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Perceived Competence and Behavioral Adjustment of Siblings of Children with Autism

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Compared 19 siblings of severely autistic children with 20 siblings of children with Down syndrome and 20 siblings of developmentally normal children. Results reveal that siblings of autistic children have more internalizing and externalizing behavior problems than siblings of developmentally normal children; however, the three groups did not differ significantly on measures of perceived self-competence or parents' report of social competence. Examination of demographic variables indicate that age of sibling and parents' marital satisfaction were associated with siblings' psychological functioning. Implications for future research are discussed.

Sibling interactions are essential and powerful components of socialization because they foster the development of important instrumental and affective relationship skills (Cicirelli, 1985). What is learned from relating to siblings can potentially influence cognitive, affective, and social skills as well as the development of a positive self-image. Positive and frequent sibling interactions provide important sources of emotional support (Dunn & Kendrick, 1982), whereas negative and infrequent sibling interactions may disrupt the psychological adaptation process (Bryant, 1982).

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Considering the importance of sibling relations in the context of child development, it is not surprising that researchers have begun to investigate the psychological adaptation of siblings of chronically ill or handicapped children (e.g., Dyson, 1989; Hanson et al., 1992). The importance of examining the psychological functioning of siblings also has been highlighted by the apparent disruption and subsequent reorganization of family structure and functions often necessitated by the presence of a child with special needs (Howlin, 1988; Morgan, 1988; Simeonsson & McHale, 1981). It is commonly assumed that siblings of handicapped children are more susceptible to psychological maladjustment than siblings of healthy children. Indeed, nonhandicapped siblings may experience numerous stressors, including loss of parental attention, changes in family roles, structure, and activities, identification with the handicapped child, feelings of guilt and shame, and the negative reactions of others outside the family. Adjustment difficulties may be even more pronounced in small families, as the burden of care cannot be easily shared and attention from other siblings is not available to compensate for reduction in parental attention. Furthermore, increases in parental stress may have concomitant or residual effects on siblings in the family (Morgan, 1988).

Despite these commonly held beliefs about the high risk of poor psychological adjustment among siblings of handicapped children in general, the extant literature reveals equivocal findings. Some researchers have reported detrimental effects among siblings of handicapped children (e.g., Ferrari, 1987; Harvey & Greenway, 1984), whereas others have reported no discernible adjustment difficulties (Dyson, 1989; Ferrari, 1984; Gath, 1972; Gayton, Friedman, Tavormina, & Tucker, 1977). Recently, McHale and Pawletko (1992) found that siblings of disabled children spent more time on chores than disabled children and siblings of nondisabled children, and mothers spent more time in activities such as help and play with the disabled child compared to the nondisabled siblings. However, siblings of disabled children spent more time in play with mothers than did siblings of nondisabled children, perhaps suggesting that mothers may try to compensate for differential treatment in some situations. McHale and Pawletko also found that mothers reported using discipline strategies characterized by more negative love, less positive love, and power assertion more frequently for younger disabled children than for their nondisabled siblings. This differential treatment was associated with higher levels of depression and anxiety in siblings of disabled children. These findings provide some of the first empirical evidence that siblings of disabled children may experience differential maternal treatment, and possibly negative emotional consequences, relative to siblings of healthy children.

It has been suggested that the greater complexity, unpredictability, and inexplicability of the symptoms exhibited by children with autism place their siblings at even higher risk for poor psychological adjustment than siblings of children with other disabilities (Morgan, 1988). However, despite a few well-controlled studies (e.g., Mates, 1990; McHale, Sloan, & Simeonsson, 1986), the research base in this area is small and no less equivocal than in other studies of sibling adjustment. Moreover, some of these disparate findings can be attributed to methodological inadequacies, including the lack of control groups, use of nonequivalent comparison groups, and reliance on nonstandardized instrumentation (Dyson, 1989; Morgan, 1988; Simeonsson & McHale, 1981).

