

School-based indicated prevention: a randomised trial of group therapy

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Background: One hundred and twenty-two children identified by teachers as at risk for behavioural or emotional problems were randomly allocated to drama-group therapy or to a curriculum-studies control, based in school. **Methods:** One hundred and seventeen completed the intervention phase of the trial, which comprised 12 hour-long sessions. Post-intervention self-reports showed significant effects associated with both interventions. **Results:** However, there was a clear advantage of group therapy over both a waiting list control and curriculum studies, according to teacher reports. This was true also of categorical analyses focusing on those with the most severe symptoms. **Conclusions:** These analyses confirmed sustained teacher-reported improvement over a year-long follow-up period. **Keywords:** Randomised controlled trial, group therapy, selective/indicated prevention.

Child and adolescent mental health problems are responsible for considerable and persistent distress (Harrington, Fudgem Rutter, Pickles, & Hill, 1990; Sadowski, Ugarte, Kolvin, Kaplan, & Barnes, 1999) and disturbed behaviour (Szatmari, Offord, & Boyle, 1989; McArdle, O'Brien, & Kolvin, 1995). They also contribute to scholastic and vocational underachievement (Caspi, Elder, & Herbener, 1990), drug use (Mannuzza et al., 1991), adolescent pregnancy (Kessler et al., 1997), accidents (Szatmari et al., 1989) and suicide (Gould, Fisher, Parides, Flory, & Shaffer, 1996). Furthermore, according to recent reviews, there has been a substantial increase in rates of mental health related problems among youth in Western societies (Prosser & McArdle, 1996; Smith & Rutter, 1995). At least in part, this may be due to the considerable changes in social mores and behaviour that gathered pace in the second half of the last century (Rutter & Smith, 1995; Fukuyama, 1999).

Conventional child mental health services have developed slowly in response to these trends and remain on too modest a scale to aid more than a minority of the populations at risk (Boyle & Offord, 1988). Indeed, even if rates of mental disorder were static, the numbers at risk, especially in inner cities (Quinton, 1988), would be in any case substantial (McArdle et al., 1995; Verhulst, van der Ende, Ferdinand, & Kasius, 1997). Consequently, there has been significant interest in the potential of large-scale preventative interventions capable of promoting normal psychosocial development and of reducing risk of mental disorder (Offord, 1996).

In the mental health field, such interventions have been recently classified as universal, or selective/indicated (Mrazek & Haggerty, 1994). Universal programmes are aimed at the entire 'population... that has not been identified on the basis of individual

risk' (Mrazek & Haggerty, 1994). In a recent example, Hundert et al. (1999) evaluated a 'class-wide social skills program', a 'partner reading program' and a combination of the two. The intervention population comprised all children in selected Ontario schools. They reported that at 3.5 year follow-up, compared to cohorts in comparison schools, those in intervention schools displayed significantly reduced externalising problems, and positive trends in social skills, classroom and playground behaviour. Nevertheless, the authors concluded that, overall, 'the incremental effects attributable to the intervention programs were small and sporadic' and that this outcome was typical of universal school-based interventions related to mental health. Although perhaps understating the usefulness of the intervention, this lack of pervasively demonstrable effectiveness may be partly due to the low initial problem rate in unselected populations, and the very broad focus on 'behavioural problems, interpersonal competence and academic achievement' of the Hundert et al. (1999) intervention. Also, while the cost per individual of universal interventions may be low, because of the necessary scale, universal interventions require considerable investment, not least of organising time, and are beyond the reach of most child and adolescent mental health services.

For these reasons, so-called selective or indicated projects, targeted on individuals at risk of developing mental disorder, have tended to attract significant developmental and evaluative effort (Offord, 1996; Mrazek & Haggerty, 1994). In the case of selective interventions, risk may be identified by membership of an at-risk group, such as being of low birth weight (Hawdon, Hey, Kolvin, & Fundudis, 1990). In an example of a selective intervention, Black and Urbanowicz (1990) used family therapy to facilitate the adaptation of bereaved children. They reported a

degree of benefit at follow-up compared to a no-intervention control. In particular, the intervention group was significantly less likely to have sought help from professional agencies during a one-year follow-up.

The Help Starts Here project (Kolvin et al., 1981), aimed at reducing risk among children identified by a multi-criterion screen as symptomatic, represents a model indicated intervention. The key elements included the screening process, a comparison of three interventions, and an extended follow-up to identify delayed or sleeper effects. The authors reported that in terms of symptom reduction, brief group therapy was superior to social work consultation with parents and that differences in favour of the group therapy group increased over time.

