

## The Relationship Between Parent Stress and Parent Language Use: A Critical Review and Pilot Study

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This study consists of a critical review and a pilot study examining the relationship between parent stress and parent language use. The purpose of the review was to examine the relationship between stress and language in parents of children who have been diagnosed with a variety of developmental disorders. Two studies were included in the critical review: one single group study design, and one between group study design. Findings from both of these studies yielded suggestive evidence of a relationship between parent stress and parent language use. The objective of the pilot study was to determine the effects of parent stress on how parents use language when interacting with their preschool-aged child diagnosed with Autism Spectrum Disorder (ASD). Parent language characteristics examined included parent directiveness, responsiveness, and total utterances. Results from the pilot study did not reveal significant findings of a direct relationship between parent stress and parent language use.

### *Introduction*

Although all parents face stress related to their children and their children's development, parents of children with special needs often experience high levels of stress (Sarant & Garrard, 2013). Children and adults diagnosed with Autism Spectrum Disorder (ASD) demonstrate impairments in both social interaction and social communication (American Psychological Association, 2013). These deficits have the potential to impact a parent's interactions with their child, as they may struggle to communicate effectively. In a study that examined stress levels of parents of young children with ASD, results showed that parents reported elevated parenting stress, and that deficits in children's social relatedness were associated with parent stress and distress (Davis & Carter, 2008). Therefore, it is evident that parents of children diagnosed with ASD undergo higher levels of distress than parents of typically developing children.

Parent language use, in frequency and quality, is known to have a direct impact on child language use and ultimately child achievement. Children who experience fewer episodes of high quality speech go on to have poorer vocabulary knowledge, lower academic and socio-economic outcomes (Hart & Risley, 2003). The term 'word gap' is a well-known phenomenon that describes how children, when consistently exposed to vocabulary less frequently and poorer in quality, experience an 'achievement gap' with less vocabulary and literacy skills than their counterparts who are exposed to much higher amounts

and quality of language (Hart & Risley, 2003). Thus, the quantity and quality of parent language use is well known to have an impact on a child's language development outcomes.

Numerous studies have demonstrated a relationship between parent stress levels and child language use (e.g. Edrisinha, 2012). Researchers have found that as expressive language increases in children with language disorders, parent stress was likely to decrease (Edrisinha, 2012). Evidently, there is a relationship between parent stress and child language, but *how* parent stress is related to child language development remains poorly understood.

Given evidence of these relationships between parent stress and child language use, and between parent language use and child language use, one possible connection in these relationships could be between parent stress and parent language. This connection has yet to be explored in past research. By determining if and how parent stress impacts parent language use, this gap in the literature will be more adequately explored. The effects of parent stress on child language may be the consequence of parent language use. Consequently, only research on the relationship between parent stress and parent language use was selected for the critical review.

In order to effectively target language development in children of ASD, speech-language pathologists (S-LPs) must also consider the language use of the parents. If there is a significant relationship between

parent stress levels and parent language use, then targeting parent stress will be a useful tool in language intervention for children diagnosed with ASD.

### ***Objectives***

The objective of this review and corresponding pilot study was to answer the following question: Is there a relationship between parent stress level and parent language use, in parents of children with developmental disorders?

### ***Study 1: Critical Review***

#### ***Methods***

##### ***Search Strategy***

Computerized databases including: PsychINFO, Google Scholar, and ASHA publications were searched with the following search strategy: (parent language) OR (parent interaction) AND (stress). Reference lists of previously searched articles were also used to obtain other relevant studies. The search was limited to articles in English.

##### ***Selection Criteria***

Search results yielded studies on both the effect of parent stress on parent language and child language. Only research on the relationship between parent stress and parent language use was selected.

##### ***Data Collection***

Results of the literature search yielded two articles fitting the selection criteria described above. One single group study without controls (Giralonetto & Tannock, 1994) and one between group study without controls (Thompson, Foster, & Kapinos, 2016).

#### ***Results***

**Giralonetto and Tannock (1994)** conducted a single group study (n=20 parents & child) without controls to examine the relationship between mother and father directiveness, child characteristics, and parenting stress in parents of preschool age children with a variety of disorders (e.g. developmental delay, down syndrome, seizures, chromosomal abnormalities) and language impairment. Only the relationship between directiveness and parenting stress was included in the

current review. The children's developmental status (mental age) and receptive language were appropriately determined using published measures. Parental stress measures were obtained through a published parenting stress index. Mothers and fathers then took turns playing with their children for 15-minute periods, with symbolic play toys, and interactions were transcribed and coded offline. Results revealed a positive correlation between parenting stress and the tendency of the parent to utilize questions and commands to elicit a response from their child, for both mothers and fathers. Stress levels for the participants were within the norm. The authors hypothesized that even when stress scores are within normal limits, stress may still affect interaction patterns.

