

**Long term outcome of a parenting group intervention; an investigation into  
the generalisation and maintenance of treatment effects post intervention**

**&**

**Research Portfolio**

**PART ONE**

**(Part two bound separately)**

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**Submitted in partial fulfilment of the requirements for the degree of Doctorate in  
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**Table of Contents**  
**Part 1 (this bound copy)**

|                  |  | <b>Page</b> |
|------------------|--|-------------|
| <b>Chapter 1</b> | <b>Small Scale Service Evaluation</b><br>An investigation of non-attendance behaviour in a clinical psychology department.   | 1 - 17      |
| <b>Chapter 2</b> | <b>Systematic Literature Review</b><br>Group based parenting programmes for improving psychosocial outcomes for mothers and their children: a review of the literature.                        | 18 - 59     |
| <b>Chapter 3</b> | <b>Proposal for Major Research Paper</b><br>Long term outcome of a parenting group intervention; investigation into the generalisation and maintenance of treatment effects post intervention. | 60 - 78     |
| <b>Chapter 4</b> | <b>Major Research Paper</b><br>Long term outcome of a parenting group intervention; investigation into the generalisation and maintenance of treatment effects post intervention.              | 79 - 131    |
| <b>Chapter 5</b> | <b>Abstract for Clinical Research Case Study</b><br>Cognitive behaviour therapy for panic disorder with nocturnal panic attacks during pregnancy: a clinical report.                           | 132 - 133   |

**Table of Contents (continued)****Part one (this bound copy)****Page****Chapter 6 Appendices**

|  |           |
|--|-----------|
| Section 1: Appendices for Small Scale Service Evaluation                 | 134 - 137 |
| Section 2: Appendices for Systematic Literature Review                   | 138 - 151 |
| Section 3: Appendices for Major Research Proposal                        | 152 - 193 |
| Section 4: Appendices for Major Research Paper                           | 194 - 196 |
| (Appendices for Clinical Research Case Study bound separately in Part 2) |           |

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**For my mother  
and my sister**

## **CHAPTER 1: SMALL SCALE SERVICE EVALUATION**

### **An investigation of non-attendance behaviour in a clinical psychology department**

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**Prepared in accordance with guidelines for contributors to Clinical Psychology**

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## Introduction

Long waiting lists for clinical psychology services are a national problem (DCP Survey, 1993). A number of studies reveal that around 20 per cent of clients referred to clinical psychologists do not attend their first appointment (Weighill et al., 1983; Crawford et al., 1987; Munro and Blakey, 1988). Waiting list initiatives continue to be a high priority in the majority of adult mental health psychology departments. Indeed non-attendance of hospital out-patient appointments cost the NHS an estimated £300 million annually (Committee of Public Accounts 42<sup>nd</sup> Report, 1995). A number of waiting list management strategies have been proposed within clinical psychology and the health services as a whole, such as opt-in systems requiring patients nearing the top of the waiting list to confirm that they still wish to have an appointment (White, 1992 and West and Wright, 1997), initial screening interviews (Shawe-Taylor et al., 1994), two-plus-one treatment sessions (Barkham and Shapiro, 1989) and the use of group treatments.

Some studies have taken a different stance looking primarily at the characteristics of non-attenders (Weighill et al., 1983; Crawford et al., 1987; Munro and Blakey, 1988). The majority of researchers in this area believe that non attenders exacerbate the waiting list problem (Keen et al., 1996; Madden and Hinks, 1987), with some exceptions (Crawford, 1988). The results from studies looking at the characteristics of non-attenders are inconsistent; some have demonstrated relationships between non-attendance and variables such as socio-economic status, age, gender and length of waiting time from referral to first appointment where others have not (e.g. Rosenberg et al., 1976; Carpenter et al., 1981; Gerhand and Blakey, 1994; and Goode et al., 1997). These inconsistencies in the research may be accounted for in several ways: firstly, some of the research has been carried out in

different settings and with different clients i.e. medical patients in hospital; secondly, those studies which have been carried out in clinical psychology departments may have involved a number of confounding variables including length of waiting time, number of psychologists, location of appointments and population variables; thirdly, possibly the most important difference is that different studies in this area have used different criteria to categorise non-attenders.

Despite the number of papers written addressing the issue of waiting lists and non-attendance behaviour, satisfactory conclusions are yet to be reached.

Dumfries clinical psychology department introduced an opt-in system in 1995, in an attempt to better manage the waiting list. However, like the majority of other clinical psychology departments, some non-attenders continue to be a source of 'wasted appointments'. This study divides clients into four groups:

- (1) Clients who did not opt-in to the service;
- (2) Clients who opted-in to treatment but did not attend;
- (3) Clients who attended one session and then discontinued treatment; and
- (4) Clients who received treatment (more than one session attended).

The purpose of this study is to see if these groups differ significantly from each other on specified demographic variables and referral details. It is hoped that, by dividing clients who do not attend into two groups and classifying clients who discontinue treatment separately, more sound conclusions may be reached. The results of the investigation will go towards informing future working practice.

## **Aim**

To investigate if two groups of non-attenders, a group that discontinued treatment and a group who received treatment differ significantly from each other on specific characteristics.

## **Objectives**

1. To investigate what proportion of total referrals make up the four groups.
2. To investigate the relationship between non-attendance behaviour and a person's demographic details (age, sex, area of residence and marital status).
3. To investigate the relationship between non-attendance behaviour and a person's referral details (time from referral to appointment, referring agency, and type of referral).

## **Method**

### **Subjects**

There were 733 referrals to the clinical psychology department during the period 1 March 1998 and 28 February 1999. Of the 733 referrals 425 were managed by qualified clinical psychologists and 308 were managed by non-clinical psychologists (counsellors, a cognitive therapist, a psychotherapist, an assistant psychologist and a trainee clinical psychologist). Client allocation is carried out by matching clients to a therapist who is thought to have the appropriate skills to treat them. The exclusion criteria were; (1) all cases coded on the data base as managed by therapists other than qualified clinical psychologists (including the group who did not opt-in); (2) Clients for whom relevant information (to the current study) was not available on the data base (i.e. demographic data, referral details). In total 414 exclusions were made making the final sample 319.

The 319 clients were allocated to one of four groups: (1) clients who did not opt-in to the service; (2) clients who opted-into treatment but did not attend; (3) clients who attended one session and then discontinued treatment; and (4) clients who received treatment (more than one session attended).

## Procedure

Data were extracted from the departmental database including demographic information (date of birth, gender, marital status and area of residence), referral details (date of referral, date first appointment offered, referrer and type of referral). Three age bands were created (18-33, 34-49 and 50-65) for the purpose of analysis. Data were analysed using SPSS Version 9.