To help clarify some of these issues, we examined the psychological adjustment of siblings of autistic children in comparison with those of children with Down syndrome and those of nonhandicapped children. We were primarily interested in siblings' perceived self-competence as well as parents' perceptions of their social and behavioral functioning. Based on prior research regarding the differential functioning of siblings of disabled children, it was hypothesized that siblings of children with autism and Down syndrome would have lower perceived self-competence and poorer social and behavioral adjustment than siblings of healthy children.

A secondary purpose of the study was to examine the relationships between selected variables and sibling adjustment while controlling for the degree of disability in the autism and Down syndrome groups. For instance, the relationship between sibling functioning and demographic variables such as age and gender might help to identify those siblings that are most susceptible to adjustment difficulties. Similarly, since the processes linking marital conflict and child adjustment are well established (Emery, 1982), the relationship between marital satisfaction and the differential adjustment of siblings seems important to examine. Indeed, the combination of living with marital conflict and the familial demands associated with having a disabled child may place siblings at higher risk for social and behavioral difficulties.

METHOD

Subjects

Subjects were 39 biological siblings of children with either autism ($n=19$, 10 female, 9 male) or Down syndrome ($n=20$, 10 female, 10 male) and 20 (12 female, 8 male) biological siblings of developmentally normal children. Mean age of siblings (i.e., subjects) in the autism, Down syn-

drome, and developmentally normal groups were 10.22 (SD=4.2), 11.05 (SD=3.9), and 9.45 (SD=3.3) years, respectively. These subjects and their families were part of a larger research project examining the psychosocial adaptation of families rising a child with a developmental disability (Rodrigue, Morgan, & Geffken, 1990, 1992). Families participating in this project were intact, predominantly white (90%), and middle to upper-middle class (Hollingshead, 1975), and were matched on the basis of the targeted child's gender, race, siblings' age, gender, and birth order, as well as family size and socioeconomic status. There were no significant between groups differences ($p > .05$) on these demographic variables, except targeted child's chronological age, $F(2, 56) = 21.76$, $p < .001$.

One unique aspect of this sample is that targeted children were matched on the basis of mental age, rather than chronological age, to guard against a possible confound of disability and adaptive behavior. Thus, children with autism and Down syndrome were chronologically older than healthy children. Mean chronological age of the child with autism, Down syndrome, or normal development was 10.98, 11.93, and 3.80 years, respectively. However, their mean composite age equivalent as determined by the Vineland Adaptive Behavior Scale (Sparrow, Balla, & Cicchetti, 1984) was 2.82 years for the autism group, 3.85 years for the Down syndrome group, and 3.75 years for the developmentally normal group. Thus, the subjects in the autism and Down syndrome groups reported in this study were siblings of children with severe developmental disabilities.

Measures

Perceived Competence. Siblings were administered either the Perceived Competence Scale for Children (PCSC; Harter, 1979, 1982) or the Pictorial Scale of Perceived Competence and Social Acceptance for Young Children (PCSA; Harter & Pike, 1981), depending on their chronological age. The PCSC is a 28-item, self-administered instrument that measures children's perceived competence across four domains: cognitive competence, social competence, physical competence, and general self-esteem. The PCSC has high internal consistency as well as good convergent, construct, and discriminant validity (Harter, 1982, 1983). The PCSA is a 24-item, interviewer-administered instrument that assesses perceived competence across four dimensions: cognitive competence, peer acceptance, physical competence, and maternal acceptance. For the purposes of this study, a global index of perceived competence was obtained by summing the PCSC or PCSA subscale items, converting the subscale scores to Z scores, and then summing the Z scores.

Social and Behavioral Adjustment. The 124-item Child Behavior Checklist (CBCL; Achenbach & Edelbrock, 1983) was used to provide a global assessment of siblings' social skills, activities, relationship patterns, school performance, and general psychological development. In the present study, the Social Competence Scale (SCS) of the CBCL was used as an index of siblings' social functioning. The SCS consists of three subscales that measure children's involvement and competence in school, peer activities, and social relationships. These subscales were summed to provide an overall index of siblings' social competence. Also, *T* scores were computed for the two global patterns of behavior on the CBCL labeled "internalizing" and "externalizing." High scores on the internalizing dimension suggest inhibited, shy-anxious personality problems, whereas high scores on the externalizing dimension indicate aggressive, acting-out behaviors. The CBCL was completed only by the mother since interparent reliability is high for this instrument (Achenbach & Edelbrock, 1983).

