

THE EFFECTIVENESS OF A GRATITUDE INTERVENTION AT IMPROVING  
WELL-BEING FOR PARENTS OF CHILDREN WITH  
AUTISM SPECTRUM DISORDER

by

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## The Effectiveness of a Gratitude Intervention at Improving Well-Being for Parents of Children with Autism Spectrum Disorder

In the United States, 1 in 68 school-aged children have the neurodevelopmental disorder known as autism spectrum disorder (ASD), which is characterized by atypical social interactions and communication, a lack of imaginary play, and repetitive behaviors (American Psychiatric Association, 2013; Centers for Disease Control and Prevention, 2014). Given the high rate of occurrence, there are a large number of parents faced with the unique challenges associated with ASD. Previous research, for example, has found that parents of children with ASD experience increased parenting stress, depression, and anxiety compared to parents of typically developing children (Estes et al., 2013; Weiss, 2002). Although some parents of children with ASD exhibit such negative outcomes, previous interventions have been shown effective at improving parents' well-being (Sofronoff & Farbotko, 2002; Tonge et al., 2006). Interventions for parents of children with ASD often focus on parent-child interactions and the measured outcomes are typically parent mental health. None have examined inducing feelings of appreciation or gratitude as a potential mechanism of increasing well-being for parents of children with ASD. However, such interventions have been found effective in other populations (Emmons & McCullough, 2003). Therefore, the current study examined the effectiveness of a gratitude intervention on various domains of functioning for mothers of children with ASD, including parenting-related well-being, marital well-being, and psychological well-being.

### **Parenting and Autism Spectrum Disorder**

Anecdotally, parenting has often been described as a uniquely challenging and life-changing experience that comes with difficulties, as well as rewards. Becoming a parent has the potential to affect an individual's well-being in multiple domains of functioning, both

positively and negatively. For instance, examination of several studies including participants from more than 90 countries, found that those with children demonstrated lower life satisfaction and subjective happiness than those without children, whether they were single or married (Stanca, 2012). These findings could be categorized as effects on psychological, or overall well-being. Becoming a parent may also affect the parent's well-being within a marital context or romantic relationship. This is supported by findings that, out of continuously married couples, new parents have more marital conflict than childless couples (Nomaguchi & Milkie, 2003). Additionally, becoming a parent introduces a new dimension of well-being, parenting-related well-being, which includes feelings of self-efficacy or competence as a parent and cognitions about the child specifically in the context of parenting. It may also include the parent's satisfaction with and quality of parent-child interactions. Therefore, parenting-related well-being can change based on daily interactions with the child. This is evidenced by previous research in this area, which has shown that parents who report greater parenting daily hassles and overall parenting stress levels expressed less positivity during observed interactions with preschool-aged children (Crnic, Gaze, & Hoffman, 2005).

Although parenting may be generally stressful and life-changing, raising a child with a developmental disability may be even more so. A meta-analysis comparing the parenting stress levels reported by parents of children with ASD, parents of typically developing children, and parents of those with a different disability revealed that parents of children with ASD experienced higher stress levels than those of children with Down Syndrome and cerebral palsy, among other intellectual and physical disabilities (Hayes & Watson, 2013). Furthermore, about 25% of parents of children with ASD exhibited clinical levels of



depression symptoms (Davis & Carter, 2008). Parents of children with ASD also experience greater levels of depressive symptoms when compared to mothers of children with other developmental disabilities, such as down syndrome (Abbeduto, Seltzer, Shattuck, Krauss, Orsmond, & Murphy, 2004). Furthermore, for mothers of children with ASD, those who had children with more behavioral symptoms also exhibited poorer psychological well-being, shown through higher levels of depression, as well as anxiety (Hastings & Brown, 2002).

In addition to impacting parents' psychological well-being, raising a child with ASD may also impact the quality of the marital relationship. For example, there is some evidence suggesting that the divorce/separation rate is higher in parents of children with ASD compared to parents of typically developing children (Hartley et al., 2010). Moreover, Hartley and colleagues (2012) found that levels of relationship satisfaction decreased over a seven-year period. In this study, the child's severity of behavior problems was the biggest contributing factor to this decline (Hartley, Barker, Baker, Seltzer, & Greenberg, 2012).

Parents' feelings of competence and efficacy related to their parenting ability (i.e., parent-related well-being) may also be negatively impacted by raising a child with ASD. For example, mothers of children with ASD reported lower levels of parental competence and knowledge compared to mothers of children with down syndrome and mothers of typically developing children (Rodrigue, Morgan, & Geffken, 1990). This was further demonstrated in a sample of mothers of children with ASD for whom greater parenting stress was a significant predictor of lower maternal self-efficacy (Kuhn & Carter, 2006). That is, mothers under more stress felt less competent at being a mother.

Each of these domains of functioning (psychological well-being, relationship well-being, and parenting-related well-being) are important to examine in this population given

their interrelatedness. For example, poor marital quality was related to feelings of lower parenting efficacy for parents of individuals with ASD (Benson & Kersh, 2011).

Furthermore, research by Hartley and colleagues (2012) indicated parents of adolescents and adults with ASD that reported low marital satisfaction also reported feeling more burdened as a parent compared to those with high marital satisfaction. Additionally, marital quality has been related to other domains of well-being in this population. For instance, lower marital quality was predictive of lower levels of subjective happiness and more depressive symptoms (Benson & Kersh, 2011). Whereas, greater depressive symptoms were found to be a significant predictor of lower parenting self-efficacy for parents of children with ASD (Kuhn & Carter, 2006).

