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Parent-Training Programmes for Improving Maternal Psychosocial Health

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Cover sheet

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Parent-training programmes for improving maternal psychosocial health

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their advice and support, Richard Shaw for some assistance with data extraction during the the first update, and the HSRU for the financial support of the review.

Potential conflict of interest

Jane Barlow is a co-author of Patterson 2002.

What's new

This review has been updated with the addition of 3 new included studies. A number of additional excluded studies have also been added. There is one additional study awaiting assessment and 2 ongoing studies listed for inclusion at the next update of this review. The size of effect for the main outcomes has not been substantially altered by this update.

Additional sensitivity analyses to assess the impact of quasi randomised studies on the result have also been added. Where the quasi randomised studies are excluded from the analysis, the result was found to be slightly more conservative.

The text of the original review was also published as a bound document in slightly different format and is available from the Health Services Research Unit (details below) at a price of UK £7.50:

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Synopsis

There is evidence from a range of studies to suggest that adverse maternal psychosocial health can have an impact on the parent-infant relationship and potentially lead to adverse child outcomes in the longer term. Parenting programmes are increasingly being used to promote the well-being of parents and children, and this review aims to establish whether they can improve maternal psychosocial health in particular.

The findings of the review are based on a total of 26 studies and these have been classified into five groups according to the theoretical approach underpinning the programme - behavioural, cognitive-behavioural, multi-modal, behavioural-humanistic and rational-emotive therapy. The 23 studies produced a total of 64 assessments of maternal health, including measures of maternal depression, anxiety, and self-esteem. The combined data show that parenting programmes can be effective in improving a range of aspects of maternal psychosocial functioning. While it was not possible to compare the effectiveness of the programmes in the five different categories, all of the programmes reviewed were successful in producing positive change in maternal psychosocial health.

Further research is needed to clarify some of the questions arising from this review.

Abstract

Background

Mental health problems are common and there is evidence to suggest that the origins of such problems lie in infancy and childhood. In particular, there is evidence from a range of studies to suggest that maternal psychosocial health can have a significant effect on the mother-infant relationship, and that this in turn can have consequences for both the short and long-term psychological health of the child. The use of parenting programmes is increasing in the UK and elsewhere and evidence of their effectiveness in improving outcomes for children has been provided. Evidence is now required of their effectiveness in improving outcomes for mothers.

Objectives

The objective of this review is to address whether group-based parenting programmes are effective in improving maternal psychosocial health including anxiety, depression, and self-esteem.

Search strategy

A range of biomedical, social science, educational and general reference electronic databases were searched including 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).

Selection criteria

Only randomised controlled trials were included in which participants had been randomly allocated to an experimental and a control group, the latter being a waiting-list, no-treatment or a placebo control group. Studies had to include at least one group-based parenting programme, and one standardised instrument measuring maternal psychosocial health.

Data collection & analysis

A systematic critical appraisal of all included studies was undertaken using a modified version of the Journal of the American Medical Association (JAMA) published criteria. The treatment effect for each outcome in each study was standardised by dividing the mean difference in post-intervention scores for the intervention and treatment group, by the pooled standard deviation, to produce an effect size. Where appropriate the results were then combined in a meta-analysis using a fixed-effect model, and 95% confidence intervals were used to assess the significance of the findings.

Main results

A total of 23 studies were included in the original review which was increased to 26 at the first update (2003). Of these 20 provided sufficient data to calculate effect sizes. The 20 studies provided a total of 64 assessments of outcome on a range of aspects of psychosocial functioning including depression, anxiety, stress, self-esteem, social competence, social support, guilt, mood, automatic thoughts, dyadic adjustment, psychiatric morbidity, irrationality, anger and aggression, mood,

attitude, personality, and beliefs. Data sufficient to combine in a meta-analysis existed for only five outcomes (depression; anxiety/stress; self-esteem; social support; and relationship with spouse/marital adjustment). The results of the meta-analyses show statistically significant results favouring the intervention group for depression; anxiety/stress; self-esteem; and relationship with spouse/marital adjustment. The meta-analysis of the social support data showed no evidence of effectiveness. Of the remaining data that it was not possible to combine in a meta-analysis, approximately 22% of the outcomes measured, showed significant differences between the intervention group and the control group. A further 40% showed non-significant differences favouring the intervention group. Approximately one-third of outcomes showed no evidence of effectiveness.

A meta-analysis of the follow-up data on three outcomes was also conducted - depression, self-esteem and relationship with spouse/marital adjustment. The results show that there was a continued improvement in self-esteem, depression, and marital adjustment at follow-up, although the latter two findings were not statistically significant.

This review has been updated (2003) with the addition of 3 new included studies. A number of additional excluded studies have also been added. There is one additional study awaiting assessment and 2 ongoing studies listed for inclusion at a future update of this review. The size of effect for the main outcomes has not been substantially altered by this update.

Additional sensitivity analyses to assess the impact of quasi randomised studies on the result have also been added. Where the quasi randomised studies are excluded from the analysis, the result was found to be slightly more conservative.

Reviewers' conclusions

It is suggested that parenting programmes can make a significant contribution to the short-term psychosocial health of mothers. However, there is currently a paucity of evidence concerning whether these results are maintained over time, and the limited follow-up data which are available show equivocal results. This points to the need for further evidence concerning the long-term effectiveness of parenting programmes on maternal mental health.

Whilst the results of this review are positive overall, some studies showed no effect. Further research is needed to assess which factors contribute to successful outcomes in these programmes with particular attention being paid to the quality of delivery.

These results suggest that parenting programmes have a potential role to play in the promotion of mental health.

Background

FULL SCIENTIFIC BACKGROUND TO THE STUDY

1. The prevalence of psychosocial problems

While it is recognised that the prevalence of mental health problems in women generally is high (Goldberg 1992), there is very little published data on the prevalence of mental health problems in mothers in particular. The limited epidemiological evidence that is available, however, suggests that the prevalence in urban populations (as measured by the General Health Questionnaire) may be as high as 45% (Stevenson et al 1989). Epidemiological studies of specific conditions such as postnatal depression indicate a prevalence of between 10-15% and also indicate that such episodes may mark the onset of long-standing disorder (Cox et al 1982; Cutrona 1986; Kumar 1984). Furthermore, despite their high prevalence such disturbances still commonly go undetected by primary health care professionals (Cooper et al 1997).

2. The implications of maternal psychosocial problems for the health of infants/children

There is evidence from follow-up studies to suggest that mothers' psychosocial and mental health can have a significant effect on the mother-infant relationship, and that mental health problems such as postnatal depression can result in both emotional and cognitive deficits in the infant (Cogill et al 1986), and attachment problems in childhood (Stein et al 1991; Murray 1990). Longitudinal studies have shown that maternal mental health problems can also have significant consequences as regards the long-term emotional and mental well-being of the child (Rutter 1996; Rutter 1987; Rutter 1972; Caplan et al 1989; Ghodsian 1984). There is, therefore, considerable potential for interventions aimed at promoting the psychosocial well-being of the mother, to reduce both the disruption to the child's emotional, educational, and social adjustment, and the demand for health and welfare/social services (Murray 1995), and thereby to promote the mental health of future generations of children.

3 The role of parent-training programmes in improving maternal and child health and well-being

The use of parenting programmes began in the 1960s, and the use of groups to train parents began in the 1970s. The expansion of group-based parenting programmes has taken place in a number of countries over the past decade (Pugh et al 1994), with the growing involvement of voluntary organisations in their provision. Parenting programmes are now being offered in a variety of settings, and a recent systematic review of randomised controlled trials showed that they are effective in improving behaviour problems in young children (Barlow 1997; Barlow, S-Brown 2000).

It is now thought that parenting programmes may have an important role to play in the improvement of maternal health. Initial findings suggest that parenting programmes could have a significant effect on parenting attitudes and practices, and on factors such as marital relations and parenting stress (Todres et al 1993). A number of studies have shown that there may also be an impact on general aspects of maternal functioning, including levels of anxiety, depression (Mullin et al 1994; Scott et al 1987), and self-esteem (Mullin et al 1994).

4 Aim of this review

The aim of this review is to evaluate the effectiveness of group-based parenting programmes in improving the psychosocial health of mothers, by appraising and collating the evidence from existing studies which used rigorous methodological designs, and a range of standardised outcome instruments, for this purpose. The results will be used to inform the debate concerning the role and effectiveness of parenting programmes.

Objectives

The review aims to address whether group-based parenting programme are effective in improving maternal psychosocial health (e.g. anxiety, depression, self-esteem).

Criteria for considering studies for this review

Types of studies

Randomised controlled trials in which participants had been randomly allocated to an experimental and a control group, the latter being a waiting-list, no-treatment or a placebo control group. Studies comparing two different therapeutic modality groups, but without a control group were not included in the review. Blinding to treatment group was not a criterion for inclusion due to the fact that it is not possible to blind participants in trials of this nature.

Types of participants

Parents from either clinical or population samples.

Types of interventions

Parenting programmes that met the following criteria were included in the review:

- Group-based format
- Structured programme
- Any theoretical framework including Behavioural, Family Systems, Adlerian, Psychodynamic etc
- Developed largely with the intention of helping parents to manage children's behaviour and improve family functioning and relationships

The following programmes were excluded from the review:

- Where they were provided to parents on an individual or self-administered basis
- Where the programme involved direct work with children
- Programmes involving other types of service provision, e.g. home visits

Types of outcome measures

Studies had to include at least one standardised instrument measuring maternal psychosocial health, for example, anxiety (e.g. Hospital Anxiety and Depression Scale), depression (e.g. Beck Depression Inventory), or self-esteem (e.g. Rosenberg Self-Esteem Inventory). In addition, studies that measured aspects of maternal health related directly to the parental role (e.g. Parenting Stress Index) or self-esteem in the parenting role (e.g. Parenting Sense of Competence Scale) were included in the review. Studies which included only measures of parental attitudes (e.g. Parental Attitude Test) or of family functioning (e.g. McMaster Family Assessment Device) were excluded

from the review, due to the fact that whilst these may reflect the family's functioning as a group they are not direct measures of maternal health.

Search strategy for identification of studies

The following electronic databases were searched:

1. Biomedical sciences databases
 - Medline Journal articles (1970 to 2002)
 - EMBASE
 - Biological Abstracts Journal Article (1970 to 2002)
2. Social Science and General Reference databases:
 - CINAHL
 - PsychLIT Journal Articles and Chapter/Books (1970 to 2002)
 - Sociofile
 - Social Science Citation Index
 - ASSIA
3. Other sources of information:
 - The Cochrane Library including SPECTR, CENTRAL
 - National Research Register (NRR)
 - ERIC
 - NSPCC library database.
 - Reference lists of articles identified through database searches were examined to identify further relevant studies. Bibliographies of systematic and non-systematic review articles were also examined to identify relevant studies.
 - Letters were sent to all known co-ordinators and/or evaluators of registered parenting groups requesting information on published and unpublished evaluations of group-based parenting programmes.
 - Several leading UK independent charitable/voluntary childcare agencies were contacted in order to locate current practice-based projects.

SEARCH TERMS

The search terms used were modified to meet the requirements of individual databases as regards differences in fields. Preliminary searches indicated that narrowing the search using terms designed to identify randomised controlled trials, for example, excluded many potentially relevant studies. As a result a wide search strategy was used in order to ensure that relevant studies were not missed.

The search terms used included the following:

#1(parent*-program* or parent*-training or parent*-education or parent*-promotion) in ti, ab, de

#2(parent* program* or parent* training or parent* education or parent* promotion) in ti, ab, de

#3 - #1 or #2

Methods of the review

SELECTION OF TRIALS

Titles and abstracts of studies identified through searches of electronic databases were reviewed to determine whether they met the inclusion criteria. Titles and abstracts were identified by Esther Coren (EC) and read and reviewed by Esther Coren and Jane Barlow (JB). Two independent reviewers (EC and JB) assessed full copies of papers that appeared to meet the inclusion criteria. Uncertainties concerning the appropriateness of studies for inclusion in the review were resolved through consultation with a third reviewer, Sarah Stewart-Brown (Director, Health Services Research Unit, Oxford, UK).

QUALITY ASSESSMENT

A systematic critical appraisal of the included studies was undertaken using a modified version of the published criteria from the Journal of the American Medical Association ([Guyatt 1994](#); [Jaeschke 1994](#)). Two reviewers carried out a critical appraisal and assessment of the validity of studies. Disagreements were resolved through consultation with a third reviewer, Sarah Stewart-Brown (Director, HSRU).

DATA MANAGEMENT

Data were extracted independently by two reviewers using a data extraction form and entered into REVMAN. Where data were not available in the published trial reports, authors were contacted to supply missing information.

DATA ANALYSIS

TESTS OF HOMOGENEITY

An assessment was made of the extent to which there were between-study differences including the extent to which there were variations in the population or intervention i.e. variation in the clinical or population group and/or clinical intervention. The between study differences appeared to be few, and the statistical tests of homogeneity confirmed that the between-study differences were insufficient to preclude the possibility of combining the data in a meta-analysis. As a result of the absence of heterogeneity, a fixed-effect model was used for the purpose of data-synthesis.

ANALYSIS OF MISSING DATA

Missing data and drop-outs were assessed for each included study and the review reports the number of participants who were included in the final analysis as a proportion of all participants in each study. Reasons for missing data have been provided in the narrative summary. Assessment was also made of the extent to which studies had conformed to an intention-to-treat analysis (ie. all participants are analysed in the group to which they were allocated, irrespective of whether they received or completed the intervention).

DATA SYNTHESIS

The studies that were included in this review used a range of scales to measure similar outcomes e.g. depression was measured using the Beck Depression Inventory, the Irritability, Depression and Anxiety Scale, and the Centre for Epidemiological Studies Depression Scale. The treatment effect for each outcome in each study was therefore standardised by dividing the mean difference in post-intervention scores for the intervention and treatment group, by the pooled standard deviation, to produce an effect size. Where appropriate the results were then combined in a meta-analysis. The

decision about whether to combine data in this way was determined by the level of heterogeneity present in the population, intervention and outcomes being used in the primary studies. Where it was inappropriate to combine the data in a meta-analysis, the effect sizes and 95% confidence intervals for individual outcomes in individual studies have been presented.

Description of studies

Tables 1-5 in the additional tables provide a summary of the characteristics of the included studies ([Table 01](#), [Table 02](#), [Table 03](#), [Table 04](#), [Table 05](#)). A total of 569 abstracts were reviewed for the original review. All the databases searched yielded relevant abstracts, a number of which were replicated between databases. At time of first iteration, twelve abstracts were reviewed from MEDLINE, 10 from EMBASE, 75 from CINAHL, 61 from Asia, 54 from ERIC and 327 from PsychLIT. The library database of the UK-based National Society for the Prevention of Cruelty to Children (NSPCC) also yielded 30 abstracts.

The majority of articles reviewed were written in the English language. However, where articles that were written in other languages appeared relevant (an English abstract was provided or the abstract was translated), these were reviewed and where appropriate, translated prior to full assessment. Non-English papers included three Spanish papers, two German papers, one Korean paper and one Japanese paper. One Turkish paper was identified, but it has not proved possible to locate it. A further Spanish paper was among those retrieved at update stage.

Of the 569 abstracts reviewed, 513 proved to be of no direct relevance to the review. Many of these did not deal with parenting programmes but were identified as a result of the wide search strategy used. Others were excluded for methodological reasons, or as a result of the fact that the intervention described was not group-based, or did not include measures of maternal mental health. These studies were not formally reviewed. Of the 56 studies reviewed, a further 34 were excluded. Of these, 28 were excluded for methodological reasons i.e. because they were not RCTs or did not use a control group. Two of the programmes were excluded because they were offered to fathers only, and one was an intervention directed at both fathers and children together. Three programmes were offered on an individual rather than a group basis. The final original review included 23 RCTs of the effectiveness of group-based parenting programmes.

At update stage a total of 1101 hits were obtained in the original updated search. After sifting through the titles, we read 155 abstracts in detail and 47 papers were retrieved in full and assessed for eligibility for inclusion in the review. After consideration of these, the updated review included the original 23 studies and 3 additional studies ([McGillicuddy 2001](#), [Nicholson 2002](#), [Patterson 2002](#)), making a total of 26 studies included in the review. One further study is awaiting assessment ([Toumbourou 2001](#)).

Five ongoing or unpublished studies were also assessed ([Drew et al](#); [Kearney](#); [Scott 2002](#); [Gardner](#); [Sharp](#)) Of these, three were excluded ([Drew et al](#); [Kearney](#); [Scott 2002](#)). The remaining two appear to meet the inclusion criteria from the information available, but remain ongoing, and data will be added to the review when available.

The parenting programmes that were evaluated in the 26 primary studies have been divided into five groups, which reflect the basic theoretical stance and rationale underpinning each programme. Classification of these programmes was difficult and an element of subjective judgement was involved. There is significant overlap between the different categories and in reality the distinction

between the programmes in the different categories may be hard to sustain. The aim of classifying the studies into different groups was to simplify the data, and no attempt has been made to summarise the overall effectiveness of the five classes of programme that are described.

The behavioural category includes programmes that are purely behavioural in orientation, and are based on social learning principles. These programmes teach parents how to use a range of basic behavioural strategies for managing children's behaviour. The cognitive-behavioural category includes programmes that combine the basic behavioural type strategies with cognitive strategies aimed at helping parents to restructure their thinking about themselves and their children. The multimodal category includes a number of programmes which combine further components in addition to the behavioural or cognitive components, or which cannot be simply reduced to a cognitive or behavioural approach. This includes programmes that incorporate components such as management training or an emphasis on the use of affective type strategies including feelings and relationships. The humanistic category includes studies that evaluated the effectiveness of the Webster-Stratton Parent and Children Series, and involved the use of video-tape modelling. The emphasis of the video-tape modeling programme is on parent-child interaction and it is for this reason that it has been placed in what has been term the 'humanistic' category. The final category includes all programmes based on Rational Emotive Therapy. This involves the reduction of emotional stress through the disputation of irrational beliefs and the reinforcement of rational beliefs. Table 2 summarises the content of the programmes.

Methodological quality of included studies

Critical appraisal of the included studies was undertaken using a modified version of the published JAMA criteria (Guyatt, Sackett and Cook, 1993a; 1993b). Tables 11-15 in the additional tables summarise the results of the critical appraisal (Table 11, Table 12, Table 13, Table 14, Table 15).

