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[Intervention Review]

Media-based behavioural treatments for behavioural problems in children

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ABSTRACT

Background

Many approaches are used to address behavioural problems in childhood including medication or, more usually, psychological treatments either directly with the child and/or his/her family. Behavioural and cognitive-behavioural interventions have been shown to be effective but access to these treatments is limited due to factors such as time and expense. Presenting the information parents need in order to manage these behaviour problems in booklet or other media-based format might reduce the cost and increase access to these interventions.

Objectives

To review the effects of media-based cognitive-behavioural therapies for any young person with a behavioural disorder (diagnosed using a recognised instrument) compared to standard care and no-treatment controls.

Search methods

We searched: CENTRAL (The Cochrane Library Issue 3, 2005), MEDLINE (1966 to August 2005), EMBASE (1980 to August 2005), PsycINFO (1887 to August 2005), CINAHL (1982 to August 2005), Biosis (1985 to August 2005) and Sociofile (1974 to August 2005). Bibliographies of all selected trials were checked and experts in the field were contacted for additional information.

Selection criteria

Randomised and quasi-randomised controlled trials (e.g. trials which used sequential randomisation) of media-based behavioural treatments for behaviour problems in children.

Data collection and analysis

Abstracts and titles of studies identified from searches of electronic databases were read to determine whether they met the inclusion criteria. Full copies of those possibly meeting these criteria from electronic or other searches were assessed by the reviewers and queries were resolved by discussion. Data were analysed using RevMan 4.2.

Main results

Eleven studies including 943 participants were included within this review. In general, media-based therapies for behavioural disorders in children had a moderate, if variable, effect when compared with both no-treatment controls with effects sizes ranging from -0.12 (-1.65, 1.41) to -32.60 (-49.93, -15.27) and as adjunct to medication with effect sizes ranging from -2.71 (-5.86, -0.44) to -39.55 (-75.01, -4.09). Significant improvements were made with the addition of up to two hours of therapist time.

Authors' conclusions

These formats of delivering behavioural interventions for carers of children are worth considering in clinical practice. Media-based interventions may, in some cases, be enough to make clinically significant changes in a child's behaviour, and may reduce the amount of time primary care workers have to devote to each case. They can also be used as the first stage of a stepped care approach. Consequently this would increase the number of families who could possibly benefit from these types of intervention, releasing clinician time that can be reallocated to more complex cases. Media-based therapies would therefore appear to have both clinical and economic implications as regards the treatment of children with behavioural problems.

PLAIN LANGUAGE SUMMARY**Media-based behavioural treatments for behavioural problems in children**

Cognitive-behavioural interventions have been shown to be effective for reducing behavioural problems in children, but access to these treatments is limited by factors including the availability of therapists, time and expense. Providing the information required to manage these problems in booklet or other media-based format such as DVDs, cassettes or computer programmes, would reduce the cost and increase access to these interventions. In general, this review found that media-based therapies for behavioural disorders in children had a moderate effect versus no-treatment and as an adjunct to medication.

BACKGROUND

Description of the condition

A number of investigators have suggested that many adult behaviour problems have their origins in childhood ([Fischer 1984](#); [Patterson 1992](#)). Approximately 10 to 15% of pre-school children have mild to moderate behavioural problems ([Cornely 1986](#); [Koot 1991](#)) and a growing body of prospective evidence indicates that these problems may persist. In addition, for children ages 7-16, the prevalence rate of borderline or clinical cases of oppositional defiant disorder was 9.3% and of conduct disorder was 6.8% in a sample of 1,641 children, based on parent report on the Child Behavior Checklist ([Achenbach 2003](#)). Data from a number of countries collected in different ways show similar rates in the stability of problems over many years ([Bear 2000](#); [Campbell 1994](#); [McGee 1991](#); [Richman 1982](#)). These data indicate that there is a high probability (approximately 50%) that children manifesting behavioural problems at age three or four will continue to have difficulties into adolescence. For example, one study showed that the combination of five variables (parent reports of behaviour problems in children aged five, mother's report of difficulty with the child as an infant, research staff reports of externalising problems, and two motor variables) predicted antisocial diagnoses in 81% of children at age 11, and, to a lesser extent, delinquency in 66% of adolescents ([White 1990](#)).

The importance of behaviour problems (such as sleep problems and conduct disorder) and their significance in long-term difficulties have become a key area of study ([Campbell 1995](#)). Investigations of child behaviour problems have included ratings of internalising behaviours such as anxiety, sadness, social withdrawal and fearfulness, and externalising behaviours such as over-activity, poor impulse control, non-compliance, aggression towards peers and tantrums. In general, studies indicate that parents and teachers express concerns about management difficulties, over-activity, inattention and relationships with siblings and peers ([Crowther 1981](#); [Earls 1980](#); [Richman 1982](#); [Stallard 1993](#)). Several approaches have been used to treat children with these problems including pharmacological approaches such as methylphenidate (for Attention Deficit/Hyperactivity Disorder), systemic psychological methods such as family therapy, and individual therapy such as cognitive behavioural therapy (CBT) and Kleinian psychotherapy. Of the approaches evaluated, behavioural treatments have been shown to be highly effective in a range of child behaviour problems ([Campbell 1995](#); [Sanders 1996](#); [Taylor 1998b](#)).

Description of the intervention

Behavioural treatments typically take the form of parent training when children are living at home with parents or caregivers and are not in residential treatment. Parent training interventions delivered individually or in groups by a therapist have frequently been found to improve children's behaviour and prevent future conduct problems ([Nixon 2002](#); [Serketich 1996](#)). However, like many therapeutic interventions, they are costly in terms of resources, particularly therapist time. Media-based CBT is another way of delivering treatment for children with behavioural disorders. Media-based therapy provides information and advice to parents through a range of media, such as audiotape, book, computer programme, leaflet, manual, videotape, website or some combination of these. The information and advice is designed:

1. to enable the parent or carer better to understand the problem; and
2. to deliver an appropriate programme of intervention (in this case cognitive behavioural), largely independently of a helping professional. In general, most self-help therapy is in written form (bibliotherapy) and over the last three decades there has been an increase in this field both as an adjunct to standard psychological treatment and for purchase in bookshops. Media-based behaviour therapy, if effective, could be a useful low-cost option or adjunct to conventional treatments. In countries facing problems with the cost, accessibility and delivery of health care ([Ham 1997](#)), media-based therapies, if effective, could be a useful, low-cost option or adjunct to conventional treatment, providing no other problems prevented this, for example those of literacy or technology.

In 1989, the American Psychological Association estimated that over 2000 self-help books are published each year. Evaluation of the effectiveness of media-based therapies in general is, however, limited, and largely focussed on adults. In a 1993 meta-analysis, it was reported that media-based self-help treatments could be effective for adult mental health problems below the clinical threshold ([Gould 1993](#)). This finding was further supported by [Marrs 1995](#). However, the inclusion criteria in the review permitted the assessment of low-grade evidence.

When defining media-based interventions, the level of therapist contact and type of behavioural problem are key issues ([Marrs 1995](#)). Further complexity is added to the problems of testing and evaluating treatments when they are mediated through third parties, e.g. parents or carers. A meta-analysis looking at self-directed treatments in adults found that bibliotherapy was less effective in dealing with problems that required delayed gratification than treatments aiming to have immediate impact ([Marrs 1995](#)). This might be because of a lack of ongoing support which would be a feature of most face-to-face forms of therapy. It may, therefore, be hypothesised that behavioural treatments for child behaviour problems, where success is not likely to be immediate, may be less effective than, for example, treatments to reduce generalised anxiety disorder. For instance, a behavioural programme to address a child's tantrums may well involve a parent having to correct the child's behaviour many times over a period of days or weeks as the child learns acceptable behaviours. For reasons such as the effects of intermittent schedules of reinforcement, behaviour may well deteriorate before improvement occurs. Face-to-face therapy may provide the parents with considerable support and this may perhaps enhance its effectiveness. Media-based treatments offer little or no such support and, in order to test the efficacy of the media-based delivery alone, minimal contact is defined as being less than two hours contact time; more than this might be considered a form of 'Brief Therapy'.

Why it is important to do this review

Maintenance of treatment gains over time is a major concern in clinical practice ([Marrs 1995](#)). In keeping with other studies of the effectiveness of CBT it is hypothesised that there will be some erosion of therapeutic effect at follow-up ([Price 2000](#)). Some media-based therapies are initiated and monitored by therapists who have varying amounts of contact with parents, either face-to-face or via telephone contact. It is possible that such therapist contact may enhance the effectiveness of media-based therapies

(see [Scogin 1990](#) and [Gould 1993](#)). Such contact may provide a source of explanation and clarification, it may enhance efficacy expectations, it may enhance compliance ([Glasgow 1978](#); [Marrs 1995](#)), or it may provide a motivating factor if parents know they are expected to 'report back' on progress. The evidence, however, is not unequivocal (see [Marrs 1995](#)) and most is concerned with self-help therapies. This review therefore explores the effectiveness of media-based therapies with or without such contact and examines the effect of varying amounts of therapist contact. However, this review asks the pragmatic, real world question, how well does media-based behavioural therapy work for carers who are trying to manage children with behaviour difficulties? It does not ask how well this intervention can work under ideal circumstances.

OBJECTIVES

To determine whether media-based cognitive-behavioural treatments is effective in helping carers to manage difficult behaviour in children and adolescents.

METHODS

Criteria for considering studies for this review

Types of studies

Studies were eligible for inclusion if they were:

- randomised controlled trials in which participants were randomly allocated to an intervention group and a control group or comparison treatment group;
- quasi-randomised controlled trials where, for example participants were randomised following a sequential assignment

Types of participants

The parent(s) or carer(s) of any young person, adolescent or child, as defined by the trialist, with a behavioural problem (as measured using a psychometrically sound assessment tool).

Types of interventions

Only interventions of a behavioural or cognitive behavioural nature were included within the review. Media-based behavioural therapy can also be known as 'bibliotherapy', 'manual', 'videotape', and 'minimal contact' therapy. For the purpose of this review, media-based therapy could be delivered via audiotape, book, computer (including Internet) manual, videotape, or some combination. This review is confined to media-based therapy if it was used by an individual parent or primary carer, largely independent of a helping professional, for the purpose of gaining understanding or solving problems relevant to the young person's therapeutic needs.