Preventative interventions may focus predominantly on parenting skills or the functioning of the children themselves or both (Mrazek & Haggerty, 1994). However, because of the difficulty of ensuring that sufficient parents attend programmes (Hundert et al., 1999) and because successful interventions can become quite elaborate (Rutter, Giller, & Hagell, 1998), prevention relying on the enhancement of parenting skills is organisationally daunting. Also, interventions involving parents alone have sometimes shown little or no measurable benefit to the child (Cox, 1993), even after extensive follow-up (Nicol et al., 1993; Kolvin et al., 1981). In contrast, because the great majority of children attend school, school-based interventions are relatively efficient in terms of engaging at-risk individuals without stigma. In addition, since school-age children are more likely than younger children to present to child and adolescent mental health services (El-Badri & McArdle, 1998), the potential for reducing referral rates to overburdened specialist services may be maximal at this age. Also, effective interventions tend to have both a child and a group focus. This may be at the level of the classroom (Conduct Problems Prevention Research Group, 1999), subsets of the classroom (Kellam, Rebok, Ialongo, & Mayer, 1994) or otherwise constituted groups (Kolvin et al., 1981). However, while groups appear to be important, they may differ radically in content and so it is not clear what the key component of the group intervention may be.

A feature of the child mental health prevention literature is the reliance on teachers to identify and rate problems, report change and deliver interventions. No doubt this is because of their central role in schools, the usual setting for school-age interventions. However, teachers may also be particularly valid observers of child behaviour. For instance, in an analysis of levels of hyperactivity, a common developmental problem in childhood, Porrino et al. (1983) demonstrated that teacher reports rather than parent or caretaker reports predicted home observations of motor activity. Also, Rapoport, Donnelly, Zametkin, and Carrougner (1986) reported no

difference on a range of cognitive and observational measures between children identified as hyperactive by teachers *and* parents and those identified by teachers alone. More recently, in a commentary on a treatment study (MTA Cooperative Group, 1999), Jensen (2000) reported that 'teachers were substantially better than parents in observing the effects of different doses of medication versus placebo under double-blind ... conditions'. As Rapoport et al. (1986) concluded, 'the teacher has a standardised framework ... of age norms ... within which to rate children'.

The predominantly US literature on interventions in this age group was recently reviewed by Durlak and Wells (1998) and, focusing on conduct problems, in Rutter et al. (1998). In general, outcome measures tend to rely on classroom-based measures alone, lack randomisation, or have only a short-term follow-up (less than six months), so that longer-term effects are unknown. As a consequence, information on the effects of intervention in different cultures, on subjective well-being or behaviour outside school, and on the degree to which any change is sustained, is lacking.

The current paper reports the results of a one-year follow-up of a brief school-based intervention for children identified as at risk according to criteria developed in consultation with teachers. The project compares two forms of group intervention: a group therapy intervention based on activity and discussion similar to that of Kolvin et al. (1981) and, serving to control for the experience of meeting in an adult-led group, a control curriculum studies group. The hypotheses are that

- i) school-based intervention reduces school-based behavioural and emotional problems to a greater degree than no intervention (i.e. waiting list control),
- ii) change is evident to teachers, participating children, and parents,
- iii) group therapy is more effective than curriculum studies intervention,
- iv) there is an extended effect of treatment, i.e., follow-up scores will be significantly lower than post-intervention scores, and
- v) change will be most apparent for those with the most problematic behaviour.

The project represents a collaboration between a charity (Total Learning Challenge), the Departments of Child Health and Education of the University of Newcastle-upon-Tyne, and the local community and schools in North Tyneside.

Method

Subject selection

In order to identify children at risk of both emotional and behavioural problems, a series of criteria were agreed through discussion with teachers. These inclu-

ded one or more of the following criteria: persistent and concerning (i) scholastic under-performance, (ii) known major family problems, (iii) ill-nourished or poorly cared-for appearance, (iv) impaired peer relationships and (v) behavioural or emotional difficulties, a mixture of selective (i–iii) and indicated (iv–v) criteria. The children attended primary, middle and comprehensive schools in the same ‘pyramid’ in a predominantly working-class and high unemployment area of North Tyneside. Once identified, the school approached parents to explain the intervention and the evaluation and to obtain agreement for their children’s participation. Contact was made by letter and with the offer of an interview with a designated member of staff. In addition, meetings in each school provided forums for parents to hear more details and to discuss the project. None of the parents refused their child’s initial participation. The local research ethics committee approved the project.