1. ALLOCATION TO GROUPS

None of the studies included in this review specified the method of allocation concealment that was used in the process of randomisation. Twenty two studies used rigorous methods of randomisation (Blakemore 1993; Cunningham 1995; Gammon 1991; Greaves 1997; Gross 1995; Irvine, 1999; Joyce 1995; McGillicuddy 2001, Nicholson 2002, Nixon 1993; Odom 1996; Pisterman 1992a; Pisterman 1992b; Sheeber 1994; Schultz, 1993; Sirbu 1978; Spaccerelli 1992; Taylor 1998; Van Wyk 1983; Wolfson 1992; WebsterStratton 1988; Zimmerman 1996). One study used block randomisation (Patterson 2002). The remaining three studies used a range of quasi-methods of randomisation including the availability of places on the programme (Anastopoulos 1993; Scott 1987), and sequential assignment from a waiting-list (Mullin 1994).

At update, sensitivity analyses were conducted to assess the impact of the quasi-randomised studies on the results. Three meta-analyses were affected - for depression, stress/anxiety and relationship with spouse. In each case, the result remained significant, but became slightly more conservative, which is what would be expected as lower quality studies tend to increase effect estimates. For depression the result of the meta-analysis including the quasi-randomised studies was -0.26[-0.40, -0.11]. When the meta-analysis was conducted without the quasi-randomised studies, the result was slightly more conservative -0.23[-0.37, -0.08]. For stress/anxiety the result of the meta-analysis including the quasi-randomised studies was -0.42[-0.60, -0.24]. When the meta-analysis was conducted without the quasi-randomised studies, the result was slightly more conservative -0.39[-0.59, -0.19]. For relationship with spouse the result including the quasi-randomised studies was -

0.43[-0.71, -0.15]. When the meta-analysis was conducted without the quasi-randomised studies, the result was more conservative -0.34[-0.65, -0.04], in this instance becoming only barely significant.

2. ACCOUNTING AND ATTRIBUTING PARENTS AT THE END OF THE STUDY

Eight studies did not account for the number of parents who dropped out of the evaluation or who were lost to follow-up (Gross 1995; Gammon 1991; Greaves 1997; Joyce 1995; Mullin 1994; Nicholson 2002, Sirbu 1978; Van Wyk 1983). Of the studies which did provide this data, the drop-out rate ranged from 6% to 44%. The reasons for parents dropping out of programmes was not given, except by Patterson 2002 (eg depression, life stress, moved away from area, work commitments), and only one study provided details concerning the demographic characteristics of the parents who did not continue (Spaccarelli 1992). This study suggests that the parents who dropped out of programmes were different from the parents who continued (see Discussion for further details). None of the studies included in this review analysed subjects in the groups to which they were randomised irrespective of whether they dropped out or were lost to follow-up (i.e. intention-to-treat), except for Patterson 2002, and the result of this may well be an overestimation of the treatment effect.

3. BLINDING TO TREATMENT

In trials of parenting programs, it is not possible to blind either facilitators or parents to the type of treatment being implemented or received. One of the methods of minimising bias arising from the failure to blind parents and study personnel is to blind the assessors of clinical outcomes. None of the included studies used outcome measures which required independent assessment i.e. all of the studies used self-report measures, and blinding was therefore, once again, inappropriate.

4. DISTRIBUTION OF CONFOUNDERS

While the use of randomisation should in theory ensure that any possible confounders are equally distributed between the groups, the randomisation of small numbers of parents may result in an unequal distribution of confounding factors. Eight studies did not report on the distribution of possible confounders (i.e. to what extent the intervention and control groups were similar at the start of the trial) (Blakemore 1993; Gammon 1991; Greaves 1997; Joyce 1995; Mullin 1994; Scott 1987; Sirbu 1978; Van Wyk 1983).

Results

The parenting programmes that were evaluated in the 26 primary studies have been divided into five groups which reflect the basic theoretical stance and rationale underpinning each programme. Tables 6-10 in the additional tables summarise the content of the programmes. The first category includes programmes which are purely behavioural in orientation, and that are based on social learning principles. These programmes teach parents how to use a range of basic behavioural strategies for managing children's behaviour. The second category includes programmes that are based on a cognitive-behavioural approach. These programmes combine the basic behavioural type strategies with cognitive strategies aimed at helping parents to restructure their thinking about themselves and their children. The third category includes all of the remaining multi-modal programmes. Many of these programmes were included in this category because they combine further components in addition to the behavioural or cognitive components already referred to. The fourth category includes the behavioural-humanistic programmes. All of the studies in this group evaluated the effectiveness of the Webster-Stratton Parent and Children Series, and involved the use of video-tape modelling. The final category includes all programmes based on Rational

Emotive Therapy. This involves the reduction of emotional stress through the disputation of irrational beliefs and the reinforcement of rational beliefs.

The results section comprises the following:

Section A: Individual results of the studies in the five categories of parenting programme - Behavioural; Cognitive-Behavioural; Multi-Modal; Behavioural-Humanistic; and Rational Emotive.

Section B: Meta-analysis of the data for five of the main outcomes i.e. those for which there was a sufficient number to justify undertaking a meta-analysis - depression; anxiety; self-esteem; social support; marital adjustment/relationship with spouse.

Section C: Follow-up data for the individual studies in the five categories of parenting programme (as above).

Section D: Meta-analysis of the follow-up data for depression, self-esteem and marital adjustment/relationship with spouse. (There was an insufficient number of studies providing follow-up data on anxiety and social support to justify undertaking a meta-analysis for these outcomes).

SECTION A

The following section provides the results for each of the five group of programmes. Where it has been possible to calculate an effect-size and 95% confidence intervals, these have been reported. Where effect-sizes have been calculated and reported, a minus sign indicates that the results favour the intervention group. It should be noted that the post-intervention scores have been used to calculate effect sizes rather than the change scores (i.e. pre to post scores for each group). This reflects the fact that a change standard deviation is required to calculate change scores, and these data were not available for any of the included studies. The findings from studies in which it was not possible to obtain the necessary data with which to calculate an effect size have also been summarised.

It should be noted that while an effect size of 0.1 or less has been treated as no evidence of effectiveness, an effect size of 0.2 has been treated as small evidence of effectiveness. An effect size of 0.3 to 0.6 has been treated as moderate evidence of effectiveness, and an effect size of 0.7 or above has been treated as good evidence of effectiveness.

1. BEHAVIOURAL PARENTING PROGRAMMES

Eight studies evaluated the effectiveness of behavioural parenting programmes as regards a range of measures of parental psychosocial functioning (Irvine, 1999; Anastopoulos 1993; Odom 1996; Pisterman 1992a; Pisterman 1992b; Scott 1987; Sirbu 1978; Wolfson 1992). There was insufficient data in three of these studies to calculate effect-sizes (standardised mean differences) and confidence intervals (CI), and the results of these two studies have not been included in the graph displaying the results (Sirbu 1978; Pisterman 1992b). Of the six studies which provided sufficient data to calculate effect sizes, a total of 24 assessments of outcome were produced on a range of aspects of maternal psychosocial functioning including depression, anxiety, stress, irritability, marital adjustment, and parental efficacy.

1.1 Depression

Two studies evaluated the effectiveness of behavioural parenting programmes in improving levels of depression. Scott 1987 examined levels of depression (using the Irritability, Depression and Anxiety Scale - IDA) in a group of high-risk mothers with children between the ages of 2-14 years with parent-reported behaviour problems. The parents in this study took part in seven 90-minute behavioural parenting sessions. The results show that there was a significant difference favouring the parents in the intervention group -0.9 [-1.5,

-0.2]. [Irvine, 1999](#) examined levels of depression (using the Beck Depression Inventory) in parents from a cross-section of social backgrounds, with children referred by school or social services for mild to moderate behaviour problems. The parents in this study took part in twelve 90-minute behavioural parenting sessions. The results no evidence of effectiveness as regards levels of depression -0.04 [-0.3, 0.2]

1.2 Anxiety and stress

Three studies examined the effectiveness of behavioural parenting programmes on levels of parental stress ([Anastopoulos 1993](#)), and anxiety ([Pisterman 1992a](#); [Scott 1987](#)). [Anastopoulos 1993](#) examined the effects of 9 weekly behavioural parenting sessions on a group of white middle-class parents of children aged 6-11 years who had been diagnosed using DSM III criteria as having ADHD. The results show a marked improvement in stress (as measured by the Parenting Stress Index- PSI) for the parents in the intervention group as indicated by the total PSI score -0.8 [-1.5, -0.1], and the score for the parent domain (measuring stress derived from the parenting relationship) of the PSI -0.9 [-1.6, -0.1]. [Pisterman 1992a](#) reported a significant difference in levels of parenting stress (as measured by the Parenting Stress Index -PSI) favouring parents of preschool children who had been clinically diagnosed as having ADHD, and who received 12 behavioural parenting sessions -0.6 [-1.0, -0.2]. [Anastopoulos 1993](#) showed a change favouring the intervention group in levels of personal distress or psychopathology among mothers, as measured by the Global Severity Index -0.4 [-1.1, 0.3]. [Scott 1987](#) also reported a non-significant difference in levels of anxiety (as measured by the Irritability, Depression and Anxiety Scale) post-intervention favouring the parents of a group of high-risk mothers with children between the ages of 2-14 years with parent-reported behaviour problems -0.4 [-1.0, 0.2].

One further study assessed the effectiveness of a behavioural programme in improving parental stress, but did not provide sufficient data to calculate an effect-size ([Sirbu 1978](#)). [Sirbu 1978](#) examined the effects of a five-week behavioural parenting programme with a population group of volunteer parents of pre-school children. There was a lack of evidence of effectiveness as regards levels of stress-satisfaction for three intervention groups (a parenting course with a programmed text, a course alone, or a programmed text alone) compared with an attention-placebo control group.

1.3 Irritability

[Scott 1987](#) evaluated the effectiveness of a behavioural parenting programme on levels of irritability as measured by the Irritability, Depression and Anxiety Scale. The results show a significant difference in 'inward' irritability (i.e. irritability that is directed at the self) favouring the intervention group -0.6 [-1.1, -0.01], and a non-significant difference for 'outward' irritability (irritability that is directed outside the self) -0.4 [-1.0, 0.2].

1.4 Marital adjustment

[Anastopoulos 1993](#) evaluated the effectiveness of a behavioural parenting programme with regard to marital adjustment, as measured by the Marital Adjustment Test (MAT) . The results show a significant difference favouring the intervention group - 0.9 [-1.6, -0.2].

1.5 Self-esteem

Two studies reported an improvement in parental efficacy and satisfaction (self-esteem) as measured by the Parenting Sense of Competence Scale (PSOC) ([Odom 1996](#); [Pisterman 1992a](#)). The 'Skills' subscale of the PSOC reflects parental self-perceptions of skill and knowledge regarding parental functions, and the 'Valuing' subscale measures feelings of satisfaction, frustration, and interest associated with parenting. The results of the [Pisterman 1992a](#) study show

a significant difference favouring the intervention group in the valuing subscale -0.6 [-1.1, -0.2], and a non-significant difference for the skills subscale -0.3 [-0.7, 0.2]). [Odom 1996](#) examined the effectiveness of a behavioural parenting programme for parents from low socioeconomic groups, with 5-11 year old boys diagnosed as having ADHD. The results show non-significant differences favouring the intervention group for the total score of the PSOC -0.4 [-1.1, 0.3], the 'Valuing' subscale -0.8 [-1.7, 0.1], and the 'Skills' subscale 0.2 [-0.7, 1.1].

[Wolfson 1992](#) used the Hassles and Uplifts Scale to measure parental adjustment to life stressors and positive experiences. This study shows that a group of middle-class first-time parents who took part in four weekly sessions (2 prenatally and 2 postnatally) experienced significantly fewer hassles compared with the control group -0.6 [-1.1, -0.01]. However, the control group experienced more uplifts (non-significant) than the intervention group +0.5 [-0.1, 1.0].

1.6 Attachment

[Pisterman 1992a](#) evaluated attachment as measured by the parenting domain of the Parenting Stress Index. This study shows that there was a non-significant difference favouring the control group +0.3 [-0.8, 0.1]

1.7 Social isolation

[Pisterman 1992a](#) evaluated levels of social isolation as measured by the parenting domain of the Parenting Stress Index. The results show no evidence of effectiveness -0.1 [-0.5, 0.3].

1.8 Parent health

[Pisterman 1992a](#) evaluated parent health as measured by the parenting domain of the Parenting Stress Index. The results show that there was a significant difference favouring the intervention group as regards parental health -0.6 [-1.0, -0.2]

1.9 Other outcomes

The above study also shows that there were significant differences favouring the intervention group as regards role restriction -0.5 [-0.9, -0.04], sense of competence -0.5 [-0.9, -0.1], and the mother's relationship with her partner -0.4 [-0.9, -0.02] ([Pisterman 1992a](#)).

2. MULTIMODAL PARENTING PROGRAMMES

Five of the included studies evaluated the effectiveness of multi-modal parenting programmes ([Mullin 1994](#); [Sheeber 1994](#); [Blakemore 1993](#); [Schultz, 1993](#); [Van Wyk 1983](#)). Two studies in this category provided insufficient data to calculate effect-sizes and was not included in the graph displaying the results ([Mullin 1994](#); [Blakemore 1993](#)). The three studies that provided sufficient data to calculate effect-sizes produced a total of 22 assessments of outcome including depression, stress, anxiety, psychiatric morbidity, social support, and personality.

2.1 Depression

[Sheeber 1994](#) evaluated the effectiveness of a multi-modal parenting programme on levels of depression, using the depression subscale of the Parenting Stress Index (PSI). This study examined levels of depression in parents of 3-5 year old children with 'difficult temperaments', who had taken part in 9 weekly sessions of a temperament-focused parenting programme. A significant part of this programme was focused on teaching parents to recognise the temperament of their child and then to utilise the appropriate behavioural strategy. The study showed a significant difference favouring the intervention group in levels of depression -0.7 [-1.3, -0.02].

2.2 Stress and anxiety

Sheeber 1994 also evaluated the effectiveness of the above programme on levels of stress in the relationship with the spouse and child, as measured by the parent domain of the Parenting Stress Index (PSI). The results show a significant difference favouring the intervention group for the relationship with the child -0.7 [-1.2, -0.04], and a small non-significant difference favouring the intervention group as regards the relationship with the spouse -0.2 [-0.8, 0.5]. This study also shows a non-significant difference favouring the intervention group in levels of trait anxiety -0.6 [-1.3, 0.04]. Blakemore 1993 examined the effects of 12 weekly parenting sessions combining the use of behavioural and affective components with parents of children aged 6-11 years who had been diagnosed using DSM III criteria as having ADHD. The results show an improvement of approximately 5 points in the percentile mean score on the Parenting Stress Index for the intervention group and an improvement of approximately 1 point in the percentile mean score for the control group.

2.3 Psychiatric morbidity

Two studies evaluated the effectiveness of multi-modal parenting programmes on levels of psychiatric morbidity, using the General Health Questionnaire (GHQ) (Schultz, 1993; Mullin 1994). Schultz, 1993 examined the effectiveness of a programme combining affective, cognitive, and behavioural components provided over 6 weeks, for a socially mixed group of parents with children diagnosed as having intellectual disabilities. The results show a non-significant difference favouring the intervention group in overall morbidity -0.4 [-1.1, 0.2]. Mullin 1994 examined the effects of a combined behavioural and parental self-management programme. The programme was provided over 10 weeks to a socially mixed group of parents with children between the ages of 3 months and 14 years, with parent-perceived behaviour problems. Insufficient data were provided to calculate effect-sizes but the results show that while there was no significant difference in post intervention scores on the GHQ between the intervention and control groups $p=0.143$. There were, however, significant change scores favouring the intervention group $p<0.001$, compared with the control group, $p=0.81$.

2.4 Self-esteem

Mullin 1994 evaluated the effectiveness of a combined behavioural and parental self-management programme on levels of self-esteem, using the Rosenberg Self-Esteem Inventory (RSI). The results show a significant difference in post-intervention scores favouring the intervention group $p<0.04$.

2.5 Social competence

The Mullin 1994 study also examined social behaviour, using the Texas Social Behaviour Inventory (TSBI). While there were no significant differences between the intervention and control group in post-intervention scores $p<0.202$, there was once again a significant change score in levels of social competence favouring the intervention group $p<0.002$, compared with the control group $p<0.762$.

2.6 Social Support

Schultz, 1993 examined the effectiveness of a multi-modal parenting programme combining affective, cognitive, and behavioural components on levels of social support using the Inventory of Socially Supportive Behaviours. The results show a small non-significant difference favouring the intervention group -0.2 [-0.4, 0.8].

2.7 Attachment

Sheeber 1994 evaluated the effectiveness of a multimodal parenting programme on attachment using the parenting domain of the Parenting Stress Index. The results show a non-significant

difference favouring the intervention group -0.6 [-1.2, 0.04].

2.8 Interpersonal traits

[Van Wyk 1983](#) examined the effectiveness of an eclectic parenting programme (combining components from various theoretical perspectives) on the interpersonal traits of middle-class Afrikaaner parents of children aged 8-12 years (as measured by the Group Assessment of Interpersonal Traits - GAIT). The results of this study show a large significant difference favouring the intervention group -1.0 [-1.8, -0.2].

2.9 Personality

[Van Wyk 1983](#) also examined the effects of a multi-modal parenting programme on a number of aspects of personality using the Personal Orientation Inventory (POI). The results show a significant difference favouring the intervention group as regards self-actualisation -3.9 [-5.3, -2.5]. A number of dimensions of the POI showed non-significant differences favouring the intervention group - Existentiality -0.3 [-1.1, 0.5], Feeling Reactivity -0.5 [-1.3, 0.3], Spontaneity -0.3 [-0.5, 1.1], Self-Acceptance -0.3 [-1.1, 0.5], Self-Regard -0.5 [-1.3, 0.3], and Time Competence -0.5 [-1.3, 0.3]. For the remaining dimensions there were small non-significant differences favouring the intervention group: Synergy -0.2 [-1.0, 0.6], -0.1 [-0.8, 0.7], and Inner-Other Directedness -0.2 [-1.0, 0.6], or no evidence of effectiveness - Constructive Acceptance of Aggression -0.1 [-0.9, 0.7], Capacity for Intimate Contact -0.04 [-0.8, 0.8].

[Sheeber 1994](#) measured role restriction and competence using the parent domain of the Parenting Stress Index. This study shows that there were non-significant differences favouring the intervention group as regards both role restriction -0.4 [-1.1, 0.2] and competence -0.6 [-1.3, 0.01].

Sheeber and Johnson (1994) measured parental role restriction and competence using the parent domain of the Parenting Stress Index. This study shows that there were non-significant differences favouring the intervention group as regards both role restriction -0.4 [-1.1, 0.2] and competence -0.6 [-1.3, 0.01].

