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Behaviour Problems in Retarded Children with Special Reference to Down's Syndrome

ANN GATH and DIANNE GUMLEY

Data were collected, using interviews with parents and teachers and rating scales, concerning the behaviour of two groups of mentally retarded children: 193 children with Down's Syndrome (DS) and 154 children with a similar degree of handicap were identified in the same schools. The proportions of children who had high scores on the Rutter or an additional behaviour check list, were similar in the two groups. Deviant behaviour was markedly more common in both sets of retarded children than in their siblings next in age; 31% of the children with DS and 29% of controls were judged to be well adjusted, while 38% of the DS children and 49% of the controls had significant behaviour disorder. Conduct disorders were most common in the children with DS. 'Psychosis' was the most common diagnostic label in the control group, but was also found in the children with DS.

Behaviour problems are a common and distressing complication of mental retardation: indeed it has been argued (Webster, 1970) that psychiatric disorder is an almost inevitable accompaniment: he could find no child who was 'simply' retarded in a group of Boston children aged 3–6 years. Webster described the "primary psychopathology" of retardation, the characteristics of which were "repetitiousness, inflexibility and simplicity of emotional life". However, Chess & Hassibi (1970) in their study of 52 children living at home, aged between five and twelve years and with mental ages of between four and six years found that 40% showed behaviour that could be accounted for by the fact of retardation alone, without psychiatric disorder. The features described by Webster as signs of 'primary psychopathology' were considered by Chess (1977) to indicate merely lack of ideas, which is an integral part of mental retardation.

A very high rate of psychiatric disorder in retarded children was noted by Philips & Williams (1975) who found only 13% free of it among clinic attenders, but there was likely to be a referral bias in this group towards children with problems. In another clinic for retarded children, 24% were considered to have a primary emotional disorder and 30% emotional problems secondary to other developmental difficulties (Szymanski, 1980). Kamimer *et al* (1984) found a 75% rate of behavioural or emotional problems among 167 children evaluated at a clinic: their critieria for 'no problems' were that the child was compliant to adult requests, interacted with appropriate affect, had no deviant behaviours noted or reported, and showed a level of attentiveness and activity appropriate for his mental age level, and that the parent did not report management problems. These are stiff criteria, and the findings were not validated by comparison with a control group of children in the normal range of intelligence, judged by the same yardsticks.

The evidence from epidemiological studies indicates that psychiatric disorder becomes more common with decreasing levels of intellectual functioning (Rutter, 1971; Corbett, 1977). Rutter *et al* (1970) had defined psychiatric disorder as a disturbance of behaviour or emotions sufficiently severe and prolonged to cause suffering to the child, to the family, or to the community. By this definition, the incidence of behaviour disorders in severely retarded children in the Isle of Wight study was 50%, compared with 6.6% among in the normal range of intelligence. This figure for retarded children is similar to those found in retarded children in Scotland (Birch *et al*, 1970; Koller *et al*, 1983) and in Camberwell (Corbett, 1977), but somewhat lower figures were reported by Stein & Susser (1975) in severely retarded children aged 5 to 14, 20% of whom had behaviour problems, and by Groden *et al* (1982), who found 25% out of 1114 retarded children in Rhode Island had behavioural and/or emotional problems.

Some investigators have attempted to determine what sort of disorders are seen in retarded children: 38 of the 100 children described by Philips & Williams (1975) were classified as psychotic, while, of the rest, 26 had behaviour disorders, five had

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neuroses, two had transient situational disorders and 16 personality disorders. The making of specific psychiatric diagnoses is particularly difficult in retarded children, but the recent trend to multi-axial classification in I.C.D.9 (World Health Organisation, 1978) and D.S.M.III (American Psychiatric Association, 1980) seems to have made the task a little less daunting. 'Psychosis specific to childhood' was the most common diagnosis made in the Camberwell survey (Corbett, 1977), being found in 17% of children, with 6% showing adjustment reactions and emotional disorders; conduct disorders and hyperkinetic syndrome were each found in 4% of his sample while a relatively large group, 12%, had to be classified under 'Special symptoms or syndromes not elsewhere classified'. Reid (1980), found conduct disorders to be most common, being diagnosed in 27 out of 60 clinic attenders. Of the remaining 33 children, 13 showed neurotic disorders, four had adjustment reactions, nine had the hyperkinetic syndrome, five had childhood psychosis, and one was manic-depressive leaving one girl unclassified.

