2 (1.8%)	1 (0.8%)
Divorced	8 (4.7%)	7 (6.2%)	8 (6.5%)
Long Term Rel.	9 (5.2%)	4 (3.5%)	0 (0%)
No Response	40 (23.3%)	18 (15.9%)	19 (15.3%)

(continues)

Characteristic	ASD (n = 172)	Diabetes (n = 113)	No Diagnosis (n = 124)
Income (SES)			
Under \$20k	15 (8.7%)	4 (3.5%)	1 (0.8%)
\$20-30k	14 (8.1%)	6 (5.3%)	2 (1.6%)
\$30-40k	9 (5.2%)	8 (7.1%)	6 (4.8%)
\$40-60k	26 (15.1%)	13 (11.5%)	8 (6.5%)
\$60-100k	34 (19.8%)	27 (23.9%)	33 (26.6%)
Over \$100k	34 (19.8%)	37 (32.7%)	55 (44.4%)
No Response	40 (23.3%)	18 (15.9%)	19 (15.3%)

The average length of time since diagnosis for children with ASDs was 3.43 years, with a standard deviation of 2.85 years. The average length of time since diagnosis for children with Type 1 diabetes was 3.99 years, with a standard deviation of 2.44 years. A one-sample chi-square test was conducted to examine if there were differences in demographic characteristics between the groups. Table 2 below summarizes the results of the chi-square tests.

Table 2

Comparing Demographic Characteristics Using a Chi-Square Test

	Age	Ethnicity	Marital Status	Income
1 vs 2	9.98*	7.26	2.58	9.10
1 vs 3	8.31*	48.07***	12.52**	33.71***
2 vs 3	3.20	43.88***	5.37	8.92

Note. 1 = ASDs; 2 = Diabetes; 3 = None; *p < .05; **p < .01; ***p < .001

As can be seen in the above table, several statistically significant differences were found between parent groups with regard to demographic characteristics. Differences in parent age were found between parents of children with ASDs and parents of children

with diabetes as well as parents of neurotypical children with no chronic illness diagnosis; parents of children with ASDs had a smaller percentage of participants within the 41-50 age range and more participants within the 21-30 age range. Differences in ethnic representation were found between parents of neurotypical children with no chronic illness diagnosis and parents of children with ASDs as well as parents of children with diabetes; parents of neurotypical children with no chronic illness diagnosis were more ethnically diverse. Additionally, differences within the category of marital status and income were found between parents of children with ASDs and parents of neurotypical children with no chronic illness diagnosis; parents of children with ASDs had a higher percentage of non-married participants, and parents of neurotypical children with no chronic illness diagnosis had a higher percentage of participants with an income of \$100,000 or higher (44.4% versus 19.8%).

Descriptive Statistics

Means and standard deviations for the scores on the PSI, SCS, and TOSCA-3 are shown in Table 3. Cronbach's alpha was calculated for each of the measures to examine internal consistency of entire measures. The PSI had an α of .94. The SCS had an α of .67; this was lower than expected, since previous research had demonstrated an α ranging from .77 to .81 (Neff, 2003). The TOSCA-3 had an α of .71, which was lower than but close to the α value from previous research ($\alpha = .78$; Tagney, Dearing, Wagner, & Gramzow, 2000).

Table 3

Means and Standard Deviations of Stress and Self-Compassion

	ASD		Diabetes		No Diagnosis		Total	
	<i>M</i>	SD	<i>M</i>	SD	<i>M</i>	SD	<i>M</i>	SD
PSI	324.96	67.73	356.36	59.70	347.97	69.68	340.61	67.48
SCS	75.49	14.27	80.47	16.20	78.49	15.49	77.78	15.30

Note. PSI measures stress; SCS measures self-compassion

Levels of Stress

Hypothesis 1. Levels of stress in parents of children with ASDs will be higher than in parents of children with diabetes.

A one-way analysis of covariance (ANCOVA) was conducted to examine differences between levels of stress in parents of children with ASDs and parents of children with Type 1 diabetes; given that significant differences in parental age were found between parents of children with ASDs and parents of children with Type 1 diabetes, parental age as well as length of time since diagnosis were entered as covariates. Table 4 shows the unadjusted and adjusted means and standard deviations for the two parent groups.

Table 4

Adjusted Means and Standard Deviations for PSI (Total Stress)

	Unadjusted		Adjusted	
	<i>M</i>	SD	<i>M</i>	SD
ASD	324.96	67.73	329.50	59.25
Diabetes	356.36	59.70	356.05**	61.48

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

Parental age was not found to be a significant predictor of stress ($F(1, 405) = 3.78$, $p = .06$). Length of time since diagnosis was found to be a significant predictor of stress ($F(1, 405) = 5.21$, $p = .01$). After controlling for parental age and length of time since diagnosis, parents of children with Type 1 diabetes had significantly higher levels of stress than parents of children with ASDs ($F(1, 405) = 7.59$, $p = .01$). Given the results, the initial hypothesis was not supported.

Hypothesis 2. Levels of stress in parents of children with ASDs will be higher than in parents of neurotypical children without a chronic illness diagnosis.

Given that significant differences in parental age, ethnicity, SES, and marital status were found between parents of children with ASDs and parents of neurotypical children without a chronic illness, a one-way analysis of covariance (ANCOVA) was conducted to examine differences between levels of stress in parents of children with ASDs and parents of children with Type 1 diabetes, while controlling for those demographic factors. Table 5 shows the unadjusted and adjusted means and standard deviations for the two parent groups.

Table 5

Adjusted Means and Standard Deviations for PSI (Total Stress)

	Unadjusted		Adjusted	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
ASD	324.96	67.73	329.50	59.25
No Diagnosis	356.36	59.70	356.05**	61.48

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

Parental age was not found to be a significant predictor of stress ($F(1, 405) = 3.60$, $p = .06$). Ethnicity was not found to be a significant predictor of stress ($F(1, 405) = 0.37$,

$p = .55$). Marital status was not found to be a significant predictor of stress ($F(1, 405) = 0.33, p = .56$). SES was found to be a significant predictor of stress ($F(1, 405) = 5.43, p = .02$). After controlling for significant demographic factors, no significant difference between levels of stress were found between parents of children with ASDs and parents of neurotypical children with no chronic illness ($F(1, 405) = 2.82, p = .09$). Given the results, the initial hypothesis was not supported.