The comparison group could be a no-treatment group, a waiting-list group or a standard treatment group. Standard treatment is the 'normal' care given to those children suffering from behavioural disorders in the area concerned. This was usually a series of face-to-face therapy sessions delivered by a clinical psychologist, psychiatrist or social worker.

Types of outcome measures

Primary outcomes

The primary outcomes considered were the incidence or severity of externalising or internalising behaviour problems including sleep problems.

For outcome instruments some minimum standards were required:

1. the psychometric properties of the instrument should have been described in a book or peer-reviewed journal;
2. the instrument should either be: (a) a self report, or (b) completed by an independent rater or relative (not the therapist);
3. the instrument should be an assessment of a particular area of functioning.

Examples include the Child Behavior Checklist (CBCL) ([Achenbach 1991](#)) and the Eyberg Child Behavior Inventory (ECBI) ([Eyberg 1999](#)). In addition, data from measures of client satisfaction with treatment or adverse effects were sought.

Other outcomes of interest to this review were rates of study attrition, need for medication or other therapies, and economic outcomes.

Search methods for identification of studies

Initial searches for all database searching were done in September 2000; searches for this update were run in December 2003, and again in August 2005. The following electronic databases were systematically searched: CENTRAL (The Cochrane Library Issue 3, 2003), MEDLINE (1966 to August 2005), EMBASE (1980 to August 2005), PsycINFO (1887 to August 2005), CINAHL (1982 to August 2005), Biosis (1985 to August 2005) and Sociofile (1974 to August 2005). The reference lists of all relevant papers were checked for additional studies and the authors of studies initially selected for inclusion were contacted.

The search strategy in [Appendix 1](#) was used to search CENTRAL. It was modified where necessary to search the other databases. An RCT filter was also used where necessary. No language restrictions were applied.

Data collection and analysis

Selection of studies

All reports of studies identified as above were inspected by two authors (PM and JD) for the initial version of this review, and by two authors (GB and JD) for the update. Where there was doubt about the possible relevance of the study this was resolved by the acquisition of the paper. Once the full articles were obtained, authors decided whether they met the criteria for inclusion and achieved consensus. No author was blinded to the names of the investigators, institutions or journals of publication of potentially relevant studies.

Data extraction and management

Data were extracted by the authors using a data extraction sheet. This covered methods, participants, interventions and outcomes. Where it was not possible to extract data because they were not available or further information was needed, attempts were made to contact primary investigators for clarification. There was a critical appraisal of all included studies which considered the following questions:

1. Was the assignment to treatment groups really random?
2. Was allocation adequately concealed?
3. How complete was follow up?
4. How were the outcomes of people who withdrew considered? Were they included in the analysis?

5. Were those assessing outcomes blind to the treatment allocation?

Available data are presented in the '[Characteristics of included studies](#)' table and in the '[Description of studies](#)' (below).

Assessment of risk of bias in included studies

Assessment of methodological quality

The authors allocated trials to quality categories as per the Cochrane Collaboration Handbook ([Higgins 2004](#)). The Cochrane criteria are based on the evidence of a strong relationship between the potential for bias in the results and the allocation concealment and is defined as below:

- A. Low risk of bias (adequate allocation concealment).
 - B. Moderate risk of bias (some doubt about concealment).
 - C. High risk of bias (inadequate allocation concealment).
- Uncertainty was resolved by discussion and consensus.

Measures of treatment effect

Dichotomous (binary) data.

No dichotomous data were reported in trials included within the current version of this review. Should such data emerge in future updates, a standard estimation of the odds ratio with the 95% confidence interval (CI) around this will be estimated.

Continuous (including scale) data.

Continuous data were analysed when means and standard deviations were available and there was no evidence of skew in the distribution. Mean treatment effects can be combined when measurements are comparable. Due to expected heterogeneity, the random effects model was used.

Dealing with missing data

With the exception of the outcome of 'loss to follow up', when data for a particular outcome were not available for greater than one-third of people initially allocated to arms within the study, these data were not used on the grounds that they may have been prone to bias.

Assessment of heterogeneity

Tests for homogeneity: The reviewer checked whether the differences among results of trials were greater than could be expected by chance alone. This was done by not only by looking at the graphical display of the results but also by using tests of homogeneity e.g. I^2 ([Higgins 2002](#)). This test yields the percentage of the variability that is due to heterogeneity rather than chance, and a percentage higher than 50 is considered substantially heterogeneous ([Higgins 2004](#)).

Assessment of reporting biases

At present, too few studies concerning similar behavioural problems have been identified to make the construction of funnel plots informative. In future, if sufficient studies are found, these will be drawn. It may be that asymmetry in the funnel plot could be due to publication bias, but could also be due to a relationship between trial size and effect size. In the event that a relationship is found, clinical diversity of the studies will also be examined ([Egger 1997](#)).

Data synthesis

In all cases the data were entered into RevMan 4.2 in such a way that the area to the left of the 'line of no effect' indicated a favourable outcome for media-based treatment. The review brings together a diverse collection of studies with regard to range of problems and type of media. As more studies become available, they may need to be divided and analysed according to type of problem. Different approaches e.g. video, booklet and website were analysed together and will continue to be so analysed unless evidence of heterogeneity of effect becomes apparent.

RESULTS

Description of studies

History of searches

The current version of this review contains eleven included studies ($n=943$), five of which were added since the original (2001) version of this review.

1089 citations were found using the search strategy at the protocol stage of the original review (1999-2000). Of these, 40 qualified for further inspection and of these, eight fulfilled the initial inclusion criteria. Searches were re-run in December 2003 and a further 791 citations located. Of these, 14 merited further inspection and two met the inclusion criteria ([Nicholson 1999](#)) and ([Sanders 2000b](#)), but only the latter presented data suitable for meta-analysis. We are in correspondence with the authors of the older paper in order to obtain data for a media-based arm of the reported trial separately from that reported from a therapist-delivered arm of the same trial.

A new Cochrane review was published ([Glazener 2004](#)) which focussed entirely on educational (including media-based) interventions for enuresis. It was decided to exclude this topic from the scope of this review, resulting in the removal of two studies from the original version (Houts and Van Londen).

Searches were again run in August 2005 and a further 1475 citations were located, of which 16 merited further inspection. Of these, only a single unpublished PhD dissertation ([Illsley 2003](#)) was suitable for inclusion and we have also included two unpublished reports of randomised controlled trials that were given to us by one of the authors ([MarkieDadds 2005a](#) and [MarkieDadds 2005b](#)), so that the total number of included studies is now eleven. Specific details of each study are reported in the '[Characteristics of included studies](#)' table (where, for multiple intervention trials, an asterisk (*) indicates which intervention has been used for comparison and "therapist time" is abbreviated to "TT").

Setting of studies

Studies included within this review span four decades (1977-2004). Four studies were conducted in the USA ([Heifetz 1977](#); [Long 1993](#); [WebsterStratton 1988](#); [WebsterStratton 1990](#)); one in New Zealand ([Seymour 1989](#)), four in Australia ([MarkieDadds 2005a](#); [MarkieDadds 2005b](#); [Nicholson 1999](#); [Sanders 2000b](#)), one in Canada ([Illsley 2003](#)) and one in the UK ([Montgomery 2004](#)).

Characteristics of participants

Two included studies ([Heifetz 1977](#)) and ([Montgomery 2004](#)) involved learning-disabled (mentally retarded) children, the former looking at self-help skills and the latter at sleep problems.

Seven studies included children with conduct problems (Illsley 2003; MarkieDadds 2005a; MarkieDadds 2005b; Nicholson 1999; Sanders 2000b; WebsterStratton 1988; WebsterStratton 1990). The study by Long 1993 had participants whose children had been prescribed methylphenidate for attention deficit hyperactivity disorder (ADHD). The final study focused on sleep problems in children (Seymour 1989). Children included within all studies ranged from ages two to fourteen.

Media-based approaches used

There was little variation in the media-based approaches used within the included studies. Written information to convey behavioural skills to parents was the most frequently used method (as in Heifetz 1977; Long 1993; Nicholson 1999; MarkieDadds 2005a; MarkieDadds 2005b; Montgomery 2004; Sanders 2000b; Seymour 1989). Webster-Stratton's studies (WebsterStratton 1988; WebsterStratton 1989; WebsterStratton 1990) all used video modelling of behavioural techniques and Illsley 2003 used Webster-Stratton's videos in the media-based treatment conditions.

Outcome measures and follow-up times

Predictably, studies varied considerably in their chosen outcomes, as would be expected in so broad a review. Studies investigating conduct problems used a variety of validated measures including the Child Behavior Checklist (CBCL) (Achenbach 1991), the Eyberg Child Behavior Inventory (ECBI) (Eyberg 1999), the Behar Preschool Behaviour Questionnaire - Teacher Report (BPBQ - T) (Behar 1977) and/or the Parent Daily Report (PDR) (Chamberlain 1987), (Illsley 2003; MarkieDadds 2005a; MarkieDadds 2005b; Nicholson 1999; Sanders 2000b; WebsterStratton 1988; WebsterStratton 1990), which were used in this review as primary outcome measures. One study investigating a media-based intervention and medication versus medication-only for Attention-Deficit/Hyperactivity Disorder utilised the ECBI, the Conners Parent Rating Scale (CPRS) (Conners 1982), the Home Situations Questionnaire (HSQ) (Barkley 1987), and the Behavior Rating Profile - Teacher Rating Scale (BRP-T) (Brown 1983). Both sleep studies employed specific measures relating to the number of nights children experienced no problem symptoms (Montgomery 2004; Seymour 1989). Only Heifetz 1977 considered economic outcomes. Follow-up data suitable for meta-analysis are obviously limited in the case of all trials in which a wait-list control group was part of the original research design as those participants received treatment at post-treatment; the longest period (one year) is reported in Sanders 2000b. Measures used in the included studies to assess outcomes not relevant to this review were not considered.

Included studies

Please see [Characteristics of included studies](#).

Excluded studies

Please see [Characteristics of excluded studies](#).