There are references in the literature to subjects with Down's syndrome (DS) being less prone than other retarded people to the severe complications of mental retardation of which behaviour disorder is one (Kushlick, 1975). The personality stereotype of someone with DS is adaptable, humorous, and affectionate, with skills in mimicry (Smith & Berg, 1976), and recent studies appear to confirm that DS children are easy to manage (Gibbs & Thorpe, 1983; Gunn & Berry, 1985). In a review of the personality characteristics associated with DS, Gibson (1978) concluded that age, IQ, and ability to communicate are important whereas older children, particularly post-pubertal boys, are more likely to show aggression, hostility, or sullenness. However, in a longitudinal study, Carr & Hewett (1982) noted that 22% of the mothers of 11-year-old children with DS said they had worries about their children's behaviour, but that five years later, three quarters of the children were described as 'easy' and the rest as 'fairly easy'.

There are conflicting reports of the incidence of psychiatric disorder in DS children. Webster (1970) considered such children to have only minor degrees of emotional disorder, but on the other hand, Menolascino (1970), found 37% of a sample of 54 boys and 41 girls with an average age of 13.2 years to have a psychiatric disorder. The present authors followed a small group of children first seen in infancy (Gath & Gumley, 1984) and found that eight out of 14 boys and three out of eight girls had behaviour problems, as shown by deviant scores on standardised behavioural rating scales, but that nine controls (normal children born at the same time to similar families) also had deviant scores on the same scales.

Method

Children with DS were identified, using the School Health Service records, in one Health Region in England. Each was matched, in the same school, with another child of the same sex and age and with a degree of physical and mental handicap as close as possible to the index child. The general practitioner was contacted before any approach was made to the parents of any child. Data were collected during the period 1979–1982: a member of the research team carried out semi-structured interviews with the parents in their homes. The parents were asked to complete the Rutter behavioural scale A2 for the identified child and for the sibling next in age who was also attending school; they also completed Part 1 of the Adaptive Behaviour Scale (Nihira *et al*, 1974) and an Additional Behaviour checklist, consisting of items of behaviour found to concern parents of children with DS in a previous study (Gath & Gumley, 1984). With the permission of the parents, the clinical psychologist visited the school attended by the Child with DS and interviewed the teacher; the control child was selected at this meeting. Teachers completed the Rutter B2 scale, the Adaptive Behaviour Scale, and the Additional Behaviour checklist for both the children.

Results

Subjects

One hundred and ninety three children with DS, 94 boys and 99 girls, were enrolled: ages ranged from six to 17 years. The control group consisted of 154 chidren, 76 boys and 78 girls, attending the same schools and with a similar degree of verbal and motor handicap: 87% of the children with DS and 89% of the controls lived at home with at least one natural parent while seven children with DS and four controls were in long-stay hospitals. General practitioners had refused consent to the participation of one family with a DS child and of four families of the control group; 18 families with DS children and 16 families in the control group had refused to take part in the study. The refusal rates were thus 8.96% for the DS group and 11.5% for the control group, and 90% of the families approached in fact took part in the study.

Teachers completed the Rutter B2 rating scale and the Additional Behaviour checklist for 170 of the DS children and for 136 of the controls—a response rate of 88% for both groups.

Adaptive Behaviour Scale Scores: The range of raw scores on the Adaptive Behaviour scales were similar in the two groups (Figures 1 and 2). The means for each age group were similar in the Down's syndrome group and the controls.

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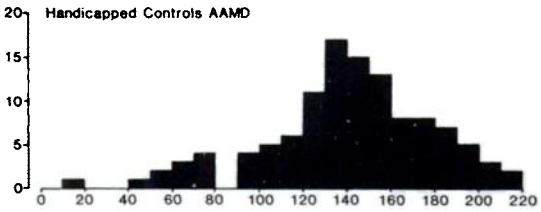


FIG. 1. AAMD Adaptive Behaviour Raw Scores.

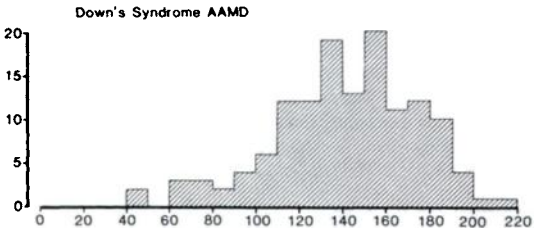


FIG. 2. AAMD Adaptive Behaviour Raw Scores.