Levels of Self-Compassion

Hypothesis 3. Levels of self-compassion in parents of children with ASDs will be lower than in parents of children with diabetes.

A one-way analysis of covariance (ANCOVA) was conducted to examine differences between levels of self-compassion in parents of children with ASDs and parents of children with Type 1 diabetes; given that a significant difference in parental age was found between parents of children with ASDs and parents of children with Type 1 diabetes, parental age as well as length of time since diagnosis were entered as covariates. Parental age was not found to be a significant predictor of stress ($F(1, 405) = 2.10, p = .15$). Length of time since diagnosis was not found to be a significant predictor of stress ($F(1, 405) = 2.30, p = .13$). When controlling for parental age and length of time since diagnosis, parents of children with ASDs had significantly lower levels of self-compassion than parents of children with Type 1 diabetes ($F(1, 405) = 4.89, p = .03$). These results support the initial hypothesis. Table 5 shows the unadjusted and adjusted means and standard deviations for the two parent groups.

Table 6

Adjusted Means and Standard Deviations for SCS (Total Self-Compassion)

	Unadjusted		Adjusted	
	<i>M</i>	SD	<i>M</i>	SD
ASD	75.49	14.27	75.01	15.27
Diabetes	80.47	16.20	80.00*	16.11

* $p < .05$

Hypothesis 4. Levels of self-compassion in parents of children with ASDs will be lower than in parents of neurotypical children without a chronic-illness diagnosis.

An independent samples t-test was conducted to examine differences between self-compassion in parents of children with ASDs and parents of neurotypical children without a chronic illness diagnosis. When comparing levels of self-compassion in parents of children with ASDs and parents of children with no diagnoses, parents of children with ASDs did not have significantly lower levels of self-compassion (ASD $M = 75.50$, No Diagnosis $M = 78.50$, $t = 1.721$, $p = .09$). Given the results, the initial hypothesis was not supported.

Hypothesis 5. Stress and Self-Compassion Have a Negative Association

It was hypothesized that there would be a negative association between stress and self-compassion. A partial correlation was computed to investigate the relationship between stress and self-compassion, controlling for length of time since diagnosis. A statistically significant, small, positive correlation was found between stress and self-compassion ($r = .38$; $p = .00$); the initial hypothesis was not supported.

Hypothesis 6. Stress and Self-Compassion Comparisons will have a Medium Effect Size

Cohen's d was calculated to determine the effect size of the differences between levels of stress and self-compassion in the three parent groups. The statistically significant difference between levels of stress in parents of children with ASDs and parents of children with Type 1 diabetes had a small to medium effect size ($d = .44$). The statistically significant difference between levels of stress in parents of children with ASDs and parents of children with no diagnoses had a small to medium effect size ($d = .33$). The statistically significant difference between levels of self-compassion in parents of children with ASDs and parents of children with Type 1 diabetes had a small to medium effect size ($d = .32$). The non-significant difference found between levels of self-compassion in parents of children with ASDs and parents of children with no diagnoses had a small effect size ($d = .20$). The original hypothesis that differences would have medium effect sizes was not supported.

Hypothesis 7. Guilt will Act as a Mediator on the Relationship between Stress and Self-Compassion

It was hypothesized that guilt would mediate the relationship between stress and self-compassion. The macro "Indirect" for SPSS (Preacher & Hayes, 2008) was used to examine mediation effects of guilt on the relationship between stress and self-compassion; one thousand bootstrap samples were used. Stress was significantly related to self-compassion (path c_1 ; $\beta = .15, p = .00$), as well as guilt (path a_1 ; $\beta = .04, p = .00$). The effect of stress on self-compassion was still significant after the effects of guilt were controlled (path c_1' ; $\beta = .15, p = .00$) and guilt did not have a significant relationship with

self-compassion (path b_1 ; $\beta = -.16$, $p = .10$), which does not support the hypothesis that guilt acts as a mediator of the relationship between stress and self-compassion (see Figure 1).

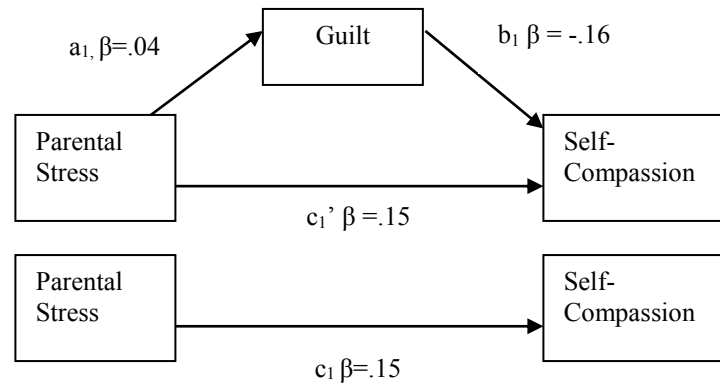


Figure 1. Guilt does not mediate the relationship between parental stress and self-compassion.

An additional analysis was conducted to see if guilt mediates the relationship between stress and self-kindness. Stress was significantly related to self-kindness (path c_2 ; $\beta = .040$, $p = .00$), as well as guilt (path a_2 ; $\beta = .04$, $p = .00$). The effect of stress on self-compassion was still significant after the effects of guilt were controlled (path c_2' ; $\beta = .037$, $p = .00$) and for guilt on self-kindness (path b_2 ; $\beta = .10$, $p = .00$), which supports partial mediation (see Figure 2).

