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Conversion Disorder (DSM-III 300.11): Symptomatology and Course in Childhood and Adolescence

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Summary. The incidence, age and sex distribution, symptomatology, psychosocial stress factors and course of conversion symptoms in a child and adolescent psychiatric patient sample were studied. Under the age of 10 conversion symptoms are comparatively rare and consequently require careful diagnosis, particularly regarding visual and hearing defects. Predominant conversion symptoms are seizures, gait problems and paralysis.

Key words: Conversion disorder – Symptomatology – Childhood – Adolescence – Treatment outcome

Introduction

The diagnosis of conversion symptoms is difficult and requires careful exclusion of possible physical causes (Coppolillo 1981). Caplan (1970) found that 46% of the children who were diagnosed as having conversion disorders were found on follow-up to have organic disease and Goodyer (1981) found 27%. The prevalence of conversion syndromes in child and adolescent psychiatric clinic samples ranges from 0.5% to 10% (Caplan 1970; Forbis and Jones 1965; Goodyer 1981; Herman and Simonds 1975; Maloney 1980; Proctor and Schneer 1958; Regan and Labarbera 1984; Robins and O'Neal 1953; Rock 1971). From epidemiological studies no reliable conclusions about the prevalence of conversion symptoms in the total population of children and adolescents can be drawn (Rae 1977; Rutter et al. 1970, 1975, 1976; Shepherd et al. 1971). There are conflicting findings in the literature regarding which conversion symptoms are most prominent in childhood and adolescence, and whether an age-related distribution can be observed (Goodyer 1981; Herman and Simonds 1975; Maloney 1980; Regan and Labarbera 1984; Robins and O'Neal 1953; Rock 1971).

Few empirical findings are available concerning type and severity of the symptomatology, age- and sex-specific distributions, and the course of conversion symptoms in childhood and adolescence. As these data partially contradict each other (cf. Table 1), we studied the following questions in a clinic sample:

1. What spectrum of conversion symptoms can be seen in children and adolescents? Is it related to sex or age at onset?

2. Is it possible to identify variables predictive for the course of treatment?

3. Are there any typical antecedents of conversion disorders?

Method

The investigated sample comprised children with conversion symptoms from all psychiatric referrals (in- and outpatient) between 1977 and 1986 to the Child and Adolescent Psychiatric Clinic of the Central Institute of Mental Health in Mannheim and the Department of Child and Adolescent Psychiatry of the University of Heidelberg. This retrospective study was based on the routine case documentations being systematically and continuously recorded from the first contact till the end of treatment. The case documentation data were re-analysed in order to extract standardized data of anamnesis, symptomatology, course of treatment, and sociofamilial background. Only cases which strictly met the DSM-III criteria for the diagnosis of conversion disorders were included.

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Table 1. Data from literature about total number of patients, percentage of clinic population, sex ratio, age distribution, average age, and symptom frequency

Authors	Total number of patients (*n*)	Percentage of clinic population (%)	Sex ratio	Age distribution (years)	Average age (years)	Symptom frequency		
						Gait problems (%)	Paralysis (%)	Seizures (%)
Eggers (1985)	14	1.6	1/2.5	3–17	11.9	64	–	–
Goodyer (1980)	15	0.5	1/1.5	7–15	11.3	–	20	–
Hermann and Simonds (1975)	15	4.1	1/0.98	10–16	12.9	–	–	–
Maloney (1980)	105	16.7	1/1	–	12.1	–	13	19
Regan and Labarbera (1984)	11	8.1	1/0.8	5–18	10.5	–	46	–
Volkmar et al. (1984)	30	–	1/4.0	6–15	10.2	–	13	40

The DSM-III diagnostic criteria for conversion disorder are:

A. The predominant disturbance is a loss of or alteration in physical functioning, suggesting a physical disorder.

B. Psychological factors are judged to be aetiologically involved in the symptom, as evidenced by one of the following:

1. There is a temporal relationship between an environmental stimulus that is apparently related to a psychological conflict or need and the initiation or exacerbation of the symptom.