## Results

| <b>Group</b>                           | <b>n</b> | <b>%</b> | <b>Male</b> | <b>Female</b> | <b>18-33</b> | <b>34-49</b> | <b>50-65</b> |
|--|----------|----------|-------------|---------------|--------------|--------------|--------------|
| <b>(1) Did not opt-in</b>              | 82       | 26%      | 41          | 41            | 43           | 27           | 11           |
| <b>(2) Opted-in but did not attend</b> | 37       | 12%      | 16          | 21            | 16           | 16           | 5            |
| <b>(3) Seen once</b>                   | 36       | 11%      | 17          | 19            | 15           | 11           | 10           |
| <b>(4) Received treatment</b>          | 164      | 51%      | 73          | 91            | 56           | 70           | 34           |
| <b>Total</b>                           | 319      | 100      | 147         | 172           | 130          | 124          | 60           |

*Table one shows descriptive data for groups 1-4 including: the number of clients in each group; the relative proportion that the four groups are of the total sample; sex; and age. (5 cases missing age).*

Descriptive data for the four groups in table one shows that there were a similar number of clients in the age bands 18-33 and 34-49 with approximately half the number in the 50-65 age band. Groups did not differ with respect to gender. Clients came from four areas of Dumfries and Galloway: Nithsdale (189), Wigtown (98), Stewartry (28) and Annan (4).

Marital status and type of referral were not reliably entered on to the database and so were not included in the analysis.

The differences between the groups in terms of demographic details and referral details were analysed using crosstabulation analysis (Chi-Square Test). Individual differences were then tested for statistical significance using a post-hoc test of difference. The confidence intervals are given for these.

There were no significant differences between the four groups on gender or area of residence. There was a relationship between age and attendance behaviour (table 2). Fifty-seven per cent of those aged 34 years and over received treatment compared with 43 per cent of those aged 18-33 (95% Confidence Interval (C.I.) 11.12, 2.88-25.12). Clients aged 18-33 were significantly less likely to opt-in to treatment than the 34-49 age group (95% C.I. 10.89, 0.11-21.89) and the 50-65 age group (95% C.I. 12.64, 2.36-27.64). A third of those aged 18-33 did not opt-in to treatment compared with just 18% of those aged 50-65. There was no significant age difference in the proportions of clients who opted-in but did not attend, or were seen once and then discontinued treatment.

| Group                                  | Age           |               |               |                          |
|--|---------------|---------------|---------------|--------------------------|
|  | 18-33         | 34-49         | 50-65         | All                      |
| <b>(1) Did not opt-in</b>              | 33% (p=<0.05) | 22% (p=<0.05) | 18% (p=<0.05) | 26%                      |
| <b>(2) Opted-in but did not attend</b> | 12%           | 13%           | 8%            | 12%                      |
| <b>(3) Seen once</b>                   | 12%           | 9%            | 17%           | 12%                      |
| <b>(4) Received treatment</b>          | 43% (p=<0.05) | 57% (p=<0.05) | 57% (p=<0.05) | 51%                      |
| <b>Total</b>                           | 130           | 124           | 60            | 314<br>(5 cases missing) |

Table two shows the relationship between age and attendance behaviour using a crosstabulation analysis (Chi-Square Test) and a post-hoc test of difference.

Although there was a trend for more clients who had waited one month or less to be in treatment (76%) as compared with more than one month (65%) this finding failed to reach significance (table 3).

| Group  | waiting time    |                |       |
|--|-----------------|----------------|-------|
|  | Up to one month | Over one month | Total |
| <b>(2) Opted-in but did not attend (3) Seen once</b> | 22 (24%)        | 49 (36%)       | 71    |
| <b>(4) Received treatment</b>                        | 71 (76%)        | 89 (65%)       | 160   |
| <b>Total</b>   | 93              | 138            | 231   |

Table three shows the relationship between waiting time and attendance behaviour (for those clients who received a first appointment) using a crosstabulation analysis (Chi-Square Test) and a post-hoc test of difference. Group (2) and group (3) were combined for analysis due to the small numbers. (6 cases missing).

Source of referral appeared to influence attendance behaviour (table 4). Clients referred by general practitioners were significantly less likely to opt-in to treatment than clients

referred by others (general medicine, Crichton Royal Hospital and unspecified) (95% C.I.

9.10, 8.90-27.10). Those clients referred by others were therefore significantly more likely

to be treated than those referred by general practitioners (95% C.I. 10.86, 11.14-32.86).

Percentage of clients referred by referral agencies were: general practitioner 60%, Crichton Royal Hospital 24 %, general medicine 4% and unspecified 11%.

| Group                                  | Referral Agent   |                  |                  |             |                         |     |
|--|------------------|------------------|------------------|-------------|-------------------------|-----|
|  | GP               | Other            | General Medicine | Unspecified | Crichton Royal Hospital | All |
| <b>(1) Did not opt-in</b>              | 33%<br>(P=<0.05) | 15%<br>(P=<0.05) | 4                | 5           | 11                      | 26% |
| <b>(2) Opted-in but did not attend</b> | 14%              | 9%               | 3                | 5           | 3                       | 12% |
| <b>(3) Seen once</b>                   | 11%              | 12%              | 1                | 9           | 5                       | 11% |
| <b>(4) Received treatment</b>          | 43%<br>(P=<0.05) | 65%<br>(P=<0.05) | 6                | 34          | 42                      | 51% |
| <b>Total</b>                           | 192              | 127              | 14               | 52          | 61                      | 319 |

*Table four shows the relationship between referral source and attendance behaviour using a crosstabulation analysis (Chi-Square Test) and a post-hoc test of difference. Due to the small numbers of referrals made by Crichton Royal Hospital, General Medicine and Unspecified, Other referrals represents a combination of these referrers. Percentages are given for GP and Other referrals and figures for the individual other groups. (See appendix 1.2 for the list of those referrers classified as unspecified).*

## Discussion

The percentage of clients not attending their first appointment after opting-in to the service (12%) is lower than that found in a number of other studies (Weighill et al., 1983; Crawford et al., 1987; Munro and Blakey, 1988). However these non-attendance figures must be seen in the context of an established opt-in system. In this context, a lower figure would be expected as a proportion of the potential non-attenders will already have been screened out; opt-in systems have been found to be a significant factor in the reduction of non-attendance rates (Green and Giblin, 1989). Given that 26% of clients did not opt-in for treatment, the 12% non-attendance figure of those who opted-in but did not attend can be seen as in line with previous research findings.

A relationship between age and those receiving treatment was found. A significantly higher proportion of the older age group were in treatment as compared with the younger age group. The younger client group were significantly less likely to opt-in to treatment and were less likely to attend. This is in line with a study by Carpenter et al. (1981) who found age to be the only demographic characteristic to significantly differentiate attenders from non-attenders in their sample. Frankel et al. (1989), whose study involved medical outpatients, found that non-attenders were significantly younger than attenders. However a number of studies have found no association between age and non-attendance (Weighill et al., 1983; McGlade et al., 1988; Gerhand and Blakey, 1994; and Goode et al., 1997).