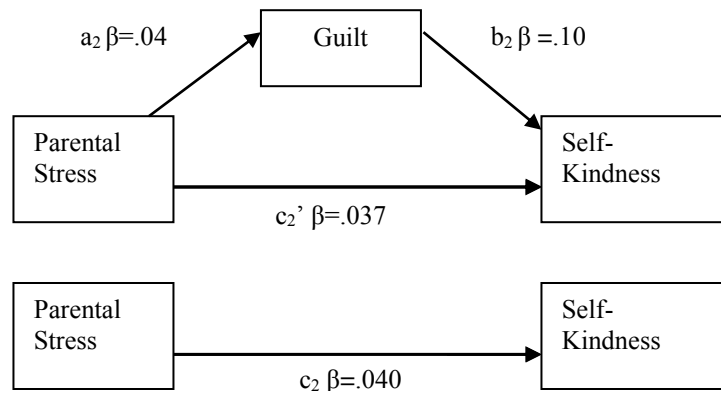


Figure 2. Guilt mediates the relationship between parental stress and self-kindness.

CHAPTER FOUR

Discussion

The purpose of this study was to examine stress and self-compassion in parents of children with ASDs, parents of children with Type 1 Diabetes, and parents of neurotypical children without a chronic illness. Specifically, the study hypothesized that parents of children with ASDs would have higher levels of stress and lower levels of self-compassion than parents of children with Type 1 Diabetes and parents of neurotypical children without a chronic-illness. These differences were hypothesized to have a medium effect size. The study also aimed to investigate the association between stress and self-compassion. In particular, the study hypothesized that stress and self-compassion would have an inverse association. It was also hypothesized that guilt would act as a mediator of the relationship between stress and self-compassion.

Examination of Stress in Parents

In this sample, it was found that parents of children with ASDs reported lower levels of stress than both parents of children with Type 1 Diabetes and parents of neurotypical children without a chronic illness. This is an unexpected result, given that the previous literature suggests parents of children with ASDs have significantly higher levels of stress than parents with children with or without special needs (Blacher & McIntyre, 2006; Dunn, Burbine, Bowers, & Tantleff-Dunn, 2001; Eisenhower, Baker, & Blacher 2005; Hastings & Johnson, 2001; Koegel, Schriebman, Loos, Dirlich-Wilhelm, & Dunlap, 1992; Rao & Bleidel, 2009). Post-hoc analyses were completed to explore the

possible reasons underlying these results. It was found that scores on the Child Domain (which reflects child characteristics that contribute to overall stress) were significantly lower in parents of children with ASDs compared to scores on the Child domain for parents of children with Type 1 Diabetes ($F(1, 405) = 36.46, p = .00$) and parents of neurotypical children without a chronic-illness ($F(1, 405) = 27.14, p = .00$). Differences in scores on the Adult domain (which reflects parent characteristics that contribute to overall stress) were not significant (ASD vs Diabetes: $F(1, 405) = .62, p = .43$; ASD vs No Diagnosis: $F(1, 405) = .57, p = .45$).

These additional analyses could be interpreted as this particular sample of parents of children with ASDs are less likely to report their children as sources of stress and are likely to report personal contributions to their levels of stress. Several speculations can be made as to why parents of children with ASDs may be reporting lower levels of stress in the Child domain. In this sample, parents of children with ASDs may be more prone to underreporting their children as sources of stress. Perhaps these parents are more comfortable with attributing stress to their own thoughts and behaviors rather than their children. On the other hand, these parents may be actively trying to change perceptions about children with ASDs. Unfortunately, this author did not gather data that could support either of these hypotheses. Additionally, this author was unable to find research literature to support this conjecture.

Moreover, it is possible that this sample of parents of children with ASDs truly has lower levels of stress compared to the parents of children with Type 1 Diabetes and parents of neurotypical children without a chronic-illness. This particular sample of parents of children with ASDs may have habituated to their children's behaviors and do

not perceive their child as stressful. In a longitudinal study of coping in parents of children with ASDs, Gray (2006) suggested that parents become “accustomed” to the stresses and restrictions that are associated with raising a child with an ASD diagnosis; life becomes more “routinized” and the perception that their child was stressful appeared to decline over time. The lower levels of stress may also be related to the amount of services and support that parents of children with ASDs have, compared to other parents. It is possible that this sample has many parents who have much support—either formally (e.g., ABA therapist, respite care) or informally (e.g., family, friends)—compared to parents of children with Type 1 diabetes and parents of neurotypical children with no chronic illness. Perceived formal and informal support given to parents of children with ASDs is associated with successful coping (Siklos & Kerns, 2006). Unfortunately, data pertaining to social support were not gathered, so this possible explanation could not be examined. Additionally, it is possible that with the growing awareness of ASDs in the public through public awareness campaigns (e.g., Global Autism Public Health Initiative, Wallace et al., 2012), parents are not feeling as isolated or socially stigmatized as earlier years. Several studies have shown that raising awareness of mental health issues is associated with reducing stigma associated with mental illness (Corrigan & Gelb, 2006; McKinney 2009; Vaughan & Hansen, 2004; Yamaguchi, Mino, & Uddin, 2011). Although these studies did not examine stigma with regard to ASDs specifically, their conclusions may be applicable to stigma in ASDs.

The additional analyses could also be interpreted as parents of children with Type 1 diabetes and parents of neurotypical children without a chronic-illness are more likely to report their children as stressful. Conjectures can be made about this as well. Perhaps

parents of children with Type 1 Diabetes and parents of neurotypical children without a chronic-illness saw the research study as an opportunity to demonstrate how stressful raising their child is. This author was unable to find research literature to support this conjecture. However, while recruiting participants, the author received several emails from potential participants stating how stressful raising a child with Type 1 diabetes is and thanking the author for studying the topic. Although it is anecdotal in nature, these emails lend some support to this author's speculation; at the very least, it suggests this area may be worth further examination in future research studies.

Examination of Self-Compassion in Parents

Parents of children with ASDs had significantly lower levels of self-compassion than parents of children with Type 1 diabetes, which supported one of the study's hypotheses. However, contrary to another of the study's hypotheses, there was not a significant difference in levels of self-compassion between parents of children with ASDs and parents of neurotypical children without a chronic illness diagnosis; there was a general trend of levels of self-compassion in parents of children with ASDs being lower than the levels of self-compassion in parents of neurotypical children without a chronic illness diagnosis ($p = .09$). These findings could reflect a true lack of difference between levels of self-compassion, or, alternatively, these findings could reflect issues with sampling that are mentioned earlier in the discussion section.

