Comorbid Anxiety Symptoms in Children with Pervasive Developmental Disorders

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Abstract—The present study examined the prevalence of comorbid anxiety symptoms in 44 children with pervasive developmental disorders. Parents of the children were interviewed using the Anxiety Disorders section of the Diagnostic Interview Schedule for Children. Results indicated that severe anxiety symptoms are highly prevalent in children with pervasive developmental disorders: 84.1% of the children met the full criteria for at least one anxiety disorder. Furthermore, 72.7% of the children displayed ritualistic behaviors. Implications of the findings are discussed. © 1998 Elsevier Science Ltd

DSM-IV (American Psychiatric Association, 1994, p. 65) defines pervasive developmental disorders (PDD) as disorders that are “characterized by severe and pervasive impairment in several areas of development: reciprocal social interaction skills, communication skills, or the presence of stereotyped behavior, interests, and activities.” Apart from these core features, PDD children frequently present a variety of other, less specific, emotional and behavioral prob-

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lems. Clinical reports suggest that some of these problems are closely linked to fear and anxiety. For example, several clinicians point out that PDD children often show inappropriate fear responses. Some of these children are extremely afraid of commonplace items and situations and become terrified when confronted with them. Other PDD children may display absolutely no fear at all in situations where there is real danger (e.g., Wing, 1976). In the DSM-IV, this clinical impression is briefly mentioned: “There may be a lack of fear in response to real dangers, and excessive fearfulness in response to harmless objects” (p. 68).

Some authors believe that fears and other anxiety symptoms are quite prevalent among autistic children. Thus, Marks (1987) noted that “for some reason, fears are common in subnormal and especially autistic children” (p. 420). Preliminary evidence for this notion comes from a study by Matson and Love (1990). In that study, 14 autistic children matched for age and sex with nonhandicapped peers were rated by their parents on the revised Fear Survey Schedule for Children (Ollendick, 1983). Results showed that common fears were more frequent in autistic children than in nonhandicapped controls.

To the present authors’ knowledge, there is only one study that has systematically investigated the frequency of anxiety disorder symptoms in PDD. In that study, Rumsey, Rapoport, and Sceery (1985) examined psychopathological symptoms in an adult population of 14 men with well-documented histories of infantile autism. These authors found evidence for generalized anxiety (50%), separation anxiety (14%), phobia (7%), obsessional thinking (29%), and compulsion (21%) in their sample. The authors interpreted most of these symptoms as concomitant features of the autistic disorder (AD), and consequently no additional DSM-III (American Psychiatric Association, 1980) anxiety disorder diagnoses were made. However, Rumsey et al. also acknowledged that, had the diagnosis of autism not been made, some of their patients would have met the criteria for generalized anxiety disorder and simple phobia.

In sum, then, although clinicians and previous studies strongly suggest that fear and anxiety symptoms are common in PDD, few studies have actually examined the prevalence of these symptoms in a systematic fashion. Why is it important to evaluate the prevalence rates of anxiety symptoms in PDD children? A straightforward answer is that anxiety symptoms might represent an additional handicap for PDD children. Howlin and Rutter (1987) rightly remarked that “although such problems are not specific to autism, . . . they, too, require treatment” (p. 93).

The present study examined the prevalence of anxiety symptoms in a sample of PDD children. Parents or guardians of 44 PDD children were interviewed using the Anxiety Disorders section of the Diagnostic Interview Schedule for Children (DISC; National Institute of Mental Health, 1992). Strictly speaking, PDD represent a superordinate diagnosis, and therefore a number of anxiety disorders (e.g., social phobia) cannot be diagnosed. Nevertheless, we chose this
method to get a more detailed picture of severe comorbid anxiety symptoms in PDD.

**METHOD**

Participants were 59 children from the database (1993, 1994, and 1995) of the Centre of Autism South-Limburg, the Netherlands. These children had undergone extensive psychodiagnostic and psychiatric screening and were classified on the basis of DSM-III-R criteria (American Psychiatric Association, 1987) as either having AD or ‘‘pervasive developmental disorder not otherwise specified’’ (PDDNOS). Diagnoses had been made by the specialized, multidisciplinary team of professionals of the Centre of Autism. The professionals had experience with autistic children for at least 5 years. IQ scores of the children as determined by means of the Snijders-Oomen Non-Verbal Intelligence Test (SON 2/2–7; Snijders & Snijders-Oomen, 1975), the Dutch version of the Wechsler Preschool and Primary Scale of Intelligence (Wechsler, 1989), or the Dutch version of the Wechsler Intelligence Scale for Children (Wechsler, 1974) were available. These IQ measures are widely used in The Netherlands. Research has shown that these instruments have satisfactory psychometric properties and yield similar IQ scores (Van Doorn, 1992).