Given the empirical studies showing a variety of elements influencing well-being for mothers of children with ASD, it is important to examine potential protective factors that might contribute positively to their well-being. One possibility is that increasing a parent's well-being in one area may positively influence other areas of well-being. For example, previous research has shown that feelings of parental self-efficacy mediated the negative effects of children's behavior problems on parent psychological well-being, such that parents who felt more able to deal with the behavior also had lower levels of depression and anxiety (Hastings & Brown, 2002). Additionally, having positive perceptions of the child was predictive of greater marital satisfaction for mothers of children with ASD (Lickenbrock, Ekas, & Whitman, 2011). Increasing tendencies towards gratitude, which has been shown to increase well-being in other populations, may lead to increases in one or more areas of well-being for this population, which could then influence others.

## **Interventions for Parents of Children with ASD**

Previous research has examined a variety of interventions to improve well-being of parents of children with ASD. However, the focus of such interventions has often been limited to child-focused interventions or to one or two areas of well-being (e.g., psychological well-being) and not accounting for others (e.g., parenting-related well-being or relationship functioning). The goal of this study was to implement and evaluate an intervention, which was predicted to have a positive impact on parenting-related, relationship/marital, and overall well-being for parents of children with ASD. Since none of the previous research with this population has focused on gratitude as a useful intervention tool, other parent-focused interventions with positive effects on well-being are discussed.

Despite the lack of research utilizing gratitude activities as an intervention, there have been other interventions successful at improving well-being for parents of children with ASD. An intervention of parent education and behavior management (PEBM) training for parents of children with ASD resulted in overall well-being changes, such as decreased anxiety and depression at a follow-up assessment conducted 6 months later when compared to a group not participating in the PEBM training intervention (Tonge et al., 2006). Several intervention studies have included measurements of parenting-related well-being in their procedures. One previous study found that an intervention focused on changing interactions of parent-child dyads in which the child had ASD was shown to improve parenting well-being as measured through reported feelings of self-efficacy and competence, while also decreasing parenting stress (Keen, Couzens, Muspratt, & Rodger, 2010). Another intervention increased parenting self-efficacy among Australian mothers and fathers of children with ASD for at least 3 months by providing training to manage difficult behavior

(Sofronoff & Farbotko, 2002). Furthermore, an intervention involving parent-child relationship therapy, demonstrated increased parenting-related well-being as measured through reported positive affect and observable positive affect expressed during parent-child interactions for parents of boys ages 5-12 with high-functioning ASD (Solomon, Ono, Timmer, & Goodlin-Jones, 2008). Lastly, a mindful parenting intervention was shown to increase parents' satisfaction with parent-child interactions and parenting skills (Singh et al., 2006). In sum, there are many existing parent-focused interventions, but none have focused on gratitude as a potential mechanism to increase well-being for parents of children with ASD.

### **Gratitude and Well-Being Interventions**

Gratitude has been defined in various ways, with the general commonality that it is an emotion, practice, or dispositional tendency of being thankful for something or someone in one's life (Watkins, Woodward, Stone, & Kolts, 2003). Previous research has revealed many connections between overall well-being of individuals and a tendency towards showing gratitude (e.g., Emmons & McCullough, 2003; Watkins et al., 2003). More grateful people were found to have higher levels of life satisfaction and experience a greater number of positive emotions more frequently than comparatively less grateful people (McCullough, Emmons, & Tsang, 2002). Gratitude has also been shown to buffer against negative effects on well-being in special populations, such as female breast cancer patients, for whom having high levels of gratitude predicted greater post-traumatic growth, as well as lower levels of depression and anxiety compared to those with little gratitude (Ruini & Vescovelli, 2013).

Another domain of well-being potentially impacted by gratitude is relationship quality, which is measured through indicators such as marital satisfaction, ability to cope

effectively as a couple, and spousal well-being. Individuals who reported being more grateful were more supportive and empathic (McCullough et al., 2002). Given that these qualities are likely crucial in social relationships, gratitude could play an important role in relationship and parenting-related well-being. Evidence for this can be found in the results of a study showing expressed and felt gratitude were positively related to marital satisfaction (Gordon, Arnette, & Smith, 2011). Expressing gratitude was also related to greater relationship satisfaction the following day for couples in a serious romantic relationship (Algoe, Gable & Maisel, 2010). Finally, findings from previous research have demonstrated that better marital quality is predictive of greater parenting satisfaction (Rogers & White, 1998). Despite the lack of research examining the relationship between gratitude and parenting, it appears they could be related, based on the aforementioned indirect links.

Since the dispositional trait of gratitude has been related to a number of measures of well-being, it is possible that interventions which incorporate practices such as counting blessings or giving thanks can improve well-being. Results from a weekly diary gratitude intervention with undergraduate participants showed that those who were asked to make gratitude lists were significantly more optimistic about the following week and happier with their lives overall, when compared to those asked to list weekly hassles or neutral weekly events (Emmons & McCullough, 2003). Participating in a letter-writing activity to express gratitude was related to participants' increased life satisfaction and subjective happiness, as well as decreased levels of depressive symptoms (Toepfer, Cichy, & Peters, 2012). An intervention in which participants expressed gratitude resulted in improved happiness and well-being as much as six months later (Lyubomirsky, Dickerhoof, Boehm, & Sheldon, 2011). A week-long gratitude intervention, which consisted of grateful letter-writing and

daily reflections on positive events, implemented with college students increased happiness immediately following the intervention when compared to a control and strengths-based intervention group, as well as decreased symptoms of depression reported at a one-month follow-up compared to the control group (Senf & Liao, 2013).

