

Preventing emotional and behavioural problems: the effectiveness of parenting programmes with children less than 3 years of age

J. Barlow,* J. Parsons† and S. Stewart-Brown*¹

*Health Services Research Unit, Department of Public Health, University of Oxford, Oxfordshire, UK, and
†Department of Obstetrics and Gynaecology, University of Adelaide, Adelaide, Australia

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Abstract

Background Emotional and behavioural problems in children under 3 years of age have a high prevalence, and parenting practices have been shown to be strongly associated with their development. A number of recent systematic reviews have shown that group-based parenting programmes can be effective in improving the emotional and behavioural adjustment of older children (aged 3–10 years). The aim of this review was to establish whether there is evidence from controlled trials that group-based parenting programmes are effective in improving the emotional and behavioural adjustment of children less than 3 years of age, and their role in the primary prevention of emotional and behavioural problems.

Methods English and non-English language articles published between January 1970 and July 2001 were retrieved using a keyword search of a number of electronic databases.

Results Five studies were included and two meta-analyses were conducted, the first combining data from parent reports and the second combining data from independent observations of children's behaviour. The combined parent reports showed a non-significant difference favouring the intervention group, while the combined independent observations showed a significant difference favouring the intervention group.

Conclusion It is concluded that this review points to the potential of parenting programmes to improve the emotional and behavioural adjustment of children less than 3 years of age, but that there is insufficient evidence from controlled trials to assess whether the short-term benefit is maintained over time, or the role that such programmes might play in the *primary* prevention of emotional and behavioural problems. This review points to the need for further primary preventive research on this important public health issue.

Background

Emotional and behavioural problems are among the most important causes of functional disability in children (Meltzer *et al.* 2000). The rate of behaviour problems among pre-schoolers in particular is

high. One study showed that the prevalence for 3-year-old children was 10% with 66% of parents sampled having one or more concerns about their child (Stallard 1993). A further study showed that 7% of children aged 3–4 years exhibited serious behaviour problems (Charlton *et al.* 1995).

Keywords

primary prevention,
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Correspondence:

Jane Barlow, Health Services
Research Unit, Institute of
Health Sciences, Old Road,
Headington, Oxon, OX3 7LF,
UK

¹Present address:

Department of Public Health
and Epidemiology, Warwick
Medical School, University of
Warwick, Warwick, UK
E-mail:
jane.Barlow@dphpc.ox.ac.uk

While many studies have demonstrated the stability of behaviour problems over time (e.g. the Dunedin study showed that antisocial behaviour at age 13 was predicted by externalizing behaviour at age 3 and behaviour problems at age 5 – Robins 1991), and a strong association with later psychopathology (e.g. Robins 1991; Caspi *et al.* 1996), it is becoming increasingly clear that such problems have their origins in infancy and toddlerhood. There is evidence to show that the caregiver environment is particularly important during the first few years of life in predicting externalizing disorders at school entry, which is consistent with both social learning and attachment models (Shaw *et al.* 2001). The risk associated with the caregiving environment relates in particular to parenting that is negative and inconsistent, and to family and social adversity. For example, the above study showed that aggression in 2-year-olds in disadvantaged families was associated with punitive parental attitudes. Other research showed that teacher-rated behaviour problems at age 5 could be predicted at 18–24 months of age by negative parenting behaviour in the home (in addition to negative child behaviour with peers, and single-parent status) (Fagot & Leve 1998).

Parenting programmes are focused short-term interventions, which are typically aimed at helping parents to deal with their children's emotional and behavioural development. They are based on a range of theoretical approaches. The focus of behavioural programmes, for example, is to help parents to identify problem behaviours and to use positive reinforcement such as rewards to encourage desirable behaviour, and techniques such as ignoring and time-out, or redirection in the case of a younger child, to discourage undesirable behaviour (Smith 1996). There is also a range of non-behavioural or 'relationship' programmes, e.g. humanistic, Adlerian, psychodynamic, transactional analysis, and family systems theory. Programmes underpinned by Adlerian theory, for example, emphasize helping parents to understand children, the ways in which children think, and the reasons or motives for their behaviour, while programmes based on family systems theory aim to help parents understand their own behaviour and that of other family members, and to locate the

problem behaviour of children within the context of relationships at home and at school (Smith 1996).