Numbers, randomisation and follow-up

Teachers identified children meeting the selection criteria and allocated them on the basis of a mix of problems and equivalence in terms of severity to blocks of eight. A member of the intervention team, who did not know the children, then allocated each block to either intervention. After children were allocated, in order to ensure an adequate mix of problems or to avoid a particularly volatile grouping, in consultation with the teacher, children were exchanged, on eight occasions, between group therapy and curriculum studies. This approach sought to minimise the risk of bias at the level of the individual, but also, following normal group therapy practice, to ensure an appropriate case mix and at the least, the viability of the groups. The age of the children in the curriculum studies groups (mean age 11.3 years, SD 1.3) and drama groups (mean age 11.4 years, SD 1.1) was similar.

Power considerations were based on the data of Kolvin et al. (1981), who demonstrated significant differences between interventions each comprising approximately 60 children. Accordingly, 122 children were randomised between group therapy (GT) and comparison ‘curriculum studies’ (CS) interventions, running in parallel, eight children in each group. This was repeated in three consecutive terms and, to avoid confounding intervention status with a school effect, both types of group occurred within each school. At the time of selection there were no significant differences between the problem scores of the two intervention groups, from teacher, parent or self-reports. By one-year follow-up most children had changed school and all had changed teachers. As a consequence, at follow-up teachers were blind to intervention status. In addition, since each cohort was identified a term prior to intervention, a ‘waiting-list’ control was available. As a consequence of initial funding problems the waiting list data comprises teacher data alone, and omits the first cohort. Over the course of the intervention and follow-up, either because of leaving the area or because parents declined further involvement, contact was lost with 17 children.

Intervention

Each group ran for an hour a week for 12 weeks. This randomised prospective design allowed for follow-up and contrast of the group therapy with the curriculum studies group, but also with no-treatment waiting-list controls. Data for two of the three cohorts (the first cohort began treatment without waiting-list data) were gathered three months prior to intervention (Time 1), at the onset of intervention (Time 2), immediately after (Time 3), and 1 year (Time 4) after intervention.

Interventions comprised group therapy (‘essentially play, guided ... to ... the acquisition of personal and social skills’), linked with reflective discussion (Stephenson, 1993) and a curriculum studies comparison. Both of these were delivered in the children’s school of origin.

The group therapy intervention comprised creative-expressive or psychodrama approaches, including role-play to a degree that was more developed than in the groups described by Kolvin et al. (1981), using a range of dramatic techniques either to heighten the experience or to contain it. All sessions began with a ‘talking circle’, an opportunity for each child to speak out and be heard. The earlier sessions were characterised by cooperative and competitive games, so that talk would focus on common themes or experiences within the group. These also served the purpose of creating a group identity, mutual trust and the setting of boundaries for behaviour. The middle sessions used a range of self-expression and controlled physical activity, as well as artistic work such as painting and making of masks. Later sessions utilised the material from this expressive phase to create dramas, enacted by the group for the group. The nature of the drama varied from group to group, depending on their experience and the way each group approached expressive materials. For instance, a group might have developed a fantasy play drama using predominantly their mask work or real-life role-plays with children taking on the characters of figures from their world. In the final phase the sessions were characterised by reflection on the learning points offered by the group experience and integration of individual insights into ideas for behaviour outside the group.

The children generally determined the wide range of themes that emerged in the groups. For instance, a child might seek to re-enact the sequence of events surrounding a limb fracture but without the frame in which his frantic mother shouted at him. Children might confide that they had been tearing the roof covering off the school and were chased by the police. The group might then rehearse an imaginary sequence in which a transgressor has a dialogue with a ‘police officer’ and then takes on the ‘police officer’ role, considering and re-enacting often frightening or disturbing events from different perspectives. Other types of themes that the children chose to explore or come to terms with included disciplinary encounters with teachers, parental separations, moves of home or school.

The curriculum studies group worked on national curriculum maths and English. This involved also more individual tutoring than is possible in mainstream classrooms but also whole group teaching. This

controlled for the effect of working in small groups but not for content. This was selected also as likely to provide a useful intervention for children who might be expected to be achieving sub-optimally (although this was not a necessary inclusion criterion, and we did not track academic attainment). A qualified teacher with extensive training in drama therapy conducted both interventions. He received supervision for clinical issues from an occupational therapist working in a child and mental health unit. No child refused to participate in the groups and school attendance during groups approached 100% for both interventions.