There have been a limited number of gratitude interventions with adult special populations. One study found that an intervention with gratitude as a primary component increased life satisfaction and happiness, while decreasing depression and anxiety levels in the elderly (Ramírez, Ortega, Chamorro, & Colmenero, 2014). Additionally, a weekly diary gratitude intervention in a sample of chronically stressed health practitioners yielded lower levels of stress and depressive symptoms compared to a control and daily hassles group (Cheng, Tsui, & Lam, 2014). Although gratitude has been examined as a means of intervention with these special populations, this method has not been applied to parents or caregivers of those with ASD. Therefore, this study was the first to provide empirical evidence regarding the efficacy of a gratitude intervention at increasing well-being with this population.

### **Research Questions and Hypotheses**

The current study attempted to replicate previous findings of improved well-being through inducing gratitude in an intervention of weekly writing activities among parents of children with ASD. The second aim of the study was to add a condition that focused specifically on the parent's perceptions of the child. Given previous relations of positive parenting cognitions to other areas of well-being (Hastings & Brown, 2002; Lickenbrock, Ekas, & Whitman, 2011), this condition sought to increase positive parental perceptions of the child through child-specific gratitude exercises, as opposed to general gratitude exercises.

Results were expected to reveal which domains of well-being were most strongly impacted by the intervention: overall well-being, relationship well-being, or parenting-related well-being. It was predicted that participants in both gratitude conditions would show improved parenting-related, relationship, and overall well-being when compared to those in the neutral life events group at the assessment following the intervention. Those in the child gratitude condition were predicted to show greater increases in parenting-related well-being than those in the general gratitude condition at the post-test.

## **Method**

### **Participants**

Participants in the study were mothers of children under the age of 18 with ASD. Eighty-two mothers completed the initial or pre-test phase of the study (see Figure 1). Of those mothers, 67 (general gratitude,  $n = 24$ , child-specific gratitude,  $n = 22$ , and control,  $n = 21$ ) completed the post-test assessment and were included in the final sample for analyses. Participants were predominately White/Caucasian, middle to upper-middle class, and college-educated (see Table 1 for sample demographics).

**Table 1***Sample Demographics (N = 67)*

	Mothers
	% (n)
<b>Annual Household Income</b>	
<\$7,500	0 (0)
\$7,500-\$14,999	6 (4)
\$15,000-\$24,999	1.5 (1)
\$25,000-\$39,999	14.9 (10)
\$40,000-\$74,999	34.3 (23)
\$75,000-\$99,999	17.9 (12)
> \$100,000	25.4 (17)
<b>Education</b>	
High School	7.5 (5)
Vocational Education	7.5 (5)
Some College Classes	19.4 (13)
College Degree	46.3 (31)
Post College Degree	19.4 (13)
<b>Race/Ethnicity</b>	
White/Caucasian	73.1 (49)
African American	4.5 (3)
Asian or Pacific Islander	3.0 (2)
Hispanic or Latino	11.9 (8)
Mixed Ethnicity/Other	7.5 (5)

**Procedure**

Participants were recruited online through various resources for families of children with ASD, such as support groups and therapy providers. Mothers were compensated for each week of the intervention portion of the study, and also compensated for completing pre- and post-test measures. There was also an opportunity to receive bonus compensation for completing all 8 weeks of the study. The total amount of compensation was as much as \$50 if



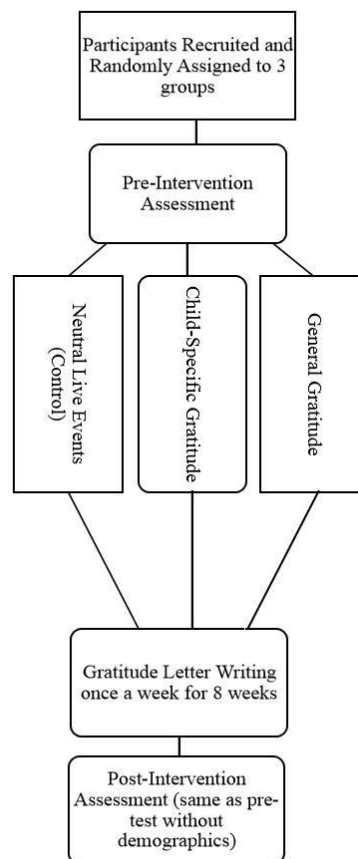
participants completed all sections of the study. Compensation for participation by parents was provided in the form of gift cards to a major national retailer.

The procedure used for the study was based on a gratitude intervention implemented by Lyubomirsky and colleagues (2011). After being recruited online, participants were emailed a link to a pre-intervention assessment to be completed in Qualtrics. This assessment included questions to assess demographic information, as well as self-report measures of overall well-being, parental well-being, and relationship well-being. After completion of this assessment, participants received \$10.