3. BEHAVIOURAL-HUMANISTIC PARENTING PROGRAMMES (PACS)

All five studies in the behavioural and humanistic parenting category ([Patterson 2002](#); [Taylor 1998](#); [Gross 1995](#); [Spaccarelli 1992](#); [WebsterStratton 1988](#)) evaluated the effectiveness of the Webster-Stratton 'Parent and Children Series' (PACS) programme based on the use of video-tape modelling. These studies reported a total of 8 measurements of outcome including depression, stress, social support, dyadic adjustment, toddler care, and anger and aggression.

3.1 Depression

Three studies examined the effectiveness of the PACS programme in improving depression ([Patterson 2002](#); [Taylor 1998](#); [Gross 1995](#)). [Taylor 1998](#) examined the effectiveness of the PACS programme in reducing depression, using the Beck Depression Inventory (BDI). The intervention was delivered over 11-14 weeks, to a high-risk group of parents with 3-8 year old children diagnosed as having Conduct Disorder. The results show that there was a significant difference in depression favouring the intervention group -0.6 [-1.2, -0.04]. [Gross 1995](#) evaluated the effectiveness of the PACS programme in improving depression using the Centre for Epidemiological Studies Depression Scale (CESDS). Ten weekly parenting sessions were delivered to a socially mixed group of parents of 2-year old children with behavioural difficulties. The results, once again, show a non-significant difference favouring the intervention group -0.7 [-1.8, 0.3]. [Patterson 2002](#) evaluated the effectiveness of the PACS programme in improving depression using the General Health Questionnaire (GHQ). The results show no significant difference between the

two groups -0.10 [-0.51, 0.30].

It should be noted that the GHQ produces data which are skewed. Means and standard deviations are not a good measure of the spread of skewed data, and as meta-analysis assumes a normal distribution of data, these data may appear as showing no effect for these measures in the pooled analysis. Where there appears to be an effect, these data should be treated with caution in interpretation due to the presence of skew.

3.2 Stress

Three studies examined the effectiveness of the PACS programme in improving parental stress (Gross 1995; Spaccerelli 1992; WebsterStratton 1988). Of these, one study did not provide sufficient data with which to calculate an effect-size (Spaccerelli 1992). The two studies for which effect-sizes could be calculated both show that there were non-significant differences post-intervention in levels of stress favouring the intervention group -1.0 [-2.1, 0.1] (Gross 1995), -0.3 [-0.9, 0.2] (WebsterStratton 1988). Patterson 2002 evaluated measured anxiety using the GHQ. The results a small but non-significant difference favouring the intervention group -0.29 [-0.69, 0.11]. This study also measured parenting stress using the Parenting Stress Index (PSI). The results show no difference between the two groups for the parent domain 0.13 [-0.27, 0.53], child domain -0.22 [-0.62, 0.18], interaction -0.11 [-0.51, 0.29], or for the total score -0.19 [-0.59, 0.21].

Spaccerelli 1992 compared the effectiveness of two intervention groups - one based on the use of the PACS programme with a problem-solving component, and the second based on the PACS programme plus extra discussion - with a control group. A 16-hour programme was delivered to a socially mixed population group of parents, all of whom had defined their children as having behaviour problems. The mean age of the children was 6 years. The results show that there was a significant difference favouring the problem-solving intervention group $p < .004$, but a non-significant difference between the extra-discussion group and the control group $p < .08$.

3.3 Social support

Taylor 1998 also examined the effectiveness of the PACS programme in improving levels of social support. This study shows no evidence of effectiveness 0.1 [-0.5, 0.8].

3.4 Dyadic adjustment

Taylor 1998 evaluated the effectiveness of the PACS programme in improving four aspects of dyadic adjustment - dyadic satisfaction, dyadic cohesion, dyadic consensus, and affectional expression (See section 2.4.1 for further details about the study). Overall, the results show a small non-significant difference favouring the intervention group 0.2 [-0.6, 0.9].

3.5 Parental self-efficacy

Gross 1995 examined the effectiveness of the PACS programme in improving parental self-efficacy, using the Toddler Care Questionnaire. The results show a non-significant difference favouring the intervention group -0.6 [-1.6, 0.4].

3.6 Anger and aggression

Taylor 1998 examined the effectiveness of the PACS programme on levels of parental anger and aggression using the Brief Anger and Aggression Questionnaire. The results show a non-significant difference favouring the intervention group -0.4 [-1.0, 0.2].

3.7 Self-Esteem

Patterson 2002 measured self-esteem using the Rosenberg Self-Esteem Inventory. The results show no evidence of effectiveness -0.17 [-0.58, 0.23].

3.8 Psychopathology

Patterson 2002 measured a number of aspects of psychopathology using the General Health Questionnaire (GHQ). The results show a small but non-significant difference favouring the intervention group for the dysfunction domain -0.29 [-0.69, 0.11], but no improvement in the somatic domain 0.19 [-0.21, 0.6], and no improvement in the total score -0.15 [-0.55, 0.26]. (The anxiety and depression scales of the GHQ are reported above, together with a note about the interpretation of data from this scale).

4. COGNITIVE-BEHAVIOURAL PARENTING PROGRAMMES

Six studies evaluated the effectiveness of cognitive-behavioural programmes (Cunningham 1995; Nixon 1993; Gammon 1991; Zimmerman 1996; McGillicuddy 2001; Nicholson 2002). Two of the six included studies did not provide sufficient data to calculate effect-sizes, and the results of these have not been included in the graph displaying the results (Gammon 1991; Zimmerman 1996). Of the four studies which produced sufficient data to calculate effect sizes, a total of nine assessments of outcome were reported including depression, guilt, automatic thoughts, parenting stress, anger, anxiety and parental competence (Cunningham 1995; Nixon 1993).

4.1 Depression

Three studies evaluated the effectiveness of cognitive-behavioural programmes in improving depression (Cunningham 1995; Nixon 1993; McGillicuddy 2001). Nixon 1993 evaluated a programme, which was aimed at reducing self-blame and guilt in a group of parents with children diagnosed as having severe developmental disabilities. The programme was based on five two-hour sessions of a cognitive behavioural programme. The cognitive component of the programme focused on cognitive distortions that contribute to self-blame and guilt, and on techniques for dealing with such distortions e.g. misattributions around the explanation of events such as the birth of a child with a disability. The results show a non-significant difference in levels of depression (using the Beck Depression Inventory - BDI) favouring the parents in the intervention group -0.4 [-1.1, 0.3]. Cunningham 1995 compared the effectiveness of a community group-based parenting programme with an individual clinic-based programme. The programme was directed at a group of socially mixed parents of preschool children with behavioural problems, all of whom had been diagnosed using a screening questionnaire i.e. all children above 1.5 standard deviations above the norm were invited to take part in the programme. Parents participated in a 12-week programme, and the cognitive component of the programme focused on the development of coping and problem-solving skills. The results show no evidence of effectiveness as regards levels of depression (using the Beck Depression Inventory) 0.1 [-0.4, 0.5]. McGillicuddy 2001 evaluated the effectiveness of an 8 week coping skill training programme based on a behavioural-analytic model with volunteer parents of substance abusing adolescents age 12-21 years. Depression was measured using the Beck Depression Inventory. The results show a non-significant difference favouring the intervention group -0.85 [-1.76, 0.06].

4.2 Guilt

Nixon 1993 measured levels of guilt and self-blame in parents using the Situation Guilt Scale. The results show that there was a non-significant difference favouring the intervention group -0.5 [-1.2, 0.2].

4.3 Automatic Thoughts

The above study also measured the number of automatic negative thoughts that parents had

experienced during the preceding week (Nixon 1993) using the Automatic Thoughts Questionnaire. The results show a non-significant difference favouring the intervention group -0.5 [-1.2, 0.2].

4.4 Parenting self-esteem

The effectiveness of a cognitive-behavioural parenting programme on parenting sense of competence (self-esteem) was assessed by Cunningham 1995 using the Parenting Sense of Competence Scale (PSOC). There was a lack of evidence of effectiveness as regards the total score for the PSOC -0.03 [-0.4, 0.5].

4.5 Parental moods

Gammon 1991 examined the effectiveness of a coping-skills parenting programme on parental mood states, using the Profile of Mood States (POMS). Parents of children with developmental disabilities were offered ten two-hourly cognitive-behavioural parenting sessions. The cognitive component of the programme focused on the development of problem-solving skills using cognitive restructuring. Insufficient data were provided to calculate effect-sizes, and the results show a non-significant difference between the intervention and control groups for the following seven domains of the POMS - tension-anxiety; depression-dejection; anger-hostility; vigour-activity; fatigue-inertia; confusion-bewilderment; and the total score. The only significant difference between the intervention and control group was for the vigour-activity domain ($p < .003$). This suggests that there was relatively little evidence of the programme's effectiveness on a number of dimensions of parental stress as measured by the POMS.

4.6 Parenting skills

Zimmerman 1996 evaluated the effectiveness of a 'solution-focused' parenting programme in improving parenting skills with a population group of mothers using the Parenting Skills Inventory. This study shows that there were significant differences favouring the intervention group in role image, rapport, communication, limit setting and total parenting skills ($p < 0.05$), but no significant difference for role support, objectivity, or expectations.

4.7. Stress and Anxiety

McGillicuddy 2001 measured anxiety using the Brief Symptom Inventory. The results show no evidence of effectiveness -0.19 [-1.06, 0.68]. Nicholson 2002 measured parenting stress using the Parenting Stress Index. The results show a moderate but non-significant difference favouring the intervention group for the child domain -0.45 [-1.23, 0.33], and a small non-significant difference for the interaction domain -0.27 [-1.04, 0.51], but no evidence of effectiveness for the parent domain -0.02 [-0.79, 0.75].

4.8 Coping

McGillicuddy 2001 measured parent coping using the Parent Situation Inventory. The results show a non-significant difference favouring the intervention group -0.91 [-1.83, 0.00].

4.9 Anger

Nicholson 2002 measures anger using the Brief Anger-Agression Questionnaire. The results show a moderate but non-significant effect favouring the intervention group -0.57 [-1.36, 0.22].

McGillicuddy 2001 measured anger using the State-Trait Anger Expression Scale. The results show a non-significant difference favouring the intervention group -0.75 [-1.65, 0.15].

5. RATIONAL EMOTIVE THERAPY PARENTING PROGRAMMES

Two studies evaluated the effectiveness of a parenting programme based on Rational Emotive Therapy (RET) on a range of maternal psycho-social outcomes (Greaves 1997; Joyce 1995). The two studies reported a total of 18 assessments of outcome including stress, anxiety, mood, anger, guilt, and beliefs.

5.1 Depression

Greaves 1997 evaluated the effectiveness of a parenting programme based on RET in terms of parental depression as measured by the Parenting Stress Index, and depression-dejection as measured by a subscale of the Profile of Mood States (POMS). The results show that there was a large significant difference favouring the intervention group in depression-dejection -0.8 [-1.5, -0.1] and a small non-significant difference in depression favouring the intervention group as measured by the PSI -0.2 [-0.8, 0.5].

5.2 Stress

Greaves 1997 evaluated the effectiveness of a parenting programme based on RET as regards parental stress (using the Parenting Stress Index) with a group of mothers of young children attending a centre for children with Down's Syndrome. The results show non-significant differences favouring the intervention group for relationship with spouse -0.3 [-1.0, 0.3], and social isolation -0.3 [-0.9, 0.4]. There were small non-significant differences favouring the intervention group for the total PSI score -0.2 [-0.8, 0.5], and for the depression subscale of the PSI -0.2 [-0.8, 0.5].

5.3 Anxiety

Greaves 1997 also evaluated the programme in terms of parental tension-anxiety as measured by a subscale of the Profile of Mood States (POMS). This study showed that there was a non-significant result favouring the intervention group -0.6, [-1.2, 0.1]. Joyce 1995 evaluated the effectiveness of RET on levels of parental anxiety (using the Spielberger State-Trait Anxiety Inventory - STAI) in a population group of parents with children in a private school in Melbourne, Australia (no further details provided). The results of this study show a non-significant difference favouring the intervention group in the subscale measuring state-anxiety -0.6 [-1.2, 0.03], and also in the subscale measuring trait-anxiety -0.4 [-1.0, 0.2].

5.4 Mood

Greaves 1997 evaluated the effectiveness of RET with regard to parental mood, once again, using the Profile of Mood State (POMS) Questionnaire. The results show a large significant difference favouring the intervention group as regards the total score for the POMS -0.7 [-1.4, -0.04]. The results also show non-significant differences favouring the intervention group for five domains of the POMS - Vigor-Activity -0.5 [-1.1, 0.2], Anger-Hostility -0.7 [-1.3, 0.02], Tension-Anxiety -0.6 [-1.2, 0.1], Confusion-Bewilderment -0.3 [-0.9, 0.4] and Fatigue-Inertia -0.3 [-0.9, 0.4].

5.5 Anger

Both of the studies included in this category evaluated the effectiveness of RET with regard to parental anger using the Berger's Feeling Scale (BFS) (Greaves 1997; Joyce 1995). Both studies show non-significant differences favouring the intervention group in levels of parental anger -0.6 [-1.3, 0.1] (Greaves 1997), and -0.5 [-1.1, 0.1] (Joyce 1995).

5.6 Guilt

Both studies in this category also evaluated the effectiveness of a RET parenting programme in improving levels of parental guilt using the Berger's Feeling Scale (BFS) (Greaves 1997; Joyce 1995). Both studies show large significant differences favouring the intervention group in levels of

parental guilt -0.7 [-1.4, -0.1] (Greaves 1997) and -1.1 [-1.7, -0.4] (Joyce 1995).

5.7 Social isolation

Greaves 1997 evaluated the effectiveness of a RETparenting programme on levels of social isolation as measured by a subscale of the Parenting Stress Index. The results show a non-significant difference favouring the intervention group -0.3 [-0.9, 0.4].

5.8 Beliefs

The Joyce 1995 study also used the Bergers' Feeling Scale (BFS) to evaluate irrational parental beliefs. The results show a large significant difference in parental beliefs favouring the intervention group -1.3 [-2.0, -0.6].

SECTION B:

The following section comprises a meta-analysis of the combined data for five of the main outcomes - depression; anxiety; self-esteem; social support; and marital adjustment/relationship with spouse.

6. META-ANALYSIS

Fourteen studies provided sufficient data with which to conduct a meta-analysis for five outcomes - depression; anxiety/stress; social support; self-esteem; and marital adjustment/relationship with spouse. The data combine results from a range of instruments, all measuring the same outcome i.e. the meta-analysis of the depression data combines results from the Beck Depression Inventory (BDI); Parenting Stress Index (PSI) (Parent domain); Centre for Epidemiological Studies Depression Scale; Irritability, Depression and Anxiety Scale (IDA) (Depression subscale). The treatment effect for each outcome in each study was standardised by dividing the mean difference in post-intervention scores for the intervention and treatment group, by the pooled standard deviation, to produce an effect size.

6.1 Depression

Eleven studies (Cunningham 1995, Greaves 1997, Gross 1995, Irvine, 1999, McGillicuddy 2001, Nixon 1993, Patterson 2002, Pisterman 1992a, Scott 1987, Sheeber 1994, Taylor 1998) evaluated the effectiveness of a parenting programme in improving maternal depression using a range of standardised instruments - Beck Depression Inventory (BDI); Parenting Stress Index (PSI) (Parent domain); Centre for Epidemiological Studies Depression Scale; Irritability, Depression and Anxiety Scale (IDA) (Depression subscale), and the General Health Questionnaire (GHQ). The eleven studies provided data from a total of 793 participants (422 intervention group and 371 control group). The combined data show a small but statistically significant difference favouring the intervention group -0.26 [-0.40, -0.11].

6.2 Anxiety/stress

Ten studies (Anastopoulos 1993, Greaves 1997, Gross 1995, Joyce 1995, McGillicuddy 2001, Patterson 2002, Pisterman 1992a, Scott 1987, Sheeber 1994, WebsterStratton 1988) evaluated the effectiveness of a parenting programme in improving maternal anxiety/stress using a range of standardised instruments - Parenting Stress Index (PSI) (Parent domain); Spielberger Stait/Trait Anxiety Inventory (Trait subscale); Irritability, Depression and Anxiety Scale (IDA) (Anxiety subscale), Brief Symptom Inventory (BSI), and the General Health Questionnaire (GHQ). The ten studies provided data from a total of 486 participants (258 intervention group and 228 control group). The combined data show a statistically significant difference favouring the intervention group -0.4 [-0.6, -0.2].

6.3 Social Support

Four studies (Greaves 1997, Pisterman 1992a, Schultz, 1993, Taylor 1998) evaluated the effectiveness of a parenting programme in improving maternal social support using a range of standardised instruments - Parenting Stress Index (Social Isolation subscale); Inventory of Socially Supportive Behaviours; Support Scale. The four studies provided data from a total of 234 participants (122 intervention group and 112 control group). The combined data show no evidence of the effectiveness of parenting programmes in improving social support -0.04 [-0.3, 0.2].

6.4 Self-esteem

Six studies (Cunningham 1995, Gross 1995, Odom 1996, Patterson 2002, Pisterman 1992a, Sheeber 1994) evaluated the effectiveness of a parenting programme in improving maternal self-esteem using a range of standardised instruments - Parenting Sense of Competence Scale; Parenting Stress Index (PSI) (Parent competence subscale); Toddler Care Questionnaire (TCQ) . The six studies provided data from a total of 341 participants (168 intervention group and 173 control group). The combined data show a statistically significant difference favouring the intervention group -0.3 [-0.5, -0.1].

6.5 Marital adjustment/relationship with spouse

Four studies (Anastopoulos 1993, Greaves 1997, Pisterman 1992a, Sheeber 1994) evaluated the effectiveness of a parenting programme in improving marital adjustment/relationship with the spouse using one of two standardised instruments - Locke-Wallace Marital Adjustment Test (MAT) and the Parenting Stress Index (PSI) (Relationship with spouse subscale). The four studies provided data from a total of 202 participants (106 intervention group and 96 control group). The combined data show a statistically significant difference favouring the intervention group -0.4 [-0.7, -0.2].

SECTION C

The following section comprises the follow-up data for the individual studies in the five categories of parenting programme (as above).