A significant relationship was found between referral source and attendance behaviour with clients referred by general practitioners significantly less likely to opt-in to treatment



than those referred from other sources. Those clients referred by others, therefore, were significantly more likely to be treated than those referred by general practitioners.

A higher percentage of those clients who had waited a shorter period of time for an appointment were in treatment but this did not reach significance. Weighill et al. (1993) did not find a relationship between attendance and waiting time. Hicks and Hickman (1994) found that clients who had to wait only two weeks for their first appointment were significantly more likely to attend than those waiting between one and three months.

In this study gender, length of waiting time and area of residence were found to be unrelated to pattern of attendance behaviour. This is line with McGlade et al. (1988); Gerhand and Blakey (1994); and Goode et al. (1997) who found no associations between gender and attendance patterns and Weighill et al. (1983) who found no association between distance to clinic and attendance.

Although a number of studies have found a significant relationship between socio-economic status and non-attendance (Berrigan and Garfield, 1981; Weighill et al., 1983; and Trepka, 1986) it was not possible to analyse this variable in the present study.

Given that non-attenders represent a high cost to the NHS and have implications for clinical psychology departments it is important that this problem is addressed. Trepka (1986) argues that whilst some variables associated with non-attendance behaviour carry few practicable implications for reducing non-attendance rates i.e. socio-economic status and educational level, some variables are potentially modifiable i.e. aspects of the referral

process, appointment making and clinic organisation have been linked with patients' failure to keep appointments (Frankel and Hovell, 1978). The finding that younger adults were less likely to opt-in to treatment may have practical implications for the department. A smaller number of younger adults attending psychological services is likely to lead to a higher number of older adults with problems of psychological comorbidity and consequently poorer prognoses. If the department implemented a strategy to encourage younger adults to attend it may be possible to increase the preventative work carried out in the department, which would contribute to the reduction of psychological comorbidity and therefore improve prognoses.

The finding that clients referred by general practitioners are less likely to opt-in to treatment and therefore less likely to be in treatment may be accounted for in a number of ways. Trepka (1986) found that non-attenders tended to be referred by groups who were less familiar with the psychologist. Trepka hypothesised that these referrers either made less appropriate selection of would-be clients or gave these people a less clear idea of what to expect from a psychologist. One explanation for the finding that general practitioner's referrals are less likely to opt-in to the service could be their lack of familiarity with referral criteria as suggested by the research carried out by Trepka. However, this is only one possibility and a general practitioner's familiarity with referral criteria may not be a factor. Another possibility is that clients referred by general practitioner's, a primary care service, may differ in terms of the nature and severity of their problem compared to those referred by secondary and tertiary care services.

The objectives of this study were firstly to establish frequency with which clients attend and do not attend clinical psychology outpatient appointments. Secondly, to see if there were any systematic relationships between attendance behaviour and demographic details and referral. Although these objectives have been met there are weaknesses in the study. The exclusion of clients on the basis of incomplete information held on the database may have introduced a systematic bias to the sampling process. Those clients who did not opt-in or opted-in but did not attend may have been more likely to have incomplete information on the database. It should be borne in mind that a substantial proportion of the clinical psychology department is made up of non-clinical psychologists (counsellors, a cognitive therapist, a psychotherapist, an assistant psychologist and a trainee clinical psychologist), referrals made to the department may have been made with non-clinical psychologists in mind. This is important when considering the group who did not opt-in to the service. As mentioned in the introduction caution should be shown when comparing the results of other studies, some have been carried out in different settings (i.e. medical) introducing new variables. In addition, those studies carried out in clinical psychology departments often use different criteria for non-attenders.

## **Conclusions**

This study found rates of non-attendance and the likelihood of opting-in to treatment to be in line with other studies in this area. Significant factors in attendance behaviour were found to be age and referral agency. Young adults and clients referred by general practitioners were less likely to opt-in to treatment and less likely to be in treatment.

There have been a number of papers written addressing the issue of waiting lists and non-attendance behaviour and satisfactory conclusions have not been reached. Given the nature of research in this area and the results from this study it might be more realistic to work on the assumption that there will always be a proportion of clients who will not attend. A more effective measure to take might be to build mechanisms into the system to best manage non-attendance rather than working towards a one hundred percent attendance rate.

### **Recommendations**

- Steps should be taken to ensure that the quality of the data entered on to the department database is monitored.
- The department should consider targeting younger adults referred by general practitioners with regards to their non-attendance behaviour.

## References

- Barkham, M., and Shapiro, D. A. (1989). Towards resolving the problem of waiting lists: psychotherapy in two-plus-one settings. *Clinical Psychology Forum*, 23, 15-18.
- Berrigan, L. P., and Garfield, S. L. (1981) Relationship of missed appointments to premature termination and social class. *British Journal of Clinical Psychology*, 20, 239-42.
- Carpenter, P., Morrow, G., Del Gaudio, A., and Ritzler, B. (1981) Who Keeps the First Outpatient Appointment? *American Journal of Psychiatry*. 102-105.
- DCP (1993) Report on DCP survey of waiting lists in NHS clinical psychologists. *Clinical Psychology Forum*, 10, 15-18.
- Crawford, J., Blakey, R., and Gullion, F. (1987) The venue for clinical psychology appointments: a study of client preferences. *Clinical Psychology Forum*, 7, 6-10.
- Crawford, D. (1988) Waiting lists: the problem that should not exist. *Clinical Psychology Forum*, 17, 29-30.
- Committee of Public Accounts 42<sup>nd</sup> Report (1995) National health service outpatients services in England and Wales. London: Stationery Office.
- Frankel, B. S., and Hovell, M. f. (1978) Health service appointment-keeping: A behavioural view and critical review. *Behaviour Modification*, 2, 435-464.

Frankel, S., Farrow, A., and West, R. (1989) Non-attendance or non-invitation?: a case control study of failed outpatient appointments. *British Medical Journal*, 298, 1343-45.

Gerhand, S., and Blakey, R. (1994) An investigation into early discontinuation of clinical psychology contact by clients. *Clinical Psychology Forum*, 74, 26-30.

Goode, L (1997) Null contacts by clients referred by general practitioners and hospital consultants. *Clinical Psychology forum*, 99,32-35.

Green, B., and Giblin, M. (1988) screening out non-attenders. *Clinical Psychology forum*, 18, 12-14.

Hicks, C., and Hickman, G. (1994) The impact of waiting-list times on clients attendance for relationship counselling. *British Journal of guidance and Counselling*, 22, 169-86.