Strengths of the study included detailed procedures sufficient for replication, and an appropriate study design. Weaknesses include the small sample size, parent report (N=3) that their children's behaviour during the study was unrepresentative, and the unnatural testing environment. As well, the sample included a variety of developmental disorders and language levels (mild-moderate language impairments) in the child participants who met inclusion criteria.

Overall, this study provides suggestive evidence that parental stress is related to how parents communicate with their child during play interactions. Specifically, it provides evidence that stress levels are positively correlated to response control.

**Thompson, Foster, & Kapinos (2016)** conducted a between group study comparing high and low SES groups to explore mothers' (n=18) use of scaffolding language during a collaborative problem solving activity with their preschoolers (n=17 males). Participants consisted of 25 English speaking parent-child dyads recruited from either private preschools (n=11 high SES) or Head Start centres (n=14 low SES). SES was independently established using a published index. The dyads participated in a 10-minute videotaped play session, with an unfamiliar complex toy. After the activity, parental stress was measured using a published index. Transcriptions were coded for frequency of parent question use compared to statement use. Among all families,

parenting stress was found to significantly predict the ratio of parents' questions to statements, with a reduced frequency of questions found in the high-stress group. Further, overall scaffolding talk (described as child directed, task-relevant language) was greater among high-stress high-SES parents in comparison to the low-stress high-SES parent group.

The strengths of this study include use of appropriately standardized questionnaires, and appropriate statistical analyses with control for child language level and play session. However, weaknesses include a small sample size as well as a disproportionate number of female participants, and no report of inter-rater reliability.

Overall, this study provides suggestive evidence that parenting stress is associated with reduced rates and proportion of talk structured as questions but only in those from high SES groups.

### ***Discussion***

The findings from these two studies provides suggestive evidence for a relationship between parent stress levels and parent language use. However, both studies were limited in their sample sizes, and varied in which aspects of parent-language use was considered and how these were defined (questions, commands, statements, scaffolding language etc.). It is clear that further research in this area is needed.

### ***Study 2: Pilot Study***

Results of study 1 revealed limited evidence regarding the association between parent stress and parent language, and the impact on child language development. As well, the available evidence cannot be generalized to the case of Autism Spectrum Disorder, given the unique communication deficits experienced by children in this group. The purpose of Study 2 was to examine the relationship between parental stress levels and parent language use (directiveness, responsiveness, and total language use) in parents of children with ASD.

### ***Methods***

The current study uses a set of data from a larger, randomized control trial (Casenhiser, Shanker, & Stieben, 2013), and analyzed 39 parent-child videotaped interactions. All children included in the study were English speaking, between the ages of 3 and 5 years, and had a diagnosis of ASD, as confirmed by The Autism Diagnosis Observation Schedule (ADOS) (Lord & Rutter, 2000) and The Autism Diagnostic Interview-Revised (ADI-R) (Le Couteur, Lord, & Rutter, 2003). Pre-treatment parent language was measured during parent-child interactions of natural play across a range of contexts (symbolic play, tactile play, and gross motor play). The videotaped interactions were comprised of fifteen minutes of access to symbolic toys, five minutes of access to tactile toys, and five minutes of access to gross motor toys. Symbolic toys included: Toy food, toy house, toy cars, a shopping cart, cash register, and puppets. Tactile toys included: a bucket of beans and balls of various sizes with textured surfaces. Gross motor toys included: a crash mat, exercise ball, spinning desk chair, and a trampoline.

Parent language was coded via CHILDES, and analyzed using CLAN and the kid eval program (Macwhinney, 2000).

Parent stress was measured through the completion of the Parent Stress Index Short Form (PSI/SF) (Abidin, 1990), a 36-item self-report screening tool which yields a Total Stress score derived from three subscales, as described in Table 1.

Table 1. *Brief Descriptions of the Subscales of the PSI/SF (Abidin, 1990)*

<u>Subscale</u>	<u>Description</u>
Parental Distress (PD)	The extent to which parents feel competent, restricted, conflicted, supported, and/or depressed in their role as a parent.
Parent-Child Dysfunctional Interaction (P-CDI)	The extent to which parents feel satisfied with their interactions with their child.
Difficult Child (DC)	How a parent perceives their child to be, whether the child is easy or difficult to take care of.
Total Stress	An indication of the overall level of stress a person is feeling in their role as a parent.

### **Results**

#### **Data analysis**

Hierarchical multiple regression analyses, using children's language levels and PSI/SF (Abidin, 1990) raw scores as independent variables, were used to test if there were significant effects on parents' language use (directiveness, responsiveness, and total language used). Child language level was entered at stage one of the regression, to control for the effect of child language on parent language use. The PSI/SF Total Stress raw score was entered at the second stage of the regression.

#### **Parent Responsiveness**

Results from hierarchical regression revealed that child language level did not contribute significantly  $F(1,37) = 3.34, p > .05$  and accounted for 8.3% of the variation in parents' proportion of utterances that were responsive. Introducing parent stress explained an additional 1.2% of the variation in parental responsiveness. This change was not significant,  $F(2,36) = 1.90, p > .05$ . Together the two independent variables accounted for 9.5% of the variability. Regression statistics are reported in Table 2.