Group-based parenting programmes are now being offered in a variety of settings in the UK, and a number of systematic reviews of controlled trials have shown that they are effective in improving behaviour problems in older children, i.e. 3–10 years of age (Barlow & Stewart-Brown 2000; Richardson & Joughin 2002), and maternal psychosocial health in the short term, including reducing anxiety and depression, and improving self-esteem (Barlow *et al.* 2002).

The main advantages of providing parents with skills to deal with their children's behaviour problems include their potential to meet the therapeutic needs of large numbers of parents and greater ease in transferring changes produced in the clinic to the home (Johnson & Katz 1973; Rose 1974). They also provide parents with the skills to deal with new problems as they arise.

The reason for focusing a review on parenting programmes is twofold. First, in addition to recent reviews of their effectiveness with children in other age groups, the potential cost effectiveness of these programmes (Barlow & Stewart-Brown 2000) offers a promising model with regard to the primary prevention of emotional and behavioural problems. In addition, qualitative research has confirmed that many parents value the support provided to them by other parents in the group (Barlow & Stewart-Brown 2001).

The second reason for focusing on parenting programmes is that a number of recent UK government documents have pointed to the need for interventions aimed at supporting the family and more specifically, enhancing early parenting skills. 'Supporting Families' (Home Office 1998) points to the need to provide more help to parents with the difficult job of raising children successfully, including the use of 'toddler training groups' to help parents to develop ways to cope with behaviour problems. The Sure Start initiative (DfES 1999) aims to provide parenting programmes as part of a range of local area-based services to improve support for families and parents of children under 3 years of age. Evidence of the effectiveness of parenting programmes for children less

than 3 years of age is therefore required. The UK government has also given a high priority to parenting as part of the social exclusion and criminal justice agendas (Henricson 2003), good parenting being viewed as an important means of promoting social cohesion. The Crime and Disorder Act (Home Office 1999) for example, introduced compulsory parenting education into the criminal justice system.

The aim of this review was to establish whether group-based parenting programmes are effective in improving the emotional and behavioural adjustment of children less than 3 years of age, and to assess their role in the primary prevention of emotional and behavioural problems. The focus on primary prevention reflects the fact that while parenting programmes are typically used in the secondary prevention of behavioural problems in children (i.e. early treatment of problems), and evidence of their effectiveness in this role has now been established, they may also have an important role to play in the primary prevention of such problems (i.e. removal of the causes of a problem) as part of both universal and targeted approaches.

Methods

The methods have been described in detail in the Cochrane review on which the current paper is based (Barlow & Parsons 2004). A search was conducted of English and non-English language articles published between January 1970 and July 2001 in a number of biomedical, social science, educational and general reference electronic databases. These included MEDLINE, EMBASE CINAHL, PsychLIT, ERIC, ASSIA, Sociofile and the Social Science Citation Index. Other sources of information included the Cochrane Library (SPECTR, CENTRAL), and the National Research Register (NRR).

Two independent reviewers selected the relevant abstracts and articles. Studies had to include at least one group-based parenting programme (irrespective of the theoretical basis) directed at parents of children aged 3 years or less (studies of children older than 3 were included provided that the mean age of the sample was less than or equal to 3 years). Only controlled studies were included in which

participants had been randomly allocated to an experimental or a control group the latter being a waiting list, no-treatment or placebo control group.

The studies included used a number of standardized outcome measures of emotional and behavioural adjustment in infants/toddlers. Where sufficient data were provided, effect sizes were calculated. The effect for each outcome in each study was standardized by dividing the mean difference in post-intervention scores for the intervention and control group by the pooled standard deviation. The data were then combined in a meta-analysis using a random effect model.