Risk of bias in included studies

Allocation

Nine of the trials included within this review were randomised, the exception being the oldest (Heifetz 1977) which used alternate allocation. Authors rarely reported methods of randomisation. In terms of allocation concealment, seven (Heifetz 1977; MarkieDadds 2005a; MarkieDadds 2005b; Montgomery 2004; Nicholson 1999;

WebsterStratton 1988; WebsterStratton 1990) reported adequate concealment of allocation to groups (e.g. by use of sealed opaque envelopes) during randomisation and merited an 'A'; information has been sought from the remaining four without success to date which therefore are assessed as 'Bs'; Heifetz 1977 is assessed as 'C' as in this trial, sequential allocation was performed.

Blinding

Blinding of assessors was reported in the majority of included studies (Kratochwill 2003; Long 1993; Sanders 2000b; WebsterStratton 1988; WebsterStratton 1989; WebsterStratton 1990) and was definitely not performed in one (Montgomery 2004). No information was supplied in the remaining five studies (Heifetz 1977; MarkieDadds 2005a; MarkieDadds 2005b; Nicholson 1999; Seymour 1989).

Incomplete outcome data

Intention-to-treat

The majority of studies in this review were reported per protocol, rather than on an intention-to-treat basis. Montgomery 2004 is the only exception. MarkieDadds 2005b conducted intention-to-treat analyses but reported that the same outcomes were significant in the intention-to treat analyses as were significant in the per protocol analyses, and thus only reported the results from the per protocol analyses.

Selective reporting

Drop-outs

The participant dropout rates were reported for the majority of studies. Of those that reported dropout rates, attrition ranged from 2% to 31% of participants (See [Characteristics of included studies](#)). Nicholson attempted to investigate differences in families who dropped out of her study, concluding that on most measures of sociodemographic status and child behaviour, there were no significant differences between those who completed and those who dropped out, save that significant associations were identified between stepmother families allocated to self-directed intervention; families containing children from both partners' former relationships; and for stepparents who had rated the target child's behaviour as poor (Nicholson 1999).

Other potential sources of bias

Sample size

Samples need to be of sufficient size for differences between groups to become statistically significant. Small samples can obscure treatment effects and result in an unequal distribution of confounders. The required sample size can be obtained using power calculations, but none of the included trials described such a calculation in their publications. Sample sizes varied from 32 to 305.

Effects of interventions

Overall, media-based interventions for child behaviour problems seem to be moderately effective for reducing behavioural problems in children compared to no treatment. The data for 'added value' (when media-based interventions are added to medication and compared to medication alone) are less conclusive (Long 1993).

There are substantial variations in the outcome measures of the studies included in this review.

Any media intervention versus no treatment control

Self-help skills for children with learning disabilities

Heifetz 1977 considered learning-disabled children and the efficacy of media-based behavioural treatments. It reported the relative effectiveness of manuals versus control and many other training formats (e.g. manual plus telephone support, manual plus group sessions and home visits), particularly in terms of the children's gain in self-help skills. This study also reported that the manuals-only condition was equal or marginally superior to the more expensive formats in this area, although the author does not report a formal statistical test to demonstrate this. Heifetz reported data pertaining to cost of conditions (the most expensive condition being 5.6 times more costly than the cheapest (manuals only) condition. Overall, the children in the 'manuals-alone' arm of this study gained 1.78 times more self-help skills than control children according to the measurements on the Behavioral Assessment Scales (Heber 1961) during the 20-week treatment period. The data from this study could not be analysed in this review because the publication only reported the Means, but not the Standard Deviations for these results and the author was not available to provide the data.

Sleep problems in children - with and without learning disabilities

Montgomery 2004 looked at the efficacy of a booklet describing behavioural techniques to assist parents in dealing with sleep problems in learning-disabled children as compared to conventional therapist treatment (that is, standard care) and a waiting-list control condition. There was a significant difference shown between the control group and the booklet treatment as measured by the Composite Sleep Score (CSS) (Richman 1971) (WMD -3.20 (95% CI = -4.51, -1.89; Analysis 1.1), N = 22 treatment, 24 controls). Results for the two active treatment groups ('therapist alone', and 'booklet alone') were both positive and could not be distinguished. Seymour 1989 reported similar results in a population of children who had no problems other than with sleep, using measures including 'sleep disruptions' as measured by minutes awake at night and by numbers of wakings. In the case of the former, the control group was reported to be awake for 32 minutes more than the intervention group (WMD -32.60 (95% CI = -49.93, -15.27; Analysis 1.10), N=15 treatment, 15 controls). In addition, the control group was reported to have 6 more night wakings than the treatment group (WMD -6.77 (95% CI = -10.94, -2.60; Analysis 1.11)).

Conduct problems in children

Nine studies included within this review concerned conduct problems in young children and a meta-analysis was possible when outcomes measured by the Child Behavior Checklist (CBCL) (Achenbach 1991), the Eyberg Child Behavior Inventory (ECBI) (Eyberg 1999), and the Parent Daily Report (PDR) (Chamberlain 1987) are reported (MarkieDadds 2005a; MarkieDadds 2005b; Sanders 2000b; WebsterStratton 1988; WebsterStratton 1989) for comparisons between media-based treatments and no-treatment control conditions.

Child Behavior Checklist (Achenbach 2003)

The CBCL contains 114 items which can be grouped to form an internalising subscale, an externalising subscale, or summed to calculate a total problems score and was utilised by Illsley 2003, WebsterStratton 1988 and WebsterStratton 1990. WebsterStratton 1988 compared a self-administered videotape parent training intervention with a group discussion plus videotape, group discussion alone, and a waiting list control group. WebsterStratton 1990 compared a self-administered videotape parent training intervention, therapist consultation plus videotape, and a waiting list control group. For the purposes of this review, the comparisons that were used in the meta-analyses were the self-administered videotape conditions versus the waiting list control groups from WebsterStratton 1988 and WebsterStratton 1990. Both studies reported data from the Total Behavior Problem Score only. In the first of these comparisons, on the CBCL Total Problem Score as reported by mothers, the difference between groups was not significant (WMD -5.21 (95% CI= -13.77, 3.35; Analysis 1.4), N = 44 treatment, 39 controls). The second comparison showed that CBCL father reports from these studies also yielded results that did not show a significant difference between groups (WMD = -8.83 (95% CI= -16.91, 0.26; Analysis 1.5), N = 27 treatment, 28 controls). For the comparison of conjoint behavioural consultation versus videotape comparison in Illsley 2003, on the CBCL Total Problem Score, there was no significant difference between groups (p=.50) (WMD scores not currently available due to missing data).

Eyberg Child Behavior Inventory (Eyberg 1999)

The ECBI contains several subscales allowing assessment of different aspects of child behaviour problems. Trials included in this review collected reports of the frequency (Problem Subscale) and intensity (Intensity Subscale) of problem behaviour from both parents where possible, and reported these data separately. Five included studies utilised this measure: MarkieDadds 2005a; MarkieDadds 2005b; Sanders 2000b; WebsterStratton 1988, and WebsterStratton 1990. MarkieDadds 2005a compared a written self-directed behavioural family intervention, a self-directed intervention plus brief telephone consultation, and a waiting-list control for families in rural and remote areas in Australia. MarkieDadds 2005b compared the same self-directed behavioural family intervention with a waiting-list control condition. Sanders 2000b compared an enhanced behavioural family intervention, a standard behavioural family intervention, a self-directed behavioural family intervention, and a waiting list control condition. For the purposes of this review, the comparison between the self-directed interventions and the waiting list control conditions was used in the meta-analyses. The meta-analysis from these five studies of the ECBI Intensity Subscale as reported by mothers showed a significant effect in favour of the treatment condition (WMD -19.81 (95% CI -26.56, -13.06; Analysis 1.2), N = 141 treatment, 144 controls). WebsterStratton 1988; WebsterStratton 1990, and Sanders 2000b used the ECBI Intensity Subscale for fathers' reports, and the meta-analysis also showed a significant difference in favour of the treatment conditions, although the effect was not as great (WMD -13.56 (95% CI = -24.02, -3.10; Analysis 1.3), N = 88 treatment, 99 controls). Results from the ECBI Problem Subscale were reported by MarkieDadds 2005a; MarkieDadds 2005b, and WebsterStratton 1988, and a significant effect was found from mothers' reports in favour of the treatment condition (WMD -6.87 (95% CI -9.31,-4.43; Analysis 1.6), N=63 treatment, 61 controls). The ECBI Problem Subscale was also used

with fathers in WebsterStratton 1988 and showed a much smaller effect in favour of the treatment condition and this effect was not significant (WMD -2.46 (95% CI -7.26, 2.34; Analysis 1.7), N=18 treatment, 21 controls).

Parent Daily Report (Chamberlain 1987)

Three trials (MarkieDadds 2005a; MarkieDadds 2005b, and Sanders 2000b) used the PDR Mean Targeted Problem Scale to assess the mean number of child problem behaviours in the home. It is striking with this measure that in Sanders 2000b (just as for the results of the meta-analysis reported above for the ECBI and the CBCL) fathers consistently view their children's behaviour as having improved less than mothers (WMD -0.12 (95% CI -1.65, 1.41; Analysis 1.13), N=61 treatment, 71 controls). The interventions used in MarkieDadds 2005a; MarkieDadds 2005b, and Sanders 2000b appeared to yield significant effects in the PDR Mean Problem Scale as reported by mothers (WMD -2.83 (95% CI -4.03, -1.63; Analysis 1.12), N=97 treatment, 105 controls). In addition, MarkieDadds 2005a; MarkieDadds 2005b, and WebsterStratton 1990 utilised the PDR Mean Targeted Problem score to assess changes in behaviours that mothers had identified as particular problems for them at baseline. The meta-analysis for this measure showed a very slight significant effect in favour of treatment (WMD -1.35 (95% CI -2.37, -0.33; Analysis 1.14), N=53 treatment, 46 controls).

Behar Preschool Behaviour Questionnaire - Teacher Report (Behar 1977)

Only one study utilised this measure to collect teacher report of child behaviour. The results from WebsterStratton 1988 indicated that teachers did not report significantly greater improvement in children's behaviours in the treatment groups as compared to the control condition (WMD -2.55 (95% CI -8.15, 3.05; Analysis 1.9), N=27 treatment, 27 controls).

