Journal on Developmental Disabilities
Le journal sur les handicaps du développement
JoDD
Volume 16, Number 2, 2010

BRIEF REPORT: The Relationship Between Parental Stress and Intervention Outcome of Children with Autism

Authors

Rebecca Shine,
Adrienne Perry

Department of Psychology,
York University,
Toronto, ON

Correspondence

rshine@yorku.ca

Keywords

autism,
mothers,
IBI,
parental stress

Abstract

This study examined stress levels in 151 mothers of children with autism, at the time their children were beginning Intensive Behavioural Intervention (IBI), in relationship to the rate of progress and outcomes for the children at the time of exiting the IBI program. There was a modest negative correlation between mothers' stress and child's adaptive skills and a trend for lower stress among mothers whose children achieved better outcome classifications.

In 2008, Perry and colleagues examined the effectiveness of Ontario's province-wide Intensive Behavioural Intervention (IBI) initiative. While they found that the children in this program showed reductions in autism severity and gains in cognitive and adaptive levels, there was considerable heterogeneity in outcome. Approximately one-quarter of the sample achieved good outcomes, one-half demonstrated modest improvement, and one-quarter did not improve. Some variables that may have accounted for this diversity in outcomes include those related to the child (e.g., age, IQ), intervention, and family (Perry et al., 2008). This paper focuses on how family variables, specifically parental stress, relate to the child's outcome.

Only two studies in the literature have examined the question of whether parents' stress levels affect their children's progress in intervention; these used different interventions and measures of stress. Robbins, Dunlap, and Plienis (1991) found an inverse relationship between the levels of parental stress at the time of program entry and the progress that was demonstrated by 12 children with autism in a pivotal response type behavioural program. Osborne, McHugh, Saunders, and Reed (2008) examined the effect of parental stress on the outcomes of different types of teaching interventions of high or low intensity for 65 children with Autism Spectrum Disorder (ASD) and found a significant interaction effect. In particular, that initial parental stress had a negative impact on child outcomes for high intensity interventions.

In the present study, we examined the relationship between mothers' stress and children's outcomes in IBI. We hypothesized that a higher level of parental stress at the time of entry into the IBI program would relate to a slower rate of progress and less optimal outcomes for children at the time of exit from the program.

Method

Ethics approval was obtained through York University to conduct a file review of data collected from the nine IBI programs who participated in the Perry et al. study (2008), which had also received ethics clearance through the University.

Data reviewed included assessments of the children (at entry and exit from the program) and parents (at entry to the program). The children's measures included the Childhood Autism Rating Scale (CARS; Schopler, Reichler, & Renner, 1988) and the Vineland Adaptive Behavior Scales (VABS; Sparrow, Balla, & Cicchetti, 1984). Table 1 provides further information about the children. The present study also includes data from all files in which the child's mother completed the Parenting Stress Index/Short Form (PSI/SF; Abidin, 1995) at intake (or Time 1) (n = 151); this represents about half the sample described in Perry et al. (2008). The PSI/SF has three subscales but only the Parental Distress subscale was used here. Higher scores indicate greater distress.

Table 1. Child Characteristics (n = 151)

	n	%
Gender		
Female	33	21.9
Male	118	78.1
Initial Diagnosis (n = 150)		
Autism or Autistic Disorder (AD)	99	66.0
PDD-NOS	26	17.3
ASD/PDD	25	16.7
	M (SD)	*Range*
Age (months) at start of IBI	52.61 (13.44)	20–85
Duration (months) of IBI	19.29 (9.08)	4–47

The dependent variables included Time 2 (i.e., at exit from the program) scores on the CARS and VABS, as well as rate of development during IBI and child's outcome category. Rate of development during IBI was calculated by taking the difference between the age equivalent scores on the VABS at time 1 and time 2, divided by the duration of IBI. The seven categories describing the outcome/progress of the children created by Perry et al. (2008) were collapsed into three categories for the present study: Good outcomes (including the original Average functioning and Substantial improvement subgroups); Modest outcomes (including Clinically significant improvement, Less autistic, and Minimal improvement subgroups); and Poor outcomes (including No change and Worse subgroups).

Results

To test the hypothesis that higher levels of parental stress at Time 1 would relate to less optimal outcomes for children at Time 2, correlations were computed for the mothers' PSI Parental Distress scores and the following child variables: Rate of Development during IBI, CARS total score (Time 2), and VABS ABC score (Time 2). As shown in Table 2, the only significant correlation was with VABS ABC (Time 2) (r = -.231 p < .01), indicating that higher stress in mothers at Time 1 was associated with lower adaptive behavior skills at Time 2.