Association between Stress and Self-Compassion

Stress was found to have a positive association with self-compassion ($r = .38$). Stress having a positive relationship with self-compassion is contrary to the expected outcome, given that self-compassion has been used as an intervention to reduce stress

(Pace et al., 2009; Shapiro, Astin, Bishop, & Cordova, 2005; Shapiro, Brown, & Biegel, 2007). The unexpectedly low levels of stress in parents of children with ASDs may have impacted the data in a way that affected the relationship between stress and self-compassion. Therefore, post hoc analyses examining the relationship between stress and self-compassion for each parent group were completed. It was found that stress and self-compassion had a positive association in all groups (Autism, $r = .33$; Diabetes, $r = .35$; No Diagnosis, $r = .29$). Thus, the conjecture that unexpectedly low levels of stress in parents of children with ASDs influenced the relationship between stress and self-compassion can safely be rejected.

Another potential reason stress and self-compassion may have a positive association is that parents with high levels of parental stress may be generally self-compassionate but are not self-compassionate in the area of parenting, which would perhaps leave parents with high levels of parenting-specific stress but perhaps lower levels of overall stress. Unfortunately, since the field of self-compassion is relatively new, there has not been any research regarding self-compassion in parents; self-compassion with regards to parenting-specific stress versus overall stress would be an area for future study. Also of note is the low internal consistency of the SCS, the measure used to examine self-compassion. A low internal consistency could indicate that the sample interpreted the questions on the SCS differently; it is plausible that this inconsistency of responding affected the association between stress and self-compassion.

Another possibility is that the association between stress and self-compassion is truly in the positive direction. There can be several different reasons why stress and self-compassion have a truly positive association. For one, even though this sample of

parents has high levels of stress, this sample of parents is able to cope with the stress without becoming self-critical, which would in turn inadvertently result in high levels of self-compassion as well. Another possibility is that this sample of parents actively uses self-compassion or components of self-compassion to cope with the stresses of raising children. For example if the parent belonged to a support group, the parent would likely have high levels of belief in a common humanity (a component of self-compassion) because the parent would likely see how his or her experience relates to other parents' experiences; this explanation seems plausible, given that much of the recruitment for participants was through larger organizations and support groups.

Guilt as a Mediator

Guilt was not found to be a full mediator of the relationship between stress and self-compassion. Additional analyses demonstrated that guilt partially mediated the relationship between stress and self-kindness. Since guilt was not a full mediator of the relationship between stress and self-kindness, future studies examining other mediating factors would be beneficial.

Limitations and Future Directions

The sample used for this study was limited in several respects. The sample was primarily limited to individuals in the United States. Also, the sample did not represent the general United States population; ethnic minorities and fathers were underrepresented. Attempts to recruit ethnic minorities were made, by targeting ethnic minority specific support groups and websites. Males were also targeted by contacting stay-at-home father groups and websites as well as by encouraging females with male significant others to have their male significant others participate in the study.

Unfortunately these efforts did not result in a more diverse and representative sample. In the future, it may be beneficial to continue actively recruiting a more representative sample. However, this research study's demographics seemed to reflect a common sampling problem in the literature; most research studies of parents of children with ASDs have overrepresentation of mothers in their samples, with some researchers noting that mothers tend to be the primary caregivers of children with ASDs (for example, Bitsika & Sharpely, 2004; Eisenhower, Baker, & Blacher, 2005; Phetrasuwan & Miles, 2009).

The sample was also limited to individuals with access to the internet, since the survey was available only online. This likely skewed the sample towards individuals with internet access at home or work or individuals who were comfortable using the internet. Slightly over 30% of the sample had an income of \$100,000 or above. This is a higher percentage than the national average of 20.4% (United States Census Bureau, 2011), suggesting that the study's sample is skewed towards more wealthy participants. The length of the survey may have also affected which individuals participated in the study. The online survey took an average of thirty to forty-five minutes, although some participants took upwards to an hour and a half completing the study. Parents who had limited free time, perceived themselves to have limited free time, or did not want to use their free time to complete a survey would have likely self-selected not to participate in the study. In the future, it may be useful to provide opportunities for individuals to complete the survey via paper and pencil. It also may be useful to offer interested participants who do not have internet access to computers with internet. Additionally, it

may also be helpful to provide childcare for parents where free time is a barrier to participation.

Another limitation of the study was the use of the TOSCA-3. Although the TOSCA-3 is a valid and reliable measure of general guilt, there has not been research regarding its validity in studying guilt related specifically to parenting. This study was interested in guilt specifically pertaining to parenting. To the best of this author's knowledge, a valid and reliable parenting-specific guilt measure has not yet been developed; it may be useful to develop one for use in future studies. If a parenting-specific guilt measure was used and the limitations regarding the sample were addressed, then the replication of this study may result in different results and conclusions.

It may be useful to replicate this study with the aforementioned limitations addressed. Additionally, gathering data pertaining to social support may be useful; this variable may then be controlled for and comparisons of stress among groups may be more accurate. It may also be of interest to add a measure on self-criticism to examine whether self-criticism may mediate the relationship between stress and self-compassion. If the improved upon study produces results that support an inverse relationship between stress and self-compassion, then it would likely be beneficial to do another study to determine if a self-compassion intervention for parents will reduce parental stress.