7. FOLLOW-UP

7.1 Behavioural Programmes

Three studies in the Behavioural category of parenting programmes provided follow-up data (Irvine, 1999, Pisterman 1992a, Wolfson 1992). The results show a large statistically significant difference favouring the intervention group at 3-months follow-up in parental self-esteem (valuing) (as measured by the Parenting Sense of Competence Scale) -0.7 [-1.3, -0.1]. This represents a slight improvement on the score obtained immediately post-intervention -0.6 [-1.1, -0.2]. There was also a large statistically significant difference favouring the intervention group in maternal depression (as measured by the Parenting Stress Index) -0.6 [-1.0, -0.2]. This represents no change on the scores obtained immediately post-intervention. There were moderate to small non-significant differences favouring the intervention group as regards parental self-esteem (skills) (as measured by the Parenting Sense of Competence Scale) -0.4 [-1.0, 0.2], and social isolation (as measured by the Parenting Stress Index - social isolation subscale) -0.3 [-0.9, 0.3]. These represent slight improvements on the scores obtained immediately post-intervention - self-esteem (skills) -0.3 [-0.7, 0.2], and social isolation -0.1 [-0.5, 0.3]. There were also moderate non-significant differences favouring the intervention group at follow-up in maternal stress (as measured by the Parenting Stress Index - Parent Domain) -0.5 [-1.1, 0.1], maternal attachment (as measured by the Parenting Stress Index - attachment subscale) -0.4 [-1.0, 0.2], and self-esteem (as measured by the Parenting Stress Index - sense of competence subscale) -0.5 [-1.1, 0.2]. These all

represent similar scores to the results obtained immediately post-intervention. There was a moderate non-significant difference favouring the intervention group at follow-up as regards the relationship with spouse (as measured by the Parenting Stress Index) -0.3 [-0.9, 0.3] and parental health -0.3 [-0.9, 0.3] (as measured by the Parenting Stress Index - Parent Domain). These results both represent a slight deterioration on the outcomes obtained immediately post-intervention - relationship with spouse -0.4 [-0.9, 0.02]. and parental health -0.6 [-1.0, -0.2].

Irvine, 1999 showed no evidence of effectiveness in improving maternal depression at either 3-month follow-up -0.002 [-0.3, 0.3] or immediately post-intervention -0.04 [-0.3, 0.2].

Wolfson 1992 showed a large statistically significant difference favouring the intervention group at 3-4 month follow-up in parental self-esteem (as measured by the Parental Efficacy Measure) -0.9 [-1.5, -0.4]. There was, however, no measurement of self-esteem immediately post-intervention with which to compare this result. There was a non-significant difference favouring the control group at follow-up as regards the number of uplifts (as measured by the Hassles and Uplifts Scale) +0.2 [-0.69, 0.39]. This represents no change on the score obtained immediately post-intervention. There was also a non-significant difference favouring the intervention group at follow-up in the number of hassles -0.4 [-0.9, 0.2], representing a deterioration on the results obtained immediately post-intervention -0.6 [-1.1, -0.01].

7.2 Multi-Modal Programmes

One study in the Multi-Modal category of parenting programmes provided follow-up data (Gross 1995). The results show a large statistically significant difference favouring the intervention group at follow-up in maternal attachment (as measured by the Parenting Stress Index) -0.9 [-1.5, -0.2]. This represents an improvement on the result obtained immediately post-intervention -0.6 [-1.2, 0.04]. There was also a large statistically significant improvement at follow-up favouring the intervention group in maternal self-esteem (as measured by the Parenting Stress Index) -0.7 [-1.3, -0.02], representing a similar result to that which was obtained immediately post-intervention. The results show moderate to small non-significant differences favouring the intervention group at follow-up as regards role restriction (as measured by the Parenting Stress Index) -0.5 [-1.1, 0.1], and the relationship with the spouse (as measured by the Parenting Stress Index) -0.3 [-1.0, 0.3]. These both represent slight increases in score compared with the post-intervention data. There was a small non-significant difference favouring the intervention group at follow-up as regards maternal anxiety (as measured by the Spielberger State-Trait Anxiety Inventory - Trait Subscale) -0.2 [-0.8, 0.4]. This represents a deterioration in outcome compared with the post-intervention score -0.6 [-1.2, 0.04].

7.3 Humanistic Programmes

Two studies in the Humanistic category of parenting programmes provided follow-up data - one at three-months post-intervention (Gross 1995) and one at six-months post-intervention (Patterson 2002). The results for Gross 1995 show a large statistically significant difference in maternal stress at follow-up (as measured by the Parenting Stress Index) favouring the intervention group -1.2 [-2.3, -0.1]. This represents an improvement on the results obtained for maternal stress immediately post-intervention -1.0 [-2.1, 0.1]. There was a large non-significant improvement in depression at follow-up favouring the intervention group -0.7 [-1.7, 0.4] (as measured by the Centre for Epidemiological Studies Depression Scale) which represents no change on the result obtained immediately post-intervention. There was also a small non-significant difference at follow-up favouring the intervention group in maternal self-esteem (as measured by the Toddler Care Questionnaire) -0.3 [-1.3, 0.7]. This represents a large deterioration in the result which was obtained immediately post-intervention -0.6 [-1.6, 0.4].

The results for [Patterson 2002](#) show no significant difference for a number of aspects of psychopathology as measured by the GHQ - depression -0.6 [-0.47, 0.36], anxiety 0.06 [-0.35, 0.47], somatic 0.05 [-0.36, 0.46], dysfunction -0.25 [-0.66, 0.16], and the total score -0.07 [-0.48, 0.34]. These represent small deteriorations on the scores obtained at baseline - depression -0.10 [-0.51, 0.30], anxiety -0.29 [-0.69, 0.11], somatic 0.19 [-0.21, 0.6], dysfunctional -0.29 [-0.69, 0.11], and total score -0.15 [-0.55, 0.26]. The [Patterson 2002](#) study also showed no evidence of effectiveness for self-esteem at six-month follow-up -0.17 [-0.58, 0.24]. This result is similar to the score obtained immediately post-intervention.

7.4 Cognitive-Behavioural Programmes

One study in the cognitive-behavioural category of parenting programmes provided follow-up data at 6-months post-intervention ([Cunningham 1995](#)). The results show small non-significant differences favouring the intervention group at baseline 0.1 [-0.4, -0.5] and follow-up -0.2 [-0.6, 0.3] (as measured by the Beck Depression Inventory). There was no evidence of effectiveness for parenting self-esteem (as measured by the Parenting Sense of Competence Scale) at baseline 0.03 [-0.4, 0.5] or at follow-up -0.1 [-0.1, 0.4].

7.5 Rational-Emotive Therapy Programmes

No follow-up data was available for Rational-Emotive Therapy Programmes.

SECTION D

The following section comprises the meta-analysis of the follow-up data for depression, self-esteem and marital adjustment/relationship with spouse. There was an insufficient number of studies in the categories of maternal anxiety and social support to undertake a meta-analysis.

8. META-ANALYSIS OF FOLLOW-UP DATA

8.1 Depression

Six studies ([Cunningham 1995](#), [Gross 1995](#), [Irvine, 1999](#), [Patterson 2002](#), [Pisterman 1992a](#), [Sheeber 1994](#)) evaluated the effectiveness of a parenting programme (of any type) in improving depression at follow-up. A range of outcome instruments were used including the Parenting Stress Index (PSI), the Centre for Epidemiological Studies Depression Scale, the Beck Depression Inventory (BDI), and the General Health Questionnaire (GHQ). Follow-up was measured at 2-months ([Sheeber 1994](#)), 3-months ([Gross 1995](#), [Irvine, 1999](#), [Pisterman 1992a](#)); and 6-months ([Cunningham 1995](#), [Patterson 2002](#)). The six studies provide data from a total of 478 participants (226 intervention group and 252 control group). The combined data show a small non-significant difference favouring the intervention group -0.2 [-0.4, 0.002].

8.2 Self-esteem

Five studies ([Cunningham 1995](#), [Gross 1995](#), [Pisterman 1992a](#), [Sheeber 1994](#), [Wolfson 1992](#)) evaluated the effectiveness of a parenting programme in improving self-esteem at follow-up. A range of outcome instruments were used including the Parenting Stress Index (PSI), the Parenting Sense of Competence Scale, Parental Efficacy Measure, and the Toddler Care Questionnaire (TCQ). Follow-up was measured at 2-months ([Sheeber 1994](#)), 3-4 months ([Gross 1995](#), [Pisterman 1992a](#), [Wolfson 1992](#)) and 6-months ([Sheeber 1994](#)). The five studies provide data from a total of 233 participants (115 intervention group and 118 control group). The combined data show a statistically significant difference favouring the intervention group -0.4 [-0.7, -0.2].

8.3 Marital adjustment/relationship with spouse

Two studies ([Pisterman 1992a](#), [Sheeber 1994](#)) evaluated the effectiveness of a parenting

programme in improving marital adjustment/relationship with spouse at follow-up using the Parenting Stress Index (relationship with spouse subscale) (PSI). Follow-up was measured at 2-months (Sheeber 1994) and 3-months (Pisterman 1992a). The two studies provide data from a total of 86 participants (43 intervention group; 43 control group). The combined data show a non-significant difference favouring the intervention group -0.3 [$-0.8, 0.1$].

Discussion

A total of 26 studies were included in this review - eight behavioural programmes; six cognitive-behavioural programmes; four multi-modal programmes; six humanistic programmes; and two rational emotive therapy programmes. Twenty of these provided sufficient data to calculate effect sizes, providing a total of 64 assessments of outcome on a range of aspects of maternal psychosocial functioning including depression, anxiety, stress, self-esteem, social competence, social support, guilt, automatic thoughts, mood, dyadic adjustment, psychiatric morbidity, irrationality, anger and aggression, mood, attitude, interpersonal traits, personality and beliefs. There was sufficient data on five outcomes (depression, anxiety, self-esteem, social support and marital adjustment) to justify combining the results in a meta-analysis i.e. irrespective of the type of parenting programme (Results Section - B). The decision to combine the data in this way reflected the fact that the results of the individual studies showed few differences in outcome despite the presence of differences in the content of the programme i.e. irrespective of the type of parenting programme many studies produced results favouring the intervention group in approximately one-third to one-half of the outcomes measured. It should be noted, however, that future studies may be identified which report findings from programmes that cannot be combined in a meta-analysis with other types of programmes, as has been undertaken here.

Four of the five outcomes which were combined in a meta-analysis showed statistically significant results favouring the intervention group (Results Section - B). These results indicate that parenting programmes can be effective in improving maternal depression; anxiety/stress; self-esteem; and the mother's relationship with her partner. The meta-analysis of the social support outcome data, however, showed no evidence of effectiveness. This is due to the fact that none of the four studies on which the results are based produced statistically significant findings favouring the intervention group, and in two of the studies the results favoured the control group. This is a counter-intuitive finding given the group-based structure of the parenting programmes being evaluated, and the existence of qualitative data clearly demonstrating the additional support many parents appeared to have experienced as a result of taking part in such programmes with other parents (Barlow, S-Brown 2000). It may be that this result is due to the fact that the outcome instruments that were used in the primary studies were not designed to measure the type of changes in social support, which would be influenced by a parenting programme e.g. an increase in support from other parents.

Of the data from the individual studies, including those outcomes which were eventually included in a meta-analysis, (Results - Section A), approximately 22% of the results showed positive and significant differences between the intervention group and the control group. A further 56% showed non-significant differences favouring the intervention group. This is an increase in the proportion of positive but non-significant findings at update from the original figure of approximately 40%, possibly reflecting the inclusion of the scales from the GHQ used by the Patterson 2002 study, from which data are skewed. Overall, the failure to achieve significance may reflect the fact that in some studies the numbers were small, thereby contributing to the wide

confidence intervals which were obtained. This suggests that some of the included studies may have been under-powered, and the fact that it was not possible to combine the results for many of the outcomes in a meta-analysis, precluded the possibility of narrowing the confidence intervals. However, despite the width of the confidence intervals, the effect-sizes in most cases were above 0.4, and in at least one case, the effect-size for the individual study was 1.0 while the confidence intervals, nevertheless, showed a non-significant finding. While the wide confidence intervals including the zero effect-size mean that it is possible that the intervention has no effect, the fact that such a large number of studies produced such large effect-sizes confirms the evidence obtained in the meta-analysis that parenting programmes can improve maternal psychosocial outcomes. It should be noted, however, that in some studies up to a third of the outcomes which were measured showed no evidence of effectiveness. While this result may once again reflect the fact that some of the included studies were underpowered, it should also be borne in mind that in some cases the parenting programme was not effective in improving some aspects of maternal psychosocial functioning.

The picture presented by the individual results of the programmes in the five categories is a complex one and it is not possible to make any definitive statement as to whether there are particular outcomes which are not improved by parenting programmes. Neither is it possible to make any sort of assessment of which groups of parents were less likely to show a successful outcome. While it seems likely that the severity of the problem at the outset represents an important source of variation, the level of severity was not assessed as regards its impact on the outcome in any of the included studies. The failure to address the significance of the severity of the problem at the outset reflects the fact that the majority of the included studies evaluated parental psychosocial health as a secondary (and often incidental) outcome, the focus very often being on child outcomes, or parental skills in managing children's behaviour. This suggests the need for both greater consideration of the impact of parenting programmes on parents themselves and for further research in this area.

Twelve studies in total provided follow-up data (Results - Section C), but only 6 of these provided sufficient data with which to calculate effect sizes. The eleven studies provided a total of 53 assessments of outcomes for follow-up periods ranging from 2-months to 1-year. The results once again indicate that overall, approximately one-quarter of the outcomes measured showed statistically significant differences favouring the intervention group, and that approximately a half of the outcomes showed non-significant differences favouring the intervention group. Very few outcomes showed no evidence of effectiveness at follow-up. A meta-analysis of the follow-up data was undertaken combining the results for three outcomes - depression, self-esteem and the mother's relationship with her partner. The effect sizes for the follow-up data were small and two out of the three results obtained were not significant. The lack of significance for two out of three of the follow-up results may reflect the small number of studies providing follow-up data and the consequent wide confidence intervals. In addition the data from [Patterson 2002](#) using the General Health Questionnaire are skewed, and as noted above, these results should be treated with caution in the context of a meta-analysis. However, it is clear that further evidence is required before any firm conclusions can be reached about the effectiveness of parenting programmes in improving maternal psychosocial health in the long term.

The results of the critical appraisal showed that nine of the 26 included studies were likely to be subject to bias due to a lack of rigor in the methodology (see tables 11-15 of the additional tables). This suggests that the results of these studies should be treated with caution. In addition, it is difficult to assess the extent to which the results obtained reflect clinically objective changes in maternal functioning, due to the nature of the outcome measures which were used (i.e. self-report).

Further research is needed which includes, where possible, objective clinical assessments of maternal functioning. Furthermore, it is difficult to know how some of the outcome measures which were used in the primary studies should be interpreted. For example, one study included measures of the 'nature of man', and 'existentiality'. It should also be borne in mind that the conclusions of this review rely heavily on numerical results from the reports of the included studies and as such may have been subject to a 'reporting bias'. Indeed, the prevalence of positive findings supports this possibility, as a greater variability in the results might have been expected given the size of the studies, and the nature of the measures used.

In some of the primary studies the generalisability of the results was compromised due to a number of factors. First, although on the whole the mean drop-out rate in the included studies was much lower than the usual 28% (Forehand et.al, 1980), the upper limit for parental drop-out was as high as 44% in one study (Spaccarelli 1992) and 41% in two further studies (Nixon 1993; Scott 1987). Only one study examined the demographic characteristics of the parents who dropped out. This showed that drop-outs were more likely to be less-well educated parents, to score much lower on the Parenting Situation Test, and to report more child behaviour problems on the Eyberg Child Behaviour Inventory (Spaccarelli 1992). Parents were also more likely to drop out of the intervention group than the control group. These results confirm the findings of other research which show that premature termination from parent education programmes among families with children referred for antisocial behavior was associated with more severe conduct disorder symptoms and more delinquent behaviours; mothers reporting greater stress from their relations with the child, their own role functioning, and life events; and families being at greater socio-economic disadvantage (Kazdin 1990). Other studies have also identified individuals more likely to drop out as including those from a lower social class or a minority ethnic group (Farrington 1991; Strain et al 1981; Holden et. al. 1990), and those children with a greater number of presenting problems (Holden et. al. 1990). There are a number of points at which a parent may drop-out of a parenting programme. Research has shown that failure to persist through the initial intake is associated with parental feelings of helplessness and negativity, and that failure to persist through the programme itself, is associated with therapist inexperience (Frankel 1992). These problems surrounding the issue of attrition and drop-outs point to the importance of evaluating the results of trials on an intention-to-treat basis which would limit bias arising from this source.

Generalisability was also compromised in a number of studies as a result of the absence of any demographic characteristics as regards the participating parents. Of the studies which did report this data, three included parents from predominantly high-risk backgrounds including parents from low socio-economic groups (Odom 1996, Taylor 1998, Scott 1987, Nicholson 2002), parents with experience of alcohol and drug-abuse, depression, and abuse in childhood (Taylor 1998, WebsterStratton 1988), and five studies included parents from mixed socio-economic groups (Irvine, 1999, Gross 1995, Mullin 1994, Spaccarelli 1992, WebsterStratton 1988). The programmes described in the included studies were directed at parents of children with a range of problems, including ADHD (Anastopoulos 1993, Blakemore 1993, Odom 1996, Pisterman 1992a, Pisterman 1992b), behaviour and conduct problems (Cunningham 1995; Gross 1995; Irvine, 1999, Scott 1987, Sheeber 1994, Spaccarelli 1992, Taylor 1998, WebsterStratton 1988, Patterson 2002); a range of developmental and intellectual disabilities (Greaves 1997, Nixon 1993, Schultz, 1993, Gammon 1991), parents of new-born infants (Wolfson 1992), teenagers with drug and alcohol problems (McGillicuddy 2001), and two population groups of parents with no specific problems (Joyce 1995, Sirbu 1978). This suggests that parents with a diverse range of problems may be able to benefit from parenting programmes.

A number of studies recruited parents who had been referred by outside agencies, in addition to

volunteers/self-referrals, and some studies were based solely on findings from parents who volunteered to take part in the programme. Parents who self-refer or who volunteer to take part in parenting groups may not be representative of the wider group of parents, perhaps most importantly in the sense that volunteers are very often better motivated than parents who have been referred by professional agencies. The use of volunteers would thereby increase the likelihood of a positive treatment effect.

Over half of the studies included fathers in the parenting programme and in the evaluation process, although in some cases the data from mothers only was used for the purpose of the review. The results from the remaining studies were based on the findings from groups comprised largely of mothers. Caution should therefore be exercised before the findings from this review are generalised to both parents. Furthermore, the majority of parents taking part in most studies were Caucasian and it seems likely that the results of this study should not be generalised to parents from other ethnic groups. The studies were, however, conducted in a number of countries including the UK, USA, Republic of Ireland, Canada and Australia, making the results generalisable across a range of cultural contexts.