Marital Satisfaction. The 15-item Marital Adjustment Scale (MAS; Locke & Wallace, 1959) was used to assess both mothers' and fathers' level of marital satisfaction. The MAS is one of the most widely used instruments of marital adjustment (O'Leary & Turkewitz, 1978).

Procedure

All siblings were administered the study instruments during an extended home visit conducted by either the first author or an advanced graduate student. Mothers completed the CBCL and the MAS and fathers completed the MAS as part of a packet of questionnaires they received prior to the home visit. In an effort to establish rapport with younger siblings, the PCSC or PCSA was administered only after the interviewer had interacted informally with the entire family and had played casually with the sibling using his or her toys. All families were informed about their rights as research participants, including confidentiality and the privilege to discontinue participation at any time during the investigation. One female sibling of a child with autism subsequently refused to participate during the home visit.

RESULTS

Table I presents the means and standard deviations of the study instruments. A series of 3 (Group) × 2 (Target Child's Gender) × 2 (Sibling's Gender) analyses of variance (ANOVAs) were performed on siblings'

Table I. Means and Standard Deviations for Siblings' Perceived Competence (PCSC, PCSA) and Social and Behavioral Adjustment (CBCL)

	Autism (n = 19)		Down (n = 20)		Normal (n = 20	
	M	*SD*	*M*	*SD*	*M*	*SD*
PCSC[a]						
Scholastic competence	21.31	3.28	18.27	3.49	19.50	3.66
Social acceptance	20.15	2.91	19.07	2.22	18.90	4.75
Athletic competence	18.54	4.22	17.60	3.40	18.30	3.68
Physical appearance	19.08	3.12	18.73	3.35	19.70	2.71
Behavioral conduct	20.23	3.14	19.33	2.13	18.80	2.04
Global self-worth	19.77	2.28	19.33	2.61	19.90	3.67
PCSA[b]						
Cognitive competence	20.83	1.94	19.40	3.91	20.90	3.04
Physical competence	19.17	3.54	20.40	1.67	20.30	4.45
Peer acceptance	18.50	4.46	18.20	4.71	21.20	2.57
Maternal acceptance	16.17	4.58	17.20	4.32	21.40	2.12
CBCL (T scores)						
Social competence	39.66	9.26	40.75	8.85	42.98	10.89
Internalization	56.84	11.30	51.20	8.82	46.05	8.46
Externalization	55.95	8.80	51.75	7.50	49.60	8.07

[a]Autism (n = 13), Down syndrome (n = 15), normal (n = 10).
[b]Autism (n = 6), Down syndrome (n = 5), normal (n = 10).

PCSC or PCSA (converted to Z scores), CBCL-SCS, CBCL-Internalizing, and CBCL-Externalizing scores. Analyses revealed significant group main effects for siblings' CBCL-Internalizing score, $F(2, 46) = 5.72$, $p < .01$, and CBCL-Externalizing score, $F(2, 46) = 3.35$, $p < .05$. Post hoc analyses (Scheffé) revealed that siblings of children with autism were reported by their mothers to have more internalizing and externalizing problems than were siblings of developmentally normal children. Siblings of children with Down syndrome did not differ significantly from either siblings of children with autism or siblings of developmentally normal children. It should be emphasized that the internalizing and externalizing problems of siblings of autistic children were not in the range of clinical significance (Achenbach & Edelbrock, 1983).

To determine whether siblings' ordinal position relative to the target child was related to perceived competence or social and behavioral adjustment, a 2 (Group: autism or Down syndrome) × 2 (Siblings' Gender) × 2 (Birth Order: before or after target child) ANOVA was conducted. Siblings of developmentally normal children were not included in this analysis be-

cause the vast majority of them were older than the target child. Analyses revealed no significant main or interaction effects for any of the indices of perceived competence or social and behavioral adjustment (all p's $> .05$).