TABLE I

Down's syndrome children and similarly handicapped controls: deviant scores on Rutter behavioural rating scales

Scale used	*DS children*	*Controls*
	$n=193$	$n=154$
Rutter A2 scale		
(score 13 or more)	66 (34%)	63 (41%)
mean	11.23	12.84
	($\chi^2=1.045$, d.f. = 1 NS)	
Rutter B2 scale	$n=170$	$n=136$
(score 9 or more)	53 (31%)	58 (42.6%)
mean	7.55	9.2
	($\chi^2=3.8184$, d.f. = 1, $P<0.05$)	

Rutter Behavioural Rating Scales: There were no significant differences in the percentages of children who had deviant scores, defined as 13 or more on the Rutter A2 scale, completed by the parents. The control children, however, were more frequently found to have deviant scores of nine or more on the Rutter B2 scale as completed by teachers (Table I). Parents reported more neurotic symptoms in the control than in the DS group. Both parents and teachers found significantly more hyperactive behaviour in the control than in the DS children. Anti-social sub-scores were similar in the two groups.

Additional Behaviour Checklists: Seventy three (38%) of DS children and seventy one (46%) of controls had scores of ten or more on the Additional Behaviour checklists as completed by parents and 30% of both groups as completed by teachers. Individual items of behaviour on the checklists also showed few differences between the groups. The most frequent item reported was that the child became very distressed if corrected, which appeared to inhibit the parents from disciplining him or her. Aggressive gestures, rebellious behaviour, attention-seeking and interference with the persons or property of others were common in both groups; the least common behaviours were head banging, inappropriate use of the toilet (e.g. by drinking from it or stuffing it with paper), and fire setting, Behaviour associated with psychotic disorders in childhood, such as stereotypies, use of objects as twiddles or unresponsiveness were as frequently found among DS children as among the controls. Running away was reported in one in four of DS children (24.5%), but in only one in eight (12.5%) of the controls ($\chi^2=3.999$, d.f. = 1, $P<0.05$). Shouting or screaming was reported in 33.5% of the controls, but in 19.4% of the DS children ($\chi^2=4.427$, d.f. = 1, $P<0.05$).

Comparison with siblings next in age: Ninety nine children, 56 boys and 43 girls, with DS and 92, 50 boys and 42 girls, among the controls had a sibling who was still attending school and within five years' age difference. In the DS families, there were 51 sisters and 48 brothers, and in the control families 32 sisters and 60 brothers who fulfilled the criteria. In the DS group, 58 were older and 39 were younger than the retarded child, while in the control group, 40 were older and 49 were younger. There were two sets of twins in the DS group and three sets in the control group. (None of the twin siblings were retarded.)

A2 behavioural rating scales were completed by the same parent for each paired retarded child and sibling: deviant scores were found in 30 DS children and 11 siblings ($\chi^2=9.996$, d.f. = 1, $P<0.01$) and in 33 controls and 11 siblings ($\chi^2=13.17$, d.f. = 1, $P<0.001$).

High neurotic, anti-social, and hyperactive sub-scores were each found in between 3 to 5% of the siblings—much less frequently than in the retarded children.

Children with no behaviour problems: Fifty nine children with DS (31%) and 46 controls (29%) had no deviant scores on either scales or on the Additional Behaviour checklists. These children had no more behaviour or emotional problems than children in the average range of intelligence and could certainly be regarded as normal or well adjusted.

Children showing severe behaviour problems: Seventy four (38.3%) of the 193 children in the DS group had high scores on at least one of the Rutter scales with a score of ten or more on the Additional Behaviour checklist, as rated either by parents at home or teachers at school, or by both. In the 154 controls, 74 (49%) also had significant behaviour problems or were definitely deviant by the same definition. Serious behaviour problems were more

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TABLE II
Deviant behaviour in retarded children by age-groups: DS

	Age-group (years)				
	I	*II*	*III*	*IV*	*Total*
Sex	6–8	9–11	12–15	16+	
Boys					
Deviant	13	14	9	8	44
%	50	51.8	37.5	47	47
Borderline	5	7	8	4	24
Non-deviant	8	6	7	5	26
Total	26	27	24	17	94
Girls					
Deviant	10	6	8	6	30
%	43.4	32	25	24	30
Borderline	8	8	10	9	35
Non-deviant	5	6	13	10	34
Total	23	20	31	25	99
Both sexes					
Deviant	23	20	17	14	74
%	47	42.5	32	32	
Borderline	13	15	18	14	59
Non-deviant	13	12	18	15	60
Total	49	48	55	43	193