Keen, A., Blakey, R., and Peaker, A. (1996) The effects on non-attendance and early discontinuation of enclosing an information leaflet to prospective clients for clinical psychology. *Clinical Psychology Forum*, 96, 33-35.

Larsen, D., Atkissen, C. C., Hargreaves, W., and Nguyen, T. (1979) Assessment of client/patient satisfaction: Development of a general scale. *Evaluation and Programme Planning*, 2, 197-207.

Madden, S., and Hinks, M. (1987) Appointment-keeping with clinical psychologists.

*Clinical Psychology Forum, 10, 15-19.*

Marks, K. (1984) four patients' information, attitudes and expectations about psychological care, treatment and their relationship to attrition. *Unpublished MScThesis.*

McGlade, K. J., Bradley, T., Murphy, G. J. J., and Lundy, G. P. (1988) Referrals to hospital by general practitioners: a study of compliance and communication. *British Medical Journal, 297, 1246-48.*

Munro, J., and Blakey, R. (1988) A study of non-attendance in first appointments with clinical psychologists. *Clinical Psychology Forum, 17, 10-14.*

Rosenberg, C., and Raynes, A. (1976) Keeping patients in psychiatric treatment. Cambridge, Mass, Ballinger publishing Co.

Shawe-Taylor, M., Richards, J., Sage, N., and Young, E. (1994) Assessment appointments prior to being placed on the waiting list. *Clinical Psychology forum, 70, 23-25.*

Trepka, C. (1986) Attrition from an out-patient psychology clinic. *British Journal of Medical Psychology, 59, 181-6.*

Weighill, V., Hodge, J., and Peck, D. (1983) Keeping appointments with clinical psychologists. *Clinical Psychology Forum, 22, 143-144.*

West, D., and Wright, B. (1997) Improving attendance in out-patient clinics. *Irish Journal of Psychological Medicine, 14, 153.*

White, J. (1992) How to get round the waiting list? Using the local press and public lectures to publicize stress. *Clinical Psychology Forum, 42, 6-9.*



**CHAPTER 2: SYSTEMATIC LITERATURE REVIEW**

**Group Based Parenting Programmes for Improving Psychosocial Outcomes for**

**Mothers and their Children: A Review of the Literature**

**Elise N. Kearney**

**Prepared in accordance with requirements for submission to Journal of Child**

**Psychology and Psychiatry**

**(Appendix 2.1)**

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## **Abstract**

### **Objectives**

The aim of this review was to review the evidence base for the efficacy of group based parenting programmes for maternal psychosocial and child behaviour outcomes.

### **Search Strategy**

- (1) Electronic searching of bibliographic databases: EBM Reviews - Databases of Abstracts of Reviews of Effectiveness and Cochrane Database of Systematic Reviews, CINAHL, Embase, Lancet Archive, Premedline, Medline, PsychINFO and Wilson Social Science Abstracts.
- (2) Hand search recent relevant journals.
- (3) Citation lists of relevant studies and reviews were analysed.
- (4) The database for a local Parenting Programme Initiative was searched.

### **Results**

Articles were selected for review if they fulfilled criteria: mothers (any age but not exclusively teenage) and their children; group based parenting programmes; and structured programme with any theoretical framework. Parenting programmes meeting the following criteria were excluded from the review: individual based programmes; programmes aimed exclusively at both mothers and fathers, single fathers, adolescent parents, foster parents, single parents, children with learning disabilities, children with a diagnosis of Attention Deficit Hyperactivity Disorder, Conduct Disorder, Oppositional Defiant Disorder or Autistic Spectrum Disorder.

**Data collection & analysis**

One reviewer read and analysed the studies. Eight studies fulfilling inclusion criteria were allocated to quality categories. Data were extracted from these eight studies and entered into data extraction tables. Systematic synthesis of results using effect sizes was limited due to inadequate presentation of data or no use of a control group.

**Main results**

A summary of maternal and child outcomes yields positive results. All eight studies report maternal improvement on psychosocial factors and six report maintenance of treatment at follow-up. Child behaviour problems were reduced in six out of eight studies and this treatment effect was maintained in all of these studies that followed-up participants.

**Reviewer's conclusions**

This systematic review includes focussed inclusion and exclusion criteria (reflecting good external validity). Results can therefore be reliably generalised to the wider population of this target group. Further research is required to better understand the optimum ways of delivering parent group interventions.

**Keywords**

Parent Training Education/Programme, Mother, Anxiety, Depression, Outcome/Follow-up Studies.

## **Background**

Teaching parents to better manage their children is not a new concept, however, it has received increased attention in the past decade. Given that the research suggests that child behaviour problems are not only stable over time but often lead to problems in adolescence and adulthood (Mullin, Proudfoot and Glanville, 1990) early intervention measures are seen as increasingly important. The evidence base for parent training is varied, some research has shown that parent training can improve child management skills, increase prosocial behaviour and increase parental confidence and family relationships (Cunningham, 1995). It has been shown that the treatment effects of parent training can be maintained over short and long term follow-up (Cunningham, 1995). Conversely, research has shown that parent training interventions are not always effective and often the effects of treatment are not maintained over time (Ferber, Keeley and Shember, 1974; Johnson and Christensen, 1975). Marital discord and high levels of stress and social disadvantage have been identified as factors that may reduce the effectiveness of parent training outcome (Kazdin, 1987 cited by Mullin, et al., 1990). Spaccarelli, Cotler and Penman (1992) link parental pathology and low social support to poor outcome in parent training. Spaccarelli et al. (1992) suggest that poor outcome in parent training and poor maintenance of treatment gains may be linked to the inability of parent training to change cognitive and affective patterns underlying ineffective parenting behaviours.

Traditional parent training groups relied on behavioural interventions and few if any addressed parental pathology. Typically, parent training groups involved teaching parents behavioural management strategies to reduce problem behaviour in their children. Parent training is said to be 'founded on the assumption that dysfunctional child behaviour is inadvertently shaped and maintained through maladaptive patterns of family interaction'

(Patterson, 1975; 1986, cited in Mullin et al., 1990). More recently research has focussed on the family as a system and has included treatment components to target parental well being as well as child behaviour. However, as suggested above, the research presents an unclear picture with some research suggesting long lasting benefits and others suggesting little or no benefits. It is likely that this mixed picture is due to the multitude of interventions offered to parents subsumed under the umbrella term of parent training, the different groups targeted (children with behaviour problems and a wide range of developmental disorders), often together, and the variable methodological quality of this research.