Long-term follow up

Five trialists looked at maintenance beyond the initial treatment period, however meta-analyses of these outcomes were not possible because all studies utilised waiting list control groups that began treatment at some point before follow-up. WebsterStratton 1989 showed that media-based treatments with and without therapist support was maintained at 12 months. The results of the three treatment groups she studied all remained stable over this time period including those families who received no therapist input. Indeed there was further improvement in many measures over time. Sanders 2000b found that at one-year follow-up there were no changes on parent report measures of child behaviour from post-treatment, nor were there changes in independent observations of child behaviours in the enhanced behavioural family intervention or the standard behavioural family intervention, indicating that outcomes did not either decline or improve after post-treatment. However, they did find significant improvements in child behaviours from independent observations from post-treatment to one-year follow-up in the self-directed behavioural family intervention condition ($p < .01$). In addition, MarkieDadds 2005a found that although there were no changes from post-treatment to six-month follow up on mothers' reports of child behaviour in the enhanced self-directed intervention group, there were significant improvements in that time period for the self-directed intervention group ($p < .05$). MarkieDadds 2005b did not find any significant differences between measures at post-

treatment and six-month follow-up, and Montgomery 2004 showed no significant erosion of effect at their six-month follow up.

Data from Nicholson 1999 cannot currently be used for meta-analysis as they have been published in forms where data from non-equivalent intervention groups (therapist- and self-directed interventions) have been combined, and follow-up data were not analysed due to 'poor sample retention to this phase' (p 10). Overall, the investigators reported that 2-group repeated measure MANOVAs indicated 'statistically significant phase effects... [but] there were no significant main effects for condition and no condition by phase interactions. In light of this lack of group differences, data from families receiving either therapist-directed or self-directed interventions were combined into a single 'active intervention' group for the remaining analyses.' The means and standard deviations were not reported for the separate treatment groups and investigators have not yet responded to requests for data for the self-directed intervention alone. Percentages of children who remained in the clinical range following treatment (whether by therapist or self-directed) were reported and statistically significant differences were reported between treated and wait-list control groups on all outcomes (including CBCL and ECBI) with one exception: the Parent Daily Report (PDR).

Media intervention plus medication versus medication only

Attention-Deficit/Hyperactivity

Long 1993 looked at the additional benefit of providing a booklet containing behavioural advice on management to parents whose children had been prescribed methylphenidate for Attention Deficit/Hyperactivity Disorder as compared to methylphenidate only. At post-treatment the group with written information added to pharmacological treatment showed significant improvement on measures of the intensity of behavioural problems in the home as measured by the ECBI Intensity subscale (WMD -39.55 (95% CI = -75.01, -4.09; Analysis 2.1), N=13 treatment, 9 controls) and the HSQ Intensity subscale (WMD -25.74 (95% CI = -47.84, -3.64; Analysis 2.2)). These findings were supported within the school environment as measured by teachers' responses on the BRP-T (WMD -13.75 (95% CI = -24.53, -2.97; Analysis 2.6)). However, there were no significant differences in the frequency of behavioural problems as measured by the ECBI Problem subscale (WMD -8.68 (95% CI = -17.25, -0.11; Analysis 2.3)); the HSQ frequency subscale (WMD -2.71 (95% CI = -5.86, 0.44; Analysis 2.4)) or the 'Hyperactivity Index' of the CPRS (WMD -4.87 (95% CI = -11.01, 1.27; Analysis 2.5)) - which is to say that the children's oppositional behaviours in the home continued but that the intensity of these problems was reduced in the group that received this form of media-based treatment (booklet). However, in a study as small as this and with seven outcome measures of which only three demonstrated significant differences, no strong conclusions should be drawn.

Media intervention versus standard treatment

In addition, data from Illsley 2003 cannot be analysed because the records of sample sizes and attrition are not clear in the dissertation. The authors of this review contacted Illsley's supervisor on 11 October 2005 and are awaiting information about the flow of participants in the study. This study utilised the Child Behavior Checklist and the Social Skills Rating System to measure change in children's behaviour over time. No significant differences are reported between treatment conditions on either measure, but

this could be because the study was not adequately powered to detect a difference.

DISCUSSION

As [Campbell 1995](#) has suggested, the efficacy of behavioural interventions with child behaviour problems is often reported to be good. Overall, the interventions were found to have a moderate effect, ranging quite widely, with the most consistently strong effects appearing in mothers' reports of child behaviour. It is important to note that most of the trials in this review utilised interventions designed by Webster-Stratton or interventions from the Triple-P Positive Parenting Programme and that parenting programmes from both research groups have a strong evidence base.

Comments specific to individual comparisons

Media based interventions versus controls

Learning disabilities (Heifetz 1977; Montgomery 2004)

[Heifetz 1977](#) provided successive increments in professional assistance to the following groups: (1) parents provided with manuals-only; (2) those given manuals and telephone support; (3) those with manuals and group support; and (4) those with manuals, group support and visits. In none of these groups did the increasing amount of assistance prove consistently more effective. In fact the manuals and telephone condition was in some areas less effective than the manuals-only group. This was thought to be because, on the telephone, the participants focused on specific and present-day problems whereas the other groups all had a more general approach. This manuals and telephone condition was the only intervention with one-to-one contact and this may, in fact, have created dependence on the consultant answering questions rather than the parents concentrating on using the manual to resolve general problems. This was the only study which included information on financial benefits of these interventions. Additional groups in his study compared a manual with other groups which had increased amounts of personal support. He expressed these costs-per-family as a ratio of the cost of the training manual he used. His 'Manuals plus Telephone' condition cost two times as much as the manuals alone, the 'Manuals and Groups' condition was 3.1 times more expensive, and the 'Manuals, Groups and Visits' condition was 5.6 times as expensive (see table of included studies). In [Montgomery 2004](#), it was found that health visitors reported spending an average of six hours per week on child sleep problems and it has been estimated that two-thirds of these cases would respond to a booklet costing under £1 (one GBP). In any event, there is little doubt that media-based approaches, when effective, have significant potential for cost-reduction compared to face-to-face treatment.

Triple-P Interventions (MarkieDadds 2005a; MarkieDadds 2005b; Nicholson 1999; Sanders 2000b)

[Sanders 2000b](#) similarly delivered interventions with increasing intensity: (1) wait-list control group; (2) self-directed behavioural family intervention; (3) standard behavioural family intervention; and (4) enhanced behavioural family intervention. However, this study showed outcomes that corresponded more reliably with the level of intervention. The results showed that, at post-treatment, parents in the enhanced and standard intervention conditions reported significantly greater improvements in their children's

behaviour than parents in the waiting list condition ($p<.001$). Parents in the self-directed intervention condition also reported greater improvements in their children's behaviour as compared to the waiting list condition, but the level of significance was lower ($p<.05$). At one-year follow-up, the results indicated that all treatment groups had maintained improvement in child behaviour problems and independent observations showed that children in the self-directed intervention condition had significantly improved behaviour since post-treatment. [MarkieDadds 2005a](#) also compared interventions with increasing therapist involvement: (1) wait-list control group; (2) self-directed behavioural family intervention; and (3) enhanced self-directed behavioural family intervention (with weekly telephone consultation). The results of this study showed that at post-treatment parents in the enhanced self-directed condition reported significantly lower levels of child behaviour problems than parents in the self-directed condition on the ECBI, and that parents in the self-directed condition reported significantly lower levels of child behaviour problems than parents in the wait-list control group. Parents in both treatment conditions reported significantly fewer disruptive behaviours on the PDR than parents in the wait-list control group at post-treatment. At six-month follow-up, the results were similar to those in [Sanders 2000b](#) in that outcomes were maintained from post-treatment for children in the enhanced self-directed intervention group, but there was additional improvement in the self-directed intervention group, according to parent report on the ECBI. These studies provide valuable information about the relative effectiveness of interventions of increasing intensity and show that added therapist input can yield greater reductions in child behaviour problems than self-directed interventions alone, but that self-directed interventions seem to have further impact in the long term. [MarkieDadds 2005b](#) compared a self-directed behavioural family intervention with a wait-list control group and found that parents in the self-directed intervention condition reported significantly greater improvement in child behaviour problems than parents in the wait-list control group on both the ECBI and the PDR. There were no significant differences in child behaviour from post-treatment to six-month follow-up in the treatment group, indicating no decline or additional improvement in the long term.

The Incredible Years (WebsterStratton 1988; WebsterStratton 1990)

All studies by Webster-Stratton used videotape examples whereby parents were shown models of appropriate strategies to use with their child. These videotapes were individually administered or delivered with group discussions compared with group discussions only, and a no-treatment control group. A detailed analysis of this work showed that all three active treatment groups reported significantly fewer child behaviour problems, more pro-social behaviours and less physical punishment compared with the control group. There were few differences between the three groups. Those differences that were evident favoured the discussion group in which the videotape was also used. One year post-treatment, when 93% of families were assessed on the basis of teacher and parent reports as well as home observations, all the significant improvements reported immediately post-treatment were maintained. [WebsterStratton 1988](#) showed that adding group discussion to a videotape improved child behaviour on some measures. The parents reported greater improvements than did the teachers, who may be considered to be more independent as raters; however, the importance of parental report should not be

underplayed. The group with no therapist support required half the time commitment from the parents (one hour per week compared with two hours for the group discussion group) and is likely to be less expensive. When two individual hours of therapist time were added to media-based treatments, as in the [WebsterStratton 1990](#) study, outcome measured by parental report was unchanged. However, results from independent observations showed that children receiving the extra support showed significantly fewer deviant behaviours ($M=24.14$, $SD=11.5$) than children in the videotape-only condition ($M=38.0$, $SD=24.5$, $p<0.05$) when observed interacting with their mothers.

Media-based interventions with medication versus medication only

It is unfortunate that there is only one small study in this comparison and thus comparatively little may be said with any certainty. However, in view of the prevalence of attention deficit/hyperactivity disorder that [Long 1993](#) considered, it is promising to see that the addition of a media-based intervention might improve outcomes for children taking medication. More research is needed to explore this further.