Participants were then randomly assigned to one of three conditions: a) a general gratitude group ( $n = 24$ ), b) a child-specific gratitude condition ( $n = 22$ ), or c) a neutral life-event control group ( $n = 21$ ). Each participant was e-mailed a link to an online Qualtrics form every Friday for 8 weeks with specific instructions to complete a 15-minute weekly writing by the end of the weekend. The activities were not timed, but the instructions in each one specified that the parents should spend approximately 15 minutes on the activity. Those in the general gratitude condition were asked to recall a time they were grateful for something someone did for them and to write a letter to that person (knowing that the letter will not be sent). For this condition, the instructions stated that they should not write to their child with ASD for the activities. Participants in the child gratitude condition were asked to think about a time when they were grateful for something their child with ASD did, specifically, and to write a letter about that to their child. Those in the control group were instructed to think about what they did that week and write it out in list format, attempting to exclude feelings or opinions about those events. Responses were reviewed on Monday mornings and those who did not complete the exercise for the previous week were asked to

complete it that day. Participants were not able to respond after Monday evening. Mothers were compensated at a rate of \$2 per week for the intervention portion of the study. However, if the participants completed all 8 weeks, they were given an additional \$4 bonus.

A post-intervention assessment identical to the initial assessment (excluding the initial demographic questions) was conducted within one week of participants' completion of the weekly writing activities, if possible. Participants were asked to complete a third and final assessment 4 weeks after their immediate post-test. For each of these assessments, participants were given \$10. Participants were mailed compensation following their completion of each phase of the study.



*Figure 1.* Flow Chart of Data Collection Procedure

## Measures

**Overall well-being measures.** The Center for Epidemiologic Studies Depression Scale (CES-D), a self-report questionnaire, was used to measure symptoms of depression experienced by an individual during the previous week (Radloff, 1977). The measure consists of 20 items with response options on a 4-point Likert scale (1 = *rarely or none of the time* to 4 = *most or all of the time*). Response scores were then summed to provide a total score. A commonly used clinical cutoff for possible depression is indicated by a score of 16 or higher on the CES-D (Radloff, 1977). More severe symptoms are indicated by a cutoff of 23 or greater (Husaini, Neff, Harrington, Hughes, & Stone, 1980). Internal consistency for this measure in the current sample of mothers of children with ASD was high (pre-test  $\alpha = .90$ ; post-test  $\alpha = .92$ ).

The short form version of the Positive and Negative Affect Schedule (PANAS) was used to examine levels of positive and negative affect experienced by participants in a specified time period, typically the past week (Watson, Clark, & Tellegen, 1988). Participants were given 10 emotion words to rate on a 5-point Likert scale (1 = *very slightly or not at all* to 5 = *extremely*). The sum of scores on five of the items created a positive affect subscale score, while the other five items were summed to create the negative affect subscale. A higher score indicates higher positive or negative emotions. The internal consistency for this measure ranged between good and excellent for the positive and negative subscales at pre-test (positive  $\alpha = .85$ ; negative  $\alpha = .88$ ) and post-test (positive  $\alpha = .90$ ; negative  $\alpha = .80$ ).

**Relationship well-being measures.** The Couples' Satisfaction Index (CSI; Funk & Rogge, 2006) was used as the primary measure of marital satisfaction and relationship well-

being for married individuals and those in long-term relationships. The CSI is a self-report measure with 32 items and various Likert scales, which allow respondents to indicate to what degree they agree or disagree with statements regarding their relationship satisfaction and feelings about their partner. In some cases, the respondent's scale ranges from negative to positive and in other cases it is reversed. Additionally, some of the questions ask the participant to respond whether their relationship is better described by one adjective or its opposite (e.g., "enjoyable" on one end of the scale and "miserable" on the other) and those responses are assigned representative numbers (varying values). Scores are created by summing responses and those with greater couples' satisfaction have higher score values. The internal consistency of this measure was excellent and also the same for the assessment prior to ( $\alpha = .98$ ) and following the intervention ( $\alpha = .99$ ).

**Parenting-related well-being measures.** Well-being measures specifically focused on parenting-related aspects of well-being were also used. The Parenting Sense of Competence Scale (PSOC; Johnston & Mash, 1989) was used to measure the levels of parenting-related satisfaction and efficacy a parent feels. The PSOC has 17 items which when evaluated as a sum score suggest greater feelings of satisfaction and competence as scores increase. The question are answered on a 6-point Likert-type scale (1 = *strongly disagree* to 6 = *strongly agree*). This measure demonstrated acceptable to high reliability for pre- test ( $\alpha = .79$ ) and was consistent at post-test ( $\alpha = .74$ ).

The Kansas Inventory of Parental Perceptions (KIPP) assessed the specific perceptions parents have of caring for children with special needs (Behr, Murphy, & Summers, 1992). The 97 question (total when subscales are combined) self-report measure has subscales of positive contributions, social comparisons, causal attributions, and

mastery/control to examine the way parents think about their children. For the purpose of this study, only the positive contributions subscale, consisting of 24 items was used (1 = *strongly disagree* to 4 = *strongly agree*). On this measure, a higher score indicated the parent's feelings that the child had made greater contributions to various aspects of their life. Internal consistency was high to excellent for this measure at pre- and post-test, respectively ( $\alpha = .89$ ;  $\alpha = .87$ ).

## **Results**

### **Attrition Analyses**

Although 82 parents completed the pre-test, only 67 mothers completed the entire intervention. The others were either dropped from the study because they did not complete the entire writing activity (i.e., missed more than 2 weekly writing assignments) or withdrew from the study for various reasons. Therefore, attrition analyses consisting of a series of one-way analyses of variance (ANOVAs) and chi-square tests were conducted to test for differences in demographic variables between those who completed the intervention and those who did not. No significant differences were found between those who finished and those who did not in terms of income level, marital status, education level, parent age, race, ethnicity, child age, child gender, or child's ASD diagnosis (Autism, Pervasive Developmental Disorder, or Asperger's syndrome). Further analyses were conducted with the same demographic variables to confirm that the randomly assigned groups did not systematically differ prior to the intervention. No significant differences were found between the participants in the general gratitude, child-specific gratitude, and control groups for any of the demographic variables at time 1 (also henceforth referred to as pre-test).