Finally, of the 59 studies which were not included in this review at first iteration, 30 showed improvements in parental psychosocial health including depression, anxiety, stress, self-esteem, and marital satisfaction. One measured self-esteem but showed no significant improvement. In addition, some of the excluded studies evaluated the effectiveness of parenting programmes directed at very high-risk or vulnerable parents. These included incarcerated offenders and individuals undertaking residential rehabilitation for substance abuse. In a number of cases child protection issues were indicated. Six studies showed a reduction at post-test in measured propensity for violence or child maltreatment. Although these are indirect measures of psychosocial health, their relationship with maternal depression (see background) and parental stress has been established (Tomison 1998). Where programmes are offered to such groups, participation by parents may be a higher priority for service-providers than methodological rigour. In fact Gill, 1998 refers to the difficulties posed in using rigorous experimental design when working with families in crisis.

Reviewers' conclusions

Implications for practice

The results of this review suggest that parenting programmes can be effective in improving a range of psychosocial outcomes in mothers. The limited follow-up data available are equivocal and the overall paucity of follow-up data points to the need for further evidence concerning the long-term effectiveness of parenting programmes in improving maternal psychosocial health. The use of a wide range of outcomes reflects the different rationales underpinning the programmes e.g. the cognitive-behavioural and RETS programmes aimed to relieve guilt in parents, and improve parental moods, whereas the behavioural and multi-modal programmes aimed to improve outcomes such as parenting competence and social support. This review did not include studies that compared different types of parenting programmes and it is not possible to comment on which category of programme is the most effective in improving maternal psychosocial health. Most of the studies, however, evaluated the effectiveness of parenting programmes in improving common problems for parents such as depression, anxiety/stress, and self-esteem, and the meta-analysis provides clear evidence of the short-term effectiveness of parenting programmes in improving these outcomes.

The similarity in the results obtained by the different types of parenting programme may indicate that 'process' factors are important in influencing the outcome for parents. There is very little research available to date addressing the role of 'process' factors, such as the way in which the programme is delivered, in producing positive outcomes with regard to parental functioning. However, it seems likely that the group facilitator/leader has an important part to play in helping parents not only to persist with a particular programme (Frankel 1992), but in facilitating an atmosphere of openness and trust between the participating parents, and in helping parents to feel respected, understood, and supported. Group leaders can play an important role in modelling attributes such as empathy, honesty and respect, and personal qualities such as a sense of humour, enthusiasm, flexibility, and warmth. The absence of data on process factors in the studies that were included in this review precludes the possibility of assessing to what extent the lack of positive change, where this occurred, was due to the content of the programme or its delivery.

While none of the included studies discuss the issue of programme delivery explicitly, four studies refer to related issues. Webster-Stratton 1988 compares three methods of delivering the programme - an individually self-administered method, a group discussion with therapist input, and a group discussion with video-tape modelling and therapist input. Webster-Stratton suggests that the self-administered mode of delivery was successful in increasing self-efficacy by allowing families to solve problems and be responsible for their own treatment, and that this method of delivery also allowed for privacy, flexible scheduling, self-pacing, and self-control, all of which are difficult to achieve in a group setting. However, she notes that only the group discussion with video-tape modelling and skilled therapist input was successful in significantly reducing mothers' reports of parenting stress, and resulted in higher consumer satisfaction scores, lower drop-out rate, and higher attendance. Schultz, 1993 discusses the balance between affective, cognitive and behavioural strategies and cites qualitative data from 14 (out of 20) participants who refer to the group benefits of meeting with other parents and sharing experiences, exchanging ideas, and of understanding each others' needs. Nixon 1993 also refers to the group process, and the validation of parental feelings through the experience of sharing them with other parents. He also discusses the way in which the process of sharing feelings with other parents contributes to the normalisation and destigmatisation of such feelings, and of the potential for a reduction of negative attributions

through comparison with other parents. The extent to which these processes influenced some of the outcomes is discussed, as is the lack of validated measures to assess outcomes of this nature. It is hypothesised that 'social comparison' may well be a powerful treatment tool. [Gammon 1991](#) cites a number of benefits for parents arising from the use of groups in particular, including the possibility for mutual support, the opportunity for learning from each other and for a reduction in feelings of isolation. The facilitators in this instance used subgroups and snack periods together, in addition to mutual positive reinforcement to maximise group benefits. None of the included studies explicitly discussed the role of the therapeutic relationship in influencing the outcome.

In addition to the use of a wide range of outcome measures, the programmes that were evaluated in the primary studies were directed at parents of children with a wide range of problems. A number of studies also showed that parents from both disadvantaged and less disadvantaged backgrounds were able to benefit from the support that was offered. Some caution should, nevertheless, be exercised before the results are generalised to all parents irrespective of the type or severity of their pathology as these factors were not assessed as possible influences on outcome. Further information is also required regarding parents who drop out of parenting programmes. The studies included in this review do not address whether particular types of programme are more suited to particular groups of parents than others. The current recruitment of parents to programmes reflects the assumption that all parents can benefit from whichever programme is on offer. One danger of this is that parents who drop-out may be then be blamed for their failure to complete the programme, rather than the appropriateness of the programme being called into question.

Implications for research

The findings of this review suggest that parenting programmes are effective in the short-term in improving parental psychosocial outcomes. The long-term follow-up data, however, is equivocal and there is a need for further assessment of the extent to which the results of such programmes are maintained over time. The heterogeneity which was evident also points to the need for further research which would facilitate an assessment of the effectiveness of parenting programmes for well-defined groups of parents, thereby improving the external validity of such research. In particular, further consideration should be given to whether the type and severity of psychosocial problem being experienced by the parent plays a role in determining the outcome. There is also a need for further studies to evaluate the effectiveness of programmes that utilise strategies focusing in particular on feelings and relationships.

The wide confidence intervals that were obtained for some of the included studies may have been due to the small numbers, and future research should involve the recruitment of larger samples thereby reducing the likelihood of weak statistical power.

All of the measures of parental psychosocial functioning that were used in the 26 included studies were self-report measures. Future research would ideally combine the use of such measures with other more objective evaluations of parental psychosocial functioning such as, for example, some form of clinical assessment.

A number of important questions remain to be addressed concerning the effectiveness of parenting programmes in improving maternal psychosocial outcomes. These include questions such as - which type of programme is most effective in improving outcomes for parents, and whether different programmes vary in the impact which they have on the different outcomes being measured; who are the parents that drop out of group-based parenting programmes and why they

drop-out; which particular aspects of parenting programmes are the decisive factors in bringing about change, and whether these factors are specific to particular training programmes or non-specific factors such as group-leader qualities.

Research is also needed which focuses on the process of programme delivery. Only four of the primary studies included in this review made any reference to this issue. Of the programme service-providers who were contacted, six referred to group factors such as empowerment, support, and self-esteem as being important. Two referred to the role of facilitators in promoting positive group processes. [Buttigieg 1995](#) describes difficulties in evaluating parenting programmes for vulnerable clients and describes the use of 'hard outcome measures' as limited when compared with qualitative outcomes such as support, empowerment and the relationship between the professional and the client. Furthermore, she suggests that in many cases, this type of factor can play an important role in influencing outcomes such as the risk of child abuse or reception into care, and that evaluation should include their assessment.

It is clear from the range of programmes reviewed that there is much creative use of parenting programmes with different groups of parents. It is also apparent that there is great potential for such groups to have a positive impact on maternal psychosocial health. However, as discussed above, the literature lacks any discussion of the process of service delivery or its impact on psychosocial outcomes. Future research would benefit from some consideration of the impact of such factors on the outcomes recorded.

Characteristics of included studies

Study ID	Methods	Participants	Interventions	Outcomes	Notes	Allocation concealment
Anastopoulos 1993	RCT using quasi allocation; pre and post measures	34 parents of children with ADHD - clinical population	Behavioural parent training group (n =19); waiting-list control group (n=15)	Parenting stress; distress; self-esteem; marital satisfaction	Quasi randomisation according to clinical availability	C
Blakemore 1993	RCT with pre and post measures; 3-month follow-up	24 volunteer or professionally referred parents of children with ADHD	Behavioural parent-training group (n=8); waiting-list control group (n=8); Individual therapy (n=8)	Parenting stress	Results unclear	B
Cunningham 1995	RCT with pre and post measures; 6-month follow-up	150 volunteer parents of pre-school children with behaviour problems	Cognitive-Behavioural parent- training group (n=48); waiting list control group (n=56); Individual programme (n=46)	Social support; parenting sense of competence; depression	Quasi randomisation using block assignment; no information on drop-out or loss to follow-up at post test	C
Gammon 1991	RCT with pre and post measures	42 volunteer or professionally referred parents of children with a disability	Cognitive-Behavioural parent training group (n=24); No treatment control group (n=18)	Parental moods; stress	No information on drop-out or loss to follow-up at post test; distribution of confounders not reported	B
Greaves 1997	RCT with pre and post measures	54 mothers of pre school children attending a centre for children with Down syndrome	Rational Emotive parent education group (n=21); No treatment control group (n=16); Applied Behaviour Analysis (n=17) Comparison	Parental stress; anger and guilt; parental mood		B
Gross 1995	RCT with pre and post measures; 3-month follow-up	16 volunteer parents of toddlers with behaviour	Behavioural-Humanistic parent training group (n=10);	Parenting self-efficacy; depression; stress		B

Irvine, 1999	RCT with pre and post measures; 6 months and 1-year follow-up	difficulties 303 families of school-referred 'at-risk' adolescents	Control group (n=6) Behavioural parent training group (n=151); waiting-list control group (n=152)	Parental depression		B
Joyce 1995	RCT with pre and post measures; 10-month follow-up	48 volunteer parents	Rational Emotive parent-training group (n=32); waiting-list control group (n=16)	Parental emotionality; state-trait anxiety; irrationality; anger and guilt; self-worth		B
McGillicuddy 2001	RCT with pre and post measures	22 parents of substance abusing adolescents	Cognitive-behavioural parenting group (n=14); waiting-list control group (n=8)	Parental stress; depression; anxiety; and anger		B
Mullin 1994	RCT with pre and post measures; 1-year follow-up	79 self-referred/ volunteer parents	Multi-modal parent training group (n=39); waiting-list control group (n=40)	Psychiatric morbidity; self-esteem; social competence	Quasi randomisation using sequential assignment; distribution of confounders not reported; no information on drop-out or loss to follow-up at post-test	C
Nicholson 2002	RCT with pre and post measures	23 mothers, 2 grandparens; 1 father of low socioeconomic status who made excessive use of verbal and corporal punishment	Cognitive-behavioural parenting programme (n=13); waiting-list control group (n=13)	Parental stress; anger/aggression		B
Nixon 1993	RCT with pre and post measures	58 volunteer parents of children with severe developmental disabilities attending special schools	Cognitive-Behavioural parent-training group (n=18); waiting-list control group (n=16)	Depression; guilt; automatic thoughts	Attrition 41%	B
Odom 1996	RCT with pre and post measures	16 volunteer parents of children with ADHD	Behavioural parent-training group (n=10); no-treatment control group (n=16)	Parental competence (self-esteem)		D
Patterson 2002	Block RCT with pre and post	114 parents of children who	Humanistic parenting	Parental psychopathology;	Block randomisation	B

	measures	scored in upper 50% on behaviour measure	programme (n=60); waiting-list control group (n=56)	stress; self-esteem		
Pisterman 1992a	RCT with pre and post measures	45 parents of children with ADHD aged 3-6 years - clinical population	Behavioural parent-training group (n=23); waiting-list control group (n=22)	Parenting stress; self esteem; parental competence		B
Pisterman 1992b	RCT with pre and post measures; 3-month follow-up	91 clinical families of preschool children with ADHD	Behavioural parent-training group (n=46); waiting-list control group (n=45)	Parenting stress and sense of competence		B
Schultz, 1993	RCT with pre and post measures; 1-year follow-up	54 mother father dyads of children/young adults with intellectual disabilities	Multi-modal parent-training group (n= 15) no-treatment control group (n=39)	Social support; psychiatric well-being		B
Scott 1987	RCT with pre and post measures; 1-year follow-up	55 volunteer mothers of children with perceived problems	Behavioural parent-training group (n=27); waiting-list control group (n=28)	Irritability; depression and anxiety;	41% drop out; distribution of confounders not reported; contingent randomisation	C
Sheeber 1994	RCT using quasi randomisation with pre and post measures; 2-month follow-up	40 mothers of 3-5 year old children with 'difficult temperament'	Multi-modal parent-training group (n=20); waiting-list control group (n=20)	State-trait anxiety; parenting stress	Quasi randomisation based on clinical availability of places	B
Sirbu 1978	RCT with pre and post measures	60 volunteer mothers of preschool children	3 Behavioural parent-training groups (i) course + programmed text (n=?); (ii) course alone (n=?) (iii) programmed text alone (n=?); Attention placebo control group (n=?)	Parental stress and satisfaction	Numbers in groups/dropouts/ distribution of confounders not reported	B
Spaccerelli 1992	RCT with pre and post	53 volunteer parents	Behavioural-humanistic	Parental stress	44% drop out	B

	measures; 4-6 month follow-up		parent-training group + problem solving group (n=21); waiting-list control group (n=16); Parent-training + discussion group (n=16)			
Taylor 1998	RCT with pre and post measures	110 volunteer families of 3-8 year old children with conduct problems	PACS parent-training group (n=46); waiting-list control group (n=18); Eclectic programme (n=46)	Depression; anger/aggression; social support; dyadic adjustment		B
Van Wyk 1983	RCT with pre and post measures	26 mothers of 8-12 year old children	Multi-modal parent-training group (n=16); no-treatment control group (n=10)	Self-actualisation; Interpersonal sensitivity	Drop-outs, loss to follow-up at post-test, and distribution of confounders not reported	B
WebsterStratton 1988	RCT with pre and post measures; 1-year follow-up	85 self or professionally referred parents of 3-6 year old children with conduct disorders	Group discussion + video-tape modelling parent training group (n=28); waiting-list control group (n=29); Group discussion (n=28)	Parental stress		B
Wolfson 1992	RCT with pre and post measures, and 4-5 month follow-up	60 couples recruited from childbirth classes	Behavioural parent-training group (n=29); no-treatment control group (n=31)	Stresses & positive experiences;parental self-confidence		B
Zimmerman 1996	RCT with pre and post measures	42 volunteer mothers of adolescents with behaviour problems	Solution-focused parenting group (n=30); Control group (n=12)	Parenting skills		D

Characteristics of excluded studies

Study ID	Reason for exclusion
Azrin 2001	No control group. No maternal mental health measures.
Baker et al, 1991	No control group.
Barber, 1992	Non-random allocation. .
Barkley 2001	No control group. No maternal mental health measures.
Barth et al, 1983	Non-random allocation.
Bigelow 2000	Not randomised. No maternal psychosocial health measures.
Bristol, 1993	Non-random allocation.
Britner, 1997	Not random allocation.
Brody 1985	Not random allocation. Not a group programme.
Brunk et al, 1987	No control group.
Camp, 1997	No control group.
Chadwick 2001	No random allocation to groups. Intervention included teacher training.
Ciechomski 2001	No random allocation to groups. No measures of maternal psychosocial health.
Collins et al, 1992	Quasi-experimental pilot study. Not random allocation.
Connell et al, 1997	Telephone counselling programme. Not a group-based programme.
Connolly 2001	No random allocation to groups.
Cummings 2001	Intervention delivered on individual basis in the home.
Dadds, 1992	No control group. Study compared outcomes in 22 mothers of diagnosed oppositional/conduct disordered children. Two groups received parent-training and one received additional social support. Both groups improved on measures including depression. Changes maintained at 6-month follow-up.
Davis, 1996	No control group - matched comparison group.
Drew et al	Not a standard parenting programme - different category of intervention, specific to parents of children with autistic spectrum disorders.
Elliot 2002	No random allocation to groups. Intervention not provided alone.

Fashimpar 2000	No random allocation to group. No maternal measures of mental health.
Felner et al 1994	No control group.
Feng 2000	No control group.
Fetsch et al 1999	One group pretest-posttest design with a convenience sample of 99 parents recruited via professional referral and the media.
Fielden 2000	No random allocation to group.
Forehand et.al, 1980	Non-clinic control group.
Forgatch 1999	No maternal measures of mental health.
Fox 1991	No control group.
Froehlich 2002	No random allocation to group. No maternal measures of mental health.
Fulton et. al. 1991	No control group.
Gill, 1998	No control group. Non-standardised measures of outcome.
Harrison, 1997	Programme offered to fathers only .
Howze Browne, 1989	No control group.
Huebner 2002	Not randomised.
Hutchings 2002	Not group based intervention.
Kacir 1999	No measures of maternal psychosocial health.
Kazdin et. al, 1992	No control group. Different treatment comparisons.
Kearney	Not randomised. Volunteer comparison group from the same family centre only.
Laggés 1999	Individual not group based programme
Lawes, 1992	Assignment method unclear.
Long 2001	Not randomised.
Marinho 2000	Not RCT. No measures of maternal psychosocial health.
Martinez 2001	No measures of maternal psychosocial health.
McBride, 1991	Non-random allocation. Comparison rather than control group. Intervention directed at 54 father and child dyads rather than parents only.
Menta, 1995	Non-random allocation, and no control group; combination of group

	and individual intervention.
Miller-Heyl, 1998	Joint intervention directed at 797 parents AND their children.
Olivares, 1997	No comparison of some outcomes with the control group.
Orrell-Valente 1999	Intervention included a home visiting component which might confound the results re: parenting programme
Probst 2001	Not RCT. Review.
Probst 2000	
Puckering, 1994	No control group or appropriate psychosocial measures.
Puckering, 1999	No control group.
Purdie 2002	Not RCT. Review of research.
Rieckhof, 1977	No data at time 1 and time 2 and no comparison with the control group.
Sampers 2001	Not an RCT. Review.
Sanders 2000	Not a group-based programme.
Schinke, 1986	Non-random allocation.
Schultz, 1980	Parenting attitudes only measured.
Scott 2001	No maternal psychosocial health measures.
Scott 2002	Multi-faceted programme.
Shifflett 1999	Outcome measured was parenting behaviour only
Singer 1999	Not a group-based programme.
Sofronoff 2002	Not RCT.
Solis-Camara 2002	No maternal psychosocial health outcomes measured
Sonuga-Barke 2001	Individual, not group-based programme.
Sonuga-Barke 2002	Individual, not group-based programme.
Stahmer 2001	Not randomised.
StJames Roberts 2001	Leaflet programme. Not a group-based programme.
Sutton, 1992	Comparisons between three treatment modes and a control group (n=37). Personal stress measured using an 'ad hoc' measure.
Sutton, 1995	Programme directed at 23 individual parents - not group-based. Telephone based parent-training intervention.