TABLE III
Deviant behaviour in the retarded child by age-group in controls

	Age-group (years)				
	I	*II*	*III*	*IV*	*Total*
Sex	6–8	9–11	12–15	16+	
Boys					
Deviant	13	14	9	3	39
%	50.5	66	45	25	
Borderline	5	1	5	5	16
Non-deviant	5	6	6	4	21
Total	23	21	20	12	76
Girls					
Deviant	9	10	12	4	35
%	50	55.5	46	25	
Borderline	3	4	7	4	18
Non-deviant	6	4	7	8	25
Total	18	18	26	16	78
Both sexes					
Deviant	22	24	21	7	74
%	53.6	61.5	45.6	25	
Borderline	8	5	12	9	34
Non-deviant	11	10	13	12	46
Total	41	39	46	28	154

Down's syndrome children v. Handicapped controls

Boys	$\chi^2 = 0.314$, d.f. = 2	NS	
Girls	$\chi^2 = 5.819$, d.f. = 2	$P < 0.1$	NS
Both sexes	$\chi^2 = 4.474$, d.f. = 2	NS	

common in the children with low scores on the adaptive behaviour scales. There were 17 children in the DS group with adaptive behaviour scale scores of below 100 both at home and at school-well below the mean for any age-group; 14 (82%) had severe behaviour disorders and the other three were in the borderline group ($\chi^2 = 20.54$ d.f. = 4, $P < 0.001$). Eleven children with DS had very low adaptive behaviour scores in one situation only, either at home or at school, and seven of these also had severe behaviour disorders which tended to be situational—associated with low expectations or achievement.

Similarly, 11 (78%) of the controls with very low adaptive behaviour scale scores had severe behaviour disorders, as did all 7 children with low adaptive behaviour scale scores in one situation only (χ^2·15, d.f. = 4, $P < 0.001$). Behaviour disorders tended to be less common in the most competent children in both groups.

Possible behaviour disorders: Sixty children with DS and 34 in the control group were regarded as on the behavioural borderline (Tables II and III). The difference between the two groups fell just short of significance at the 5% level ($\chi^2 = 5.7569$). More girls in the control group were deviant than in the DS group, the difference being very close to significance ($\chi^2 = 5.819$ d.f. = 2). Similar proportions of boys in the two groups had many behaviour problems.

Psychiatric Diagnoses: The majority of the children with severe behaviour problems could be classified, using Axis I of ICD 9, as shown in Table IV. DSM-III diagnoses agreed with those under ICD 9 except for 299.8 under ICD 9 'Psychosis with origin specific to childhood' where the DSM-III diagnosis of Pervasive Developmental Disorder was considered more appropriate but for its stipulation that the disorder had to have developed before the age of 30 months. Multiple diagnoses are possible on the DSM-III system so that, for example, hyperactivity and conduct disorder were both coded.

Two children with DS and three of the controls fitted the criteria for infantile autism. More boys than girls in both groups were diagnosed as having a 'psychotic' disorder, including autism, but this difference is not significant with the small numbers concerned. More girls than boys in the handicapped control group were judged as having an unsocialised conduct disorder, corresponding to 'unsocialised aggressive disorder' in D.S.M. III., in contrast to the DS group, where this diagnosis tended to be

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TABLE IV
Psychiatric diagnoses of retarded children with deviant behaviour

Diagnosis (ICD-9)	*(1) DS*		
	Boys	*Girls*	*Total*
Infantile autism	2	0	2
Psychosis with origin specific to childhood	9	8	17
Unsocialised disturbance of conduct	13	8	21
Mixed disturbance of conduct and emotions	6	3	9
Disturbance of emotions specific to childhood and adolescence—other or mixed	3	3	6
Hyperkinetic syndrome of childhood—with developmental delay	2	2	4
Hyperkinetic conduct disorder	9	5	14
Undiagnosed	0	1	1
Total	44	30	74
Diagnosis (ICD-9)	*(2) Controls*		
Infantile autism	2	1	3
Psychosis with origin specific to childhood	14	10	24
Unsocialised disturbance of conduct	4	12	16
Mixed disturbance of conduct and emotions	7	4	11
Disturbance of emotions specific to childhood and adolescence—with anxiety and fearfulness	2	2	4
Hyperkinetic syndrome of childhood—with developmental delay	6	3	9
Hyperkinetic conduct disorder	1	1	2
Undiagnosed	3	2	5
Total	39	35	74

more common in boys. Hyperactive conduct disorder was a diagnosis which tended to be more commonly made in the DS group, but there were somewhat more controls who did not fit into any diagnostic category. Conduct disorders and psychoses were found in all age-groups, in both DS children and the controls, but hyperkinetic disorders tended to be found more, though not exclusively, in the younger children. Psychoses were found in the more able children with higher adaptive behaviour scores but were more numerous in the children with lower adaptive behaviour scores.