Media-based interventions versus face-to-face treatment

There were no significant differences between the treatment conditions on either child behaviour or child social skills [Illsley 2003](#). The authors reported that significant differences were found for all three interventions in child behaviour and child social skills from pretest to posttest, although without a no-treatment control condition with which to compare these outcomes, it is not known how much change was due to the passage of time alone. Other studies have included this comparison; however, those studies were used to address the primary question of whether media-based interventions are effective compared to no treatment. Therefore, those data (for the media-based arm of the studies) cannot be used again for this comparison.

Generalisability

This section will consider the extent to which the results of the review may be generalised to use in practice. Relevant to this matter are the clinical significance of the statistical effects, participation rates in the studies, the methods of recruitment, the quality of the materials used in each study and the economic implications that follow from these types of interventions. In view of the variety of child behaviour problems contained in this review as well as the differing approaches to addressing them with a media-based behavioural approach, this discussion will firstly consider issues that seem common to the entire review. Secondly issues relevant to the individual comparisons will follow.

Clinical Significance

Conclusions about the effectiveness of an intervention are often drawn from results, such as those in this review, that show a statistically significant effect of treatment for child behaviour problems, but not necessarily a clinically significant effect. The amount of change as an effect of treatment might be enough to produce a statistical difference but it might not mean that individual children have improved enough to be noticed by parents or clinicians. Few researchers addressed this issue in their studies, however four trials in this review did explore the clinical significance of their findings and comparisons were made

between media-based treatments and other interventions for three of these studies. These analyses showed that, according to the ECBI, significantly more participants reliably improved after using self-directed interventions than those who received no treatment, and that these outcomes were maintained at follow-up. The results also indicated that not all participants showed clinically significant improvement and in some cases only approximately one-third of participants reliably improved.

[WebsterStratton 1990](#) mentioned that 'approximately two-thirds of parents reported their children as having CBCL scores in the normal range' after treatment in the self-administered videotape intervention condition (p. 488). [Sanders 2000b](#) examined the clinical significance of outcomes in the three treatment conditions and the waiting list condition using the reliable change index, as designed by [Jacobson 1991](#). This index provides information about the likelihood that participants' change from pre-treatment to post-treatment exceeds that which might be expected by the standard error of measurement. According to these criteria, 47% of participants in the self-directed intervention condition had improved as compared to 24% in the waiting list condition, as measured by the ECBI. This difference was statistically significant ($p<0.01$). In addition, 56% of participants in the self-directed group moved from the clinical to the normal range on the ECBI, as compared to only 31% in the waiting list condition ($p<0.01$). However, similar patterns were not found for other measures of child behaviour. [MarkieDadds 2005a](#) also used the reliable change index to examine the clinical significance of participants' scores on the ECBI. Their analyses showed that 69% of children in the enhanced self-directed condition, 60% of children in the self-directed condition, and 0% of participants in the waiting list condition improved from pre-treatment to post-treatment and that these results were maintained at 6-month follow-up. They did not provide data on the clinical significance of outcomes on other measures. [MarkieDadds 2005b](#) also calculated the clinical significance of scores on the ECBI using the reliable change index. They found that 30% of participants in the self-directed condition showed improvement at post-treatment and 23% showed improvement at 6-month follow-up, whereas no children in the waiting list condition showed improvement at either time point.

Participation Rates

All participants were children aged 2 to 15. Participation rates were high and dropout rates were low in all studies (Long's rate (31%) was relatively high but within limits for inclusion). The generally low attrition rate may be because potential subjects were warned about the large amount of time and commitment required for success through typical informed consent procedures. It might well be that at a primary care level this would not be the case. In a busy surgery general practitioners may not be able to spend enough time engaging the families sufficiently for them to be able to complete the treatment on their own and that in 'real world' situations a greater proportion of users of these materials would give up before completing them. [Nicholson 1999](#) made some attempt at analysing differences between those who dropped out of self-directed treatments and those who dropped out from other conditions; similar efforts in future research might be informative.

Methods of Recruitment

The methods of recruitment used by the trials in this review varied but generally reflect populations that would be found in day-to-day practice. Most studies used some kind of community outreach or advertising campaign (Heifetz 1977; MarkieDadds 2005a; MarkieDadds 2005b; Nicholson 1999; Sanders 2000b). Other studies recruited through agencies (Heifetz 1977), outpatient clinics or therapy referrals (Long 1993; Nicholson 1999; Seymour 1989) or schools (Illsley 2003; Montgomery 2004). Participants in WebsterStratton 1988 and WebsterStratton 1990 were either self-referred or referred by local clinicians.

Quality of Materials

The efficacy of individual self-help media-based therapies will, to some extent, be dependent on the quality of the individual materials used in each study. At present there is no agreed standardised way of analysing the quality of the material used although 'Discern' (Charnock 1999), a set of quality criteria for consumer health information, has been shown to include useful considerations including the sources of the information and biases within it.

Type of Materials

It may be that differences in format of the media-based approaches (booklet, video, audiotape, etc.) may explain some of the heterogeneity in the effects of these interventions due to literacy levels and consumer preferences, but it is not possible to tell from the current data. This review has shown the effectiveness of these treatments over a range of child behavioural problems and media-based approaches and cannot discriminate between them.

Contextual Issues

Most studies lack the additional information that would be informative to practitioners. For example, many do not include the results of economic implications of these approaches or of consumer satisfaction measures in ways that make analysis and comparison possible. In addition, practitioners might also seek information about cultural and individual differences when considering the use of these sorts of approaches (taking into account, for example, literacy levels, access to audiovisual equipment, etc). Furthermore, one of the difficulties of doing behavioural programmes with children is that there is usually a delay before the treatment begins to work, whether the programme is delivered by a media-based approach or by another method. This may be a very difficult time for these families and the matter of whether study participants were able to manage without face-to-face support through these times is of interest. However, data from included studies do not allow this question to be fully answered at present.

AUTHORS' CONCLUSIONS

Implications for practice

The results of this review suggest that the use of media-based materials to teach parents to use child behaviour management strategies would appear to be worthy of consideration at a primary care level and is likely to be effective at least for moderate cases. All studies show that following the media-based behavioural intervention the child's problems improve, but the confidence intervals are often wide and the use of these approaches clearly

requires further work to be certain of their efficacy. There are, also, insufficient data to determine whether one method of delivery is any better than another. While adding some therapist support to these interventions has been found to be worthwhile, it may not justify the additional costs that would be incurred.

These materials may also help to train those working in primary care to be more aware of effective child behaviour management interventions when confronted by parents expressing concern about their children's behaviour. Health care professionals may also want to consider distributing these media-based approaches in addition to their work directly with clients where they feel that the materials themselves may not be sufficient as a stand-alone treatment.

Behavioural interventions will not work with every family and treatments delivered by media-based methods are no exception. This may be because some parents would resist any attempt to change their parenting, or because there are other factors influencing family and individual functioning which may prevent change. These factors may be internal to the family, such as parental alcohol abuse, or external, such as poverty.

Implications for research

Media-based self-help materials in general, and parenting books in particular, are a growing industry. Any trip to a bookshop will present the consumer with many new titles most of which claim to be the ideal book to read in order to resolve many child behaviour problems. Most of these books and other methods of presenting self-help strategies are not tested at all. This is unfortunate as the potential for this form of psychological help would appear to be considerable, especially in these times of progressively limited resources. If a proportion of the population could address some of these problems themselves using media-based strategies, considerable time would be released for professionals to attend to cases which might need greater inputs.

Specifically, high-quality randomised controlled trials are needed which have sufficient statistical power to distinguish between different amounts of therapeutic time and style. The issues of different modes of delivery and different child behaviour problems are also important. To date, there are no trials using a placebo to isolate the content from the method of delivery. For example, a comparison of two videotapes, one containing behavioural advice and the other a discussion of the nature of the problem might be helpful. However it must be admitted that this is a difficult area for these sorts of interventions, but such a trial would be a useful exercise. The use of video has not been sufficiently compared to written self-help materials and yet video's potential to model appropriate strategies to parents is greater than most written forms of presentation, with the added advantage that the potential problem of limited parental reading ability would be removed. Over time the internet will present more options for the presentation of psychological treatments which can be more flexible and tailored to the particular profile provided by the client. This exciting area will also require rigorous testing. In addition, issues that future research might aim to address include cost-benefit analyses and consideration of the relationship between face-to-face contact and the optimal use of therapeutic media. Future research might also consider testing relative proportions of media and face-to-face input, as it is not possible to judge this from the information currently available.

None of the studies reviewed here include any outcome measures based on child report. There is now a whole range of self-complete measures which have been designed for use by children in order to assess such aspects as self-esteem and self-concept. Use of such measures would allow the children's opinions to be considered properly and empower them to influence the treatments administered to them. This may, of course, be difficult to do in the case of young children. However it may be that these behavioural problems are an important concern for the children as well as their parents and the child's perception of the success of the treatments might be an important consideration in the search for effective interventions. The inclusion of these would have enhanced quite considerably our understanding of the effectiveness of many of these media-based programmes. Most

studies rely on parent reports, and yet there is some conflict in the reports of teachers concerning the improvements in behaviour shown by children in some studies, notably those of Webster-Stratton and colleagues ([WebsterStratton 1988](#); [WebsterStratton 1989](#); [WebsterStratton 1990](#)) and the need for independent report in the measurement of behaviour should be noted.

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* Indicates the major publication for the study

CHARACTERISTICS OF STUDIES

Characteristics of included studies [ordered by study ID]

Heifetz 1977

Methods	Allocation: quasi RCT. Clusters of families were matched on chronological age of the child and parents pre-treatment score on the Behavioral Vignettes Test. Members of each cluster were randomly distributed across four treatment conditions. Blinding: not described Controls: waiting list.
Participants	Families of learning-disabled children aged 2-14. N = 160.
Interventions	5 groups: *1- manuals only (n = 25); TT = nil mins. 2 - manuals and phone (n = 23); TT = 10 phone calls over 20 weeks. 3 - manuals and groups (n = 24); TT = 8 group meetings (duration unknown). 4 - manuals, groups and visits (n = 28); TT = 8 group meetings + 7 x 1hour individual sessions

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Heifetz 1977 (Continued)

5 - waiting list controls (n = 28).