Results

Study selection and characteristics

Of the 140 studies reviewed, only four were suitable for inclusion (Sutton 1992; Gross *et al.* 1995; Nicholson *et al.* 1998, 2001). A further study that was 'in press' at the time of the initial review has also been included (Gross *et al.* 2003) (see Table 1 for details of studies). The main reasons for exclusion were that the study did not evaluate a parenting programme, the intervention described was not group-based, or the children in the study did not meet the age criterion. Other studies were excluded because they did not include a standardized instrument measuring some aspect of emotional or behavioural adjustment.

The five studies had a variety of aims. The first study evaluated the effectiveness of a group-based behavioural videotape modelling parenting programme (Incredible Years BASIC Programme for toddlers – Webster-Stratton 1981; revised 1987) with multi-ethnic parents of toddlers (aged 2–3 years) in day care in low-income urban communities (Gross *et al.* 2003). The second study was designed to improve the relationship between parents and children, to decrease parental stress and depression, and to reduce child behaviour problems (Gross *et al.* 1995). Parents of children aged 2–3 years satisfying criteria for behavioural difficulties were invited to take part in a group-based videotape modelling parenting programme (Same programme as above). The third study evaluated

Table 1. Characteristics of included studies

Authors	Design	Aim and intervention	Participants	Number	Outcome measures
Gross <i>et al.</i> (2003)	Cluster randomized controlled trial with pre- and post-measures	Targeted primary prevention of emotional and behavioural problems. Group-based parenting programme – 12 weeks	Parents of multi-ethnic toddlers (2–3 years of age) in day care in low-income urban communities	Group parent training (n = 75); teacher training (n = 52); combined parent and teacher training group (n = 78); control group (n = 59)	<ul style="list-style-type: none"> • Eyberg Child Behaviour Inventory; • Kohrs Problem Checklist; • Dyadic Parent–Child Interactive Coding System – Revised
Gross <i>et al.</i> (1995)	Randomized controlled trial with pre- and post-measures	Secondary prevention of emotional and behavioural problems. Group-based parenting programme – 10 weeks	Both parents of children aged 2–3 years fulfilling criteria for behavioural difficulties	Intervention group n = 10; Control group 1 n = 6; Control group 2 n = 7	<ul style="list-style-type: none"> • Eyberg Child Behaviour Inventory • Toddler Temperament Scale
Nicholson <i>et al.</i> (1998)	Randomized controlled trial with pre- and post-measures	Universal primary prevention of emotional and behavioural problems. Group-based parenting programme – 10 h	Population based approach – volunteer parents recruited via flyers in schools and community centres. Either or both parents of children, average age 3 years	Intervention group n = 20; Waiting-list control group n = 20	<ul style="list-style-type: none"> • Behaviour Screening Questionnaire
Nicholson <i>et al.</i> (2001)	Randomized controlled trial with pre- and post-measures	Targeted primary prevention of emotional and behavioural problems. Group-based parenting programme – 10 h	Mothers, fathers and grandmothers of children aged 1–5 with excessive use of verbal and corporal punishment and low socio-economic status	Intervention group n = 13; Waiting-list control group n = 13	<ul style="list-style-type: none"> • Behaviour Screening Questionnaire; • Eyberg Child Behaviour Inventory; • Sutter-Eyberg Student Behaviour Inventory; • Pediatric Screening Checklist
Sutton (1992)	Randomized controlled trial with pre- and post-measures	Secondary prevention of emotional and behavioural problems. Group-based parenting programme – 1–2 h for 8 weeks	Self-referred and referred parents of pre-school children, average age 2 years 10 months with behavioural problems	Intervention group n = 8; Waiting-list control group n = 11	<ul style="list-style-type: none"> • Child Behaviour Questionnaire; • Home Situations Questionnaire