Pearson product-moment correlations were computed to investigate whether there was a relationship between sibling adjustment and other pertinent variables, including sibling age and gender, target child's chronological and mental age, socioeconomic status, and parents' marital satisfaction. Results indicated that older siblings in all three groups were likely to have higher internalizing problems (autism, $r = .63$, $p < .01$; Down syndrome, $r = .41$, $p < .05$; developmentally normal, $r = .39$, $p < .05$). In addition, older siblings of children with autism also were likely to have more externalizing problems ($r = .58$, $p < .01$). In contrast, older siblings of developmentally normal children tended to have higher social competence ($r = .50$, $p < .05$). Finally, greater marital satisfaction among mothers ($r = .51$, $p < .01$) and fathers ($r = .46$, $p < .05$) of children with autism was strongly associated with higher levels of sibling perceived competence. Subsequent r to Z transformations revealed no differences in correlations across groups.

DISCUSSION

Findings regarding the psychological adjustment of siblings of children with autism are equivocal and difficult to interpret in light of significant methodological weaknesses. To help clarify this literature, the psychological functioning of siblings of autistic children was compared with that of siblings of children with Down syndrome and normal development. Siblings of children with autism did not differ significantly from siblings of children with Down syndrome or normal development on measures of self-competence or social competence. Although siblings of children with autism had more internalizing and externalizing behavior problems when compared to the other siblings in this study, their mean scores on these two dimensions of the CBCL fell within the normative range. Therefore, unlike recent research findings with older siblings of children with mental retardation (McHale & Pawletko, 1992), our findings suggest that siblings of developmentally disabled children in general, and siblings of autistic children in particular, are not especially vulnerable to adjustment difficulties. These results are, however, consistent with some earlier research (Dyson, 1989; Ferrari, 1984; Gath, 1974; Graliker, Fishler, & Koch, 1962; McHale, Sloan, & Simeonsson, 1984, 1986).

Some reviewers (Howlin, 1988; McHale et al., 1984; Morgan, 1988; Simeonsson & McHale, 1981) have noted that there are numerous child, sibling, and family characteristics that potentially influence sibling adjust-

ment. Our correlational analyses revealed that only two such characteristics were significantly associated with sibling adjustment: sibling age and marital satisfaction. Older sibling age was related to higher rates of both internalizing and externalizing behavior problems in siblings of children with autism. Consistent with previous findings, it may be that older siblings experience more difficulties because of abrupt changes in family life upon the introduction of a developmentally disabled child (Gath, 1974). Moreover, older children may be more likely to be held responsible for domestic chores and partial care of the disabled child, thus promoting additional stress (McHale et al., 1984). Problems may develop for the sibling because increased parental expectations are not always accompanied by increases in parental time and attention.

Higher marital satisfaction among parents of children with autism was also associated with higher levels of self-esteem in siblings. This finding is consistent with research in the family relations literature which indicates that parents are not the only potential benefactors of positive marital relations (Henggeler & Borduin, 1990). With satisfying marriages, both parents (Rodrigue et al., 1990. 1992) and siblings appear to adjust better to having a developmentally disabled child in the family. Thus, in addition to positive association between larger family size and adaptation of siblings reported by some researchers (e.g., Dyson, 1989), the quality of the relationships within the family system likely serves an important role in mediating this association and should be examined in future research.

Overall, our results suggest that siblings of children with developmental disabilities are not necessarily susceptible to poor psychological functioning, as might be inferred from the earlier child and developmental literatures. Yet, professionals should attend to those variables that may affect siblings' reactions to a child with special needs and that may increase their risk of behavioral maladjustment, including older age and family relations. It would be useful for future research to evaluate the relationships in families of handicapped children using direct observational methods. For instance, researchers might examine the ways in which siblings, particularly older ones, resolve problems and conflicts with their parents. Such studies would provide important and useful information about the degree to which both sibling relationships and family relations in general contribute to siblings' adaptation across dimensions of individual, family, and social functioning.

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