In order to gain a clearer picture of the existing parent training literature, a systematic review was carried out. Specifically, the review asks the question: what impact do parent training groups have on psychosocial outcome for mothers and their children? Although researchers have previously carried out reviews of the effects of parent training (Barlow and Stewart-Brown, 2000, Barlow and Parsons, 2002, Barlow and Coren, 2002, Guterman, 1997, Rogers Wiese, 1992, Benasich, Brooks-Gunn and Clewell, 1992) these reviews have either focussed exclusively on child behaviour outcome, on maternal psychosocial outcome, have reviewed both group and individual treatment interventions with or without a mixed target population, or have included groups for two parents and their children. It is proposed that by carrying out a focused review more sound conclusions as to the effectiveness of parent training for maternal and child psychosocial outcome may be reached.

## **Objectives**

The aim of this review was to carry out a systematic review of the evidence base for the efficacy of group based parenting programmes for maternal and child psychosocial outcomes.

## **Criteria for considering studies for this review**

### Types of Participants

Mothers (any age but not exclusively teenage) and their children.

### Types of Intervention

Parenting programmes which meet the following criteria will be included in the review:

- Group based format.
- Programmes based on the use of a structured format.
- Any theoretical framework.

Parenting programmes which meet the following criteria will be excluded from the review:

- Individual based programmes.
- Programmes aimed exclusively at both mothers and fathers, single fathers, adolescent parents, foster parents, single parents, children with learning disabilities, children with a diagnosis of Attention Deficit Hyperactivity Disorder, Conduct Disorder, Oppositional Defiant Disorder or Autistic Spectrum Disorder.

Highest levels of evidence will be sought; in the absence of these all other study designs will be considered if they reported original data. Expert opinion articles or narrative reviews of the literature will be excluded. Studies published in all languages will be considered.

### Types of outcome measures

Studies which measure outcomes in:

#### 1. Maternal psychosocial health

- anxiety and/or depression

AND

#### 3. Infant health and development

- behavioural problems and/or cognitive development and/or mental health

To be included in the review studies must include at least one mother and child standardised outcome measurement instrument.

The inclusion and exclusion criteria were set in order to maintain the focus of the review.

As mentioned earlier, other reviews have been carried out previously but these reviews have lacked focus. There may be a number of reasons for their lack of focus including: (1) the inclusion of parent training programmes without structure, leading to the comparison of different interventions; (2) several reviews have included different target populations i.e. single fathers, couples, foster parents, teenage parents; (3) several reviews have included interventions with children with a range of developmental disabilities i.e. Autistic Spectrum Disorder, Attention Deficit Disorder, Conduct Disorder, Opposition Defiant Disorder and Learning Disabilities. It is proposed that the purpose of a systematic review is to inform the evidence base from which practice guidelines can be developed (Mulrow and Cook, 1998). In order to reliably inform the evidence base an appropriate methodology including focused inclusion and exclusion criteria is necessary in order to limit bias and random error.

### **Search strategy for identification of studies**

A number of sources were used to identify studies for possible inclusion in the review.

These included:

#### **1. Electronic Bibliographic Databases**

- Social science and general reference databases:

**PsychINFO.** (1887 to June Wk 4, 2002)

**CINAHL** (1982 to June Wk 4, 2002)

**Wilson Social Science Abstracts** (1984 to May 2002)

- Biomedical Science Databases

**Premedline and Medline** (1966 to Present)

**Embase** (1980 to 2002, Wk 25)

**EBM Reviews - Database of Abstracts of Reviews of Effectiveness** (2<sup>nd</sup> Quarter 2002)

**EBM Reviews – Cochrane Database of Systematic Reviews** (2<sup>nd</sup> Quarter 2002)

**Lancet Archive** (1993 – December 2000)

### **Search strategy for identification of studies**

The search terms used were modified to meet the requirements of individual databases as regards different fields. Preliminary searches indicated that narrowing the field using terms designed to find specific types of studies, for example randomised controlled trials, excluded potentially relevant studies. As a result a wide search strategy was used in order to ensure that relevant studies were not missed. The following terms were used: parent\$ education/train\$/program\$ (\$ representing any ending of the word) combined with mother, anxiety, depression, behavior (? representing optional spelling in order to retrieve American and English studies), IQ, outcome/follow-up studies.



## **2. Local Parenting Programme Initiative**

The database for a local Parenting Programme Initiative was searched in order to identify further relevant studies.

## **3. Hand Search**

One of the most relevant journals (Journal of Child and Adolescent Psychology and Psychiatry) was hand searched for entries in the past five years.

## **4. Citations**

Reference lists of articles identified through database searches were examined to identify further relevant studies.

## **Article selection**

Potential studies were identified from an inspection of the results of the search strategy. All studies were evaluated in order to determine if they met inclusion criteria for the systematic review. In total, 82 articles were retrieved. Those articles that did not fulfil criteria for inclusion in the review were excluded (appendix 2.2). Eight articles met criteria for inclusion in the review.

## **Methods of the review**

### Assessment of methodological quality

Quality criteria are based on Cochrane and SIGN guidelines (SIGN, 2001). Studies were graded according to their design as follows:

- Ia      Controlled studies with sufficient sample size, well-matched groups and well validated measurement instruments.
  
- Ib      Controlled studies with insufficient sample size but with well matched groups and well-validated measurement instruments.
  
- IIa     Controlled studies with sufficient sample size but poorly matched groups and/or less well-validated measurement instruments.
  
- IIb     Controlled studies with insufficient sample size, poorly matched groups and/or less well-validated measurement instruments.
  
- IIIa    Uncontrolled studies with sufficient sample size and well-validated measurement instruments.
  
- IIIb    Uncontrolled studies with sufficient sample size but less well-validated measurement instruments.
  
- IV      Uncontrolled studies with either insufficient small sample size and/or less well-validated measurement instruments.

**Data extraction**

Data were extracted from each article and entered into data extraction tables. Information was collected regarding treatment model, sample size, control group, randomisation procedure, outcome measures, end of treatment results, follow-up results, length of follow up, study quality, study limitations and effect sizes where applicable and entered into Data Extraction Table 1 (Appendix 2.3). Effect sizes where applicable are included in the text [d].

## INSERT TABLE 1

Length of programme, length of session, total number of treatment hours and qualification of therapist were entered into Data Extraction Table 2 (Appendix 2.4).

## INSERT TABLE 2

Quality of group matching, level of attrition, level of group attendance and sex of child were entered into Data Extraction Table 3 (Appendix 2.5)

## INSERT TABLE 3

## Results and Discussion

Table four presents the studies included in the review. The studies were of mixed quality.

| Study number | Study                    | Quality Rank |
|--------------|--------------------------|--------------|
| 1            | Brunk et al. (1987)      | IV           |
| 2            | Cunningham et al. (1995) | Ia           |
| 3            | Mullin et al. (1990)     | IIa          |
| 4            | Mullin et al (1994)      | IIIa         |
| 5            | Myers et al. (1992)      | Ia           |
| 6            | Spaccarelli et al (1992) | IIa          |
| 7            | Sutton (1992)            | IIb          |
| 8            | Whipple et al. (1996)    | IV           |

**Table 4: Study quality ranking**

One of the main themes in the papers was the need for a comprehensive programme addressing both maternal and child difficulties; this is discussed in relation to each paper. The treatment model and programme content are reported for each study. The results of each study are discussed in relation to post-programme outcome and long-term follow-up for mother and child.