## **Effectiveness of Intervention**

Prior to testing for group differences that resulted from the intervention, a one-way ANOVA was conducted to ensure that the three randomly assigned conditions, general gratitude ( $n = 24$ ), child-specific gratitude ( $n = 22$ ), and control ( $n = 21$ ), did not vary in their levels of well-being (see Table 2). Results showed that there were no significant group differences prior to the intervention.

In order to test the hypothesis that the gratitude intervention would improve parents' well-being, a series of repeated measures ANOVAs, using pre-and post-test scores (see Table 2) as the within subjects factors and group as the fixed factor, were conducted. The first analysis included all three conditions. There were no significant interactions between group and differences in well-being scores before and after the intervention,  $ps > .05$ . However, a main effect of time was found, such that all groups decreased in negative affect,  $F(1, 64) = 13.96, p < .001$  from pre-test to post-test. Conversely, changes in positive affect over time were non-significant,  $p > .05$ . Additionally, the interaction between group and time and the main effect of time were non-significant for relationship satisfaction,  $ps > .05$ . Parents' ratings of their child's positive contributions increased from pre- to post-test for all groups,  $F(1, 64) = 10.46, p < .01$ . Additionally, parental self-efficacy increased significantly over time for all groups,  $F(1, 64) = 20.31, p < .001$ .

**Table 2***Pre-and Post-Test Means of Overall, Relationship, and Parenting-Related Well-Being*

Condition	Positive Affect		Negative Affect		Marital Satisfaction		Parent Sense of Competence		Child's Positive Contributions	
	Pre (SD)	Post (SD)	Pre (SD)	Post (SD)	Pre (SD)	Post (SD)	Pre (SD)	Post (SD)	Pre (SD)	Post (SD)
Control	13.48 (4.98)	12.90 (5.80)	9.33 (3.88)	7.57 (2.56)	117.78 (31.44)	119.44 (33.70)	67.76 (11.04)	72.71 (13.26)	70.90 (10.75)	71.33 (10.57)
General Gratitude	14.04 (4.64)	14.83 (5.43)	11.17 (5.60)	9.42 (3.36)	101.75 (36.89)	109.21 (35.16)	66.54 (6.57)	69.67 (9.15)	68.00 (8.65)	71.17 (8.53)
Child Gratitude	13.14 (4.80)	14.86 (5.78)	9.45 (3.51)	8.18 (3.11)	104.25 (44.97)	105.58 (46.12)	67.95 (13.20)	73.82 (15.78)	68.00 (10.61)	72.00 (11.33)

Due to the smaller sample sizes in the gratitude conditions, I conducted another repeated measures ANOVA with two groups, the gratitude conditions collapsed into one ( $n = 46$ ) and the control group ( $n = 21$ ). No significant interaction effects were found in this analysis,  $ps > .05$ . Furthermore, the existing main effects remained the same as those found in the aforementioned three-group analysis.

Given that gratitude interventions have been found, in some cases, less effective for depressed participants (Sin & Lyubomirsky, 2009), another analysis was conducted including only those who reported elevated depressive symptoms (i.e., CESD score  $> 16$ ;  $n = 45$ ). No interaction effects were found for a three-group repeated measures ANOVA,  $ps > .05$ .

Furthermore, an SCQ score of 15 or greater is typically used to indicate meeting criteria for a diagnosis of ASD. Therefore the same analyses were conducted including only those whose CESD scores were above 16 and whose children met the SCQ criteria. Again, no group differences were found for either the two or three group analysis,  $ps > .05$ . The main effects remained the same as for previous analyses in both cases.

A score of 23 has been used in previous research as a more conservative cutoff for probable depression on the CES-D. Therefore, the next step was to re-run the two and three-group repeated measures ANOVAs with only participants whose score was 23 or above on the CESD ( $n = 26$ ). No differences were found in either case,  $ps > .05$ . However, in this instance, the main effects of time on relationship satisfaction and parents' views of their children's positive contributions became non-significant.

Finally, the same ANOVAs were conducted with all participants, adding depressive symptoms as a covariate. No significant differences were found,  $ps > .05$ . The main effects of time on negative affect disappeared and that of time on relationship satisfaction re-appeared,  $F(1, 57) = 17.74, p < .001$ . The main effects remained the same for the two-group analysis when controlling for depressive symptoms.

### **Comparison of General and Child Gratitude Conditions**

To test the specific hypothesis that the child-specific gratitude condition ( $n = 22$ ) would show increased parenting-related well-being when compared to the general gratitude condition ( $n = 24$ ), a repeated measures ANOVA including only those two groups was conducted with the pre- and post-test scores for parenting-related well-being. No significant interaction effects were found,  $ps > .05$ . However, both groups showed increased positive affect,  $F(1, 44) = 4.75, p < .05$ , as well as decreased negative affect,  $F(1, 44) = 6.90, p \leq .01$ ,



from pre- to post-test. Additionally, these two groups increased in relationship satisfaction across time,  $F(1, 41) = 4.42, p \leq .05$ . Finally, parents' reported positive contributions of the child increased across time for both the gratitude groups,  $F(1, 44) = 15.11, p \leq .001$ , as did parenting self-efficacy,  $F(1, 44) = 12.00, p \leq .001$ . The previous main effects disappeared when depressive symptoms were included as a covariate in the model,  $ps > .05$ , with the exception of relationship satisfaction and perceptions of child positive contributions.