Telleen, 1989	Non-random allocation.
Tucker, 1998	Follow-up study. Also control/comparison groups combined.
WebsterStratton 2001	Parent and teacher training. No parental psychosocial health measures.
Weinberg 1999	Not randomised.
Whipple 2000	Not randomised. Not a group-based programme. No maternal psychosocial health outcomes measured.
Whipple, 1996	No control group.
Wilczak 1999	Not RCT. Incarcerated father programme.
Wolkchik	No maternal psychosocial health outcomes measured

Characteristics of ongoing studies

Study ID	Trial name	Participants	Interventions	Outcomes	Starting date	Contact info	Notes
Gardner							
Sharp							

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-
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Additional tables

01 Characteristics of Included Studies (Behavioural Programmes)

Study ID	Methods	Participants	Interventions	Outcomes	Quality
Irvine, 1999	RCT with pre and post measures; 6 months and 1-year follow-up	303 families of school-referred 'at-risk' adolescents	Parent training group (n=151); waiting-list control group (n=152)	Parental depression	B
Odom, 1996	RCT with pre and post measures	20 volunteer parents of children with ADHD	Parent-training group (n=10); no-treatment control group (n=16)	Parental competence (self-esteem)	B
Anastopoulos, 1993	RCT using quasi allocation; pre and post measures	34 parents of children with ADHD - clinical population	Parent training group (n =19); waiting-list control group (n=15)	Parenting stress; distress; self-esteem; marital satisfaction	B
Pisterman, 1992a	RCT with pre and post measures	45 parents of children with ADHD aged 3-6 years - clinical population	Parent-training group (n=23); waiting-list control group (n=22)	Parenting stress; self esteem; parental competence	B
Pisterman, 1992b	RCT with pre and post measures; 3-month follow-up	91 clinical families of preschool children with ADHD	Parent-training group (n=46);waiting-list control group (n=45)	Parenting stress and sense of	B

				competence	
Wolfson, 1992	RCT with pre and post measures, and 4-5 month follow-up	60 couples recruited from childbirth classes	Parent-training group(n=29);no-treatment control group(n=31)	Stresses & positive experiences;parental self-confidence	B
Scott, 1987	RCT with pre and post measures; 1-year follow-up	77 volunteer mothers of children with perceived problems	Parent-training group (n=27);waiting-list control group (n=28)	Irritability; depression and anxiety;	B
Sirbu, 1978	RCT with pre and post measures	60 volunteer mothers of preschool children	3 Parent-training groups (i) course + programmed text (n=dk); (ii) course alone (n=dk) (iii) programmed text alone (n=dk);Attention placebo control group (n=dk)	Parental stress and satisfaction	D

Additional tables

02 Characteristics of Included Studies (Multi-modal Programmes)

Study ID	Methods	Participants	Interventions	Outcomes	Quality
Mullin, 1994	RCT with pre and post measures ; 1-year follow-up	79 self-referred/ volunteer parents	Parent training group (n=39); waiting-list control group (n=40)	Psychiatric morbidity; self-esteem; social competence	C
Sheeber, 1994	RCT using quasi randomisation with pre and post measures ; 2-month follow-up	40 mothers of 3-5 year old children with 'difficult temperament'	Parent-training group (n=20); waiting-list control group (n=20)	State-trait anxiety; parenting stress	B
Schultz, 1993	RCT with pre and post measures ; 1-year follow-up	54 mother father dyads of children/young adults with intellectual disabilities	Parent-training group (n=15)no-treatment control	Social support; psychiatric well-being	C

			group (n=39)		
Van Wyk, 1983	RCT with pre and post measures	26 mothers of 8-12 year old children	Parent-tr aining group (n=16);n o-treatm ent control group (n=10)	Self-actu alisation Interpers onal sensitivit y	C
Blakemore, 1993	RCT with pre and post measures ; 3-month follow-u p	24 volunteer or professionally referred parents of children with ADHD	Parent-tr aining group (n=8); waiting-l ist control group (n=8); Individu al therapy (n=8)	Parentin g stress	C

Additional tables

03 Characteristics of Included Studies (Humanistic Programmes)

Study ID	Methods	Participants	Interventions	Outcomes	Quality
Taylor, 1998	RCT with pre and post measures	108 volunteer families of 3-8 year old children with conduct problems	Parent-training group (n=46); waiting-list control group (n=18); Eclectic programme(n=46)	Depression; anger/aggression; social support; dyadic adjustment	B
Gross, 1995	RCT with pre and post measures ; 3-month follow-up	23 volunteer parents of toddlers with behaviour difficulties	Parent training group (n=10); Control group (n=6)	Parenting self-efficacy; depression; stress	C
Patterson 2002	Block RCT with pre and post test	114 parents of children who scored in upper 50%	Humanistic parenting programme (n=60); waiting list control group (n = 56)	Parental psychopathology; stress; self-esteem	B

Spaccarelli, 1992	RCT with pre and post measures; 4-6 month follow-up	53 volunteer parents	Parent-training + problem solving group (n=21); waiting-list control group (n=16); Parent-training + discussion group (n=16)	Parental stress	B
Webster-Stratton, 1988	RCT with pre and post measures; 1-year follow-up	114 self or professionally referred parents of 3-6 year old children with conduct disorders	Group discussion + video-tape modelling parent training group (n=28); waiting-list control group (n=29); discussion group (n=28)	Parental stress	B

Additional tables

04 Characteristics of Included Studies (Cognitive-Behavioural Programmes)

Study ID	Methods	Participants	Interventions	Outcomes	Quality
Zimmerman 1996	RCT with pre and post measures	42 volunteer parents experiencing difficulties with adolescent behaviour	Solution-focused parenting group (n=30);Control group (n=12)	Parenting skills	B
Cunningham 1995	RCT with pre and post measures; 6-month follow-up	150 volunteer parents of pre-school children with behaviour problems	Parent-training group (n=48); waiting-list control group (n=56); Individual programme(n=46)	Social support; parenting sense of competence; depression	B
Nixon 1993	RCT with pre and post measures	58 volunteer parents of children with severe developmental disabilities attending special schools	Cognitive-Behavioural parent-training group (n=18);waiting-list control group (n=16)	Depression; guilt; automatic thoughts	B
Gammon 1991	RCT with pre and post measures	42 volunteer or professionally referred parents of children with a disability	Parent training group (n=24);No treatment control group (n=18)	Parental moods; stress	C
McGillicuddy 2000	RCT with pre and post measures	22 parents of substance-abusing adolescents	Cognitive-Behavioural parenting group (n=14); waiting-list control group (n = 8)	Parental stress; depression; anxiety and anger	B

Nicholson 2002	RCT with pre and post measures	23 mothers, 2 grandparents; 1 father of low socioeconomic status who made excessive use of verbal and corporal punishment	Cognitive-behavioural parenting programme (n=13); waiting-list control group (n=13)	Parental stress; anger/aggression	B
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Additional tables

05 Characteristics of Included Studies (Rational-Emotive Therapy Programmes)

Study	Methods	Participants	Interventions	Outcomes	Quality
Greaves, 1997	RCT with pre and post measures	54 mothers of pre school children attending a centre for children with Down syndrome	Parent education group (n=21); No treatment control group (n=16); Applied Behaviour Analysis (n=17)	Parental stress; anger and guilt; parental mood;	C
Joyce, 1995	RCT with pre and post measures ; 10-month follow-up	48 volunteer parents	Parent-training group (n=32); waiting-list control group (n=16)	Parental emotionality; state-trait anxiety; irrationality, anger and guilt; self-worth	

Additional tables

06 Content of the included parenting programmes: (a) Behavioural Programmes

Study ID	Aims of intervention	Content/delivery
Irvine (1999)	To evaluate the effectiveness of the Adolescent Transition Program (behavioural parent-training) provided by non-mental health providers who are more likely to be available in small communities.	Stepwise, skill-based curriculum designed to teach parenting skills. Content included: positive reinforcement, parental monitoring, limit-setting, parent-child communication, and problem solving. 12 weekly sessions of 90 minutes-2 hours. Skills discussed in group then practiced at home with group feedback the following week.
Odom (1996)	To determine whether an educational intervention directed at parents of children with ADHD would improve a mother's knowledge about ADHD and her feelings of competence and self-esteem.	Educational programme (based on Barkley's model) including information on the pathology of ADHD, its impact on family, the effects of stimulant medication, the meaning and development of a child's behaviour, enhancing positive mother-child attention, time-out, positive reinforcement, and the use of problem-solving strategies. 5 weekly 60-90 minute sessions. Weekly written handouts compiled in a booklet.
Anastopoulos (1993)	To examine the impact of parent-training on parental functioning for parents of school-aged children with ADHD. In particular the aim was to change perceptions of ADHD. It was hypothesised that there would also be improvements in parenting stress, self-esteem, distress and marital satisfaction.	The programme (Barkley) included an overview of ADHD, behaviour management, positive reinforcement skills, positive attending, home token/point system, punishment strategies including time-out, strategies for managing behaviour outside the home and dealing with schools. 9 sessions, mostly weekly. Homework reviewed each week.
Pisterman (1992a)	To assess the effects of a behavioural parenting programme on parenting stress and sense of competence in parents of children with ADHD.	Programme included information on ADHD and instruction involving role-play, modelling and homework assignments. Compliance training component differed slightly for Study 1 and Study 2. 12 weekly sessions. Reading material and manuals provided for participants.
Pisterman (1992b)	To evaluate whether a parent mediated behaviour intervention could ameliorate ADHD related deficits and behavioural problems.	Programme included educational material and information about ADHD, compliance training (behaviour management) and attention training. Teaching methods included modelling, role-play, and individual feedback to videotaped interactions. 12 session programme.
Wolfson (1992)	To evaluate the effectiveness of a behavioural parenting programme in promoting healthy, self-sufficient sleep in infants. To test the hypothesis that parent-training would reduce both stress and response to child wakefulness.	Intervention at 3 time periods - prenatal, post-natal and follow-up at 16-20 weeks. Preventive programme to facilitate healthy infant sleep. Content included information on infant sleep and methods to assist in establishing early good sleep habits. Sessions included handouts, question-and-answer periods, group discussion and problem-solving. Diaries and daily practice records completed and discussed.

Scott (1987)	The evaluate the effectiveness of a parenting programme in meeting the needs of UK families of low socio-economic status and to assist the parents with child-rearing difficulties.	Programme comprised behavioural child management techniques. Techniques are modelled by trainers and role-played by parents. Homework assignments are completed and feedback given at the next session. 6 weekly 90-minute sessions with a follow-up (maintenance) session one month later.
Sirbu (1978)	To investigate the effectiveness of a behavioural parenting programme. To examine whether lecture/written materials/combination were differentially effective in teaching behavioural principles.	Group 1 were provided 2-hourly sessions over the course of 5 weeks based on the use of a programmed text. Group 2 were provided with the same programme but without the text; group 3 were provided with the text only plus the exercises; and group 4 were a non-intervention control group.

Additional tables

07 Content of the included parenting programmes: (b) Multi-Modal Programmes

Study ID	Aims of Intervention	Content/delivery
Mullin (1994)	To evaluate the impact of a multi-modal parenting programme on child behaviour and mothers' psychological health. To demonstrate to parents that the fulfilment of their own needs has a bearing on their interaction with their children and on children's behaviour.	Structured intervention based on the use of behaviour modification principles and self-management skills related to parents' personal and psychological adjustment. 10-week programme.
Sheeber (1994)	To evaluate the efficacy of a temperament-based parenting programme in improving parental psychosocial well-being, parent-child and spousal relationships.	Intervention based on Turecki's programme. Content included information regarding the nature of child temperament and its role in behaviour, the management of temperament-related behaviour problems, making parenting demands more congruent with the child's temperament, and the use of social consequences to facilitate desired behaviours. Strategies were tried at home and discussed in the group at the next meeting. 9 weekly 1.5 - 2 hour sessions.
Schultz (1993)	To evaluate the effectiveness of a parenting programme in providing support for parents of children with intellectual disability. Focused on empowering parents to strengthen family resources. To assess long-term outcomes.	Model based on a three-tiered approach to developing personal coping and social support. Designed to strengthen interpersonal, intrapersonal and social resources by means of group work, discussion and didactic input. Topics included: family dynamics, loss and grief, communication and conflict resolution, networking and resource utilisation, stress management and relaxation skills. 12 2-hourly sessions over 6 weeks.
Van Wyk (1983)	To evaluate the effectiveness of a parenting programme that integrates different theoretical perspectives and which focuses on the attitudes and expectations of parents and the quality of the parent-child relationship.	Content focused on communication skills. Sessions included feedback about the application of the previous week's principles, summary of preparatory reading, discussion of written 'homework' exercises, modelling

		and the role-play of communication skills. 6 weekly 2-hour sessions.
Blakemore (1993)	To evaluate the effectiveness of a behaviour management parenting programme in enhancing the self-directedness of children with ADHD and responsibility for their own behaviour. The programme was designed to enhance the parents' understanding of the child's cognitive ability and affective states, and to enable the promotion and development of self-directedness.	Topics included the reframing of ADHD, behaviour management based on the use of various techniques, the grief cycle, communication skills, listening, acknowledging feelings, self-esteem, and anger-management. 12 weekly 2-hour sessions delivered using a lecture format. Follow-up (maintenance) sessions at 3- and 6-months. Optional school consultation time offered.

Additional tables

08 Content of the included parenting programmes: (c) Behavioural and Humanistic

Study ID	Aims of Intervention	Content / delivery
Patterson 2002	To assess effects of a Webster Stratton parenting programme delivered by health visitors in primary care in improving mental health of children and parents	Webster Stratton Incredible Years Programme, 10 weeks, 2 hours per week.
Taylor (1998)	To compare an eclectic treatment (standard service) with Webster-Stratton's Parent and Children Series (PACS) programme in reducing conduct problems in 3-8 year old children and parental psychosocial difficulties.	Parent and Children Series (PACS) treatment intervention using PACS manual, written materials and videos. Sessions for 2.25 hours weekly over the course of 11-14 weeks. Eclectic treatment was provided on an individual basis.
Gross (1995)	To evaluate the effectiveness of a parenting programme for promoting positive parent-child relationships in families of 2-year old children with parent perceived difficult behaviour. To promote parental self-efficacy.	PACS treatment intervention using PACS manual, written materials and videos. Authors note that PACS is consistent with self-efficacy theory. Topics as below. Weekly homework assignments 10-week programme.
Spacarelli (1992)	To evaluate the additional benefit of providing problem-solving programme with the PACS programme.	10-hour programme based on the work of Webster-Stratton. Topics included how to play with a child, use of praise, limit setting, use of time-out. Video-tape vignettes used to model skills and stimulate discussion. Written materials and homework assignments used. Problem-solving group received an extra 6 hours in 1-hour units focused on aspects of problem-solving including: problem definition, goal setting,

		alternative solutions, decision-making.
Webster-Stratton (1988)	To compare different treatment modes: Individually administered video-tape modelling; group discussion videotape modelling; group discussion only.	<p>GDVM: Group-based video-tape modelling parenting skills followed by discussion.</p> <p>IVM: Weekly in-clinic sessions for approximately 1-hour viewing of self-administered videotape without therapist or discussion.</p> <p>GD: Weekly therapist-led discussion sessions covering same topics as other groups.</p> <p>All modes of delivery took place weekly over the course of 10-12 weeks. In both groups sessions were of 2 hours duration. Content, sequencing and number of sessions constant between groups.</p>

Additional tables

09 Content of the included parenting programmes: (d) Cog-Behavioural Programmes

Study ID	Aims of Intervention	Content/Delivery
Zimmerman (1996)	To investigate the benefits of a solution-focused parenting programme on parenting skills and reported family strengths, in families with parent-reported difficulties with adolescent behaviour.	Seven principles of Solution Oriented Parenting: family strengths and the inevitability of change, small attainable goals, building on changes that work, finding alternatives to strategies that do not work, keeping change going and being open to other solutions. Homework assignments given and shared the next week. Sessions 30-minutes weekly over 6 weeks.
Cunningham (1995)	To examine the efficacy of a large group-based parenting programme as a means of increasing the accessibility of such programmes to parents of children with disruptive behaviour. To determine whether holding PT in a community setting would increase take-up by high-risk families who may choose not to attend a clinic-based programme.	Coping modelling problem-solving model involving the formulation of solutions through the observation of videotapes, discussion, modelling and role play. Content included problem-solving skills, attending to and rewarding prosocial behaviour, transitional strategies, 'when-then' strategies for encouraging compliance, ignoring minor disruptions, disengaging from coercive interaction, prompting the child to plan in advance of difficult situations, and time out. Homework reviewed each week. 11-12 weekly sessions
Nixon (1993)	To examine the effect of a short-term intervention to reduce self-blame and guilt in parents of children with severe disabilities.	Content delivered using a lecture format. Homework assigned each week consisted of monitoring automatic thoughts, cognitive distortions, negative feelings, and attempts at cognitive restructuring. Sessions focused on the cognitive distortions that contribute to self-blame and guilt in families of children with disabilities, and techniques to deal with such distortions. 5 2-hour sessions.
Gammon (1991)	To examine the effectiveness of the Coping Skills Training Programme in promoting coping in parents of children with developmental disabilities.	The primary intervention techniques used were cognitive restructuring, interpersonal skills training, problem solving, individual goal attainment, and the effects of group-based treatment. 10 sessions for 2-hours weekly.
McGillicuddy (2000)	To examine the effectiveness of a coping skill training program for parents of substance-abusing adolescents	The primary intervention was developed using the behavioural-analytic model for construction of skill training programs as outlined by Goldfried and D'Zurilla (1969). Aims were to teach participants more effective skills for coping with problems resulting from their adolescent's substance abuse. 8 sessions for 2 hours weekly .
Nicholson (2002)	To examine the effectiveness of a psychoeducational (CBT)	The STAR parenting program was specifically designed to meet the needs of parents of

	parenting program (STAR) with at-risk parents of young children	children aged 1-5 and contained 'segments' in which parents learned thoughtful ways to respond to children, how to have realistic expectations of children, and how to implement positive parenting and discipline strategies. Intervention was delivered by trained facilitators in 10 weekly sessions of 1.5 hours each, delivered to parents in small groups.
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Additional tables

10 Content of the included parenting programmes: (e) Rational-Emotive Therapy

Study ID	Aims of Intervention	Content/Delivery
Greaves (1997)	To assess the effectiveness of Rational-Emotive Parent Education in reducing parental stress in parents of children with disabilities.	Content focused on core irrational beliefs and links with stress response. Programme teaches the disputation of these beliefs and their replacement with rational beliefs. Teaching based on a didactic approach and included homework, completion of worksheets, and the distribution of a prepared summary sheet. Eight sessions over 8 weeks.
Joyce (1995)	To evaluate the effectiveness of a Rational-Emotive based parent education programme in reducing levels of parent irrationality, negative emotions, and to assess whether the change in irrationality is correlated with changes in emotionality.	Content included identifying and disputing parental irrational beliefs that lead to emotional stress; the reinforcement of rational beliefs; rational problem-solving; teaching children rational personality traits. 9 sessions in total.