REFERENCES

- Aberson, C., Healy, M., & Romero, V. (2000). Ingroup bias and self-esteem: A meta-analysis. *Personality and Social Psychology Review*, 4(2), 157-173.
- Adams, C.E., & Leary, M.R. (2007). Promoting self-compassion attitudes towards eating among restrictive and guilty eaters. *Journal of Social and Clinical Psychology*, 26(10), 1120-1144.
- Baker, B., & Heller, T.L. (1996). Preschool children with externalizing behaviors: Experience of fathers and mothers. *Journal of Abnormal Child Psychology: An official publication of the International Society for Research in Child and Adolescent Psychopathology*, 24(4), 513-532.
- Baker, B., Blacher, J., Crnic, K.A., & Edelbrock, C. (2002). Behavior problems and parenting stress in families of three-year-old children with and without developmental delays. *American Journal on Mental Retardation*, 107(6), 433-444.
- Baldwin, K.M., Baldwin, J.R., & Ewald, T.E. (2006). The relationship among shame, guilt, and self-efficacy. *American Journal of Psychotherapy*, 60(1), 1-21.
- Baxter, C., Cummins, R.A., & Yiolitis, L. (2000). Parental stress attributed to disabled family members: A longitudinal study. *International Journal of Disability Research*, 25, 105-118.
- Bitsika, V., & Sharpely, C.F. (2004). Stress, anxiety, and depression among parents of children with autism spectrum disorder. *Australian Journal of Guidance and Counseling*, 14, 151-161.
- Blacher, J., & McIntyre, L.L. (2006). Syndrome specificity and behavioral disorders in young adults with intellectual disability: Cultural differences in family impact. *Journal of Intellectual and Developmental Disabilities*, 50, 184-198.
- Blatt, S., & Zuroff, D. (1992). Interpersonal relatedness and self-definition: Two prototypes for depression. *Clinical Psychology Review*, 12, 527-562.
- Bouma, R., & Schweitzer, R. (1990). The impact of chronic childhood illness on family stress: A comparison between autism and cystic fibrosis. *Journal of Clinical Psychology*, 46, 722-730.
- Bradshaw, J., & Lawton, D. (1978). Tracing the causes of stress in families with handicapped children. *British Journal of Social Work*, 8(2), 181-192.

- Brookman-Frazee, L., Stahmer, A., Baker-Ericzen, M.J., & Tsai, K. (2006). Parenting interventions for children with autism spectrum and disruptive behavior disorders: Opportunities for cross-fertilization. *Clinical Child and Family Psychology Review, 9*, 181-200.
- Centers for Disease Control and Prevention.
<http://www.cdc.gov/ncbddd/autism/data.html>. May 2012.
- Corrigan, P. W., & Gelb, B. (2006). Three programs that use mass approaches to challenge the stigma of mental illness. *Psychiatric Services, 57*, 393-398.
- Cushman, P. (1990). Why the self is empty: Toward a historically situated psychology. *American Psychologist, 45*, 599-611.
- Crocker, J., & Canevello, A. (2008). Creating and undermining social support in communal relationships: The role of compassionate and self-image goals. *Journal of Personality and Social Psychology, 95*(3), 555-575.
- Davis, N.O., & Carter, A.S. (2008). Parenting stress in mothers and fathers of toddlers with autism spectrum disorders: Associations with child characteristics. *Journal of Autism and Developmental Research, 38*, 1278-1291.
- Dumas, J.E., Wolf, L.C., Fisman, S.N., & Culligan, A. (1991). Parenting stress, child behavior problems, and dysphoria in parents of children with autism, Down Syndrome, behavior disorders, and normal development. *Exceptionality, 2*, 97-110.
- Dunn, M.E., Burbine, T., Bowers, C.A., & Tantleff-Dunn, S. (2001). Moderators of stress in parents of children with autism. *Community Mental Health Journal, 37*, 39-52.
- Eisenhower, A.S., Baker, B.L., & Blacher, J. (2005). Preschool children with intellectual disability: Syndrome specificity, behavior problems, and maternal well-being. *Journal of Intellectual Disability Research, 49*, 657-671.
- Farrugia, D. (2009). Exploring stigma: Medical knowledge and the stigmatization of parents of children diagnosed with autism spectrum disorder. *Sociology of Health and Illness, 21*(7), 1011-1027.
- Fergus, T. A., Valentiner, D. P., McGrath, P. B., & Jencius, S. (2010). Shame- and guilt-proneness: Relationships with anxiety disorder symptoms in a clinical sample. *Journal of Anxiety Disorders, 24*(8), 811-815.
- Floyd, F.J., & Gallagher, E.M. (1997). Parental stress, care demands, and use of supportive services for school-age children with disabilities and behavior problems. *Family Relations, 46*(4), 359-371.

- Fontaine, J.R., Luyten, P., Boeck, P., & Corveleyn, J. (2001). The test of self-conscious affect: Internal structure, differential scales and relationships with long-term effects. *European Journal of Personality*, *15*, 449-463.
- Glasberg, B. A., Martins, M., & Harris, S. L. (2006). Stress and coping among family members of individuals with autism. In M. Baron, J. Groden, L. Lipsitt, G. Groden, M. Baron, J. Groden, L. Lipsitt (Eds.), *Stress and coping in autism* (pp. 277-301). New York, NY US: Oxford University Press.
- Gilbert, P., & Irons, C. (2004). A pilot exploration of the use of compassionate images in a group of self-critical people. *Memory*, *12*, 507-516.
- Gilbert, P., & Procter, S. (2006). Compassionate mind training for people with high shame and self-criticism: overview and pilot study of a group therapy approach. *Clinical Psychology and Psychotherapy*, *13*, 353-379.
- Gilbert, P., Baldwin, M.W., Irons, C., Baccus, J.R., & Palmer, M. (2006). Self-criticism and self-warm: An imagery study exploring their relation to depression. *Journal of Cognitive Psychotherapy: An International Quarterly*, *20*(2), 183-200.
- Gilliland, R., South, M., Carpenter, B. N., & Hardy, S. A. (2011). The roles of shame and guilt in hypersexual behavior. *Sexual Addiction & Compulsivity*, *18*(1), 12-29.
- Gray, D.E. (1993). Perceptions of stigma: the parents of autistic children. *Sociology of Health and Illness*, *15*, 102-120.
- Gray, D.E. (1994). Coping with autism- stresses and strategies. *Sociology of Health and Illness*, *16*, 275-300.
- Gray, D.E. (1997). High functioning autistic children and the construction of 'normal family life'. *Social Science and Medicine*, *44*, 1097-1106.
- Gray, D.E. (2002a). 'Everybody just freezes. Everybody is just embarrassed': Felt and enacted stigma among parents of children with high functioning autism. *Sociology of Health and Illness*, *24*(6), 734-749.
- Gray, D.E. (2002b). Ten years on: A longitudinal study of families of children with autism. *Journal of Intellectual and Developmental Disability*, *27*(3), 215-222.
- Gray, D. E. (2006). Coping over time: The parents of children with autism. *Journal of Intellectual Disability Research*, *50*(12), 970-976.
- Gray, D.E., & Holden, W.J. (1992). Psycho-social well-being among the parents of children with autism. *Journal of Intellectual and Developmental Disability*, *18* (2), 83-93.