the effectiveness of a cognitive-behavioural parenting programme that was designed to prevent future conduct problems in families with very young children. Volunteer parents were recruited via flyers in schools and community centres (Nicholson *et al.* 1998). The fourth study compared different methods of behavioural parent training (Sutton 1992). Participants included self-referred and referred parents of pre-school aged children (average age 2 years and 10 months) with behaviour problems. The fifth study evaluated the effectiveness of a group-based cognitive-behavioural parenting programme for parents at risk of using harsh parenting strategies (Nicholson *et al.* 2002). Participants included parents with evidence of excessive use of verbal and corporal punishment and low socio-economic status. Only one of the studies was conducted in the UK (Sutton 1992). The remainder were conducted in the US.

Table 2 shows the content of the parenting programmes that were evaluated (Sutton 1992; Gross *et al.* 1995, 2003; Nicholson *et al.* 1998, 2002). Only one of the included programmes used a universal approach, i.e. a population-based sample (Nicholson *et al.* 1998). Two of the remaining studies adopted a targeted (i.e. high-risk sample) approach to primary prevention (Nicholson *et al.* 2002; Gross *et al.* 2003), and the remaining two studies adopted a secondary preventive approach (Sutton 1992; Gross *et al.* 1995).

Critical appraisal of the included studies

Critical appraisal of the included studies was carried out by two reviewers using a modified version of the published criteria from the *Journal of the American Medical Association* (Guyatt *et al.* 1994). The full results of the critical appraisal have been reported elsewhere (Barlow & Parsons 2004).

Meta-analyses

Parent-reports

All five included studies (Sutton 1992; Gross *et al.* 1995, 2003; Nicholson *et al.* 1998, 2002) measured the effectiveness of a parenting programme in improving emotional and behavioural outcomes in

infants/toddlers using standardized parent-report instruments – Eyberg Child Behaviour Inventory (ECBI) – intensity and problem scales, Behaviour Screening Questionnaire (BSQ), Toddler Temperament Scale (TTS), and Child Behaviour Questionnaire (CBQ). These studies provided a total of 28 assessments of children's emotional and behavioural adjustment but only one from each study was included in the meta-analysis. The measures to be included were selected using the following criteria: only parent-reports were included; mother reports were favoured over father reports because of the fact that this is a more common way of assessing children's behaviour, and mothers typically spend more time with their children. The ECBI was favoured over the TTS in the Gross *et al.* (1995) study because the former is a more commonly used measure of children's behavioural adjustment. The ECBI intensity was favoured over the problems score because more studies had included this as an assessment of outcome.

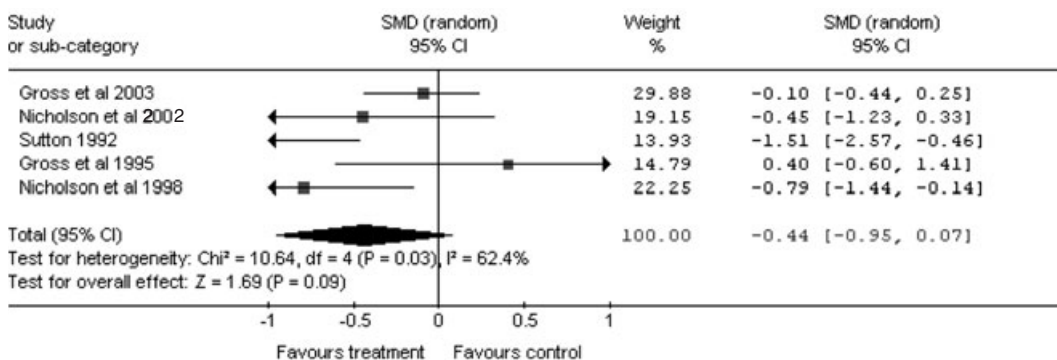
The five studies provide data from a total of 236 participants (127 intervention group and 109 control group). The combined data show a non-significant result favouring the intervention group -0.44 $[-0.95, 0.07]$. Figure 1 shows the results of the meta-analysis using parent-reports.