Outcomes	Cost relative to other formats of treatment. Aggregate improvements in self help skills.
Notes	Parents volunteered and may be unrepresentative. 4 (12%) participants in control group and 17 (13%) participants in the treatment group did not complete treatment. 28 (22%) did not complete post-treatment measures.

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	High risk	C - Inadequate

Illsley 2003

Methods	Allocation: Randomised to condition in blocks by school Blinding: none Setting: Schools Comparison condition: Conjoint Behavioral Consultation (CBC)
Participants	Children with behaviour problems aged 3-10. N=32
Interventions	3 groups: 1) Conjoint Behavioural Consultation (CBC) - 3 individual sessions with therapist plus manual (n=16); TT = not specified 2) Group discussion and videotape modelling (n=6); TT = 10 2-hour sessions with therapist. *3) Individually administered videotape modelling (n=8); TT = weekly phone contact to collect data, time of phone calls not specified
Outcomes	Parent reports using standardised measures.
Notes	Awaiting information from the author about sample size and attrition as it is unclear in the dissertation.

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Unclear risk	B - Unclear

Long 1993

Methods	Allocation: randomised. Blinding : teacher/raters were blinded. Controls: no treatment other than the methylphenidate that both groups received.
Participants	Families of children aged 6-11, 26 boys 6 girls with AD/HD. N = 32.
Interventions	2 groups: *1- Booklet of behavioural management advice in addition to methylphenidate (n = 17); TT = nil. 2- Methylphenidate only (n = 15) as controls, TT = nil.
Outcomes	Intensity and frequency of behavioural problems at home and at school using standardised measures.

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Long 1993 (Continued)

Notes High attrition rate: 4 (24%) in treatment group and 6 (40%) in control group, yielding a total of 10 (31%) participants. Independent raters were teachers.

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Unclear risk	B - Unclear

MarkieDadds 2005a

Methods	Allocation: Randomised Blinding of assessors: Not reported Duration of follow-up: 6 months Setting: Community Control condition: Waiting list
Participants	Children with behaviour problems aged 2-6 years. N=41.
Interventions	3 groups: *1) self-directed parent training (n=15); TT=nil 2) enhanced self-directed parent training with telephone consultation (n=14); TT = up to 30 minutes per week, M=20 minutes 3) waiting list control group (n=12); TT=nil
Outcomes	Parent reports using standardised measures.
Notes	One family in the self-directed condition did not complete post-treatment measures and another family dropped out before follow-up.

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Low risk	A - Adequate

MarkieDadds 2005b

Methods	Allocation: Randomised using table of random numbers Blinding of assessors: Not reported Duration of follow-up: 6 months Setting: Community Control condition: Waiting list
Participants	Children with behaviour problems aged 2-5 years. N=63
Interventions	2 groups: *1) self-directed parent training (n=32); TT=nil 2) waiting list control group (n=31); TT=nil
Outcomes	Parent reports using standardised measures.

MarkieDadds 2005b (Continued)

Notes Reported that 9 (28%) families in the self-directed condition and 7 (23%) in the waiting list condition did not complete post-treatment measures.

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Low risk	A - Adequate

Montgomery 2004

Methods Allocation: randomised.
Blinding of assessors: none.
Duration of follow-up: 6 weeks
Setting: Community-based
Controls: wait-list

Participants Families of children aged 2-6 with learning disabilities and sleep problems. N = 66.

Interventions 3 groups:
*1 Booklet of behavioural advice for sleep problems (n = 22); TT = 45 mins.
2 Same advice delivered conventionally (face-to-face) (n = 20); TT = 1.5 hours.
3 -- Control group (N = 24); TT = nil mins.

Outcomes Composite sleep score from parent report based on frequency and duration of night waking and settling problems.

Notes The author of this review is one of the authors of this study. Reported that 10 (13%) participants did not complete study and a further 2 (3%) did not complete follow-up.

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Low risk	A - Adequate

Nicholson 1999

Methods Allocation: Randomised with replacement (each participant had an equal chance of being placed in each group)
Blinding of assessors: None
Duration of follow-up: 6 months
Setting: Community
Control condition: Waiting list

Participants Children with behaviour problems aged 7-12 years. N=42

Interventions 3 groups:
*1) self-directed parent training (n=12); TT=15-30 minutes for initial assessment
2) therapist-directed parent training (n=14); TT = up to 16 hours total per family
3) waiting list control group (n=16); TT=nil

Outcomes Parent reports using standardised measures.

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Nicholson 1999 (Continued)

Notes
Reported that 8 (36%) participants in the therapist-directed intervention group, 9 (43%) participants in the self-directed condition, and 1 (6%) in the waiting list condition did not complete the study, yielding a total of 30% of participants.

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Low risk	A - Adequate

Sanders 2000b

Methods
Allocation: randomised
Blinding: assessors were blind to intervention conditions of the four arms
Duration of followup: 15 weeks
Setting: community
Control condition: waitlist control

Participants
305 families including children aged 36-48 months. Children had to be without developmental disorders, otherwise healthy, and have ECBI (Intensity) score > 127 or an ECBI (Problem) score > 11. Additionally, families had to have at least one other 'adversity factor', e.g. maternal depression or low income.

Interventions
Group 1: * Self-directed behavioural family intervention (SDBFI) (n= 61); Group 2: enhanced behavioural family intervention (n=58); Group 3: standard behavioural family intervention (n= 65); Group 4: wait-list control (n=71). SDBFI aims to teach 17 core child-management strategies, using a workbook divided into ten sessions. TT= 0.

Outcomes
ECBI (Intensity) rated by both parents where possible/appropriate. PDR (Parent Daily Report), the Parenting Sense of Competency Scale, the Parent Problem Checklist, the Abbreviated Dyadic Adjustment Scale, the Depression/Anxiety Stress Scales, the Client Satisfaction Questionnaire. Measures taken post-treatment and at one year follow-up.

Notes
Reported that 18 (24%) participants in the enhanced condition, 13 (17%) in the standard condition, 14 (19%) participants in the self-directed condition, and 6 (8%) in the waiting list condition did not complete the study. Coders were blind to the intervention conditions of participants (p. 628). Emailed first author concerning method of randomisation March and May 2005; no response to date.

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Low risk	A - Adequate

Seymour 1989

Methods
Allocation: randomised.
Blinding: not described.
Controls: wait list.

Participants
Families of children aged 9 mos to 5 yrs with sleep problems. N = 45.

Interventions
3 groups:
1 Written information, standard sleep programme (n = 15); TT = 5-10 mins to answer questions about booklet.

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Seymour 1989 (Continued)

2 - Written information, standard sleep programme, plus face-to-face contact (n = 15); TT = 1 hour individual session plus daily phone calls -- 2-3 hours in total per family.
3- waiting-list control group (n = 15).

Outcomes	Minutes awake each night, number of wakings per week, bedtime settling time.	
Notes	Dropouts were not reported in this study.	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment?	Unclear risk	B - Unclear

WebsterStratton 1988

Methods	Allocation: randomised. Blinding: observers blinded to treatment group. Controls: waitlist.	
Participants	Conduct-disordered children aged 3-8. 79 boys and 35 girls, total N = 114.	
Interventions	4 groups: * 1- Individually administered videotape modelling group (n = 29); TT = nil. 2 - Group discussion videotape modelling (n = 28); TT = 10-12 2-hour sessions with therapist. 3- Group discussion (n = 28); TT = 10-12 2-hour sessions with therapist. 4 - Wait-list controls (n = 29).	
Outcomes	Parent reports using standardised measures. Independent ratings of behaviour at home and teacher ratings of behaviour at school.	
Notes	Reported that 4 (8%) participants in the videotape condition, 1 (2%) in the group plus videotape condition, 9 (19%) in the group discussion condition, and 2 (4%) in the waiting list condition did not complete the study	
Risk of bias		
Bias	Authors' judgement	Support for judgement
Allocation concealment?	Low risk	A - Adequate

WebsterStratton 1989

Methods	Allocation: randomised. Blinding: observers blinded to treatment group. Controls - this is a follow up of the 1988 study which had a wait-list control condition.	
Participants	94 Mothers and 60 fathers of original sample. 30 children from group discussion videotape modelling, 29 from group discussion sample and 35 from individually administered videotape modelling group.	
Interventions	3 groups: This is a one year follow up of the 1988 study (NB waiting-list control group reallocated) thus it compares: * 1- Individually administered videotape modelling group (n = 35); TT = nil. .	

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WebsterStratton 1989 (Continued)

-2 Group discussion and videotape modelling (n = 30); TT = 10-12 2-hour sessions with therapist.
3- Group discussion only (n = 29); TT = 10-12 2-hour sessions with therapist.

Outcomes	Parent reports using standardised measures. Independent ratings of behaviour at home and teacher ratings of behaviour at school. However the ratings of the teachers were not reported.
Notes	Reported that 6 parents from the group plus videotape condition, 5 parents from the group discussion condition, and 6 parents from the videotape intervention dropped out between post-treatment and follow-up.

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Low risk	A - Adequate

WebsterStratton 1990

Methods	Allocation: randomised. Blinding: observers blinded to treatment group. Controls: wait list.
Participants	Conduct-problem children aged 3-8. N = 43.
Interventions	3 groups: * 1- Individually administered videotape modelling (n=17); TT= nil mins. 2-- Individually administered videotape modelling with therapist consultation (n=16); TT = 2 hours' programmed time plus phone calls to therapist as needed. 3 -- Wait-list controls (n=14).
Outcomes	Parent reports using standardised measures. Independent ratings of behaviour at home and at school.
Notes	Dropouts were not reported in this study.

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Low risk	A - Adequate

TT = "Therapist time"

* = active treatment arm

Characteristics of excluded studies [ordered by study ID]

Study	Reason for exclusion
Ackerson 1998	Treatment aimed directly at adolescents, not their parents and thus not included in this review. The efficacy of a book providing cognitive bibliotherapy for adolescents with mild to moderate depression was examined in 22 community dwelling adolescents. The results showed significant improvements in symptoms and were maintained at 1 month follow-up. N = 22.
Baer 1992	The mean age of this study's sample was 21.2 years and thus outside this review's criteria. This study assessed alcohol risk reduction with subjects randomly assigned to a class and discussion group, a 6-unit self-help manual or a single 1-hour feedback and advice with professional staff.