- Greenberg, L.S., Elliott, R.K., & Foerster, F.S. (1990). Experiential processes in the psychotherapeutic treatment of depression. In C.D. McCann & N.S. Endler (Eds.), *Depression: New directions in theory, research, and practice*. (pp. 157-185). Toronto: Wall & Emerson.
- Gruen, R.J., Silva, R., Ehrlich, J., Schweitzer, J.W., & Friedhoff, A.J. (1997). Vulnerability to stress: Self-criticism and stress-induced changes in biochemistry. *Journal of Personality*, 65(1), 33-47.
- Hammen, C., Ellicott, A., Gitlin, M., & Jamison, K.R. (1989). Sociotropy/autonomy and vulnerability to specific life events in patients with unipolar and bipolar disorders. *Journal of Abnormal Psychology*, 95, 308-319.
- Harris, S.L., Handleman, J.S., Arnold, M.S., & Gordon, R.F. (2000). The Douglass developmental disabilities center: Two models of service delivery. In J.S. Handleman & S.L. Harris (Eds.), *Preschool education programs for children with autism* (2nd ed., pp. 223-260). Austin, TX: Pro-Ed.
- Hastings, R. P. (2003). Child behaviour problems and partner mental health as correlates of stress in mothers and fathers of children with autism. *Journal of Intellectual Disability Research*, 47, 231–237.
- Hastings, R.P., & Johnson, E. (2001). Behavior problems of children with autism, parental self-efficacy, and mental health. *American Journal of Mental Retardation*, 107, 222-232.
- Hassal, R., Rose, J., & McDonald, J. (2005). Parenting stress in mothers of children with an intellectual disability: The effects of parental cognitions in relation to child characteristics and family support. *Journal of Intellectual and Disability Research*, 49, 405-418.
- Herring, S. S., Gray, K. K., Taffe, J. J., Tonge, B. B., Sweeney, D. D., & Einfeld, S. S. (2006). Behaviour and emotional problems in toddlers with pervasive developmental disorders and developmental delay: Associations with parental mental health and family functioning. *Journal of Intellectual Disability Research*, 50(12), 874-882.
- Hillard, M.E, Monaghan, M., Cogen, F.R., & Streisand, R. (2010). Parent stress and child behavior among young children with type 1 diabetes. *Child: Care, Health, and Development*, 37(2), 224-232.
- Hodapp, R.M., Fidler, D.J., & Smith, A.C.M. (1998). Stress and coping in families of children with Smith Magenis syndrome. *Journal of Intellectual Disability Research*, 42, 331-340.

- Hodapp, R.M., Ly, T.M., Fidler, D. J., & Ricci, L. A. (2001). Less Stress, More Rewarding: Parenting Children With Down Syndrome. *Parenting: Science and Practice, 1*(4), 317-337.
- Howell, D.C. (2007). *Statistical Methods for Psychology, Sixth Edition*. Belmont, CA: Thomson Wadsworth.
- Hutton, A.M. , & Caron, S.L. (2005). Experiences of families with children with autism in rural New England. *Focus on Autism and Other Developmental Disabilities, 20*, 180-189.
- International Diabetes Federation. www.diabetesatlas.com. April 2011.
- Jackson, A.P., & Huang, C.C. (2000). Parenting stress and behavior among single mothers of preschoolers: The mediating role of self-efficacy. *Journal of Social Service Research, 26*, 29-42.
- Jones, J., & Passey, J. (2004). Family adaptation, coping, and resources: Parents of children with developmental disabilities and behaviour problems. *Journal of Developmental Disabilities, 11*, 33-46.
- Kabat-Zinn, J. (1990). Full catastrophe living: Using the wisdom of your body and mind to face stress, pain, and illness. New York: Dell.
- Kelly, A., Zuroff, D., & Shapira, L. (2009). Soothing oneself and resisting self-attacks: The treatment of two intrapersonal deficits in depression vulnerability. *Cognitive Therapy and Research, 33*(3), 301-313.
- Kim, S., Thibodeau, R., & Jorgensen, R. S. (2011). Shame, guilt, and depressive symptoms: A meta-analytic review. *Psychological Bulletin, 137*(1), 68-96.
- Koegel, R. L., Koegel, L.K., & Surratt, A. (1992). Language intervention and disruptive behavior in preschool children with autism. *Journal of Autism and Developmental Disorders, 22*(2), 141-153.
- Koegel, R.L., Schriebman, L., Loos, L.M., Dirlich-Wilhelm, H., & Dunlap, L. (1992). Consistent stress profiles in mothers of children with autism. *Journal of Autism and Developmental Disorders, 22*, 205-216.
- Konstantareas, M.M., & Homatidis, S. (1989). Assessing child symptom severity and stress in parents of autistic children. *Journal of Child Psychology and Psychiatry, 30*(3), 459-470.
- Kuhn, J.C., & Carter, A.S. (2006). Maternal self-efficacy and associated parenting cognitions among mothers of children with autism. *American Journal of Orthopsychiatry, 76*, 564-575.