2. The symptom enables the individual to avoid some activity that is noxious to him or her.

3. The symptom enables the individual to get support from the environment that otherwise might not be forthcoming.

C. It has been determined that the symptom is not under voluntary control.

D. The symptom cannot, after appropriate investigation, be explained by a known physical disorder or pathophysiological mechanism.

E. The symptom is not limited to pain or to a disturbance in sexual functioning.

F. Not due to somatization disorders and schizophrenia.

The diagnosis in our study is based on fulfillment of the DSM-III diagnostic criteria A, C, D, E and F. For exclusion of somatization and depressive disorders again DSM-III definitions were used. Fifty-five children with conversion-type symptoms who did not meet the above criteria but with other diagnoses were excluded from the study.

For statistical analyses the chi-square test, analysis of variance and discriminant analysis were used.

Results

Incidence

Within the chosen period 93 children and adolescents met the diagnosis of conversion disorder, constituting 1% of the total clinic sample in Mannheim and 0.5% in Heidelberg.

Table 2. Age and sex distribution, mean symptom duration at first contact in children and adolescents with conversion disorder (DSM-III 300.11)

	All ages	Age in years		
		≤ 10;0	10;1–14.0	≥ 14;1
Age distribution (*n*)	93	10	33	50
(%)	100	11	35	54
Sex distribution	26:67 (1:2.6)	3:7 (1:2.3)	11:22 (1:2.0)	12:38 (1:3.2)
Mean symptom duration at first contact in months	9	13	7	10

Age and Sex Distribution

Average age at first contact was 13.8 years: 13.2 years for boys and 14.0 for girls (not significant). The age-range was 5.5–19.3 years. Only 4 children were younger than 7 years. The male to female ratio was 1:2.6 (Table 2); it rose with age from 1:2.3 to 1:3.2. In the total clinic sample the sex ratio was 58% boys to 42% girls; mean age at first contact was 11.8 years.

Symptomatology and Symptom Duration

Symptom distribution in our sample was as follows (more than one symptom possible): highest ranked were "seizures" (52; 56%), followed by "gait problems" (24; 26%), "twilight states" (22; 24%), "paralysis" (9; 10%), "visual disturbances" (6; 6%), and "hearing defects" (2; 2%). In 77 of the patients only one of these symptoms was present and in 16 cases a symptom combination (6 double combinations, 3 triple, and 1 quadruple; cf. Table 3). Most frequently combined were "seizures" and "twilight states" (4 cases), followed by "seizures" and "gait problems" (2), "twilight states" and "gait problems" (2), and "seizures", "twilight states" and "gait problems" (2). In comparison with the base rate, "twilight states" was the symptom most frequently combined with

Table 3. Age and sex distribution of isolated and combined symptoms in children and adolescents with conversion disorder (DSM-III 300.11)

Symptoms	Total	Sex distribution		Age distribution in years		
		Male	Female	≤ 10;0	10;1–14;0	≥ 14;1
Isolated						
Seizures	40	9	31	4	15	21
Gait problems	15	8	7	4	6	5
Twilight states	11	5	6	–	2	9
Paralysis	7	1	6	–	4	3
Visual disturbances	3	1	2	–	1	2
Hearing defects	1	1	–	–	1	–
Σ	77	25	52	8	29	40
Combined						
Seizures	12	1	11	2	3	7
Gait problems	9	–	9	–	4	5
Twilight states	11	2	9	2	2	7
Paralysis	2	–	2	–	1	1
Visual disturbances	3	1	2	–	1	2
Hearing defects	1	–	1	–	1	–
Σ	38	4	34	4	12	22

others (cf. Table 3). No typical age- or sex-specific symptom combinations were found.