Independent observations

Three studies measured the effectiveness of a parenting programme in improving emotional and behavioural adjustment in infants/toddlers using independent observations of children's behaviour (Gross *et al.* 1995; 2003; Nicholson *et al.* 2002). These included the Dyadic Parent-Child Checklist, Pediatric Symptom Checklist teacher-report; Sutter-Eyberg Behaviour Inventory teacher-report; and Kohn Pediatric Checklist (KPC) teacher-report. The three studies provided a total of seven assessments of outcome but only three of these outcomes were included in the meta-analysis because of the fact that the remaining four were repeat measures on the same children. The three measures to be included were selected using the following criteria: observations of mother and child were used rather than observations of father and child. Observations of parent-child

Table 2. Content of the programmes

Study	Content
Gross <i>et al.</i> (2003)	Group-based parenting programme (Toddler version of the Incredible Years Programme) delivered to groups of 8–12 parents in 2-h sessions over the course of 10 weeks. Parents learn through mastery experiences, viewing and discussing vignettes of parent and child models, and mutual support and reinforcement among group participants. The programme included information on (a) how to play with your child, (b) helping your child learn, (c) using praise and rewards effectively (d) strategies for setting limits effectively, and (e) managing misbehaviour. Psychiatric nurses led groups.
Gross <i>et al.</i> (1995)	As above.
Nicholson <i>et al.</i> (1998)	A 10-h group-based educational parenting programme specifically designed for parents of children aged 1–5 years, based on well-established knowledge and practices of parenting drawn from the literature on child development, cognitive psychology, and social learning theory. The programme comprised four major components, represented by the STAR acronym. The first encouraged parents to stop and think (S and T in the acronym) before responding to their child's behaviours. The second focused on parents questioning their expectations of their child (A for ask in the acronym). The third dealt with nurturing strategies to encourage development, and the fourth dealt with discipline and setting limits on children's behaviour (R for respond in the acronym). Parent educators delivered the programme.
Nicholson <i>et al.</i> (2002)	A psycho-educational programme using the STAR-parenting programme (as described in Nicholson <i>et al.</i> 1998). Training delivered by facilitators trained in the STAR Programme.
Sutton (1992)	Group-based parenting programme delivered over the course of 8 weeks, based on the principles of social learning theory. The programme was developed by the author and focused on parents learning child-management skills. The parents aimed to obtain their child's compliance with an instruction within one minute of receiving it. The author delivered the training.

**Figure 1.** Meta-analysis of emotional and behavioural outcomes using parent-reports.

interaction were used rather than teacher-reports. Where only teacher-reports were available, a summary measure was selected, i.e. in Nicholson *et al.* (2002), three teacher-reports were used – the Sutter-Eyberg Intensity; Sutter-Eyberg Problems and the Pediatric Symptom Checklist – the first of these was therefore selected for inclusion to maintain consistency with the parent-reports.

The three studies provide data from a total of 177 participants (99 intervention group and 78 control group). The combined data show a signif-

icant difference favouring the intervention group – 0.55 [–0.86, –0.25]. Figure 2 shows the results of the meta-analysis using independent observations of children's behaviour.

Long-term follow-up results

All five studies that evaluated the effectiveness of a parenting programme in improving emotional and behavioural adjustment in 0–3-year-old children provided follow-up data. However, only two stud-