- Lecavalier, L., Leone, S., & Wiltz, J. (2006). The impact of behavior problems on caregiver stress in young people with autism spectrum disorders. *Journal of Intellectual Disability Research, 20*, 172-183.
- Lee, D.A. (2009). Compassion-focused cognitive therapy for shame-based trauma memories and flashbacks in posttraumatic stress disorder. In N. Grey (Ed.), *A casebook of cognitive therapy for traumatic stress reactions* (pp. 230-246). Hove, UK: Brunner-Routledge.
- Lindstrom, C., Aman, J., & Norberg, A.L. (2010). Increased prevalence of burnout symptoms in parents of chronically ill children. *Acta Paediatrica, 99*, 427-432.
- Lovaas, O.I., & Smith, T. (2003). Early and intensive behavioral intervention in autism. In E. Kazdin & J.R. Weisz (Eds.), *Evidence-based psychotherapies for children and adolescents* (pp. 325-340). New York: Guilford.
- Lyons, A.M., Leon, S.C., Phelps, C.E.R., & Dunleavy, A.M. (2010). The impact of child symptom severity on stress among parents of children with ASD: The moderation role of coping styles. *Journal of Child and Family Studies, 19*, 516-524.
- Mak, W.S., & Ho, S.M. (2007). Caregiving perceptions of Chinese mothers of children with intellectual disability in Hong Kong. *Journal of Applied Research in Intellectual Disabilities, 20*, 145-156.
- McKinney, K. G. (2009). Initial evaluation of Active Minds: A student organization dedicated to reducing the stigma of mental illness. *Journal Of College Student Psychotherapy, 23*(4), 281-301.
- Meirsschaut, M., Roeyers, H., & Warreyn, P. (2010). Parenting in families with a child with autism spectrum disorder and a typically developing child: Mothers' experiences and cognitions. *Research in Autism Spectrum Disorders, 4*, 661-669.
- Montes, G., & Halterman, J.S. (2007). Psychological functioning and coping among mothers of children with autism: A population-based study. *Pediatrics, 119*, 1040-1046.
- Myers, B.J., Mackintosh, V.H., & Goin-Kochel, R.P. (2009). My greatest joy and my greatest heartache: Parents' own words on how having a child in the autism spectrum has affected their lives and their families' lives. *Research in Autism Spectrum Disorders, 3*, 670-684.
- National Institutes of Health. *Your guide to diabetes: Type 1 and type 2. National diabetes information clearinghouse: A service of the national institute of diabetes and digestive and kidney diseases 2006*. Retrieved April 2, 2010 from www.diabetes.niddk.nih.gov/dm/pubs/type1and2/index.htm.

- Neff, K. D. (2003). Self-compassion: An alternative conceptualization of a healthy attitude toward oneself. *Self and Identity*, 2, 85-102.
- Neff, K. D. (2003). Development and validation of a scale to measure self-compassion. *Self and Identity*, 2, 223-250.
- Neff, K. D. (2004). Self-compassion and psychological well-being. *Constructivism in the Human Sciences*, 9, 27-37.
- Neff, K. D. (2009). The role of self-compassion in development: A healthier way to relate to oneself. *Human Development*, 52, 211-214.
- Neff, K. D., & McGeehee, P. (2010). Self compassion and psychological resilience among adolescents and young adults. *Self and Identity*, 9, 225-240.
- Neff, K. D., & Vonk, R. (2009). Self-compassion versus global self-esteem: Two different ways of relating to oneself. *Journal of Personality*, 77, 23-50.
- Neff, K. D., Kirkpatrick, K. , & Rude, S. S. (2007). Self-compassion and its link to adaptive psychological functioning. *Journal of Research in Personality*, 41, 139-154.
- Neff, K. D., Rude, S. S., & Kirkpatrick, K. (2007). An examination of self-compassion in relation to positive psychological functioning and personality traits. *Journal of Research in Personality*, 41, 908-916.
- Neff, K. D., Hseih, Y., & Dejithirat, K. (2005). Self-compassion, achievement goals, and coping with academic failure. *Self and Identity*, 4, 263-287.
- Noh, S., Dumas, J.E., Wolf, L.C., & Fisman, S.N. (1999). Delineating sources of stress in parents of exceptional children. *Family Relations: Journal of Applied Family and Child Studies*, 38, 456-461.
- Olsson, M.B. , & Hwang, C.P. (2001). Depression in mothers and fathers of children with intellectual disability. *Journal of Intellectual Disability Research*, 45, 535-543.
- Osborne, L.A., McHugh, L., Saunders, J., & Reed, P. (2008). Parenting stress reduces the effectiveness of early teaching interventions for autistic spectrum disorders. *Journal of Autism and Developmental Disorders*, 38(6), 1092-1103.
- Pace, T.W.W., Negi, L.T., Adame, D.D., Cole, S.P., Sivilli, T.I., Brown, T.D., Issa, M.J., & Raison, C.L. (2009). Effect of compassion meditation on neuroendocrine, innate immune and behavioral responses to psychosocial stress. *Psychoneuroendocrinology*, 34, 87-98.

- Phetrasuwan, S., & Miles, M.S. (2009). Parenting stress in mothers of children with autism spectrum disorders. *Journal for Specialists in Pediatric Nursing, 14*(3), 157-165.
- Pottie, C. G., & Ingram, K. M. (2008). Daily stress, coping, and well-being in parents of children with autism: A multilevel modeling approach. *Journal of Family Psychology, 22*(6), 855-864.
- Powers, S.W., Byars, K.C., Mitchell, M.J., Patton, S.R., Standiford, D.A., & Dolan, L.M. (2002). Parent report of mealtime behavior and parenting stress in young children with Type 1 diabetes and in healthy control subjects. *Diabetes Care, 25*(2), 313-318.
- Preacher, K.J., & Hayes, A.F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods, 40*(3), 879-891.
- Randall, P., & Parker, J. (1999). Supporting the families of children with autism. New York, NY: Wiley.
- Rao, P.A., & Beidel, D.C. (2009). The impact of children with high-functioning autism on parent stress, sibling adjustment and family functioning. *Behavior Modification, 33*(4), 437-451.
- Reyns, T. (2006). Relationship of differentiation in marital satisfaction and stress among parents raising a child with autism. *Dissertation Abstracts International, 66*(7-B), 3957-4901.
- Robbins, F.R., Dunlap, G., & Plienis, A.J. (1991). Family characteristics, family training, and the progress of young children with autism. *Journal of Early Interventions, 15*, 173-184.
- Salmivalli, C., Kaukiainen, A., Kaistaniemi, L., & Lagerspetz, K. (1999). Self-evaluated self-esteem, peer-evaluated self-esteem, and defensive egotism as predictors of adolescents' participation in bullying situations. *Personality and Social Psychology Bulletin, 25*(10), 1268-1278.
- Sanders, J.L., & Morgan, S.B. (1997). Family stress and adjustment as perceived by parents of children with autism or down syndrome: Implications for intervention. *Child and Family Behavior Therapy, 19*(4), 15-32.
- Scheel, M.J., & Rieckmann, T. (1998). An empirically derived description of self-efficacy and empowerment for parents of children identified as psychologically disorder. *American Journal of Family Therapy, 26*, 15-27.