Assessments

Three major outcome domains were identified:

i) The Teacher Report Form (TRF) is a widely used questionnaire in child and youth mental health clinical practice and research (Achenbach, 1991), generating data across areas of positive as well as negative adjustment. Scores are generated on a number of factors covering two broad areas of externalising (e.g., aggressive, delinquent behaviour) and internalising behaviours (e.g., anxiety, depression). Raw scores are usually transformed into *t*-scores, approximately based on normalised scores: a *t*-score of 50 represents the mean score for a population, 60 (1 standard deviation) represents the 'borderline clinical' cut-point. This questionnaire measured teacher-identified school-based behavioural change.

ii) The Youth Self-Report (YSR) is similar to the TRF, focusing on child-report symptoms. This was complemented by the Multidimensional Self Concept Scale (MSCS), a further self-rating scale added in order to evaluate changes in self-perceptions relating to important areas of school and family life. It consists of 150 items, grouped into 6 sub-scales of high reliability (Cronbach's alpha for the total scale .98, and .85 or above for each subscale) (Bracken, 1992). Test-retest reliability is .90.

iii) The parent-completed Child Behavior Checklist (CBCL) is a further questionnaire developed by Achenbach (1991) identifying parent perceptions of child symptoms.

Analyses

Data are presented as *t*-scores, based on normalised scores, and so that declining scores mean improvement. As the 'waiting list' subjects had not yet been randomised, the initial comparison of waiting list and intervention was conducted using paired *t*-tests. Analyses were conducted using an Intercooled STATA 6.0 for Windows random effects regression model technique. This allowed for both within and between subject effects to be considered and enabled us to identify change over time for each intervention. An interaction effect between time and condition (group therapy versus curriculum studies) was also estimated to determine whether the behaviour over time of the two intervention groups differed significantly. The location of a significant interaction (e.g., during intervention or during post-intervention follow-up) would be identified in the within subjects design, if it existed. Hausman's (1978)

specification test was used to test the appropriateness of the use of the random-effects estimator.

In addition, in order to identify those with potentially clinically significant problems and whether the interventions were effective for those with more extreme scores, the school-based data were dichotomised at a cut-score of one standard deviation. While acknowledging that these scores are not the equivalent of a clinical diagnosis, these subjects are likely to be most at risk of clinical problems. To determine whether case status continued throughout the period of observation, case status at times 2 and 3 was compared, along with status at times 3 and 4, for each intervention group separately. This was done using McNemar's chi-squared test for paired data.

Results

Through intervention and follow-up, for both group therapy and curriculum studies conditions, the self-report MSCS and YSR symptom scores (total and internalising) showed a significant decline (i.e., improvement) (Table 1). However, there was no significant time by condition interaction. This suggests that from the perspective of self-report, the effects of both interventions were broadly equivalent. Parents also reported a decline in total, internalising and externalising symptoms during both group therapy and curriculum studies interventions, but this was not significant and not sustained at follow-up.

There was also a significant effect of time for the teacher-reported (TRF) externalising scores (Table 1). However, the interaction data did not indicate the superiority of group therapy to the curriculum studies condition. For the TRF internalising and total scores, the significant time by condition interaction for the total and internalising *t*-scores did indicate a significant effect of group therapy over curriculum studies. This was most apparent during the intervention, time 2 to time 3, period. The analyses were repeated with age as a covariate but the findings did not change.

Effect sizes (Table 2) were moderate for the curriculum studies intervention and moderate to large for the group therapy. Group therapy intervention (time 2–time 3) was associated with significant effect sizes evident for the total, internalising and externalising TRF scores. The post-intervention effect sizes (time 3–time 4) suggest continuing decline in internalising scores after the cessation of therapy. Following the curriculum studies intervention, a significant effect size was evident from the end of intervention to follow-up (time 3–time 4) for total and internalising TRF scores (Table 2).