Discussion

The results of this study reveal that a significant proportion of children show problem behaviour, which causes suffering to them and to their families. In this, they are little different from a group of children, whose retardation arises from many other causes.

When a measure standardised for use with children within the normal range of intelligence is used, many more of the children with DS have scores that are judged as deviant than do their siblings closest in age. The DS children are, in this respect, as different from their siblings as the controls are from their brothers and sisters. The two groups of retarded children also show a number of behaviour and emotional problems in addition to those rated on the Rutter scales. A similar proportion (30%) of children in the two groups of retarded children, had no behavioural or emotional problems on any of the measures used in our study. This finding is less, though not significantly so, than that of Chess & Hassibi, but is certainly larger than that found in most of the studies of clinic populations. The proportion of children with definite disorder is less than that found in most epidemiological studies of mixed groups of retarded children. However, in this study, a borderline group is included, since no evidence could be found for a clear cut off point between normal, well adjusted children and those with behavioural or emotional disorders. A continuum of deviancy is a more accurate concept than one of health and disease. Behavioural problems are much more common in those children who have been unable to learn appropriate behaviour, as measured by the adaptive behaviour scales, on which scores were found to be related to measured intelligence quotients in a group of children with DS who had been followed from infancy. It is therefore likely that severity of intellectual handicap is an important factor in the development of the disorders.

As in most other studies, the most common diagnostic group in our controls was that of psychosis (17.5% including autism)—very similar to the proportion found in Camberwell but less than in most clinic samples. The proportion of DS children with severe psychiatric morbidity was not markedly different at 9%, certainly higher than might be anticipated from most of the literature on DS. However, this label of 'psychosis' is unsatisfactory, not reflecting the flavour of the problems the children showed; Tanguay (1984) discussed the diagnosis of severe

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psychopathology in children in a developmental context. The next revision of the two systems of disease classification may contain categories with less pejorative and more accurate labels. Conduct disorders form the most common diagnostic group for children with DS (11%) and are almost as frequently found in the controls (10%). Hyperkinetic conduct disorder was more often found in the DS group (which appears to contradict the finding that hyperactive behaviour was significantly more often found in the controls). The psychotic children, often with histories of brain damage, in the control group had very high hyperactive scores.

Ineichen (1984) has questioned the findings of some studies on the prevalence of what has been termed 'mental illness' in retarded patients, particularly in hospitals. It is suggested that some at least of such 'illness' may be attributed to the poor environment or to failure to teach appropriate skills. Only a very small proportion of the children in our study were living in institutions; most of the children enjoyed family life as did their siblings. However, many of their disorders, particularly those grouped rather unhappily as 'psychosis with origin specific to childhood: other', did appear to be related to the failure to communicate and to learn more acceptable ways of attracting attention or even passing time. Psychiatrists themselves have suggested that many children who are retarded do not need the attention of psychiatrists (Tarjan, 1977; Wortis, 1977), and these would include nearly one-third of all the subjects in this study. Nevertheless, a sizeable proportion of retarded children, just under 40% of those with DS but nearly half of the mixed group of similarly retarded controls, do have severe and distressing problems that require a broad range of psychiatric skills and understanding in order to make a valid diagnosis.

Behavioural and emotional problems are a serious secondary handicap for between four and five out of ten children with mental retardation and children with DS have nearly as many problems of this sort as other children similarly handicapped. There is, however, clearly a role, though not an exclusive one, for the psychiatrist in investigating and treating the problems described.

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Family Background of Children with Down's Syndrome and of Children with a Similar Degree of Mental Retardation

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The families of Down's Syndrome children and another group with a similar degree of retardation were compared using data collected at interview. Differences in social class distribution were explained by the maternal age effect in the Down's group. Divorce was more common in the control group but the quality of marriage in those parents still together and the health of parents were similar. No close associations were found between behaviour disorders in the children and family factors, except that behaviour disorders were likely to be associated with similar disturbance in siblings next in age and to be more common in the less happy marriages.

The literature concerning families of mentally retarded children is mostly concerned with the effect upon parents and siblings of the additional burden that bringing up a handicapped child imposes. Evidence from earlier studies was used to support the case for long-term hospital care; even families who wanted to bring up the retarded child at home often felt themselves driven to request such care for their children because they could not cope with the demands upon them, (Oster & van den Tempel, 1975). The emphasis thereafter moved strongly to "community" care, and with more positive attitudes

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