- Schore, A.N. (1994). *Affect regulation and the origin of the self: The neurobiology of emotional development*. Hillsdale, NJ: Lawrence Erlbaum.
- Seligman, M.E. (1995). The effectiveness of psychotherapy: The *Consumer Reports* study. *American Psychologist*, 50, 965-974.
- Seligman, M.E. , & Csikszentmihalyi, M. (2000). Positive Psychology: An introduction. *American Psychologist*, 55, 5-14.
- Shapiro, S.L., Brown, K.W., & Beigel, G.M. (2007). Teaching self-care to caregivers: Effects of a mindfulness-based stress reduction on the mental health of therapists in training. *Training and Education in Professional Psychology*, 1(2), 105-115.
- Shapiro, S.L., Astin, J.A., Bishop, S.R., & Cordova, M. (2005). Mindfulness-based stress reduction for health care professionals: Results from a randomized trial *International Journal of Stress Management*, 12(2), 164-176.
- Sharpe, D.L., & Baker, D.L. (2007). Financial issues associated with having a child with autism. *Journal of Family and Economic Issues*, 28(2), 247-264.
- Sharpley, C.F., & Bitsika, V. (1997). Influence of gender, parental health, and perceived expertise of assistance upon stress, anxiety, and depression among parents of children with autism. *Journal of Intellectual and Developmental Disability*, 22, 19-29.
- Siklos, S., & Kerns, K.A. (2006). Assessing Need for Social Support in Parents of Children with Autism and Down Syndrome. *Journal of Autism and Developmental Disorders*, 36(7), 921-923.
- Smith, L.E., Seltzer, M.M., Tager-Flusberg, H., Greenberg, J.S, & Carter, A.S. (2008). A comparative analysis of well-being and coping among mothers of toddlers and mothers of adolescents with ASD. *Journal of Autism and Developmental Disorders*, 38, 976-889.
- Sivberg, B. (2002). Family systems and coping behaviors: A comparison between parents of children with autistic spectrum disorders and parents with non-autistic children. *Autism*, 6(4), 397-409.
- Spaccarelli, S., Cotler, S., & Penman, D. (1992). Problem-solving skills training as a supplement to behavior parent training. *Cognitive Therapy and Research*, 16, 1-17.
- Stores, R., Stores, G., Fellow, B., & Buckley, S. (1998). Daytime behavior problems and maternal stress in children with Down syndrome, their siblings, their non intellectually disabled and other intellectually disabled peers. *Journal of Intellectual Disability Research*, 42, 228-237.

- Streisand, R., Mackey, E.R., & Herge, W. (2010). Associations of parent coping, stress, and well-being in mothers of children with diabetes: Examination of data from a national sample. *Maternal Child Health Journal, 14*, 612-617.
- Streisand, R., Swift, E., Wickmark, T., Chen, R., & Holmes, C.S. (2005). Pediatric parenting stress among parents of children with Type 1 Diabetes: The role of self-efficacy, responsibility, and fear. *Journal of Pediatric Psychology, 30*(6), 513-521.
- Streisand, R., Mackey, E.R., Elliot, B.M., Mednick, L., Slaughter, I.M., Tureky, J., & Austin, A. (2008). Parental anxiety and depression associated with caring for a child newly diagnosed with type 1 diabetes: Opportunities for education and counseling. *Patient Education and Counseling, 73*, 333-338.
- Tagney, J., & Dearing, R. (2002). *Shame and guilt*. New York: Guilford Press.
- Teti, D.M., & Gelfand, D.M. (1991). Behavioral competence among mothers of infants in the first year: The meditational role of maternal self-efficacy. *Child Development, 62*, 918-929.
- Thompson, B. L., & Waltz, J. (2008). Self-compassion and PTSD symptom severity. *Journal of Traumatic Stress, 21*(6), 556-558.
- United States Census Bureau.
http://www.census.gov/hhes/www/cpstables/032011/hhinc/new06_000.htm.
 August 2012.
- Wallace, S., Fein, D., Rosanoff, M., Dawson, G., Hossain, S., Brennan, L., Como, A., & Shih, A. (2012). A global public health strategy for autism spectrum disorders. *Autism Research, 5*(3), 211-217.
- Weiss, S.J. (1991). Stressors experienced by family caregivers of children with pervasive developmental disorders. *Child Psychiatry and Human Development, 21*, 201-216.
- Weiss, S.J. (2002). Hardiness and social support as predictors of stress in mothers of typical children, children with autism, and children with mental retardation. *Autism, 6*, 115-130.
- Whelton, W.J., & Greenberg, L.S. (2005). Emotion in self-criticism. *Personality and Individual Differences, 59*, 339-345.
- Wolf, S. T., Cohen, T. R., Panter, A. T., & Insko, C. A. (2010). Shame proneness and guilt proneness: Toward the further understanding of reactions to public and private transgressions. *Self and Identity, 9*(4), 337-362.

- van Ijzendoorn, M.H., Rutgers, A.H., Bakersmans-Kranenburg, M.J., Swinkels, S.H.N., van Daalen, E., Dietz, C., Buitelaar, J.K., Naber, F.B.A., & van Engeland, H. (2007). Parental sensitivity and attachment in children with autism spectrum disorder: Comparison with children with mental retardation, with language delays, and with typical development. *Child Development*, 78(2), 597-608.
- Vaughan, G., & Hansen, C. (2004). 'Like minds, like mine': A New Zealand project to counter the stigma and discrimination associated with mental illness. *Australasian Psychiatry*, 12(2), 113-117.
- Yamaguchi, S., Mino, Y., & Uddin, S. (2011). Strategies and future attempts to reduce stigmatization and increase awareness of mental health problems among young people: A narrative review of educational interventions. *Psychiatry and Clinical Neurosciences*, 65(5), 405-415.