According teacher-report total *t*-scores, the numbers above and below the threshold identified as approaching clinical significance declined from 31.5% pre-intervention, through 18.2% post-intervention to 14.0% at one-year follow up. Among those receiving the curriculum studies and the drama

Table 1 Change in each domain: pre- and post-curriculum studies (CS) and group therapy (GT) interventions, and one-year follow-up

		Time 2		Time 3		Time 4	
		<i>n</i>	Mean (SD)	<i>n</i>	Mean (SD)	<i>n</i>	Mean (SD)
MSCS							
Total*	CS	50	52.2 (8.6)	45	50.4 (8.0)	46	47.0 (8.1)
	GT	47	51.4 (9.2)	47	49.2 (10.2)	43	47.4 (9.2)
YSR							
Total*	CS	52	53.1 (11.9)	46	49.6 (10.1)	46	47.1 (11.0)
	GT	49	54.3 (12.5)	49	52.1 (11.5)	44	50.5 (13.0)
Internalising*	CS	52	53.8 (11.2)	46	49.6 (9.9)	46	46.3 (10.1)
	GT	49	53.9 (12.0)	49	50.9 (11.8)	44	49.3 (12.4)
Externalising	CS	52	52.0 (12.2)	46	50.7 (10.3)	46	48.5 (12.7)
	GT	49	53.3 (12.3)	49	52.5 (10.9)	44	51.9 (12.6)
CBCL							
Total	CS	48	55.5 (11.9)	42	52.4 (9.9)	38	53.4 (9.6)
	GT	43	54.8 (9.9)	42	50.5 (9.5)	31	54.9 (10.7)
Internalising	CS	48	53.8 (11.6)	42	52.7 (10.2)	38	50.7 (8.6)
	GT	43	53.0 (10.1)	42	49.5 (8.9)	31	51.9 (11.1)
Externalising	CS	48	54.3 (10.9)	42	51.8 (8.7)	38	54.1 (10.4)
	GT	43	54.4 (10.9)	42	51.0 (9.8)	31	54.1 (10.4)
TRF							
Total†	CS	62	55.1 (11.0)	59	53.5 (10.7)	54	49.8 (12.0)
	GT	58	58.6 (10.5)	58	51.5 (8.9)	51	49.5 (10.7)
Internalising†	CS	62	54.3 (12.0)	59	53.9 (12.5)	54	48.8 (8.9)
	GT	58	57.3 (12.6)	58	51.2 (10.6)	51	48.1 (7.9)
Externalising*	CS	62	55.4 (10.3)	59	52.9 (12.3)	54	51.6 (11.6)
	GT	58	58.4 (11.9)	58	52.3 (8.5)	51	52.3 (9.8)

* Main effect of time significant, $p < .01$.

† Interaction of time and condition significant, $p < .05$.

Table 2 Magnitude of within group and between group effect sizes: pre- and post-curriculum studies (CS) and group therapy (GT) interventions, and 1-year follow-up

		Within groups		Between groups		
		Time 3 – Time 2 Effect size	Time 4 – Time 3 Effect size	Time 2 Effect size	Time 3 Effect size	Time 4 Effect size
MSCS						
Total	CS	-.19	-.43	-.07	-.14	.06
	GT	-.23	-.18			
YSR						
Total	CS	-.40	-.23	.10	.24	.28
	GT	-.25	-.13			
Internalising	CS	-.40	-.32	.01	.13	.26
	GT	-.25	-.13			
Externalising	CS	-.12	-.19	.11	.17	.27
	GT	-.07	-.06			
CBCL						
Total	CS	-.29	.11	-.06	-.20	.14
	GT	-.45	.44			
Internalising	CS	-.11	-.21	-.08	-.33	.13
	GT	-.37	.24			
Externalising	CS	-.26	.24	.01	-.09	.002
	GT	-.33	.31			
TRF						
Total	CS	-.15	-.33*	.32	-.20	-.08
	GT	-.73†	-.20			
Internalising	CS	-.03	-.49†	.24	-.24	-.08
	GT	-.53†	-.34*			
Externalising	CS	-.22	-.11	.27	-.06	.06
	GT	-.61†	-.01			

* $p < .05$.

† $p < .01$.

group interventions, the corresponding percentages were respectively 30.2%, 23.8% and 20.8%, and 44.1%, 18.6% and 11.9%. These changes were not significant for the curriculum studies but were so for the drama group ($p < .01$).

Insufficient self- and parent-reports were available for the waiting-list analyses and these rely on teacher reports alone. These showed essentially no change during the waiting-list phase (Table 3). A random effects model was performed only on those subjects represented in both the waiting-list period and intervention periods. This confirmed that the TRF total, externalising and internalising scores declined significantly during intervention but not waiting-list phases, and that change during the intervention phase was significantly greater than change in the waiting-list phase. These changes were confined to those receiving drama group therapy.

Discussion

This study explores the effect of two brief group interventions in the reduction of behavioural and emotional problems in teacher-identified at-risk children. Since the participants were identified by virtue of being in at-risk groups or because they were already symptomatic, but were not deemed to be suffering current diagnosable disorder, it can be classified as a selective or indicated intervention (Offord, 1996).