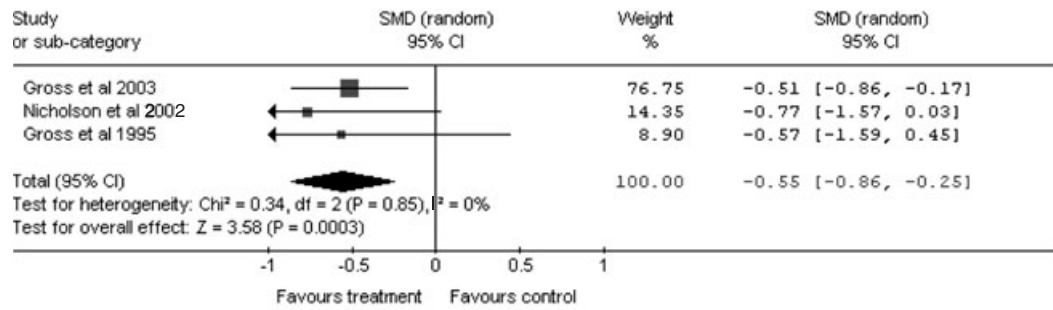


Figure 2. Meta-analysis of emotional and behavioural outcomes using independent observations of children's behaviour.

ies provided data (independent observations) from both the intervention and control group (Gross *et al.* 1995, 2003).

The two studies provide data from a total of 151 respondents (86 intervention group and 65 control group). The combined data show no evidence of effectiveness $-0.23 [-0.55, 0.10]$.

Discussion

The aim of this review was twofold. The first was to address the effectiveness of parenting programmes in improving the emotional and behavioural adjustment of children less than 3 years of age. Five studies were included all of which provided sufficient data to calculate effect sizes and confidence intervals. Two meta-analyses were conducted using parent-report and independent observations of children's behaviour. The meta-analysis of the independent observations of children's emotional and behavioural adjustment showed a significant difference favouring the intervention group, while the result using parent-reports of children's behaviour showed a non-significant difference favouring the intervention group. The lack of significance in the case of parent-reports is attributable to one study in particular that favoured the control as opposed to the intervention group (Gross *et al.* 1995). In this trial the randomization process failed to equalize scores for this particular outcome at baseline (125.0 compared with 112.3). Thus, while the paper reports a shift from 125.0 to 119.5 on the ECBI for the intervention group and a much smaller shift from 112.3

to 111.3 for the control group, the use of post-intervention scores (as opposed to change scores) for the purpose of the meta-analysis, shows a result favouring the control group. The use of post-intervention scores for the purpose of meta-analysis, is based on the assumption that randomization will equalize scores across the groups, but this may not always occur where only small numbers are randomized.

The combined result from the only two studies which provided follow-up data for both intervention and control group, did not show evidence of continued effectiveness. While there is review evidence suggesting the long-term effectiveness of parenting programmes with older children (Dimond & Hyde 1999), the results were based on studies in which only the intervention group were followed up and the results may therefore be a result of regression to the mean. There is therefore still a need for studies to evaluate the long-term effectiveness of early parenting programmes with young children. There may also be a need for refresher programmes to be made available to parents at a later date, and at different points in their children's development.

The second aim of this review was to assess whether the included studies provided any evidence concerning the effectiveness of parenting programmes in the primary prevention of emotional and behavioural problems. Only one of the included programmes was aimed at the primary prevention of emotional and behavioural problems using a population-based approach. This programme utilized a preventive educational philoso-

phy that aimed to build on existing family strengths (Nicholson *et al.* 1998). The respondents in this study were volunteer parents recruited via flyers in schools and community centres. The majority of toddlers in the sample were outside the clinical range on the BSQ as indicated by a mean pre-intervention score of 12.6 (the cut-off point designating caseness on this instrument is 11). The results of this study showed that in addition to improvement in the toddler's emotional and behavioural adjustment, parents in the intervention group had improved parenting attitudes and behaviour (including reduced reports of verbal and physical punishment), and that this change in report of disciplinary practices was maintained at 6-week follow-up. Further long-term follow-up of this study will be necessary, however, before it is possible to reach any firm conclusions regarding the success of this brief parenting programme in the primary prevention of emotional and behavioural problems.