### **The need for a comprehensive programme**

Six of the eight papers focussed on the need to address both child and parent factors in order to maximise the success of parent training programmes.

Cunningham et al. (1995) state that the families of disruptive children frequently consider relatives unhelpful and report fewer contacts with extended family members. They compensated for this in their parent training programme (PTP) by devoting time in each session to informal supportive interaction, opportunities to exchange information regarding local community resources and activities designed to increase personal networks.

Mullin et al. (1990) cite factors which may hinder parent and child success in a PTP as marital discord, high levels of stress and high levels of social disadvantage. They state that relatively few programmes incorporate a self-management skills training component in treatment which they see as a limitation of many PTPs and a possible explanation for poor treatment effects and lack of maintenance of treatment effects.

Mullin et al. (1994) in their paper evaluate the efficacy of a PTP which aims to demonstrate to parents that 'the fulfilment of their own personal and psychological needs has an important bearing on how they interact with their children'. They focus specifically on the effect of a PTP on mothers self-esteem and cite research indicating that self-esteem may be a critical variable in effective parenting (Culp, Culp, Soulis and Letts 1989; Klusa, Habbick and Abernathy, 1983).

Myers et al. (1992) recommend caution in considering positive PTP outcomes and highlight a number of factors which lead to dysfunctional parent-child relationships and their consequences. They cite evidence that factors such as parental personality characteristics, psychopathology, substance abuse, family socioeconomic status and chronic life stresses are 'powerful determinants of parent-child outcomes'. Myers et al.

(1992) state that it is because research consistently fails to address these issues that PTP yield modest results.

Spaccarelli et al. (1992) highlight the negative role that parental pathology plays in the outcome of PTP. They suggest that PTPs inability to address cognitive and affective patterns underlying ineffective parenting behaviours leads to their failure to give good outcomes. They cite evidence in favour of the use of supplementary interventions focussing on parental coping and well being (Griest et al., 1982; Sanders and Glynn, 1981; Wells, Griest and Forehand, 1980; and Egan, 1983). Although these studies have shown positive outcomes in relation to PTP, Spaccarelli et al. (1992) point to the methodological weaknesses inherent in these studies and the need for controlled well conducted research.

Whipple et al. (1996) cite evidence supporting the effectiveness of parent-focussed interventions with well-specified training components aimed at improving child-rearing competencies and stress management. They believe that programmes taking such an approach have not received adequate evaluation of outcome to date.

Interestingly, in one of the papers (Sutton, 1992) it was reported that mothers influenced session content by requesting that more emphasis be placed on their own needs. Parents sought to speak about aspects of their own experiences which they found distressing and which may have been effecting their reactions to their children.

### **Treatment model and programme content**

The majority of the studies under review used a behavioural model as the basis for intervention with an additional cognitive component.

Brunk et al. (1987) delivered a behaviourally based programme and included the use of contingent positive reinforcement, nonpunitive discipline techniques, the need for parental consistency, the negative effects of punitive methods of discipline and the importance of developing more positive parent-child interactions. Behaviour management programmes were formulated for each family and monitored in sessions. They compared parent training to multisystemic therapy. Multisystemic therapy consisted of individual sessions with parents designed to change interaction patterns between parents and their child. Participants in this study were drawn from a population of abusive and neglectful parents.

Cunningham et al. (1995) delivered a behaviourally based programme with problem solving skills training and included a more systemic approach. They compared group training to individual clinic training using the same treatment protocol. Programmes included problem solving skills, attending to and rewarding prosocial behaviour, transitional strategies, setting boundaries to facilitate compliance, ignoring minor disruptions and disengaging from coercive interactions, prompting children to plan in advance of difficult situations and time out. In addition they employed a 'coping modelling problem solving model' in which mothers formulated solutions by observing videotapes displaying typical child management problems, identifying parenting errors, discussing their consequences, devising alternative strategies and formulating supporting rationales. In terms of the systemic component they used problem solving skills to solve session difficulties, shared management responsibility and supportive communication.

Mullin et al. (1990) and Mullin et al. (1994) used a programme designed to teach basic behavioural modification principles with a range of self management skills (e.g. quick relaxation skills) relating to parents' personal psychological adjustment. Their programme

combined a range of instructional methods including direct instructions, role playing and group discussion.

Myers et al. (1992) developed their own cognitive-behavioural parenting skills-building programme for African-American parents entitled the 'Effective Black Parenting Program'. The programme integrated historical and contemporary sociocultural issues into the teaching of child management strategies and skills. The programme involved teaching a variety of behavioural child management skills through a sequenced training approach. In addition, they explored 'family rules' and taught parents a 'thinking parents approach' based on teaching parents to think before they act.

Spaccarelli et al. (1992) offered a behaviourally orientated group PTP with problem solving as a supplementary enhancement intervention. They compared the group parent training with problem solving skills training to group parent training with extra therapist-facilitated discussion. The behavioural component to the group included how to play with your child, the use of praise, how to set limits and how to use time out, other consequences and video tape modelling. The problem solving component to treatment was delivered in the second hour of treatment groups and included attitude and general orientation toward problem situations, problem definition, goal setting, generation of alternative solutions, decision making and outcome evaluation and exercises and reviews.

Sutton (1992) delivered a behaviourally based group PTP with a counselling aspect. Sessions focussed on children's behaviour disorders, however, when parents brought up issues that they found distressing a counselling role was adopted. Participants were all given one booklet a week (written by the author) based on the behavioural management of child problem behaviours. Sutton (1992) compared group parent training to a 'Home Visit



Method' and a 'Telephone Method' both using an equivalent treatment protocol to the group parent training but using a different method of treatment delivery.

Whipple et al. (1996) offered a number of PTPs and evaluated outcome in relation to how many groups parents had undertaken. They offered (1) 'Respite Care', purely child care, (2) 'Parents Place' and 'Helping Ourselves Parent Effectively' which were support groups for parents of children of all ages and included stress management, expressing emotions and positive discipline, (3) 'Parent Nurturing Programme' which was structured parent education and support (focus on 1-5 year olds) and included developmental expectations, positive discipline, empathy and roles, (4) 'Early Childhood Development' which was a structured parent and child programme for 4 year olds and included parent nurturing and programme model transition to school.