#### **Parents' use of Directives**

Results from a hierarchical regression revealed that child language level did not contribute significantly  $F(1,37) = 0.14, p > .05$  and accounted for 0.4% of the variation in parents' proportion of directive utterances. Introducing parent stress explained an additional 1% of the variation in parental directiveness. This change was not significant,  $F(2,36) = 0.26, p > .05$ . Together the two independent variables accounted for 1.4% of the variability in parent directiveness. Regression statistics are reported in Table 3.

#### **Parent Total Utterances**

Results from hierarchical regression revealed that child language level did not contribute significantly,  $F(1,37) = 0.71, p > .05$  and accounted for 1.9% of the variation in parents total number of utterances. Introducing parent stress explained an additional 1.6% of the variation in the total number of utterances parents used. This change was not significant,  $F(2,36) = 0.36, p > .05$ . Together the two independent variables accounted for 3.5% of the variability. Regression statistics are reported in Table 4.

### **Discussion**

Although the results of the current study did not demonstrate a relationship between total parent stress and parent language use, there is still a clear correlation between parent stress and child language use. It is not conclusive how parent language contributes to this correlation. Further research into what factors are contributing to this correlation between child language use and parental stress needs to be explored.

The impact of parent stress on parent language use may be more directly related to the child. For example, parent-child dysfunctional interaction or difficult child scores, as measured by the PSI/SF (Abidin, 1990) may be related to parent language use. Future research should examine this relationship, as although total parent stress was not related to parent language use, parent stress directly related to their child may be. It is important to consider clinical strategies that may reduce parental stress within

parent-child interactions to reduce the risk of the child not contributing to the interaction at all.

A potential limitation of the current study is that PSI/SF (Abidin, 1990) forms were not consistently completed on the same day as the collection of the language sample. Parent stress and parent language use may both differ depending on the time of measurement, which could impact the results. Measuring stress levels on the same day as the collection of the language sample may produce more reliable results, and lead to a more accurate understanding of the direct relationship between the two. Additionally, future research might consider incorporating a heart rate monitor as a tool to determine parental stress moment-by-moment, as low heart rate variability is known to be indicative of high psychological stress (Kim, Cheon, Bai, Lee, & Koo, 2018).

### General Discussion

The purpose of this critical review and accompanying pilot study was to determine if there was a significant relationship between parental stress levels and parent language use in parents of preschool-aged children with ASD. Although literature examined in the critical review provided suggestive evidence for such a relationship in parents of children with developmental delays and language disorders, the current study did not contribute significant findings showing a direct relationship between parent stress and language use in parents of children with ASD

and should therefore not inform clinical practice. It remains important to assess individual cases to determine if parent stress levels are impacting parent language use and examine any implications this may have on child language development.

### Clinical Implications

Numerous studies have found a significant relationship between parent stress levels and child language development (e.g. Edrisinha 2012, Sarrant & Garrard 2013, Magill-Evans & Harrison 2001). The current critical review and pilot study aims to shorten the gap between these two factors. Although the pilot study revealed no significant relationship between total parent stress and parent language use, parent stress still needs to be considered in language intervention, due to its proven relationship with child language use. Providing parents with easy-to-complete stress questionnaires like the PSI/SF (Abidin, 1990) can provide S-LPs with valuable information regarding parent stress levels, which can help guide an S-LP's plan for intervention.

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Table 2. *The Relationship Between Parent Responsiveness, Child Language Level, and Parent Stress*

Variable	$\Delta R^2$	<i>B</i>	<i>SE B</i>	$\beta$	<i>p</i>
Step 1	0.06				
Child language level		0.04	0.02	0.29	>.05
Step 2	0.05				
Child language level		0.04	0.02	0.29	>.05
Parent total stress		-0.00	0.00	-0.11	>.05

Table 3. *The Relationship Between Parents' Use of Directives, Child Language Level, and Parent Stress*

Variable	$\Delta R^2$	<i>B</i>	<i>SE B</i>	$\beta$	<i>p</i>
Step 1	-0.02				
Child language level		-0.01	0.02	-0.06	>.05
Step 2	-0.04				
Child language level		-0.01	0.02	-0.06	>.05
Parent total stress		-0.00	0.00	-0.10	>.05

Table 4. *The Relationship Between Parent Total Utterances, Child Language Level, and Parent Stress*

Variable	$\Delta R^2$	<i>B</i>	<i>SE B</i>	$\beta$	<i>p</i>
Step 1	-0.01				
Child language level		37.44	44.29	0.14	p>.05
Step 2	-0.02				
Child language level		35.29	44.62	0.13	p>.05
Parent total stress		-0.10	1.26	-0.13	p>.05

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