Additional tables

11 Summary of criteria of methodological adequacy for 20 RCTs on effectiveness A

Adequacy criteria	Irvine (1999)	Odom (1996)	Anastopolous (1993)	Pisterman (1992a)	Pisterman (1992b)	Wolfson (1992)	Scott (1987)	Sirbu (1978)	
Size - n in groups++ >25+ 15-25- <25	++ (n=303)	- (n=16)	+ (n=34)	+ (n=45)	++ (n=91)	++ (n=60)	++ (n=55)	- (n=dk)	
Random Assignment+++ Randomised - allocation concealment++ Randomised - allocation not specified+ Quasi randomisation	++	++	+	++	++	++	+	++	
Attrition/drop-outs accounted for -percentage	+(22%)	+(20%(+(6%)	+(15%)	+(8%)	+11%	+(41%)	-(dk)	
Blinding to treatment/evaluation*	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
Distribution of confounders	+	+	+	+	+	+	-	-	

Additional tables

12 Summary of criteria of methodological adequacy for 20 RCTs on effectiveness B

Adequacy criteria	Mullin (1994)	Sheeber (1994)	Schultz (1993)	Van Wyk (1983)	Blakemore (1993)
Size - n in groups ++ >25 + 15-25 - <25	++ (n=79)	+ (n=40)	+ (n=54)	+ (n=26)	- (n=24)
Random Assignment +++ Randomised - allocation concealment ++ Randomised - allocation not specified + Quasi randomisation	+	++	+	++	++
Attrition/drop-outs accounted for - (%)	- (dk)	+ (15%)	- (dk)	- (dk)	+(None)
Blinding to treatment/evaluation*	n/a	n/a	n/a	n/a	n/a
Distribution of confounders	-	+	+	-	-

Additional tables

13 Summary of criteria of methodological adequacy for 20 RCTs on effectiveness C

Adequacy criteria	Taylor (1998)	Gross (1995)	Spaccarelli (1992)	Webster-Stratt on1988	Patterson 2002
Size - n in groups ++ >25 + 15-25 - <25	++ (n=110)	- (n=16)	+ (n=53)	++ (n=85)	++(n=114)
Random Assignment +++ Randomised - allocation concealment ++ Randomised - allocation not specified + Quasi randomisation	++	+	++	+++	++
Attrition/drop-outs accounted for - (%)	+ (13%)	+ (29%)	+ (45%)	+ (3%)	+
Blinding to treatment/evaluation*	n/a	n/a	n/a	n/a	n/a
Distribution of confounders	+	+	+	+	+

Additional tables

14 Summary of criteria of methodological adequacy for 20 RCTs on effectiveness D

Adequacy criteria	Zimmerman (1996)	Cunningham (1995)	Nixon (1993)	Gammon (1991)	McGillicuddy 2000	Nicholson 2002
Size - n in groups ++ >25 + 15-25 - <25	+ (n=42)	++ (n=150)	+ (n=58)	+ (n=42)	- (n= 22)	+ (n=26)
Random Assignment +++ Randomised - allocation concealment ++ Randomised - allocation not specified + Quasi randomisation	++	+	++	++	++	+
Attrition/drop-outs accounted for - (%)	+ (30%)	+ (24%)	+ (41%)	- (dk)	+ (n/a)	+ (n/a)
Blinding to treatment/evaluation*	n/a	n/a	n/a	n/a	n/a	n/a
Distribution of confounders	+	+	+	-	+	+

Additional tables

15 Summary of criteria of methodological adequacy for 20 RCTs on effectiveness E

Adequacy criteria	Greaves (1997)	Joyce (1995)
Size - n in groups ++ >25 + 15-25 - <25	+ (n=54)	++ (n=48)
Random Assignment +++ Randomised - allocation concealment ++ Randomised - allocation not specified + Quasi randomisation	++	++
Attrition/drop-outs accounted for - (%)	- (dk)	- (dk)
Blinding to treatment/evaluation*	n/a	n/a
Distribution of confounders	-	-

Additional tables

16 Results of Included Studies (Behavioural Programmes)

Study ID	Outcomes	Effect size	CI	Reviewers conclusion
Irvine, 1999	Depression(a)	0.04	[-0.3, 0.2]	No evidence of effectiveness for depression. Study quality (B) - good.
Odom, 1996	Parenting self-esteem:valuing(b) Parenting self-esteem: skills(b) Parenting self-esteem: total(b)	-0.8 -0.2 -0.4	[-1.7, 0.1] [-0.7, 1.1] [-1.3, 0.5]	Large non-significant results favouring the intervention group for the valuing self-esteem subscale. Moderate non-significant result for the total score for the self-esteem scale. Small non-significant result for the skills self-esteem subscale. Study quality (B) - good.
Anastopoulos, 1993	Parental stress(c) Total stress(d) Parenting distress(e) Marital Adjustment(f)	-0.9 -0.8 -0.4 -0.9	[-1.6, -0.1] [-1.5, -0.1] [-1.1, 0.3] [-1.6, -0.2]	Large significant results favouring the intervention group for stress in parental relationship; total stress, and marital adjustment. Moderate non-significant result favouring the intervention group for parenting distress. Study quality (B) - good.
Pisterman, 1992a	Parenting self-esteem: skill(b) Parenting self-esteem: valuing(b) Depression(c) Attachment(c) Restriction of role(c) Sense of Competence(c) Social Isolation(c) Relationship with spouse(c) Parent health(c) Total Stress(d)	-0.3 -0.6 -0.6 -0.3 -0.5 -0.5 -0.1 -0.4 -0.6 -0.6	[-0.7, 0.2] [-1.1, -0.2] [-1.0, -0.2] [-0.8, 0.1] [-0.9, -0.0] [-0.9, -0.04] [-0.5, 0.3] [-0.9, -0.02] [-1.0, -0.2] [-1.0, -0.2]	Large and moderate significant results favouring the intervention group for a number of subscales of the parenting stress index - valuing; depression; role restriction; competence; relationship with spouse; parent health; and total stress. Small non-significant findings favouring the intervention group for the skill self-esteem and the attachment subscales. No evidence of effectiveness for the social isolation subscale. Study quality (B) - good.
Pisterman, 1992b	Parenting stress(c) Parenting self-esteem(b)	No data provided		Parent outcomes not reported. Study quality (B) - good.

Wolfson, 1992	Hassles(g) Uplifts(g)	-0.6 [-1.1, -0.01] +0.5 [-0.1, 1.0]	Moderate significant result favouring the intervention group for the Hassles subscale. Moderate non-significant result favouring the control for the uplifts scale. Study quality (B) - good.
Scott, 1987	Depression(h) Anxiety(h) Outward irritability(h) Inward Irritability(h)	-0.9 [-1.5, -0.2] -0.4 [-1.0, 0.2] -0.4 [-1.0, 0.2] -0.6 [-1.1, -0.0]	Large significant results favouring the intervention group for measures of depression and inward irritability. Moderate non-significant results favouring the intervention group for outward irritability and anxiety. Study quality (B) - good.
Sirbu, 1978	Parent stress-satisfaction(i)	Significant differences between groups P<0.05	Insufficient data to calculate effect-sizes. Results from a chi-squared test show significant differences in parent stress-satisfaction between the intervention and control group, but it is not clear in the paper whether the differences were positive or negative. Study quality (C) - fair.

Additional tables

17 Results of included studies (Multi-modal programmes)

Study ID	Outcomes	Effect size	CI	Reviewers conclusion
Mullin, 1994	Self esteem (a) Psychiatric morbidity (b) Social competence (h)	Z-value 2.1 Z-value 1.5 Z-value 1.3	p=0.04 p=0.14 p=ns	Insufficient data to calculate effect-sizes. Z-scores based on a comparison of post intervention data show significant results for psychiatric morbidity but not for self-esteem. Significant change scores were found for both psychiatric morbidity and self-esteem. Study quality (C) - fair.
Sheeber, 1994	Depression (c) Attachment (c) Competence (c) Restriction of role (c) Relationship with spouse c Relationship with child (c) Anxiety (d)	-0.7 -0.6 -0.6 -0.4 -0.2 -0.7 -0.6	[-1.3, -0.02] [-1.2, 0.04] [-1.3, 0.01] [-1.1, 0.2] [-0.8, 0.5] [-1.3, -0.04] [-1.2, 0.04]	Large significant results favouring the intervention group for depression and relationship with child. Moderate non-significant findings favouring the intervention group for attachment, competence and anxiety. No evidence of effectiveness for restriction of role and relationship with spouse. Study quality (B) - good.
Schultz, 1993	Psychiatric morbidity (a) Social support (e)	-0.4 -0.2	[-1.1, 0.2] [-0.4, 0.8]	Moderate non-significant result favouring the intervention group for psychiatric morbidity. Small non-significant result favouring the intervention group for social support. Study quality (C) - fair.
Van Wyk, 1983	Self-actualisation (f) Self-regard (f) Intimate contact (f) Feeling reactivity (f) Time competence (f) Spontaneity (f) Constructive synergy (f) Acceptance of aggression (f)	-3.9 -0.5 0.04 -0.5 -0.5 0.3 -0.2 -0.1	[-5.3, -2.5] [-1.3, 0.3] [-0.8, 0.8] [-1.3, 0.3] [-1.3, 0.3] [-0.5, 1.1] [-1.0, 0.6] [-0.9, 0.7]	Large significant results favouring the intervention group for self-actualisation and interpersonal traits. Moderate non-significant results favouring the intervention group for self-regard, feeling reactivity and time-competence. Small non-significant results for intimate contact, spontaneity, constructive energy, acceptance of aggression,

	Self-acceptance (f)	-0.3 [-1.1, 0.5]	nature of man, inner-other directedness and existentiality. Study quality (C) - fair.
	Nature of Man (f)	-0.1 [-0.8, 0.7]	
	Inner-other directedness (f)	-0.2 [-1.0, 0.6]	
	Existentiality (f)	-0.3 [-1.1, 0.5]	
	Interpersonal Traits (g)	-1.0 [-1.8, -0.2]	
Blakemore, 1993	Parental stress(c)	Graphs only provided	Insufficient data to calculate effect-sizes. Graphs showing pre to post changes indicate a significant reduction in parental stress in the intervention group. Study quality (C) - fair.

Additional tables

18 Results of included studies (Humanistic Programmes)

Study ID	Outcomes	Effect Size	CI	Reviewers conclusion
Taylor, 1998	Depression (a) Dyadic adjustment (b) Social support (c) Anger and aggression (d)	-0.6 -0.2 0.1 -0.4	[-1.2, -0.04] [-0.6, 0.9] [-0.5, 0.8] [-1.0, 0.2]	Large significant result favouring the intervention group for depression. Moderate non-significant result favouring the intervention group for anger and aggression. No evidence of effectiveness for dyadic adjustment and social support. Study quality (B) - good.
Gross, 1995	Depression (e) Parental stress (b) Parental self-efficacy (g)	-0.7 -1.0 -0.6	[-1.8, 0.3] [-2.1, 0.1] [-1.6, 0.4]	Large non-significant results favouring the intervention group for depression, parenting stress and self-efficacy. Study quality (C) - fair.
Spaccarelli, 1992	Parental stress (b) Parent attitudes	p<.004 p<.003		Insufficient data to calculate effect-sizes. Between group differences using ANCOVA showed a significant result for the intervention group with an additional problem-solving component. Study quality (B) - good.
Webster-Stratton, 1988	Parental stress (b)	-0.3	[-0.9, 0.2]	Small non-significant result favouring the intervention group for parenting stress. Study quality (B) - good.
Patterson 2002	Depression (i);Anxiety (i);Parental stress (c);Child stress (c);Parent-child interaction (c);Parent stress total (d);Dysfunction (i);Somatic (i);GHQ total (i)	-0.10 [-0.51, 0.30];-0.29 [-0.69, 0.11];0.13 [-0.27, 0.53];-0.22 [-0.62, 0.18];-0.11 [-0.51, 0.29];-0.19 [-0.59, 0.21];-0.29 [-0.69, 0.11];0.19 [-0.21, 0.6];-0.15 [-0.55, 0.26]		Intervention had short-term impact on social dysfunction in parents Study quality (B) - good.

Additional tables

19 Results of included studies (Cognitive-Behavioural Programmes)

Study ID	Outcomes	Effect size	CI	Reviewers conclusion
Cunningham, 1995	Depression (a) Self-esteem (b)	-0.1 -0.03	[-0.4, 0.5] [-0.4, 0.5]	No evidence of effectiveness for both depression and self-esteem. Study quality (B) - good.
Nixon, 1993	Depression (a) Guilt (c) Automatic Thoughts (d)	-0.4 -0.5 -0.5	[-1.1, 0.3] [-1.2, 0.2] [-1.2, 0.2]	Moderate non-significant results favouring the intervention group for depression, guilt and automatic thoughts. Study quality (B) - good.
Gammon, 1991	Tension-anxiety (e) Depression-dejection (e) Anger-hostility (e) Vigor-activity (e) Fatigue-inertia (e) Confusion-bewilderment (e) Total Mood State Score (e)	p=.29 p=.34 p=.39 p=.003 p=.24 p=.10 p=.16		Insufficient data to calculate effect-sizes. Between group comparisons using Mann-Whitney U test showed only one significant finding for the vigor-activity domain of the Profile of Moods States (POMS). Study quality (C) - fair.
Zimmerman, 1996	Role support (f) Role image (f) Objectivity (f) Expectation (f) Rapport (f) Communication (f) Limit setting (f) Total parenting skills score (g)	ns <0.05 ns ns <0.05 <0.05 <0.05 <0.05		Insufficient data to calculate effect-sizes. Between group comparisons using t-tests showed a number of significant results for role image, rapport, communication, limit setting, and total parenting skills. Study quality (B) - good.
McGillicuddy 2000	Coping (f); Anxiety (j); Depression (a); Anger (k)	-0.91 0.00 -0.19 0.68 -0.85 -0.75	[-1.83, 0.00]; [-1.06, 0.68]; [-1.76, 0.06]; [-1.65, 0.15]	Moderate, largely non-significant improvements in parents' reports of own functioning Study quality (B) good
Nicholson 2002	Parental stress (c); Parent-child interaction (c); Child stress (c); Anger-aggression (d)	-0.02 -0.27	[-0.79, 0.75]; [-1.04,	Moderate, largely non-significant treatment effect; best results were in reducing anger in people with at-risk parenting behaviour Study quality (B)

		0.51];-0.45 [-1.23, 0.33];-0.57 [-1.36, 0.22]	good
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Additional tables

20 Results of Included Studies (Rational-Emotive Therapy Programmes)

Study ID	Outcome	Effect size	CI	Reviewers conclusion
Greaves, 1997	Parental functioning (a)	-0.2	[-0.8, 0.5]	Large significant results favouring the intervention group for depression-dejection, total mood state score and guilt. Moderate non-significant results favouring the intervention group for tension-anxiety, anger-hostility, vigor-activity, and anger. Small non-significant results for parental functioning, depression, relationship with spouse, social isolation, fatigue-inertia, and confusion-bewilderment. Study quality (C) - fair.
	Parenting stress - depression (a)	-0.2	[-0.8, 0.5]	
	Relationship with Spouse (a)	-0.3	[-1.0, 0.3]	
	Social Isolation (a)	-0.3	[-0.9, 0.4]	
	Tension-anxiety (b)	-0.6	[-1.2, 0.1]	
	Depression-dejection (b)	-0.8	[-1.5, -0.1]	
	Anger-hostility (b)	-0.7	[-1.3, 0.02]	
	Vigor-activity (b)	-0.5	[-1.1, 0.2]	
	Fatigue-inertia (b)	-0.3	[-0.9, 0.4]	
	Confusion-bewilderment (b)	-0.3	[-0.9, 0.4]	
	Total Mood State Score (b)	-0.7	[-1.4, -0.02]	
	Anger(c)	-0.6	[-1.3, 0.1]	
Guilt(c)	-0.7	[-1.4, -0.1]		
Joyce, 1995	Anxiety - trait (d)	-0.4	[-1.0, 0.2]	Large significant results favouring the intervention group for guilt and irrational beliefs. Moderate non-significant results favouring the intervention group for anxiety (state and trait) and anger. Study quality (C) - fair.
	Anxiety - state (d)	-0.6	[-1.2, 0.03]	
	Anger (d)	-0.5	[-1.1, 0.1]	
	Guilt (d)	-1.1	[-1.7, -0.4]	
	Irrational beliefs (c)	-1.3	[-2.0, -0.6]	

Notes

Unpublished CRG notes

Exported from Review Manager 4.2.3

Exported from Review Manager 4.2.2

Exported from Review Manager 4.2

Published notes

This review has been substantively amended to include a meta-analysis (Issue 2, 2001).