The study indicates that in regard to questionnaire mean scores, group therapy is superior to no intervention. Also, compared to the curriculum studies control, group therapy appears to accelerate change. This is similar to the acceleration of improvement associated with cognitive therapy compared to a control condition in clinical populations (Wood, Harrington, & Moore, 1996). In addition, the categorical 'caseness' data derived from teacher questionnaires suggest that the effect of group therapy was apparent for those with the most severe difficulty and that this effect was sustained through follow-up. This parallels the findings in regard to group interventions in North America (Kellam et al., 1994). We speculate that this is because of the much greater emphasis on social learning associated with the group therapy compared to the control intervention. The categorical analyses also show that

following group therapy, a number of children who had been 'cases' at post-intervention ceased to show 'caseness' at one-year follow-up. While not statistically significant, this may reflect a delayed effect of successful psychosocial interventions: following a subtle alteration in developmental trajectory (Rutter, 1993), the maximal effect may not be apparent until a considerable time post-intervention (Kolvin et al., 1981).

According to the meta-analysis by Durlak et al. (1998), effect sizes tend to fall toward the high end of the mid-range, consistent with the effect of structured interventions classified as predominantly behavioural or cognitive behavioural. Consistent with the literature (Kolvin et al., 1981), greater change was evident for emotional than behavioural symptoms.

Intervention was associated with significant change in two of the three domains, teacher- and self-report. Kolvin et al. (1981) also reported that the parent Rutter questionnaire score showed no change at either midline or final follow-up for their junior cohort. In contrast, the teacher scale showed significant sustained change associated with group therapy. However, the findings from parent interview did reveal sustained home-based change associated with intervention for both age groups. Hence, it may be that the absence of evidence of sustained home-based change in the current study may be to some extent linked with the sensitivity to change of different techniques of data gathering. Overall, it does appear that the maximal effects of this school-based group therapy intervention were most apparent in school and attenuated outside school and that this is consistent with the findings of Kolvin et al. (1981).

Because of simplicity of administration, crucial when funding is limited, because of the face validity of relying on the judgement of those who know the children well, and who have a considerable knowledge of developmental norms (Rapoport et al., 1986), the study relied on teachers to identify at-risk children. Also, if a school-based intervention such as this were to become part of the available services, as intended, it is likely that the identification of participants would heavily involve teachers. Since the mean problem scores approached the borderline clinical threshold (a t -score of 60), according to self-, parent and teacher questionnaires, it appears that teachers did identify children at risk in multiple

Table 3 Mean t -scores (standard deviation), and effect sizes for waiting list phase according to teacher reports

	<i>N</i>	Waiting list Mean (SD)		Mean difference (SE)	ES*
		Time 1	Time 2		
TRF					
Total	83	58.6 (10.6)	57.9 (11.3)	-.7 (.7)	-.06
Internalising	83	59.2 (12.0)	58.0 (12.7)	-1.2 (7.7)	-.1
Externalising	82	57.3 (11.9)	57.4 (11.3)	.1 (.6)	.01

* ES: effect size.

areas, and not solely in terms of their behaviour at school. Furthermore, although the entry criteria were heterogeneous, the children did display behavioural and emotional difficulties measurable by mental health questionnaires.

In order to ensure equal numbers of participants and a mix of predominantly internalising and externalising problems in each intervention group, the study used a form of stratified block randomisation (Roberts & Torgerson, 1998). This resulted in intervention groups that were well matched in terms of gender, and reasonably well so in terms of overall severity. The relatively minor adjustment of the groups subsequent to allocation could have introduced significant bias. However, since the groups that entered the intervention did not differ significantly in terms of symptom scores, significant bias does not appear to have occurred.

Most health interventions are evaluated as studies of efficacy, the impact in controlled, close to ideal situations, and results may not therefore readily translate into real-life practice. Like that of Kolvin et al. (1981), this study is closer to the effectiveness model, of the actual results obtainable in ordinary circumstances and sustainable by non-research practitioners (Thornicroft, Wykes, Holloway, Johnson, & Szmuckler, 1998). Therapists currently delivering the drama group therapy, as in the model presented here, are teachers with additional qualifications in drama. However, since obtaining post-graduate drama qualifications is a major commitment, shortened modular training in drama group therapy has been developed by Total Learning Challenge in association with a local university. Preliminary indications are that practitioners, mainly teachers but also for instance school nurses, who are trained in this way and with supervision, are able to maintain adequate quality and to conduct successful groups. Hence, this approach to intervention is potentially applicable on a wide scale.