### **Treatment outcome**

Each of the eight studies report results in a different format. Some studies only report pre-programme to long-term follow-up results whereas others report pre-programme to post-programme and post-programme to long-term follow-up results. For this reason, post-programme and long-term follow-up results are reported together. To make each results section clearer a summary paragraph is given for each study. Overall post-programme and long-term follow-up results for mothers and children are summarised at the end of this section.

Brunk et al (1987) reported a significant pre-programme to post-programme effect for the Symptom Checklist-90 (SCL-90) and the Family Inventory of Life Events and Changes (FILE), indicating a decrease in global psychiatric symptomatology and overall stress for parents in both the parent training and multisystemic treatment groups. Parents who

received parent training reported a significant decrease in social system problems whereas parents who received multisystemic therapy did not. In contrast multisystemic therapists reported a greater decrease in family problems than did parent training therapists. Observational measures demonstrated that the multisystemic therapy was more effective than the parent training at restructuring parent-child relations. Multisystemic therapy facilitated positive change in those behaviour patterns that differentiate maltreating families from non-problem families. Families who received multisystemic therapy showed increased effectiveness in their attempts to control their child's behaviour. Children in the multisystemic treatment group showed less passive compliance and neglecting parents became more responsive to their children. Parent training was superior to multisystemic therapy in the reduction of social problems. Brunk et al. (1987) suggest that this finding may be due to parent training being conducted in a group format and therefore reducing social isolation and providing a temporary social network for mothers. No long-term follow-up was carried out.

In summary, Brunk et al. (1987) reported an overall significant reduction in global psychiatric symptomatology for both treatment group mothers. Parent training was superior to multisystemic therapy only in the reduction of social problems.

Cunningham et al. (1995) reported results of their three groups: community group; individual clinic group; and control group. The majority of their results were reported for pre-programme and long-term follow-up. Their results showed that community group were able to suggest a significantly greater number of solutions to child management problems than controls at six month follow-up [ $d=2.3$ ]. Between pre-programme and post-programme community groups were showing a trend towards greater improvements on

child behaviour problems at home. Between pre-programme and 6-month follow-up community groups reported a significantly greater improvement on behaviour problems at home (as measured by Home Situations Questionnaire) than did the individual clinic group [ $d=0.2$ ]. Between post-programme and 6-month follow-up community groups reported significantly greater additional gains than clinic individual groups. Both individual clinic groups and community groups reported a significant decline in child externalising and internalising problems (as measured by the Child behaviour Checklist) from pre-programme to post-programme and six-month follow-up. Observation measures showed a significant decrease for both individual clinic groups and community groups on negative child behaviour, and an increase in child compliance with parental requests from pre-programme to 6-month follow-up. Results showed an improvement in parental sense of competence between pre-programme and 6-month follow-up assessments with individual clinic groups showing a significantly greater improvement between pre-programme and post-programme but community groups showing greater improvement than clinic individual groups between post-programme and 6-month follow-up [ $d=0.1$ ]. Although depression scores improved with time, differences among groups were not significant.

In summary, at post-programme, community groups were showing a trend towards greater improvements on child behaviour problems at home. At 6-month follow-up community groups were able to suggest a significantly greater number of solutions to child management problems than controls, reported a significant improvement on behaviour problems at home and reported significantly greater additional gains than clinic individual groups on child behaviour at home. Observational measures showed that both the community group and the individual clinic group showed significant reductions on negative child behaviour and an increase in child compliance with parental requests from

pre-programme to 6-month follow-up. The clinic individual group showed a significantly greater improvement of parental sense of competence at post-programme but the community group showed greatest improvement between post-programme and long-term follow-up on this measure.

Mullin et al.'s (1990) uncontrolled study showed a significant reduction in the Eyberg Child Behaviour Inventory for Problem Intensity and Problem Identification scores and General Health Questionnaire for their treatment group from pre-programme to 1-year follow-up. They found no significant differences between post-programme measures and 1-year follow-up measures.

Mullin et al. (1994) report that their control group had some advantage for all measures over the experimental group at pre-programme. In particular, the control group had a statistically significant lower score on the Problem Identification subscale of the Eyberg Child Behaviour Inventory. Although the experimental group showed gains for the Eyberg Child Behaviour Inventory (ECBI), General Health Questionnaire (GHQ-30), Texas Social Behaviour Inventory (TSBI) and the Rosenberg Self-Esteem Inventory (RSEI) the only significantly different scores, compared to the control group, post-programme were for the RSEI and the Problem Identification subscale of the ECBI. They hypothesise that the initial advantage of the control group combined with their slight improvement over time may have masked the benefits which the experimental group derived from the course. However, the treatment group showed significant gains on all measures from pre-course to post-course. At 1-year follow-up they found no significant differences between post-programme and long-term follow-up scores for the treatment group. They report a

maintenance of treatment gains evidenced by the stability of all outcome measures except one (GHQ-30) at long-term follow-up.

In summary, Mullin et al.'s (1994) treatment group showed a significant improvement in the RSEI compared to the control group. The treatment group showed treatment gains on all measures from pre-programme to post-programme. Treatment gains were maintained for all measures.

Myers et al. (1992) report results from cohort I and II experimental and control groups. Cohort I Treatment parents reported pre-programme to post-programme decreases in mean undifferentiated rejection [ $d=0.3$ ] whereas control parents showed a mean increase (as measured by the Parental Acceptance-Rejection Questionnaire for Mothers, PARQ). Treatment parents reported no change in warmth as measured by PARQ whereas control parents showed a mean pre-programme to post-programme increase in warmth. They believe that this result should be interpreted with caution as it may have been inflated by social desirability. Cohort II treatment parents results on the PARQ were in line with cohort I [ $d=0.2$ ]. Cohort I treatment parents showed significantly improved relationships with their children and family members [ $d=0.3$ ] than control parents (as measured by the Retrospective Family Relationships Questionnaire, RETRO). No changes in family relationships were seen for cohort II. Although there were no significant changes on parenting practice (as measured by the Parenting Practices Inventory, PPI) for cohort I, cohort II reported a significant increase in their use of praise [ $d=0.4$ ] whereas control parents reported a decrease in this practice. Similarly, cohort II treatment parents showed a significant decrease in their use of spanking [ $d=0.3$ ] whereas control parents showed no change on this measure. Cohort I parents of treatment boys reported a significant

reduction in withdrawn behaviours [ $d=0.3$ ] and hyperactive behaviours [ $d=0.3$ ] (as measured by the Child Behaviour Checklist, CBCL) whereas control parents reported an increase in these factors for their sons. Cohort II parents of treatment boys reported a significant reduction in delinquent behaviour [ $d=0.4$ ] (CBCL), whereas parents of control boys showed a slight increase in this measure. Cohort I parents of girls in the treatment group showed a reduction on sexual problem behaviours [ $d=0.01$ ] (CBCL), however as reflected in the effect size this reduction was not significant, the control group showed an increase on this scale. Cohort II parents of treatment girls reported a decrease in delinquent behaviour [ $d=0.4$ ] (CBCL) but parents of control girls reported an increase in delinquent behaviour. Cohort II parents of treatment boys and girls reported a significant increase in social competency [ $d=0.2$ ] (CBCL).