### **Qualitative Analyses**

Given the lack of group differences, exploratory qualitative analyses were conducted to find potential explanations. First, lists of words (henceforth dictionaries) were compiled using words drawn from a thesaurus, as well as from the narratives written by the mothers. Separate dictionaries were created for gratitude words and three categories of words relating to autism and symptomatology (see Appendix A). Words in the general category were those frequently discussed by parents, but which were often used in a neutral manner (e.g., "autism", "diagnosis"). Whereas those in the positive or negative autism-related categories were typically more emotion-laden words used when describing situations with the child with ASD (e.g., "patience" or "struggle")

Prior to analyses, the narratives of parents were corrected for obvious spelling errors and abbreviations were eliminated. Such changes were made while carefully avoiding any changes to the parent's intended meaning or writing. Finally, the weekly narratives of each participant were analyzed using the most recent version of Linguistic Inquiry and Word Count (LIWC; Pennebaker, Chung, Ireland, Gonzales, & Booth, 2007). Mean scores of word count, use of gratitude words, and use of general, positive, and negative symptomatology and autism-related words were calculated for each participant by averaging their scores in each

category across the 8 weeks of the intervention. The overall means of the control, general gratitude, and child-specific gratitude groups were then compared using one-way ANOVAs.

On average, the groups differed significantly in the length of their narratives,  $F(2, 64) = 5.07, p < .01$ . Given the significant differences, post hoc pairwise comparisons were conducted to further examine the relationship using least significant differences (LSD). Results showed that the control group used more words ( $M = 460.21, SD = 496.98$ ), as compared to both the general gratitude ( $M = 205.87, SD = 73.40, p < .01$ ), and the child gratitude condition ( $M = 231.29, SD = 123.59, p = .01$ ). However, the general and child gratitude conditions did not significantly differ from one another,  $p > .05$ .

Furthermore, the groups used significantly different percentages of gratitude words in their narratives,  $F(2, 64) = 40.80, p < .001$ . Pairwise comparisons revealed that the general gratitude condition ( $M = 1.77\%, SD = .68$ ) and the child gratitude condition ( $M = 1.45\%, SD = .84$ ) used a greater percentage of gratitude words in their narratives than the control condition ( $M = .12\%, SD = .15, ps < .001$ ). The two gratitude conditions were not different in their usage of gratitude words,  $p > .05$ .

The groups did not differ in their use of general autism-related and symptomatology words,  $p > .05$ . However, they varied in their use of negative,  $F(2, 64) = 16.90, p < .001$ , and positive autism-related words,  $F(2, 64) = 19.36, p < .001$ . More specifically, the child-specific gratitude ( $M = .55\%, SD = .36$ ) and general gratitude ( $M = .37\%, SD = .19$ ) groups wrote a higher percentage of negative autism and symptomatology-related words in their entries when compared to the control group ( $M = .11\%, SD = .15, ps \leq .001$ ). Additionally, the child-specific gratitude condition was more negative in their writing than the general gratitude condition,  $p < .05$ .

Those in the general gratitude ( $M = .33\%$ ,  $SD = .23$ ) and child-specific gratitude ( $M = .31\%$ ,  $SD = .21$ ) groups did not significantly differ from one another in percentage of positive autism-related words used in writing,  $p > .05$ . However, both gratitude conditions wrote a greater percentage of positive autism-related words compared to the control group ( $M = .02\%$ ,  $SD = .04$ ),  $ps < .001$ .

## **Discussion**

The purpose of the current study was to examine the effectiveness of a gratitude intervention for parents of children with ASD. Although this type of intervention has been effective in the general adult population (Emmons & McCullough, 2003; Lyubomirsky et al., 2011; Toepfer, Cichy, & Peters, 2012), it has never been applied to this population. Furthermore, gratitude interventions have previously been shown to improve well-being in chronically stressed populations, which is one way to describe parents of children with ASD (Cheng, Tsui, & Lam, 2014). Unfortunately, this was not the case in the current study. Overall, I did not find support for my hypothesis that the mothers in the gratitude conditions would show increases in well-being (overall, relationship, and parenting-related) compared to mothers in the control condition. In fact, all groups showed a similar effect. However, qualitative analyses of their weekly writings showed several interesting differences.

While the implemented intervention was not found to be effective in the treatment groups specifically, there was a general trend of change in well-being across all the groups. Specifically, mothers in all groups reported an increase in their overall and parenting-related well-being. This could be due to the effects of journaling, which all groups may have experienced. For instance, written emotional disclosure (e.g., journaling) has been shown to improve psychological functioning, as well as physical health across a number of samples

(Smyth, 1998). One of the mechanisms through which this seems to operate is changes in physiological functioning, such as decreased physiological stress responses (i.e., heart rate habituation) seen in breast cancer patients (Low, Stanton, & Danoff-Burg, 2006). The general consensus from these studies is that journaling allows individuals to integrate experiences into their overall life narrative and produces physiological stress-response changes during and after emotional disclosure writing activities, which lead to increases in well-being (Smyth, 1998). This could very well be true for the current sample, who are chronically stressed mothers of children with ASD. In this study, it was somewhat surprising that the control group, who were asked to write a list of their activities over the previous week, showed increases. Perhaps reflecting on all they were able to accomplish in the previous week, as well as the subset of that group that wrote more descriptive lists, are responsible for the increases found.