Parents of the children were sent a letter in which they were informed about the purpose of the study, ‘‘Anxiety Symptoms in PDD Children.’’ One month later, parents were contacted by telephone and asked whether they were willing to participate. Eventually, 44 parents or guardians (74.6%) volunteered to participate in the study. As a result, the final sample consisted of 15 AD children and 29 PDDNOS children. They had a mean age of 9.7 years ($SD = 4.8$, range = 2–18) and a mean IQ score of 79.5 ($SD = 14.0$, range = 59–116). AD children were significantly younger, with mean ages being 5.9 years ($SD = 3.4$) versus 11.6 years ($SD = 4.3$), $t(42) = -4.4$, $p < .001$, and had lower IQ levels than PDDNOS children, with mean IQ scores being 70.5 ($SD = 7.7$) versus 84.1 ($SD = 13.6$), $t(42) = -3.4$, $p < .005$.

Parents were interviewed at home by a trained research assistant using the Anxiety Disorders section of the DISC (Version 2.3; National Institute of Mental Health, 1992). The research assistant was blind as to the precise diagnoses of the children.

The DISC is a highly structured interview that asks for the occurrence of emotional disorders during the last 6 months in terms of DSM-III-R criteria. Previous research has shown that the DISC (Version 2.3) possesses adequate test-retest reliability (Schwab-Stone et al., 1993), sufficient interrater reliability (Shaffer et al., 1993), and acceptable validity (Piacentini et al., 1993). The Anxiety Disorders section consists of 154 items and covers simple phobia, social phobia, agoraphobia, panic disorder, separation anxiety disorder, avoidant dis-
TABLE 1

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<tr>
<th>No. (%) of PDD Children (N = 44)</th>
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<td>Overanxious disorder</td>
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<td>Obsessive-compulsive disorder</td>
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Note. PDD = pervasive developmental disorders.

RESULTS

The average interview lasted for 63.3 minutes (SD = 23.2, range = 30–120). In most cases, the mother provided information on the anxiety symptoms of the child (n = 31). In other cases, both parents (n = 9), the father (n = 1), the grandmother (n = 1), or the social worker of the institution in which the child resided (n = 2) were interviewed.

Table 1 shows the number (percentage) of children who fulfilled DSM-III-R criteria for the separate anxiety disorders. On the whole, 37 of 44 PDD children (84.1%) met the full criteria for at least one anxiety disorder. Thus, severe comorbid anxiety symptoms were highly prevalent in PDD children.

The most common anxiety disorder was simple phobia (n = 28; 63.6%). In 15 children, multiple simple phobias were observed. These phobias were directed at doctors (n = 14), dentists (n = 13), thunderstorms (n = 7), darkness (n = 4), water (n = 3), insects (n = 3), blood (n = 3), heights (n = 2), dogs (n = 3), rabbits (n = 1), and balloons (n = 1).

Panic disorder (n = 4; 9.1%) was the least frequent anxiety disorder. However, it should be noted that, in 25 children (56.8%), isolated panic attacks regularly occurred. In most cases, however, children did not receive the diagnosis simply because parents or guardians could not provide sufficient information about the physical symptoms of their child during these “attacks.” The occurrence of at least four physical symptoms (e.g., shortness of breath, dizziness, palpitations, sweating) is one of the crucial DSM-III-R criteria for making the diagnosis of panic disorder (American Psychiatric Association, 1987). A similar
comorbid anxiety symptoms in children (n = 5; 11.4%). Although the vast majority of the children (n = 32; 72.7%) exhibited rituals such as ordering, washing, checking, counting, collecting, and so on, only five actually met the diagnostic criteria for OCD because most parents or guardians did not know whether these rituals caused distress in the children.