Two further programmes utilized a primary preventive targeted approach (Nicholson *et al.* 2002; Gross *et al.* 2003). One of these programmes targeted multi-ethnic toddlers in day care in low-income urban communities and the second targeted parents with excessive use of verbal and corporal punishment combined with low socio-economic status. In one of these studies all of the children were within the normal range (mean = 98.6, SD = 28) (Gross *et al.* 2003) (recommended cut-off for the Eyberg Intensity scale is 127), and in the second study most of the children were within the normal range using the same instrument (mean = 111.2, SD = 36) (Nicholson *et al.* 2002). Both of these studies showed improvement in children's emotional and behavioural adjustment using independent observations of outcomes, and one also showed improvement using parent-reports.

The extent to which the programmes that were included in this review meet the criteria for being primary prevention also depends on what the programme was aimed at preventing. Where programmes are not aimed at the primary prevention of emotional and behavioural problems (e.g. because of the fact that 2-year-olds entering the programme are already experiencing such prob-

lems), they can nevertheless play an important role in the primary prevention of other problems such as, for example, delinquency or exclusion, at a later point in the child's development. While it might be difficult to attribute effects that occurred during adolescence, for example, to such early brief interventions, the preliminary findings of this review support the case for research to follow up the children of parents who have taken part in early parenting programmes, through nursery and school-entry. No research of this nature is currently available.

The findings of this review point to the potential of parenting programmes when they are provided on a primary and secondary preventive basis during the first 3 years of life. This is not to suggest, however, that parents who take part in such programmes will not experience difficulties with their children's emotional or behavioural development at a later date, or that further intervention will not be needed. However, this preventive approach appears to have succeeded in empowering parents at a time that can not only be very stressful, but which is important in terms of both the type of relationship that is established between parent and toddler, and the future mental health of the child. Many of the struggles that parents experience with their children occur during the first 3 years of a child's life, and parenting practices can be firmly established by the time a child is 2 years of age. It may be that the provision of early parenting programmes for all parents could be successful in laying the foundations for good parenting practices and for enabling parents to seek support of this nature again at a later date.

Limitations

The review has a number of limitations. First, the average age of children in most of the included studies was 3 years with a standard deviation of 1.5 years (i.e. age range 1.5–4.5 years). The results of this review may not therefore be applicable to children less than 18 months of age, and in some cases the children will have been older than 3 years. There is, however, no reason to assume that parenting programmes would not be equally appropriate for toddlers less than 1.5 years of age,

and indeed, there is evidence to show that such programmes can be used highly effectively during the antenatal and immediate post-natal periods to prevent sleep problems (e.g. Wolfson *et al.* 1992).

Second, this review combines data that was derived from both high-risk (e.g. Nicholson *et al.* 2001) and community (e.g. Nicholson *et al.* 1998) samples of parents. It is, on the whole, much harder to show evidence of effectiveness in community samples because of the ceiling effect of questionnaires, most of which have been designed for use with clinical populations. Large effect sizes were, however, obtained despite the combination of data from different populations of parents.

Third, all of the included studies were of behavioural and cognitive-behavioural parenting programmes, and the results may not therefore be generalizable to other types of parenting programme. In addition, caution should be exercised before the results are generalized to all parents. One of the studies used parents who volunteered as opposed to parents who were referred (Nicholson *et al.* 1998) and two used a combination of volunteers and referred families (Sutton 1992; Nicholson *et al.* 2002). Only one study provided evidence concerning the ethnicity of the participating parents (it seems likely that the groups were predominantly Caucasian), and only one study was conducted in the UK (Sutton 1992).

Conclusion

The findings of this review provide some evidence indicating the potential of parenting programmes to improve the short-term emotional and behavioural adjustment of children under the age of 3 years. The limited evidence available concerning the extent to which these results are maintained over time, however, points to the need for more long-term follow-up. It may be that during this period of rapid change in infant/toddler development, further input at a later date is required.

There is insufficient evidence to reach firm conclusions regarding the role of parenting programmes in the primary prevention of emotional and behavioural problems. The limited evidence

available suggests that parenting programmes could have a primary preventive role, and indicates the need for both programme development and further large-scale studies of the effectiveness of interventions aimed at the primary prevention of emotional and behavioural problems in children.

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