Interestingly, mothers' relationship well-being did not differ significantly from pre-test to post-test when all three groups were included in the analysis. This could be a result of the intervention primarily increasing the positive perceptions of the child and parenting self-efficacy, and thusly psychological well-being, but not relationship well-being. However, when only the gratitude conditions were examined, they did show a significant increase in relationship well-being following the intervention. This could indicate that the control group was driving the effects in the three-group analysis.

Another possible explanation for the lack of differences between the intervention and control groups could be the presence of depressive symptoms. Mothers of children with ASD typically report elevated levels of depressive symptoms compared to mothers of typically developing children and mothers of children with other developmental disabilities (Abbeduto

et al., 2004; Estes et al., 2009; Gau et al., 2012). While the more recent consensus is that individuals with mild to moderate depressive symptoms experience gains in well-being following positive psychology interventions, some research suggests that positive psychology interventions, and particularly gratitude interventions such as ours, are not as effective for those with higher levels of depressive symptoms (Sin & Lyubomirsky, 2009). Indeed, I recognized that this might be a possibility and incorporated depressive symptomatology into the analyses. Following analyses of all participants, the same analyses were then run using only those with elevated depressive symptoms (i.e., CES-D score  $\geq 16$ ). Then, analyses were run again using only data from participants with a CES-D score of 23 or greater, a more conservative cutoff suggesting probable depression (Husaini et al., 1980). There were minimal differences between these sets of analyses and the ones in which depression was not included. When the aforementioned conservative cutoff was used, relationship satisfaction and child positive contributions did not change significantly from pre- to post-test.

Additionally, when level of depressive symptoms was a covariate, negative affect did not significantly differ from pre- to post-test. Given the few differing effects and that the primary findings remained the same when depressive symptoms were included as covariates suggest that depressive symptoms did not play a large role in the effectiveness (or lack thereof) of the current intervention. However, replications of this intervention should carefully screen mothers of children with ASD to eliminate this potential confound.

One additional possibility is that there may have been a self-selection effect. Previous studies have shown that self-selection effects may play a role in the efficacy of a gratitude writing intervention (Lyubomirsky et al., 2011). More specifically, this sample may not be as generalizable as the result of some characteristics of those who self-select into such studies in

concurrency with the methodology of previous gratitude intervention research (Lyubomirsky et al., 2011). However, self-selection bias was not assessed in the current study, which was actively promoted as a “happiness intervention” intended to increase levels of happiness. No other promotions were used and therefore there was not a control group without that specific expectation. Therefore, there may also have been gains in overall well-being because individuals who chose to participate expected positive benefits from the intervention and after completing it felt better than before simply for that reason. Future research should ensure the use of a more appropriate cover story (e.g., cognitive-enhancing intervention) in addition to the current one to avoid this potential bias.

Although the simple act of journaling may explain the overall change from pre- to post-test, it is possible that the content of mothers’ writings may also play a role. For example, research of women with diagnosed breast cancer has found that use of negative words in intervention journal writing predicted post-treatment levels of anxiety and depression even when controlling for pre-treatment levels (Smith, Anderson-Hanley, Langrock, & Compas, 2005). This provides another potential explanation for the lack of group differences in the results of the current study, since the mothers in both gratitude treatment groups were shown to use more negative symptomatology and autism-related words compared to the control group. This could be due to the fact that the mothers were reminiscing about the difficulties of the past and then continuing on to say that they’re grateful for how far their child has come.

Results showed that those in the control group had significantly more words in their writing than those in both treatment groups. The sheer variability in lengths of narratives suggests that some participants took the suggested time for the activity (i.e., 10 minutes) less

seriously than others. This is another factor that may have contributed to the findings, as it may be that writing more produces greater levels of benefits and increases in well-being. Indeed, the greater length of writing in the control group may be mimicking the act of journaling, as previously discussed.

Furthermore, it is apparent that those in the general gratitude condition and even the control condition were discussing their child with ASD very frequently. This was unexpected, given that the child-specific gratitude condition was the only group asked to focus on the child. Furthermore, those in the general gratitude condition were explicitly asked to write about someone they were grateful for other than their child. However, a number of them wrote a letter of gratitude to a previous therapist their child had, a teacher or doctor who initially spoke with the family about the child's atypical development, or a friend or family member who was especially helpful during the time period immediately following their child's diagnosis. Those in the control group were meant only to list the events of their week. However, a number of them went into great detail and even those who did not spent a large portion of their week taking their child to therapy or otherwise accommodating their needs and schedule. Therefore, they were inadvertently talking about their child just as much as or more than the other participants in the study were.

### **Limitations and Future Directions**

Though the procedure was similar to those used in previous gratitude intervention studies, there are potential improvements in methodology that may yield treatment effects. Given that those in the treatment group used a greater amount of negative autism-related words, it might be helpful to provide more specific guidance in future writing-based interventions with suggestions such as trying to focus on the positive and actively avoiding

usage of negative words with a list of examples provided for parents. Perhaps a better control group for comparison would have been specifically instructed to write in a narrative format about their life events that week, rather than being asked to list what they did, as in this study. Though some of the mothers provided detailed and journal-like narratives, some were brief lists of activities with little explanation.