The findings indicate that group intervention targeted on at-risk children, and that focuses on psycho-social development, enhances subjective well-being and the adjustment of children to school, confirming the much earlier work of Kolvin et al. (1981). Furthermore, as reported by Kellam et al. (1994), since the group therapy intervention had its greatest impact on the most disturbed and was sustained over at least a year post-intervention, we believe it may potentially influence subsequent life chances. Nevertheless, longer follow-up is required to test this hypothesis.

Other research issues not addressed here include the effect on service utilisation, on scholastic attainment and the complex issue of economic costs and benefits of interventions. In this case the intervention was funded from a unique blend of charitable sources, with contributions from local authorities and the NHS. In a system where there is

competition for resources and manpower, it may be that this type of partnership could represent one model for funding and organising early interventions more generally. The findings suggest that education and health professionals and managers should consider including group-work-based early interventions in the development of new child health services or in the overall management of behavioural and emotional problems in school.

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References

- Achenbach, T. (1991). *Manual for the Teacher's Report Form and 1991 Profile*. Burlington, VT: University of Vermont Department of Psychiatry.
- Black, D., & Urbanowicz, M. (1990). Family intervention with bereaved children. *Journal of Child Psychology and Psychiatry*, 28, 467–476.
- Boyle, M., & Offord, D. (1988). Prevalence of childhood disorder, perceived need for help, family dysfunction and resource allocation for child welfare and children's mental health services in Ontario. *Canadian Journal of Behavioural Science*, 20, 374–388.
- Bracken, B. (1992). *Multi-Dimensional Self-Concept Scale*. Austin, TX: Pro-Ed Inc.
- Caspi, A., Elder, G., & Herbener, E. (1990). Childhood personality and the prediction of life-course patterns. In L. Robins & M. Rutter (Eds.), *Straight and devious pathways from childhood to adulthood*. Cambridge: Cambridge University Press.
- Conduct Problems Prevention Research Group (1999). Initial impact of the Fast Track Prevention Trial for Conduct Problems II. Classroom effects. *Journal of Consulting and Clinical Psychology*, 67, 648–657.
- Cox, A., Pound, A., Mills, M., Puckering, C., & Owen, A. (1991). Evaluation of a home visiting and befriending scheme for young mothers: Newpin. *Journal of the Royal Society of Medicine*, 84, 217–220.
- Durlak, J., & Wells, A. (1998). Evaluation of indicated preventive intervention (secondary prevention) mental health programs for children and adolescents. *American Journal of Community Psychology*, 26, 775–802.
- El-Badri, S., & McArdle, P. (1998). Attendance at child-psychiatry clinics. *Psychiatric Bulletin*, 22, 554–556.
- Fukuyama, F. (1999). *The great disruption. Human nature and the reconstitution of social order*. London: Profile Books Ltd.
- Gould, M., Fisher, P., Parides, M., Flory, M., & Shaffer, M. (1996). Psychosocial risk factors for