Beside these "classic" symptoms many patients suffered from one or more additional symptoms. "Psychogenic pains" (27; 29%) and "suicidal or parasuicidal behaviour" (14; 15%) predominated, followed by "phobic symptoms", "speech disorders", "sleeping disorders", "eating disorders", "tremor", "vomiting", "hiccups", "vertigo", "psychogenic cough" and "urinary retention" (listed in descending order of frequency). Independent of age, the number of these additional symptoms was higher in girls ($r = 0.30$; $P = 0.002$).

For both sexes the mean symptom duration at first contact was 9 months (cf. Table 2). A mean symptom duration of 13 months in the lowest age group exceeded that of the other two (not significant). There was no significant correlation between symptom duration prior to treatment and final treatment outcome. Thirty-nine children (43%) had been treated in non-psychiatric hospitals for their acute symptoms – 7 (8%) more than once. No significant effects of age and sex could be found.

Neurological and Psychological Assessment

In 68 cases (86%) neurological examination yielded no abnormality; in 6 cases (8%) the findings were borderline, and in 5 cases (6%) pathological. Out of the 80 EEG records, 62 (77%) were normal. Borderline EEG abnormalities, e.g. an age-inappropriate alpha-theta quotient, reduced alpha activity, and insufficient topographic differentiation, were found in 8 cases (10%). The EEG was markedly pathological in 10 cases (13%), 6 of which showed epileptiform patterns without manifest clinical epilepsy. IQ ranged from 70 to 149, with an average of 102. Again, no significant effects of age and sex could be found.

Family Background and Psychosocial Situation

In 51 of the patients (56%), the father or mother was psychiatrically impaired. In girls ($P = 0.003$) and younger children ($P = 0.05$) it was more often the mother who was disturbed. Psychiatric impairment of the father did not lead to sex- or age-related effects in the children. In 14 cases (15%) other family members showed conversion symptoms as well, most frequently the mothers (8; 9%).

Associated abnormal psychosocial situations were assessed according to axis 5 of the Multiaxial Classification Scheme (Remschmidt and Schmidt 1986).

Among inadequate or distorted psychosocial circumstances (multiple answers were possible) "employment of the mother" (29; 32%) ranked first, followed by "academic failure" (28; 31%), "peer conflicts" (27; 30%), "loss of a related person" (26; 29%), "unemployment of the father" (10; 11%), and "absence from home not due to illness" (9; 10%). The findings were not related to either sex or age. In 25 cases (30%) no abnormal familial or social situa-

tions could be found, in 35 cases (42%) more than one.

Thirty-eight (42%) of the parents reacted with solicitude, enhanced emotional support, and special attention to the onset of symptomatology – across all age groups more often in sons than in daughters ($P = 0.002$). Thirty-nine families (44%) showed familial over-involvement or abnormal intra-familial relationships, equally for boys and girls, but becoming more frequent with age ($P = 0.01$).

Duration of Treatment

Each child or adolescent had had on the average two treatment episodes: 58 (63%) were inpatients, 12 (13%) more than once. The total duration of treatment (for all patients and all episodes) averaged 7 months: 66 patients (71%) were treated up to 6 months, 17 (18%) between 6 and 12 months, 6 (6%) between 1 and 2 years, and 4 (4%) longer than 2 years. In younger children the total duration of treatment was generally shorter ($P = 0.004$). Inpatient treatment lasted about 8 weeks on the average. All above findings were independent of sex and age.

Treatment Outcome and Associated Factors

Most patients (60; 78%) were discharged from inpatient care with medical agreement, the others either against medical advice or they dropped out of outpatient treatment.

All patients had been treated with the same therapeutic design mainly involving behaviour modification. It focused on symptom removal, but also comprised such interventions as individual psychotherapy, family therapy and activity programs.