In addition to the limitations discussed previously, there are further issues that warrant discussion. The primary concern with the current study was statistical power. The observed power in many of the analyses, particularly for interaction effects was quite small. Indeed, observed power for interactions ranged from .07 to .37. Further research would benefit from a larger sample size. Furthermore, 45 of the mothers in the study had CES-D scores of 16 or greater, which means about 67% of the sample was considered elevated in level of depressive symptoms. This warrants more thorough examination of the interaction of depressive symptoms and intervention strategies in the future. Future research should also attempt to recruit fathers of children with ASD, though it is a daunting task due to their demanding schedules. Addressing the issue of generalizability is also advisable, given that the current sample was primarily middle to upper class, White, well-educated individuals.

Despite the limitations of the current study, it still provides valuable insight about the effectiveness of positive psychological interventions with parents of children with ASD, a population previously unstudied in that area. Given that parents of children with ASD are known to have poorer well-being, greater parenting stress, and are at greater risk for marital maladjustment compared to parents of typically developing children, finding effective interventions to improve these conditions would have an extensive impact on their lives (Estes et al., 2013; Weiss, 2002; Brobst, Clopton, Hendrick, 2009). However, the qualitative



analyses seen here also provide a unique glimpse into the lives of individual families of children with ASD. They give a voice to those who are sometimes treated as members of a homogenous group, but whose experiences, while similar in some ways, are extraordinarily different from family to family. Furthermore, we learned that self-disclosure through writing has ameliorative effects on certain aspects of functioning for mothers of children with ASD, independently of the gratitude component. Finally, though the positive effects were not group-specific, the writing activities succeeded in increasing both overall and parenting-related well-being for this sample of mothers of children with ASD.

## Appendix

### Gratitude Dictionary

Gratef\*  
Grati\*  
thank  
thanked  
thankf\*  
thanks  
bless\*  
indeb\*  
please\*  
appreciat\*  
gift  
gifts  
token  
praise  
special  
miracl\*

## Dictionary of General Symptomatology and Autism-Related Words

Autism	disabil*	sensory
autistic	potty	stimming
asperge*	accident	stim
aspie	accidents	stims
ipad	social	appointmen*
ABA	sociab*	normal
behavio*	spectrum	transitio*
body	sympto*	perseverate
language	interac*	
word*	neurotypical	
diagnos*	neuro-typical	
disorder	joint	
disorder*	attention	
communic*	eye	
verbal	contact	
nonverbal	typical	
non-verbal	cues	
needs	routine	
different	routines	
mileston*	accommodat*	
learning	emotion	
therap*	emotions	
flap	coping	
flap*	cope	

*Note.* In dictionaries used in LIWC, an \* indicates that if the letters prior to the asterisk are part of the word, it should be included in the category, regardless of subsequent letters in the word.

## Dictionary of Negative Symptomatology and Autism-Related Words

aggres\*  
blam\*  
burde\*  
challeng\*  
difficul\*  
doubt  
doubt\*  
drain\*  
frustrat\*  
hard  
harde\*  
hardshi\*  
immature  
judg\*  
meltdow\*  
needy  
overwhel\*  
painful  
rough  
struggl\*  
tantru\*  
tire\*  
tough  
troubl\*

## Dictionary of Positive Autism-Related Words

admir\*  
advocat\*  
capab\*  
courag\*  
endure  
loving  
patien\*  
persevere  
progress  
smart  
strong  
taught  
wise

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## VITA

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### PUBLICATIONS

Ekas, N.V., **Timmons, L.**, Pruitt, M.M., Ghilain, C., & Alessandri, M. (2015). The power of positivity: Predictors of relationship satisfaction for parents of children with autism spectrum disorder.

### PRESENTATIONS

**Timmons, L.**, Pruitt, M. M., & Ekas, N. (2015, April). So happy together: Do partner and parent-child interactions affect each other for mothers of children with autism spectrum disorder?. Poster presented at the Gatlinburg Conference, New Orleans, LA.

**Timmons, L.**, Willis, K., Pruitt, M., & Ekas, N. (2015, March). Gender differences in well-being and coping strategies of hispanic parents of children with autism. Poster presented at the Society for Research in Child Development, Philadelphia, PA.

**Timmons, L.**, Pruitt, M., & Ekas, N. (2015, March). A longitudinal study of parent discipline and compliance of children with and without autism spectrum disorder. Poster presented at the Society for Research in Child Development, Philadelphia, PA.

### PROFESSIONAL MEMBERSHIPS

Psi Chi National Psychology Honor Society, 2014 - Present  
Society for Research in Child Development, 2014 - Present  
International Society for Autism Research, 2013 - 2014

## ABSTRACT

### THE EFFECTIVENESS OF A GRATITUDE INTERVENTION AT IMPROVING WELL-BEING FOR PARENTS OF CHILDREN WITH AUTISM SPECTRUM DISORDER

by Lisa Nicole Timmons, M.S., 2012  
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Parenting is challenging, particularly for parents of children with autism spectrum disorder (ASD). Gratitude is a positive emotion, which has been used to increase well-being in interventions with chronically stressed populations. However, such programs have not been utilized with parents of children with ASD. An 8-week gratitude intervention using weekly writing activities about neutral life-events, gratitude, or child-specific gratitude was implemented to improve well-being of 67 mothers of children with ASD. Targeted areas of well-being included psychological well-being (e.g., depressive symptoms and affect), relationship well-being (e.g., couples' satisfaction and coping), and parenting-related well-being (e.g., parenting efficacy). A pre- and post- intervention assessment were administered using self-report measures. Those receiving the intervention were predicted to show increased well-being in all areas compared to baseline levels. However, no significant group differences attributed to the intervention were found. Qualitative analyses were conducted to explore the writing samples provided during the intervention.