- child and adolescent completed suicide. *Archives of General Psychiatry*, 53, 1155–1162.
- Harrington, R., Fudge, H., Rutter, M., Pickles, A., & Hill, J. (1990). Adult outcomes of childhood and adolescent depression. I. Psychiatric status. *Archives of General Psychiatry*, 47, 465–73.
- Hausman, J.A. (1978). Specification tests in econometrics. *Econometrica*, 46, 1251–1271.
- Hawdon, J., Hey, E., Kolvin, I., & Fundudis, T. (1990). Born too small – is outcome still affected? *Developmental Medicine and Child Neurology*, 32, 943–953.
- Hundert, J., Boyle, M., Cunningham, C., Duku, E., Heale, J., McDonald, J., Offord, D., & Racine, Y. (1999). Helping children adjust: A tri-ministry study: II. Program effects. *Journal of Child Psychology and Psychiatry*, 40, 1061–1074.
- Jensen, P. (2000). Commentary. *Journal of the American Academy of Child and Adolescent Psychiatry*, 39, 984–987.
- Kellam, S., Rebok, G., Ialongo, N., & Mayer, L. (1994). The course and malleability of aggressive behaviour from early first grade into middle school: Results of a developmental epidemiologically-based preventive trial. *Journal of Child Psychology and Psychiatry*, 35, 259–282.
- Kessler, R., Berglund, P., Foster, C., Saunders, W., Stang, P., & Walters, E. (1997). Social consequences of psychiatric disorders II: Teenage parenthood. *American Journal of Psychiatry*, 154, 1404–1411.
- Kolvin, I., Garside, R., Nicol, A., Macmillan, A., Wolstenholme, F., & Leitch, L. (1981). *Help starts here: The maladjusted child in the ordinary school*. London: Tavistock Publications.
- Mannuzza, S., Gittelman Klein, R., Bonagura, N., Malloy, P., Giampino, T., & Addali, K. (1991). Hyperactive boys almost grown up V. Replication of psychiatric status. *Archives of General Psychiatry*, 48, 77–83.
- McArdle, P., O'Brien, G., & Kolvin, I. (1995). Hyperactivity: Prevalence and relationship with conduct disorder. *Journal of Child Psychology and Psychiatry*, 36, 279–305.
- Mrazek, P., & Haggerty, R. (Eds.) (1994). *Reducing risks for mental disorders: Frontiers for preventive intervention research*. Washington: National Academy Press.
- MTA Cooperative Group (1999). Fourteen month randomized clinical trial of treatment strategies for attention deficit hyperactivity disorder. *Archives of General Psychiatry*, 56, 1073–1086.
- Offord, D. (1996). The state of prevention and early intervention. In R. Peters & R. McMahon (Eds.), *Preventing childhood disorders, substance abuse, and delinquency*. London: Sage Publications.
- Porrino, L., Rapoport, J., Behar, D., Sceery, W., Ismond, D., & Bunney, W. (1983). A naturalistic assessment of the motor activity of hyperactive boys. I. Comparison with normal controls. *Archives of General Psychiatry*, 40, 681–687.
- Prosser, J., & McArdle, P. (1996). Secular trends in childhood mental disorder: A review. *Psychological Medicine*, 26, 715–725.
- Quinton, D. (1988). Urbanism and child mental health. *Journal of Child Psychology and Psychiatry*, 29, 11–20.
- Rapoport, J., Donnelly, M., Zametkin, A., & Carrouger, J. (1986). Situational hyperactivity in a US clinical setting. *Journal of Child Psychology and Psychiatry*, 27, 639–646.
- Roberts, C., & Torgerson, D. (1998). Randomisation methods in controlled trials. *British Medical Journal*, 317, 1301.
- Rutter, M., Giller, H., & Hagell, A. (1998). *Antisocial behaviour by young people* (pp. 308–338). Cambridge: Cambridge University Press.
- Rutter, M., & Smith, D. (1995). Towards causal explanations of time trends in psychosocial disorders of youth. In M. Rutter & D. Smith (Eds.), *Psychosocial disorders in young people: Time trends and their causes*. Chichester: Wiley.
- Rutter, M. (1993). Developmental psychopathology as a research perspective. In D. Magnusson & P. Casaer (Eds.), *Longitudinal research on individual development*. Cambridge: Cambridge University Press.
- Sadowski, H., Ugarte, B., Kolvin, I., Kaplan, C., & Barnes, J. (1999). Early life family disadvantages and major depression in adulthood. *British Journal of Psychiatry*, 174, 112–20.
- Smith, D., & Rutter, M. (1995). Time trends in psychosocial disorders of youth. In M. Rutter & D. Smith (Eds.), *Psychosocial disorders in young people*. Chichester: John Wiley & Sons.
- Stephenson, C. (1993). Use of drama. In K. Dwivedi (Ed.), *Group work with children and adolescents a handbook*. London: Jessica Kingsley Publishers.
- Szatmari, P., Offord, D., & Boyle, M. (1989). Correlates, associated impairments and patterns of service utilization of children with attention deficit disorder: Findings from the Ontario Child Health Study. *Journal of Child Psychology and Psychiatry*, 30, 205–217.
- Thornicroft, G., Wykes, T., Holloway, F., Johnson, S., & Szmuckler, G. (1998). From efficacy to effectiveness in community mental health services. *British Journal of Psychiatry*, 173, 423–427.
- Verhulst, F., van der Ende, J., Ferdinand, R., & Kasius, M. (1997). The prevalence of DSM-III-R diagnoses in a national sample of Dutch adolescents. *Archives of General Psychiatry*, 54, 329–336.
- Wood, A., Harrington, R., & Moore, A. (1996). Controlled trial of a brief cognitive-behavioural intervention in adolescent patients with depressive disorders. *Journal of Child Psychology and Psychiatry*, 37, 737–746.