In 35 cases (48%) the treatment outcome as regards symptomatology had been rated as significantly improved, in 22 (30%) as slightly improved, and in 16 (22%) as unchanged or worse. As to the patient's global long-term development the outcome of 25 cases (36%) had been rated as significantly improved, of 21 (30%) slightly improved, and of 23 (33%) as unchanged or worse.

In 15% of the cases the patient's symptoms are modelled after those of a family member with similar symptomatology. This, however, applied to 10% of phobic patients as well. Conversion disordered patients had not experienced more life-events than other patients, e.g. compared with phobic children. The variables age at symptom onset, number of symptoms, intelligence, sex, and number of adverse psychosocial circumstances did not significantly influence treatment outcome. Duration of treatment was significantly longer in patients with markedly improved symptomatology. Outcome was improved considerably in those cases, where the children or adolescents agreed to undergo individual psychotherapy. Employment of the mother, negative life-events, and repeated admission to general hospitals because of acute symptomatology turned out to be factors predictive of poor treatment outcome.

Discussion

Compared with the figures given in psychiatric literature the reported incidence of 0.5%–1.0% for clinic populations ranks rather low. In addition to cultural and socioeconomic factors the age distribution and the ratio of inpatients to outpatients must be recognized as playing an important role. Our results show, on the other hand, that with the use of DSM-III criteria a similar ratio of conversion symptoms had been diagnosed in both clinics. Accordingly the prevalence of conversion symptoms in childhood and adolescence seems to have been overestimated. This may be explained by the fact that any physical symptom with a demonstrative character, which affects interpersonal relationships and is psychologically represented, is likely to be subsumed under the diagnosis conversion disorder. Thus symptoms occurring frequently in childhood and adolescence – like headaches and stomach aches – are liable to be interpreted as conversion symptoms and contribute to the total frequency. It seems, therefore, necessary to confine oneself to the so-called classic symptoms listed in the DSM-III, lest any physical symptom should be classified as conversion phenomenon.

Mean age at first clinical referral of children with conversion symptoms ranges in the literature between 8.9 and 12.9 years (Dauner 1977; Eggers 1985; Goodyer 1981; Herman and Simonds 1975; Kruse 1979; Maloney 1980; Regan and Labarbera 1984; Robins and O'Neal 1953; Rock 1971; Volkmar et al. 1984). Preschool children are rarely afflicted (cf. Caplan 1970; Robins and O'Neal 1953; Rock 1971; Stevens 1969; Strunk 1985; Volkmar et al. 1984); in our sample there were only 3 out of the 93 patients. In general, conversion symptoms are extremely rare before the age of 6, and they call for very careful diagnosis.

Proctor and Schneer (1985) found a slight preponderance of boys, with a basic sex ratio of 1:0.8. Herman and Simonds (1975) reported a relative equality of sex distribution. All other studies yielded a higher prevalence in females with a sex ratio between 1:1.3 and 1:4.5 (Dauner 1977; Eggers 1985; Goodyer 1981; Kruse 1979; Maloney 1980; Regan and Labarbera 1984; Robins and O'Neal 1953; Rock 1971; Strunk 1985; Volksmar et al. 1984). The sex

distribution in prepubertal children described by Caplan (1970) and Stevens (1969) has not been confirmed by this study.

As has already been reported by Eggers (1985), Maloney (1980) and Volkmar et al. (1984), "seizures" and "gait problems" are the most frequent conversion symptoms, whereas psychogenic "visual and hearing disturbances" are rather rare in psychiatric populations. The latter should be given special attention in order to avoid misdiagnoses (Caplan 1970; Goodyer 1981; Rivinus et al. 1975). The literature gives no indications that age- or maturity-related factors influence the symptom patterns. Our analyses show that up to the age of 10 "seizures" and "gait problems" are the only conversion symptoms, and the range of symptoms widens with rising age.