Study	Reason for exclusion
	There was considerable non-compliance in the manual group suggesting limited utility. Age was a key factor in this study as the age of legal drinking of alcohol was covered. N = 134.
Bauman 1983	This was not a randomised controlled trial, and was not therefore included in the review. The aim was to evaluate the effectiveness of an advice package for pre-meal inappropriate behaviour in restaurants. N = 4.
Connell 1997	This randomised controlled trial of self-directed behavioural family intervention to reduce behaviour problems in children was excluded because parents had weekly telephone contact with a therapist for an average of 20 minutes per week for 10 weeks, exceeding the limit set for minimal therapist contact in this review. N = 24.
Dishion 1995	This randomised controlled trial of parent-focused training to prevent 'escalation in problem behaviours' involved four active-treatment arms (including one bibliotherapy intervention). This study was excluded because it dealt with prevention of behaviour problems rather than treatment and because the inclusion criteria did not include a standard diagnosis or cut-off score on a measure of behaviour problems, but rather included participants with risk factors for future behaviour problems. N= 158.
Evans 1999	It was not possible to separate out the children from the rest of the study whose age range was 16-50 and thus it is not included in this review. Manual-assisted cognitive behavioural therapy was tested in subjects with a history of deliberate self-harm. The results showed that the group who received the manual assisted therapy had a lower median rate of suicidal acts per month and had less depressive symptoms than those treated as usual. N = 34.
Giebenhain 1984	This is a small study (N = 6) whose subjects were not randomised and thus it is excluded from this review. This study is an evaluation of a parent-training manual for reducing children's fear of the dark. It was conducted on six children aged 3-11. Children were sleeping through the night with low levels of light within 2 weeks of starting treatment and this was maintained or improved upon over the following 12 months.
Griffiths 1996	The amount of therapist input was too high to be included in this review. This study evaluated cognitive-behavioural treatment for chronic headache in 10-12 year-old children. One group received their treatment in a clinic and a second group received it at home with the assistance of manuals. N = 51.
Hoover 2002	Investigators in this randomised controlled trial set out to prevent conduct problems amongst children of divorced parents, rather than treat them.
Kashima 1988	The amount of therapist input was too high to be included in this review. This study compared media-based versus live training for parents of learning disabled children. It found little difference between the two conditions except for the parents' knowledge of behavioural principles. N = 61.
Kratochwill 2003	This randomised trial was excluded because the dropout rates were too high (50% in control group alone) and because the amount of therapist time in the treatment conditions is unclear. This study compared a self-help manual, a self-administered videotape intervention, both combined with conjoint behavioural consultation versus a control condition. The results showed no significant differences between treatment conditions and control conditions on parent reports, teacher reports, or observations. This may have been because the study was underpowered. N=89.
McMurrin 1990	The randomisation was unsatisfactory and the information was given directly to the adolescents rather than their parents and thus it is excluded from this review. This study compared group therapy, a booklet and no treatment conditions in adolescent offenders with heavy drinking problems. The results show no significant differences in re-offence rates

Study	Reason for exclusion
	between the groups. However there was no prima-facie reason to assume that these people's offending and drinking were necessarily linked. N = 45
Morawska 2005	This randomised controlled trial was excluded because the inclusion criteria did not require the children to have a behaviour problem as measured by a standard assessment tool. This study compared a therapist-assisted self-administered behavioural intervention, a self-administered behavioural intervention, and a waitlist control group for reducing child behaviour problems. The results showed that the self-directed intervention yielded greater improvements than the control, and that the therapist-assisted intervention yielded even greater improvements still. The two intervention groups were assessed at 6-month follow up and there were no significant differences in outcomes between follow-up and posttreatment. N=126
Nixon 2003	The amount of therapist input was too high for the study to be included in this review. Standard parent-child interaction therapy was compared with a videotape/telephone/face-to-face abbreviated treatment vs no-treatment waitlist control for parents of behaviourally disturbed preschoolers. It found that abbreviated treatment may be of benefit. N = 54.
O'Dell 1979	This study was excluded because only parent outcomes were measured. Participants were randomised into 5 training groups to teach parents the 'Time-out' method of managing child behaviours with different media and therapist inputs. The film plus brief individual checkout condition followed by a film alone condition, was superior to all other conditions. Written manual and individual modelling and rehearsal were all significantly less effective than the film plus checkout and equally effective to one another. Total N = 61
Sanders 2000a	This RCT was excluded because the aim was to prevent problems in children who had not yet been diagnosed with behavioural problems
Scott 2001	This controlled trial with permuted block design (N= 141) with allocation by date of referral was excluded because the amount of therapist time with parents exceeded inclusion criteria for the review. Results were encouraging (16% improvement on antisocial behaviour measures reported) but long term followup not available.
Strayhorn 1989	This randomised controlled trial compared a group parent training intervention with a combined video and handout self-administered parent training programme. This trial was excluded because it was preventative in nature, and participants did not consistently present with behaviour problems on pretest measures. N=89 parents; 96 children
Strayhorn 1991	This paper reports the follow-up data from the Strayhorn 1989 study. This trial was excluded because the intervention was preventative and the children did not consistently present with behaviour problems at pretest. N=77 parents; 84 children
Taylor 1998a	The study was not included because of weaknesses in the randomisation process. This study (N=110) assesses Webster-Stratton's Parents and Children series (PACS) parenting groups compared with the more eclectic approaches generally on offer and with wait-listed controls. Results are in favour of the PACS programme.
Tremblay 1991	The mean number of sessions per family was 17, which was too high for inclusion in this review. This study is part of the Montreal Longitudinal Study of Disruptive Boys and contains elements of self help treatment and showed some positive effect of the treatments. N = 319.
WebsterStratton 1982	The high amount of therapist input excluded this study from this review. This is a study of 32 mothers and their 3-5 year-old children which used videotaped examples to model behaviours as the basis of a parent training programme. N = 35.
WebsterStratton 1984	The high amount of therapist input excluded this study from this review.

Study	Reason for exclusion
	This study compared individual therapy with groups using videotaped modelling. Results were similar for both conditions. N = 40.
WebsterStratton 1994	Both treatment conditions in this study had therapist inputs that were too high to be included in this review. This study compared basic group discussion which included videotape modelling with the addition of a broader based treatment component known as ADVANCE. Benefits were found to using the longer treatment. N = 85.

DATA AND ANALYSES

Comparison 1. ANY MEDIA TREATMENT V NO TREATMENT

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Composite Sleep Score	1	46	Mean Difference (IV, Fixed, 95% CI)	-3.2 [-4.51, -1.89]
2 ECBI Intensity- mothers only	5	285	Mean Difference (IV, Fixed, 95% CI)	-19.81 [-26.56, -13.06]
3 ECBI Intensity- fathers only	3	187	Mean Difference (IV, Random, 95% CI)	-13.56 [-24.02, -3.10]
4 Child Behaviour Check List (CBCL) - Total Problem score - mothers only	2	83	Mean Difference (IV, Fixed, 95% CI)	-5.21 [-13.77, 3.35]
5 CBCL - Total Problem score - fathers only	2	55	Mean Difference (IV, Fixed, 95% CI)	-8.33 [-16.91, 0.26]
6 ECBI Problem- mothers alone	3	124	Mean Difference (IV, Fixed, 95% CI)	-6.87 [-9.31, -4.43]
7 ECBI Problem- fathers only	1	39	Mean Difference (IV, Fixed, 95% CI)	-2.46 [-7.26, 2.34]
8 Prosocial	1	29	Mean Difference (IV, Fixed, 95% CI)	-1.55 [-3.75, 0.65]
9 Preschool Behaviour Questionnaire- teacher rated	1	54	Mean Difference (IV, Fixed, 95% CI)	-2.55 [-8.15, 3.05]
10 Sleep disruptions: minutes awake each night post-treatment	1	30	Mean Difference (IV, Fixed, 95% CI)	-32.6 [-49.93, -15.27]
11 Sleep disruptions: no. of wakings	1	30	Mean Difference (IV, Fixed, 95% CI)	-6.77 [-10.94, -2.60]
12 PDR (Parent daily report mean problem score)- mothers only	3	202	Mean Difference (IV, Fixed, 95% CI)	-2.83 [-4.03, -1.63]
13 PDR (Parent daily report - mean problem score)- fathers only	1	132	Mean Difference (IV, Fixed, 95% CI)	-0.12 [-1.65, 1.41]

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
14 PDR (Parent daily report mean targeted problem score) - mothers only	3	99	Mean Difference (IV, Fixed, 95% CI)	-1.35 [-2.37, -0.33]

Analysis 1.1. Comparison 1 ANY MEDIA TREATMENT V NO TREATMENT, Outcome 1 Composite Sleep Score.

Study or subgroup	Treatment		Control		Mean Difference Fixed, 95% CI	Weight	Mean Difference Fixed, 95% CI
	N	Mean(SD)	N	Mean(SD)			
Montgomery 2004	22	2.6 (2.8)	24	5.8 (1.5)		100%	-3.2 [-4.51, -1.89]
Total ***	22		24			100%	-3.2 [-4.51, -1.89]
Heterogeneity: Not applicable Test for overall effect: Z=4.8(P<0.0001)							
					-10 -5 0 5 10		
					Favours treatment	Favours control	

Analysis 1.2. Comparison 1 ANY MEDIA TREATMENT V NO TREATMENT, Outcome 2 ECBI Intensity- mothers only.

Study or subgroup	Treatment		Control		Mean Difference Fixed, 95% CI	Weight	Mean Difference Fixed, 95% CI
	N	Mean(SD)	N	Mean(SD)			
MarkieDadds 2005a	15	129.9 (35.1)	12	146.9 (15.5)		11.6%	-17.05 [-36.88, 2.78]
MarkieDadds 2005b	21	100.8 (29.9)	22	136.2 (31.6)		13.48%	-35.47 [-53.86, -17.08]
Sanders 2000b	61	120.7 (30.1)	71	136.8 (28.4)		45.24%	-16.14 [-26.18, -6.1]
WebsterStratton 1988	27	126.2 (23.2)	27	147.6 (37.2)		16.67%	-21.44 [-37.98, -4.9]
WebsterStratton 1990	17	123 (28.3)	12	139.7 (23)		13.01%	-16.73 [-35.45, 1.99]
Total ***	141		144			100%	-19.81 [-26.56, -13.06]
Heterogeneity: Tau ² =0; Chi ² =3.52, df=4(P=0.48); I ² =0% Test for overall effect: Z=5.75(P<0.0001)							
					-10 -5 0 5 10		
					Favours treatment	Favours control	

Analysis 1.3. Comparison 1 ANY MEDIA TREATMENT V NO TREATMENT, Outcome 3 ECBI Intensity- fathers only.