Table 2. Correlations between Parental Distress and Child Variables

Measures	*PSI-PD*
Rate of Development	-.123
CARS Total (T2)	.081
VABS ABC (T2)	-.231*

*p < .01

A one-way ANOVA of the PSI Parental Distress score for the three outcome/progress categories was not significant (F (2,148) = 1.065, *ns*); though there appeared to be a trend among variables in the direction predicted (Figure 1). Children with poor outcomes at Time 2 had parents with somewhat higher parental distress scores than the modest outcome groups, whose stress appeared somewhat higher than the good outcome group.

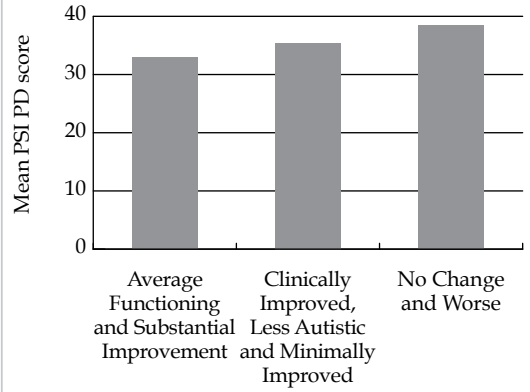

Figure 1. Parental Distress Mean Scores and Child Outcome/Progress Categories

Discussion

Contrary to our hypothesis, the predicted relationship between parental distress and child outcome did not prove to be significant. However, the trend was in the direction predicted. The measure of the child's adaptive behaviour was significantly negatively correlated with parental distress. This relationship indicated that parents with higher initial stress had children with somewhat lower adaptive behavior skills at exit, supporting our hypothesis to some extent, but the relationship was quite weak.

The two previous studies that have examined a similar relationship to the one studied here (Osborne et al., 2008; Robbins et al., 1991) both found a relationship between parental stress and child outcome. However, they examined different types of interventions for children with autism, which were largely parent directed. In these types of interventions, the parents' stress would most likely have a much more pronounced impact on the child's progress as the parent is responsible for teaching the intervention.

Another possible reason for the difference may be the conceptualization and measurement of parental stress. In the current study, stress was measured without the inclusion of stressors (see Perry, Harris, & Minnes, 2004), whereas other researchers have used a total score which includes both stressors and distress. The inclusion of stressors in the analysis could have inflated the parental stress scores, possibly creating the appearance of a relationship.

Though no statistical relationship existed between parental distress and child progress in IBI, future research should continue to examine this relationship with the inclusion of additional variables, such as parent involvement, coping, and other life stressors. Other interesting research questions would be to compare mothers' and fathers' data, as well as look at changes in stress over time in relation to child progress.

Acknowledgements

The authors wish to acknowledge the authors of the original Perry et al. (2008) study who have graciously allowed the parent data to be used for this project: Anne Cummings, Jennifer Dunn Geier, Nancy Freeman, Susan Hughes, Louise LaRose, Tom Managan, Jo-Ann Reitzel, and Janis Williams.

References

Abidin, R. R. (1995). *Parenting Stress Index* (3rd Edition). Professional Manual. Odessa, FL: Psychological Assessment resources Inc.

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 & Developmental Disorders*, *38*, 1092–1103.

Perry, A., Cummings, A., Dunn Geier, J., Freeman, N. L., Hughes, S., LaRose, L., et al. (2008). Effectiveness of intensive behavioral intervention in a large community based program. *Research in Autism Spectrum Disorders*, *2*, 621–642.

Perry, A., Harris, K., & Minnes, P. (2004). Family environments and family harmony: An exploration across severity, age, and type of DD. *Journal on Developmental Disabilities, Special Issue on Families of Individuals with DD*, *11*, 17–29.

Robbins, F. R., Dunlap, G., & Plienis, A. J. (1991). Family characteristics, family training, and the progress of young children with autism. *Journal of Early Intervention*, *15*, 173–184.

Schopler, E., Reichler, R. J., & Renner, B. R. (1988). *The Childhood Autism Rating Scale (CARS)*. Los Angeles: Western Psychological Services.

Sparrow, S. S., Balla, D. A., & Cicchetti, D. V. (1984). *Vineland Adaptive Behavior Scales. Interview Edition, Survey Form Manual*. Circle Pines, MN: American Guidance Service.