Amended sections

Cover sheet

Synopsis

Abstract

Background

Search strategy for identification of studies

Description of studies

Methodological quality of included studies

Results

Discussion

Reviewers' conclusions

Acknowledgements

Potential conflict of interest

References to studies

Other references

Characteristics of included studies

Characteristics of excluded studies

Comparisons, data or analyses

Additional tables and figures

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Review: Parent-training programmes for improving maternal psychosocial health

Total number of included studies: 26

Comparison or outcome	Studies	Participants	Statistical method	Effect size
01 Behavioural Parent-Training vs Control Group				
01 Parenting Stress Index (Parent domain)	2	125	SMD (fixed), 95% CI	-0.65 [-1.01, -0.29]
02 Parenting Stress Index (total)	2	50	SMD (fixed), 95% CI	-0.83 [-1.54, -0.13]
03 Global Severity Index (parental distress)	1	34	SMD (fixed), 95% CI	-0.42 [-1.11, 0.26]
04 Locke-Wallace Marital Adjustment Test	1	34	SMD (fixed), 95% CI	-0.89 [-1.61, -0.18]
05 Beck Depression Inventory	1	286	SMD (fixed), 95% CI	-0.04 [-0.27, 0.19]
06 Parenting Sense of Competence Scale (Efficacy/Skills)	2	111	SMD (fixed), 95% CI	-0.17 [-0.55, 0.20]
07 Parenting Sense of Competence Scale (Satisfaction/Valuing)	2	111	SMD (fixed), 95% CI	-0.67 [-1.05, -0.28]
08 Irritability, Depression and Anxiety Scale (Depression)	1	38	SMD (fixed), 95% CI	-0.85 [-1.52, -0.17]
09 Irritability, Depression and Anxiety Scale (Anxiety)	1	48	SMD (fixed), 95% CI	-0.39 [-0.97, 0.18]
10 Irritability, Depression and Anxiety Scale (Outward Irritability)	1	47	SMD (fixed), 95% CI	-0.39 [-0.97, 0.19]
11 Irritability, Depression and Anxiety Scale (Inward Irritability)	1	47	SMD (fixed), 95% CI	-0.60 [-1.18, -0.01]
12 Hassles and Uplifts Scales (Hassles)	1	53	SMD (fixed), 95% CI	-0.56 [-1.11, -0.01]
13 Hassles and Uplifts Scales (Uplifts)	1	53	SMD (fixed), 95% CI	0.45 [-0.10, 0.99]
14 Parenting Sense of Competence Scale (Total)	1	20	SMD (fixed), 95% CI	-0.43 [-1.32, 0.46]
15 Parenting Stress Index - depression	1	91	SMD (fixed), 95% CI	-0.61 [-1.03, -0.19]
16 Parenting Stress Index - attachment	1	91	SMD (fixed), 95% CI	-0.34 [-0.75, 0.08]
17 Parenting Stress Index - Sense of competence	1	91	SMD (fixed), 95% CI	-0.50 [-0.92, -0.08]
18 Parenting Stress Index - Social isolation	1	91	SMD (fixed), 95% CI	-0.11 [-0.52, 0.30]
19 Parenting Stress Index - relationship with spouse	1	91	SMD (fixed), 95% CI	-0.43 [-0.85, -0.02]
20 Parent health	1	91	SMD (fixed), 95% CI	-0.57 [-0.99, -0.15]
21 Parenting Stress Index - role restriction	1	91	SMD (fixed), 95% CI	-0.45 [-0.87, -0.04]
02 Multi-Modal Parent-Training vs. Control Group				
01 General Health Questionnaire	1	54	SMD (fixed), 95% CI	-0.44 [-1.04, 0.16]
02 Inventory of Socially Supportive Behaviours	1	54	SMD (fixed), 95% CI	0.20 [-0.40, 0.80]
03 Spielberger State-Trait Anxiety Inventory (Trait Sub-scale)	1	40	SMD (fixed), 95% CI	-0.59 [-1.23, 0.04]
04 Parenting Stress Index (Depression)	1	40	SMD (fixed), 95% CI	-0.66 [-1.29, -0.02]
05 Parenting Stress Index (Relationship with spouse)	1	40	SMD (fixed), 95% CI	-0.16 [-0.78, 0.46]
06 Parenting Stress Index - attachment	1	40	SMD (fixed), 95% CI	-0.60 [-1.23, 0.04]
07 Parenting Stress Index - competence	1	40	SMD (fixed), 95% CI	-0.63 [-1.26, 0.01]
08 Parenting Stress Index - restriction	1	40	SMD (fixed), 95% CI	-0.43 [-1.06, 0.19]
09 Group Assessment on Interpersonal Traits (GAIT)	1	26	SMD (fixed), 95% CI	-1.00 [-1.84, -0.15]
10 Personal Orientation Inventory (Self-Actualisation)	1	26	SMD (fixed), 95% CI	-3.92 [-5.32, -2.52]

Review: Parent-training programmes for improving maternal psychosocial health

Total number of included studies: 26

Comparison or outcome	Studies	Participants	Statistical method	Effect size
11 Personal Orientation Inventory (Capacity for Intimate Contact)	1	26	SMD (fixed), 95% CI	0.04 [-0.75, 0.83]
12 Personal Orientation Inventory (Existentiality)	1	26	SMD (fixed), 95% CI	-0.34 [-1.14, 0.45]
13 Personal Orientation Inventory (Feeling Reactivity)	1	26	SMD (fixed), 95% CI	-0.52 [-1.33, 0.28]
14 Personal Orientation Inventory (Spontaneity)	1	26	SMD (fixed), 95% CI	0.31 [-0.48, 1.11]
15 Personal Orientation Inventory (Constructive Synergy)	1	26	SMD (fixed), 95% CI	-0.15 [-0.94, 0.64]
16 Personal Orientation Inventory (Self-regard)	1	26	SMD (fixed), 95% CI	-0.51 [-1.31, 0.30]
17 Personal Orientation Inventory (Acceptance of Aggression)	1	26	SMD (fixed), 95% CI	-0.07 [-0.87, 0.72]
18 Personal Orientation Inventory (Self-Acceptance)	1	26	SMD (fixed), 95% CI	-0.28 [-1.08, 0.51]
19 Personal Orientation Inventory (Nature of Man)	1	26	SMD (fixed), 95% CI	-0.05 [-0.84, 0.74]
20 Personal Orientation Inventory (Inner-Other Directedness)	1	26	SMD (fixed), 95% CI	-0.17 [-0.96, 0.62]
21 Personal Orientation Inventory (Time Competence)	1	26	SMD (fixed), 95% CI	-0.48 [-1.28, 0.32]
22 Parenting Stress Index - relationship with child	1	40	SMD (fixed), 95% CI	-0.68 [-1.32, -0.04]
03 Humanistic Parent Training vs Control Group				
01 Parenting Stress Index (Parent Domain)	5	170	SMD (fixed), 95% CI	-0.11 [-0.42, 0.19]
02 Toddler Care Questionnaire	1	16	SMD (fixed), 95% CI	-0.60 [-1.64, 0.44]
03 Beck Depression Inventory	1	56	SMD (fixed), 95% CI	-0.62 [-1.20, -0.04]
04 Centre for Epidemiological Studies Depression Scale	1	16	SMD (fixed), 95% CI	-0.73 [-1.78, 0.33]
05 Dyadic Adjustment Scale	1	31	SMD (fixed), 95% CI	0.17 [-0.58, 0.93]
06 Support Scale	1	52	SMD (fixed), 95% CI	0.12 [-0.53, 0.76]
07 Brief Anger and Aggression Questionnaire	1	54	SMD (fixed), 95% CI	-0.42 [-1.03, 0.20]
08 Parenting Stress Index - Child	1	96	WMD (fixed), 95% CI	-1.90 [-5.32, 1.52]
09 Parenting Stress Index - Interaction	1	96	WMD (fixed), 95% CI	-0.60 [-2.84, 1.64]
10 Parenting Stress Index - Total	1	96	WMD (fixed), 95% CI	-3.50 [-10.76, 3.76]
11 General Health Questionnaire - Total	1	94	WMD (fixed), 95% CI	-0.80 [-3.00, 1.40]
12 General Health Questionnaire - Anxiety	1	96	WMD (fixed), 95% CI	-0.60 [-1.42, 0.22]
13 General Health Questionnaire - Somatic	1	95	WMD (fixed), 95% CI	0.40 [-0.43, 1.23]
14 General Health Questionnaire - Dysfunction	1	96	WMD (fixed), 95% CI	-0.50 [-1.18, 0.18]
15 General Health Questionnaire - Depression	1	95	WMD (fixed), 95% CI	-0.10 [-0.48, 0.28]
16 Rosenberg Self Esteem Scale	1	96	WMD (fixed), 95% CI	-0.90 [-2.94, 1.14]
04 Cognitive-Behavioural Parent Training vs. Control Group				
01 Beck Depression Inventory	3	134	SMD (fixed), 95% CI	-0.18 [-0.53, 0.16]
02 Situation Guilt Scale	1	34	SMD (fixed), 95% CI	-0.53 [-1.22, 0.16]
03 Automatic Thoughts Questionnaire	1	34	SMD (fixed), 95% CI	-0.53 [-1.22, 0.16]

Review: Parent-training programmes for improving maternal psychosocial health

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Comparison or outcome	Studies	Participants	Statistical method	Effect size
04 Parenting Sense of Competence Scale	1	78	SMD (fixed), 95% CI	0.03 [-0.42, 0.47]
05 Parenting Stress Index - Parent	1	26	WMD (fixed), 95% CI	-0.15 [-6.18, 5.88]
06 Brief Symptom Inventory - Anxiety	1	22	WMD (fixed), 95% CI	-0.13 [-0.67, 0.41]
07 State-Trait Anger Expression Scale - Anger	1	22	WMD (fixed), 95% CI	-4.96 [-12.19, 2.27]
08 Brief Anger Aggression Questionnaire	1	26	WMD (fixed), 95% CI	-1.69 [-3.90, 0.52]
09 Parenting Stress Index - Child	1	26	WMD (fixed), 95% CI	-3.93 [-10.39, 2.53]
10 Parenting Stress Index -Interaction	1	26	WMD (fixed), 95% CI	-1.77 [-6.70, 3.16]
11 Parent Situation Inventory - Coping	1	22	WMD (fixed), 95% CI	-0.28 [-0.52, -0.04]
05 Rational Emotive Parent Training vs Control Group				
01 Spielberger State-Trait Anxiety Inventory (Trait Sub-scale)	1	48	SMD (fixed), 95% CI	-0.40 [-1.01, 0.20]
02 Spielberger State-Trait Anxiety Inventory (State Sub-scale)	1	48	SMD (fixed), 95% CI	-0.58 [-1.19, 0.03]
03 Berger's Feeling Scale (Guilt)	2	85	SMD (fixed), 95% CI	-0.91 [-1.38, -0.45]
04 Berger's Feeling Scale (Anger)	2	85	SMD (fixed), 95% CI	-0.56 [-1.01, -0.11]
05 Berger's Irrational Belief Scale	1	48	SMD (fixed), 95% CI	-1.30 [-1.96, -0.64]
06 Profile of Mood States (POMS) (Total)	1	37	SMD (fixed), 95% CI	-0.70 [-1.37, -0.02]
07 POMS (Tension-Anxiety)	1	37	SMD (fixed), 95% CI	-0.58 [-1.25, 0.08]
08 POMS (Anger-Hostility)	1	37	SMD (fixed), 95% CI	-0.65 [-1.32, 0.02]
09 POMS (Fatigue-Inertia)	1	37	SMD (fixed), 95% CI	-0.28 [-0.93, 0.38]
10 POMS (Depression-Dejection)	1	37	SMD (fixed), 95% CI	-0.80 [-1.48, -0.12]
11 POMS (Vigor-Activity)	1	37	SMD (fixed), 95% CI	-0.46 [-1.12, 0.20]
12 POMS (Confusion-Bewilderment)	1	37	SMD (fixed), 95% CI	-0.25 [-0.91, 0.40]
13 Parenting Stress Index (Parent Domain Total score)	1	37	SMD (fixed), 95% CI	-0.19 [-0.84, 0.46]
14 Parenting Stress Index (Depression)	1	37	SMD (fixed), 95% CI	-0.19 [-0.84, 0.47]
15 Parenting Stress Index (Relationship with spouse)	1	37	SMD (fixed), 95% CI	-0.34 [-0.99, 0.32]
16 Parenting Stress Index (Social Isolation)	1	37	SMD (fixed), 95% CI	-0.28 [-0.93, 0.38]
06 Follow-up of Behavioural Parent Training vs. Control Group				
01 Parent Sense of Competence Scale (Skills subscale)	1	46	SMD (fixed), 95% CI	-0.41 [-0.99, 0.18]
02 Parent Sense of Competence Scale (Valuing subscale)	1	46	SMD (fixed), 95% CI	-0.72 [-1.32, -0.12]
03 Parenting Stress Index (Parent domain)	1	46	SMD (fixed), 95% CI	-0.54 [-1.13, 0.05]
04 Parenting Stress Index (Attachment)	1	46	SMD (fixed), 95% CI	-0.38 [-0.97, 0.20]
05 Parenting Stress Index (Sense of Competence)	1	46	SMD (fixed), 95% CI	-0.47 [-1.05, 0.12]
06 Parenting Stress Index (Social Isolation)	1	46	SMD (fixed), 95% CI	-0.27 [-0.85, 0.32]
07 Parenting Stress Index (Relationship with Spouse)	1	46	SMD (fixed), 95% CI	-0.33 [-0.91, 0.25]

Review: Parent-training programmes for improving maternal psychosocial health

Total number of included studies: 26

Comparison or outcome	Studies	Participants	Statistical method	Effect size
08 Parenting Stress Index (Role Restriction)	1	46	SMD (fixed), 95% CI	-0.45 [-1.04, 0.14]
09 Parenting Stress Index (Depression)	1	46	SMD (fixed), 95% CI	-0.64 [-1.23, -0.05]
10 Parent Health	1	46	SMD (fixed), 95% CI	-0.28 [-0.86, 0.30]
11 Beck Depression Inventory	1	207	SMD (fixed), 95% CI	0.00 [-0.28, 0.27]
12 Hassles and Uplifts Scales (Hassles)	1	53	SMD (fixed), 95% CI	-0.35 [-0.89, 0.19]
13 Hassles and Uplifts Scales (Uplifts)	1	53	SMD (fixed), 95% CI	0.15 [-0.39, 0.69]
14 Parental Efficacy Measure	1	53	SMD (fixed), 95% CI	-0.91 [-1.48, -0.35]
07 Follow-up of Multi-Modal Parent Training vs. Control Group				
01 Parenting Stress Index (Depression)	1	40	SMD (fixed), 95% CI	-0.58 [-1.22, 0.05]
02 Parenting Stress Index (Attachment)	1	40	SMD (fixed), 95% CI	-0.87 [-1.52, -0.21]
03 Parenting Stress Index (Competence)	1	40	SMD (fixed), 95% CI	-0.65 [-1.29, -0.02]
04 Parenting Stress Index (Restriction)	1	40	SMD (fixed), 95% CI	-0.50 [-1.13, 0.13]
05 Parenting Stress Index (Relationship with Spouse)	1	40	SMD (fixed), 95% CI	-0.33 [-0.96, 0.29]
06 Spielberger State Trait Anxiety Inventory (Trait Scale)	1	40	SMD (fixed), 95% CI	-0.19 [-0.81, 0.44]
07 Parenting Stress Index - Child	0	0	WMD (fixed), 95% CI	Not estimable
08 Parenting Stress Index - Interaction	0	0	WMD (fixed), 95% CI	Not estimable
08 Follow-up of Humanistic Parent Training vs. Control Group				
01 Toddler Care Questionnaire	1	16	SMD (fixed), 95% CI	-0.31 [-1.33, 0.71]
02 Parenting Stress Index	1	16	SMD (fixed), 95% CI	-1.22 [-2.34, -0.10]
03 Centre for Epidemiological Studies Depression Scale	1	16	SMD (fixed), 95% CI	-0.67 [-1.71, 0.38]
04 General Health Questionnaire - Total	1	91	WMD (fixed), 95% CI	-0.30 [-2.11, 1.51]
05 General Health Questionnaire - Anxiety	1	91	WMD (fixed), 95% CI	0.10 [-0.62, 0.82]
06 General Health Questionnaire - Somatic	1	91	WMD (fixed), 95% CI	0.10 [-0.66, 0.86]
07 General Health Questionnaire - Dysfunction	1	91	WMD (fixed), 95% CI	-0.40 [-1.04, 0.24]
08 General Health Questionnaire - Depression	1	91	WMD (fixed), 95% CI	-0.02 [-0.17, 0.13]
09 Rosenberg Self Esteem Scale	1	92	WMD (fixed), 95% CI	-0.80 [-2.66, 1.06]
10 Parenting Stress Index - Parent	1	92	WMD (fixed), 95% CI	-1.30 [-4.52, 1.92]
11 Parenting Stress Index - Child	1	92	WMD (fixed), 95% CI	-2.20 [-5.76, 1.36]
12 Parenting Stress Index - Interaction	1	92	WMD (fixed), 95% CI	-0.50 [-2.92, 1.92]
13 Parenting Stress Index - Total	1	92	WMD (fixed), 95% CI	-4.40 [-12.19, 3.39]
09 Follow-up of Cognitive-Behavioural Parent Training vs. Control Group				
01 Beck Depression Inventory	1	78	SMD (fixed), 95% CI	-0.20 [-0.64, 0.25]

Review: Parent-training programmes for improving maternal psychosocial health

Total number of included studies: 26

Comparison or outcome	Studies	Participants	Statistical method	Effect size
02 Parenting Sense of Competence Scale	1	78	SMD (fixed), 95% CI	-0.05 [-0.50, 0.39]
10 Meta-analysis - depression				
01 All Depression Inventories	11	793	SMD (fixed), 95% CI	-0.26 [-0.40, -0.11]
11 Meta-analysis - Stress/anxiety				
01 All Stress/Anxiety Scales	10	486	SMD (fixed), 95% CI	-0.42 [-0.60, -0.24]
12 Meta-analysis - Social support				
01 All Social Support Scales	4	234	SMD (fixed), 95% CI	-0.04 [-0.31, 0.24]
13 Meta-analysis - relationship with spouse				
01 All Relationship with Spouse Measures	4	202	SMD (fixed), 95% CI	-0.43 [-0.71, -0.15]
14 Meta-analysis - self-esteem				
01 All Self-Esteem Measures	6	341	SMD (fixed), 95% CI	-0.30 [-0.51, -0.08]
15 Meta-analysis of follow-up data - Depression				
01 All depression inventories	6	478	SMD (fixed), 95% CI	-0.17 [-0.35, 0.01]
16 Meta-analysis of follow-up data - self-esteem				
01 All self-esteem inventories	6	325	SMD (fixed), 95% CI	-0.36 [-0.58, -0.14]
17 Meta-analysis of follow-up data - marital adjustment				
01 All marital adjustment inventories	2	86	SMD (fixed), 95% CI	-0.33 [-0.76, 0.10]
18 Stress and anxiety (no quasis)				
01 All Stress/Anxiety Scales - no quasis	8	404	SMD (fixed), 95% CI	-0.39 [-0.59, -0.19]
19 Depression (no quasis)				
01 All Depression Inventories	10	755	SMD (fixed), 95% CI	-0.23 [-0.37, -0.08]
20 Relationship with spouse (no quasis)				
01 All Relationship with Spouse Measures	3	168	SMD (fixed), 95% CI	-0.34 [-0.65, -0.04]