To compare the prevalence of anxiety symptoms in AD children and PDDNOS children, chi-square analyses were carried out. Results revealed that PDDNOS children, as compared with AD children, respectively, more frequently met the criteria for simple phobia (n = 22 [75.9%] vs. n = 6 [40.0%]), \( \chi^2(1) = 5.5, p < .05 \); separation anxiety disorder (n = 11 [37.9%] vs. n = 1 [6.7%]), \( \chi^2(1) = 4.9, p < .05 \); avoidant disorder (n = 8 [27.6%] vs. n = 0 [0.0%]), \( \chi^2(1) = 5.1, p < .05 \); and overanxious disorder (n = 10 [34.5%] vs. n = 0 [0.0%]), \( \chi^2(1) = 6.7, p < .01 \).

DISCUSSION

Given the paucity of research on anxiety symptoms in autism, the current study examined the prevalence of comorbid anxiety symptoms in a sample of PDD children. The main results can be summarized as follows. First, severe anxiety symptoms were highly prevalent among these children. That is, 84.1% met the full DSM-III-R criteria of at least one anxiety disorder. Second, 72.7% of the PDD children exhibited ritualistic behaviors.

Percentages of PDD children who fulfilled the diagnostic criteria for the separate anxiety disorders varied between 9.1% (panic disorder) and 63.6% (simple phobia). Note that these percentages deviate dramatically from the prevalence rates of anxiety disorders in other samples of children. For example, Costello (1989) reported an 8.9% overall prevalence rate of anxiety disorders in a sample of pediatric patients (aged between 7 and 11 years). In this study, 4.1% met criteria for separation anxiety disorder, 4.6% for overanxious disorder, 9.2% for simple phobia, 1.0% for social phobia, 1.6% for avoidant disorder, and 1.2% for agoraphobia (for an overview of prevalence rates of anxiety disorders in children and adolescents, see Bernstein & Borchardt, 1991).

The results of the present study also suggest that some anxiety symptoms (i.e., simple phobia, separation anxiety disorder, avoidant disorder, and overanxious disorder) are more prevalent among PDDNOS children than among AD children. However, the comparisons between AD children and PDDNOS children should be interpreted with caution for two reasons. First, the sample size of the AD group was rather small. Second, both groups differed significantly with respect to age and intellectual functioning: AD children were younger and functioned at a lower intellectual level than did PDDNOS children. These differences complicate a direct comparison between both groups. It may well be the case that differences in age and intellectual functioning somehow contribute to the differential profiles of comorbid anxiety symptoms found in both groups.
For example, it is conceivable that a serious cognitive dysfunction rules out those types of anxiety phenomena that presuppose sophisticated cognitive processes (e.g., worrying, fearful anticipation).

With respect to the methodology of the present study, one important remark is in order. Research has shown that the correlation between children’s and parents’ assessment of psychopathology is often modest (e.g., Achenbach & Edelbrock, 1989). In the current study, anxiety symptoms in children were only assessed by interviewing their parents. It is possible that the anxiety prevalence rates found in the present study may be an overestimation because parents interpreted certain manifestations of PDD as anxiety symptoms. For example, attempts of PDD children to keep their environment the same can be interpreted as a symptom of OCD. However, it is also known that parents tend to underreport the number and severity of internalizing symptoms (e.g., anxiety symptoms; see Stallings & March, 1995). In that case, the current prevalent rates might be an underestimation. Future studies in which anxiety symptoms are measured in both children and their parents could yield a more precise picture of the comorbidity of anxiety symptoms in PDD.

Why would PDD children exhibit higher prevalence rates of fear and anxiety symptoms? Frith (1989) and Happé (1994) argued that the fear and anxiety symptoms of these children originate from their weak integration capacity. That is, PDD children have extreme difficulties in relating diverse sources of information. As a result, PDD children would experience many everyday situations as chaotic, obscure, and thus frightening.

Anxiety symptoms are certainly not the most prominent feature of PDD. Nevertheless, they may cause considerable distress and interference with daily activities in these children. Therefore, these symptoms should be diagnosed and, if possible, treated. The reduction of obsessive and ritualistic behaviors in PDD children is also necessary, not only because these symptoms are invalidating but also because they are likely to interfere with the child’s mastering of other skills. Howlin and Rutter (1987) extensively described ways of dealing with anxiety and rituals in autistic children. These authors demonstrated that these prevalent symptoms may be successfully alleviated by behavioral techniques.

REFERENCES