The mean duration of symptoms of 9 months lies within the time range of 9–10 months reported by Dauner (1977) and Goodyer (1981). According to Goodyer (1981) symptom duration has no bearing on the recovery time, nor had it in our sample on the treatment outcome. An explanation may be found in the fact that conversion symptoms as reactions to acute stress will rather rapidly resolve in an otherwise balanced child, whereas they tend to continue for years in more severely disturbed children or to be substituted by more pervasive symptoms, and sometimes are progressively eclipsed by psychiatric disorders like alcoholism, obsessional or anxiety disorder or depression (Adler 1986). Conversely there is a relationship between conduct disorders in adolescence and conversion disorders in adulthood (Guze et al. 1973; Robins 1966). Furthermore, the occurrence of conversion could be shown in other personality structures and psychiatric disorders than hysteria, for which it constitutes the typical mode of symptom formation (Rangell 1959; Stephens and Kamp 1962). Thus Perley and Guze (1962), Barnert (1971), Stefansson et al. (1976) and Anthony (1982) found conversion symptoms in childhood and adolescence along with various neurotic disorders, depression, schizophrenic psychoses, borderline disorders, and as acute reaction to stress in otherwise healthy persons. Likewise the patients examined by us for conversion symptoms had various other psychiatric disturbances. Similar results have been reported by Steinhausen et al. (1989), who found a high coincidence of conversion symptoms and psychosomatic – in particular vasomotoric – disorders.

Children and adolescents treated for conversion symptoms did not differ in psychosocial adverse factors from patients with other psychiatric disorders. The percentage of 56% children and adolescents with psychiatrically disturbed father/mother falls in the lower range of the figures given in the literature (44%–85%) referring to psychiatrically disturbed family members in general (Goodyer 1981; Maloney 1980; Volkmar et al. 1984). As for this, Goodyer 1981) and Maloney (1980) found no significant difference from control groups of children and adolescents with other psychiatric disorders. This is corroborated by epidemiological studies conducted in Mannheim: 53% of the psychiatrically disordered 8-year-olds and 42% of the 13-year-olds had a psychiatrically disturbed father/mother.

Mothers of children and adolescents with conversion symptoms have been described by various authors as overprotective and restrictive (Dauner 1977; Eggers 1985; Friedman 1973; Herman and Simonds 1975; Rock 1971). The comparatively high amount of 44% familial over-involvement or abnormal intra-familial relationships found in our sample seems to buttress this opinion. Yet, it is not very different for children and adolescents with other neurotic disorders: the overprotective and restrictive mother seems to be typical for neuroses in general, rather than for conversion symptoms in particular.

In conversion disordered patients, Steinhausen et al. (1989) found more differing, i.e. less uniform and specific, psychosocial stress patterns than in other neurotic patients. According to the authors this mirrors the influence of differing aetiological factors in a generally multifactorial pathogenesis of conversion disorders. Our results can be interpreted in the same way.

Proctor and Schneer (1958) and Volkmar et al. (1984) reported high therapy drop-out rates of 63%–92%. The rate of 22% in our study is rather low, though not comforting. If a therapeutic contract can be made with the patient and his/her family, the chances of a positive outcome will improve considerably. With regard to better treatment outcome and lower drop-out rates it appears necessary to diagnose conversion symptoms without any theoretical implications, i.e. to diagnose and treat them phenomenologically as demanded by DSM-III. This requires one to focus on clinical symptomatology rather than on the demonstrative character of the disorder. Only thus can the very different aetiological factors and the psychiatric symptoms of another kind be kept apart and assessed adequately, with all the different therapeutic consequences. Such a strategy opens up the possibility not only of a deeper psychological understanding, but also of a broad treatment approach, including behaviour and family therapy.

In sum, we can conclude that conversion symptoms in childhood and adolescence are comparatively rare in both epidemiological field samples (Rutter et al. 1970; Shepherd et al. 1971) and clinic samples, if an adequately narrow definition is used. A careful

diagnosis is advisable especially with young children. The occurrence of conversion symptoms with other psychiatric disorders has a strong impact on treatment outcome.

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