Study or subgroup	Treatment		Control		Mean Difference Random, 95% CI	Weight	Mean Difference Random, 95% CI
	N	Mean(SD)	N	Mean(SD)			
Sanders 2000b	61	120 (32.5)	71	127.3 (22.4)		41.22%	-7.34 [-17.02, 2.34]
WebsterStratton 1988	18	123.2 (23.8)	21	134 (19.6)		30.15%	-10.82 [-24.65, 3.01]
WebsterStratton 1990	9	115.9 (16.7)	7	141.3 (12.9)		28.63%	-25.4 [-39.9, 10.9]
Total ***	88		99			100%	-13.56 [-24.02, -3.1]
Heterogeneity: Tau ² =44.72; Chi ² =4.19, df=2(P=0.12); I ² =52.22% Test for overall effect: Z=2.54(P=0.01)							
					-10 -5 0 5 10		
					Favours treatment	Favours control	

Analysis 1.4. Comparison 1 ANY MEDIA TREATMENT V NO TREATMENT, Outcome 4 Child Behaviour Check List (CBCL) - Total Problem score - mothers only.

Analysis 1.5. Comparison 1 ANY MEDIA TREATMENT V NO TREATMENT, Outcome 5 CBCL - Total Problem score - fathers only.

Analysis 1.6. Comparison 1 ANY MEDIA TREATMENT V NO TREATMENT, Outcome 6 ECBI Problem- mothers alone.

Analysis 1.7. Comparison 1 ANY MEDIA TREATMENT V NO TREATMENT, Outcome 7 ECBI Problem- fathers only.

Analysis 1.8. Comparison 1 ANY MEDIA TREATMENT V NO TREATMENT, Outcome 8 Prosocial.

Analysis 1.9. Comparison 1 ANY MEDIA TREATMENT V NO TREATMENT, Outcome 9 Preschool Behaviour Questionnaire- teacher rated.

Analysis 1.10. Comparison 1 ANY MEDIA TREATMENT V NO TREATMENT, Outcome 10 Sleep disruptions: minutes awake each night post-treatment.

Analysis 1.11. Comparison 1 ANY MEDIA TREATMENT V NO TREATMENT, Outcome 11 Sleep disruptions: no. of wakings.

Analysis 1.12. Comparison 1 ANY MEDIA TREATMENT V NO TREATMENT, Outcome 12 PDR (Parent daily report mean problem score)- mothers only.

Analysis 1.13. Comparison 1 ANY MEDIA TREATMENT V NO TREATMENT, Outcome 13 PDR (Parent daily report - mean problem score)- fathers only.

Analysis 1.14. Comparison 1 ANY MEDIA TREATMENT V NO TREATMENT, Outcome 14 PDR (Parent daily report mean targeted problem score) - mothers only.

Comparison 2. WRITTEN INFORMATION + MEDICATION v MEDICATION ONLY

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 ECBI Intensity Parents as group	1	22	Mean Difference (IV, Fixed, 95% CI)	-39.55 [-75.01, -4.09]
2 Home Situations Questionnaire- Intensity	1	22	Mean Difference (IV, Fixed, 95% CI)	-25.74 [-47.84, -3.64]
3 ECBI- Problem (parents as a group)	1	22	Mean Difference (IV, Fixed, 95% CI)	-8.68 [-17.25, -0.11]
4 HSQ -- Problem	1	22	Mean Difference (IV, Fixed, 95% CI)	-2.71 [-5.86, 0.44]
5 Conners Parent Rating Scale-Hyperactivity Index	1	22	Mean Difference (IV, Fixed, 95% CI)	-4.87 [-11.01, 1.27]
6 Behavior Rating Profile-Teacher Rating Scale	1	22	Mean Difference (IV, Fixed, 95% CI)	-13.75 [-24.53, -2.97]

Analysis 2.1. Comparison 2 WRITTEN INFORMATION + MEDICATION v MEDICATION ONLY, Outcome 1 ECBI Intensity Parents as group.

Analysis 2.2. Comparison 2 WRITTEN INFORMATION + MEDICATION v MEDICATION ONLY, Outcome 2 Home Situations Questionnaire- Intensity.

Analysis 2.3. Comparison 2 WRITTEN INFORMATION + MEDICATION v MEDICATION ONLY, Outcome 3 ECBI- Problem (parents as a group).

Analysis 2.4. Comparison 2 WRITTEN INFORMATION + MEDICATION v MEDICATION ONLY, Outcome 4 HSQ -- Problem.

Analysis 2.5. Comparison 2 WRITTEN INFORMATION + MEDICATION v MEDICATION ONLY, Outcome 5 Conners Parent Rating Scale- Hyperactivity Index.

Analysis 2.6. Comparison 2 WRITTEN INFORMATION + MEDICATION v MEDICATION ONLY, Outcome 6 Behavior Rating Profile- Teacher Rating Scale.

APPENDICES

Appendix 1. CENTRAL search strategy

01 BIBLIOTHERAPY*:ME
02 BIBLIOTHERAP*
03 (BOOK* near THERAP*)
04 BOOKLET*
05 BOOK*
06 BOOK-BASED
07 LITERATURE*
08 LEAFLET*
09 MEDIA-BASED
10 MEDIA
11 AUDIOVISUAL-AIDS*:ME
12 VIDEO-TAPE*
13 VIDEOTAPE*
14 AUDIOTAPE*
15 AUDIO-TAPE*
16 VIDEO*
17 (VISUAL next AID*)
18 AUDIOVISUAL*
19 AUDIO-VISUAL*
20 (COMPUTER next PROGRAMME*)
21 (COMPUTER* near PROGRAM*)
22 (INSTRUCT* near MANUAL*)
23 (WRITTEN near INFORMATION)
24 (SELF-HELP near MANUAL*)
25 (SELF next DIRECT*)
26 COMPUTER-MEDIA*
27 ((((((((((#1 or #2) or #3) or #4) or #5) or #6) or #7) or #8) or #9) or #10) or #11)
28 ((((((((((((((#12 or #13) or #14) or #15) or #16) or #17) or #18) or #19) or #20) or #21) or #22) or #23) or #25) or #26)
29 (#27 or #28)
30 BEHAVIOR*:ME
31 BEHAVIOR*
32 BEHAVIOUR*
33 BEHAVIORAL-SYMPTOMS*:ME
34 IMPULSE-CONTROL-DISORDERS*:ME
35 VIOLENCE*:ME
36 CONDUCT-DISORDER*:ME
37 (ATTENTION near DEFICIT*)
38 CONDUCT
39 (DISRUPTIVE near DISORDER*)
40 CHILD-BEHAVIOR-DISORDERS*:ME

41 (ANGER or ANGRY)
 42 HYPERACTIV*
 43 VIOLEN*
 44 AGGRESSI*
 45 (((((((CHILD* or ADOLESCEN*) or YOUTH*) or TODDLER*) or PRESCHOOL*) or PRE-SCHOOL*) or BABY) or BABIES)
 46 CHILD*:ME
 47 ((((((((((((((#30 or #31) or #32) or #33) or #34) or #35) or #36) or #37) or #38) or #39) or #40) or #41) or #42) or #43) or #44)
 48 (#45 or #46)
 49 (#29 and #47)
 50 (#49 and #48)

WHAT'S NEW

Date	Event	Description
11 November 2008	Amended	Converted to new review format.

HISTORY

Protocol first published: Issue 2, 2000

Review first published: Issue 1, 2001

Date	Event	Description
14 November 2005	New search has been performed	Minor update.
26 September 2005	New citation required and conclusions have changed	Substantive amendment
18 August 2005	New citation required and conclusions have changed	Conclusions changed.
3 August 2005	Amended	New studies found and included or excluded

CONTRIBUTIONS OF AUTHORS

Paul Montgomery performed the original searches and developed the protocol for the original version of this review. Searches were double-checked by Leanne Roberts and Jane Dennis, and data entry was double-checked by Jane Dennis.

For the 2005 update, searches were performed by Jo Abbott, Trial Search Coordinator of the Cochrane Developmental, Psychosocial and Learning Problems Group, and double-checked by Gretchen Bjornstad and Jane Dennis. Paul Montgomery, Gretchen Bjornstad and Jane Dennis all entered data, undertook analysis and wrote up the text of the revised and updated review.

DECLARATIONS OF INTEREST

One author of this review is also a co-author of [Montgomery 2004](#) which is included within this review. Two authors (GB and PM) are currently running an RCT of media-based interventions for behaviour problems in children.

SOURCES OF SUPPORT

Internal sources

- University of Oxford Section of Child and Adolescent Psychiatry, UK.
- University of Bristol, UK.

External sources

- No sources of support supplied

NOTES

In late 2003 searches for this review were re-run. During the course of assessing these, a Cochrane review focussing specifically on educational interventions for enuresis was published (Glazener CMA, Evans JHC, Peto RE), and it was decided to exclude this condition from the scope of the present review, and two related trials were therefore removed. Two new trials were identified as suitable for inclusion. In addition, substantive methodological input from the Campbell Collaboration's Methods Group was received and changes were made in response.

Further searches were run in July 2005 and one study was identified as suitable for inclusion. Two additional unpublished papers were provided by their author and included. The review was substantively updated given the new data and change in the scope of the review.

INDEX TERMS

Medical Subject Headings (MeSH)

Audiovisual Aids; Bibliotherapy; Caregivers; Cognitive Behavioral Therapy [*methods]; Mental Disorders [*therapy]; Pamphlets; Patient Education as Topic [methods]; Randomized Controlled Trials as Topic

MeSH check words

Adolescent; Child; Child, Preschool; Humans