Myers et al. (1992) conducted a 1-year follow-up for cohort I treatment group. They found no significant changes in PARQ although there was a trend for reductions in undifferentiated rejection subscale from post-programme to long-term follow-up. They found a significant regressive change on parenting practices (PPI) with treatment parents increasing their use of hostile aggressive parenting practices at 1-year follow-up. They found no significant changes in total behaviour problems or in social competency (CBCL) in either the treatment boys or girls. They found a significant reduction in uncommunicative behaviours [ $d=0.3$ ] (CBCL) for treatment boys which was not obtained at post-programme. Treatment parents also reported increases in delinquent behaviour (CBCL) for girls at 1-year follow-up.

In summary, cohort I and II treatment groups showed positive changes on the PARQ, compared to controls, which were maintained at 1-year follow-up. Cohort I, but not cohort

II, showed a significant improvement on RETRO compared to controls. Cohort I and II treatment groups showed significant improvements on PPI compared to control groups. Cohort I and II showed significant improvement on different subscales of the CBCL compared to controls. At one year follow-up there were no significant changes on total behaviour problems or social competence for cohort I treatment group.

Spaccarelli et al. (1992) reported the results of three groups: parent training with problem solving; parent training with extra discussion; and waiting list control group. Group comparisons showed that parenting skills (as measured by the Parenting Situation Test, PST) were significantly improved for both treatment groups as compared to control group with no significant differences between the two treatment groups. They reported similar results for parents' self-report of punitiveness (as measured by the Parent Behaviour Inventory, PBI) where both treatment groups reported a greater reduction than in the control group with no significant differences between treatments. Both treatment groups reported reductions on the Parent Identified Problem score compared to controls (as measured by the Eyberg Child Behaviour Inventory, ECBI), with no significant differences between the two treatments. The problem solving group, but not the extra discussion group, achieved greater reductions on the Problem Intensity scores (as measured by the ECBI). Parents in the problem solving group, but not the extra discussion group, made significant improvement in their view of the problem child when compared to controls. They found the same pattern in relation to parental attitudes to the parenting role (as measured by the Parenting Stress Index – Parent Domain, PSI); only parents in the problems solving group experienced significant improvements in self confidence relative to controls. Spaccarelli et al. (1992) found no significant differences between parent training with problem solving and parent training with extra discussion at 4 - 6 month

follow-up. Treatment gains, for both intervention groups, on the PST and all measures of child behaviour were maintained at follow-up; gains on the PSI were not maintained.

In summary, both treatment groups showed a significant improvement on PST, PBI and EBCI compared to the control group from pre-programme to post-programme. The parent training group with problem solving, but not extra discussion, showed greater reductions on the Problem Intensity score of the EBCI and significant improvements on PSI relative to the control group. Treatment gains the EBCI were maintained for both treatment groups at 4-6 month follow-up. There were no significant differences between the two treatment groups at 4-6 month follow-up.

Sutton (1992) reported results from four groups: parent training group method; parent training home visit method; parent training telephone method; and waiting list control. Sutton (1992) found significant differences on all measures (Child Behaviour Questionnaire, CBQ, The Home Situations Questionnaire [d=0.3], HSQ, Personal Stress Score Sheet [d=0.5], PSSS and Observational measures [negative behaviour, positive behaviour and total goal compliance d=0.6, 0.8 and 1.6], OM) from pre-programme to post-programme for the experimental groups as compared to controls. Sutton (1992) found no significant differences between the three active intervention groups. At twelve to eighteen month follow-up, Sutton (1992) found no significant differences between the three active intervention groups. There was a 'falling away' of results between post-programme and follow-up with the telephone method showing the most 'falling away'.

Whipple et al.'s (1996) uncontrolled study reports on pre-programme to follow-up scores. They found a significant reduction on parental stress on the Negative Life-Change Score



but no change on the Positive Life-Change Score or Total Score (as measured by The Life Experiences Survey, LES) from pre-programme to three-month follow-up. They reported a significant reduction in depression (as measured by the Beck Depression Inventory) from pre-programme to three-month follow-up. No other significant changes were reported.

### **Maternal psychosocial outcome**

Parent training led to significant positive maternal gains in all eight of the studies.

Maternal gains included: significantly reduced psychiatric symptomatology; reduced social problems; a significantly increased ability to generate solutions to child management problems; significantly increased positive interaction between mother and child; significantly increased parental sense of competence; and a significant improvement in relationships within the family.

Of the seven papers that followed-up participants, six reported a maintenance of maternal psychosocial treatment gains.

### **Child behaviour outcome**

Parent training led to significant positive child gains in six of the eight studies. Child gains were measured in terms of behaviour problems. Five of the six papers reporting positive child behaviour outcomes followed up participants. All five papers showed a maintenance of child behaviour gains.

### **Comparison of treatment studies**

Any comparison of the eight treatment studies must be made with caution. As can be seen from Data Extraction Tables 3 and 4, parent training programmes differed on a number of

factors including: length of programme; length of treatment sessions; number of hours of treatment; qualification of therapist; level of attrition; level of group attendance; and ratio of girls to boys in groups. In addition, as can be seen in Data Extraction Table 2, each study differs on a number of methodological factors including: use of control group; randomisation procedure; and length of programme follow-up.

### **Treatment effect size**

Effect sizes were calculated for the three studies in which data were adequately reported and had a control group.

### **Conclusion**

The aim of this paper was to carry out a focussed systematic review in order that more sound conclusions as to the effectiveness of parent training for maternal and child psychosocial outcome may be reached.

In order to achieve this aim eight papers fulfilling criteria for inclusion in the review were evaluated and compared. A summary of maternal and child outcomes yields positive results. All eight studies report maternal improvement on psychosocial factors and six report maintenance of treatment at follow-up. Child behaviour problems were reduced in six out of eight studies and this treatment effect was maintained in all of these studies that followed-up participants.

### **Implications for practice**

The results from this review suggest that parenting programmes can be effective in improving a range of psychosocial outcomes in mothers and child behaviour outcomes in children. The programmes described in this review delivered a broad range of programmes. However, a common theme is a behaviourally based programme with additional cognitive components. A further common theme is the programmes aim to address both maternal and child outcome.

The majority of programmes carried out a long-term follow-up, albeit at differing time points. Given the research evidence, a larger number than expected in the current review reported maintenance of treatment gains at long-term follow-up (6 of the 7 papers which followed-up mothers reported maintenance of maternal mental health gains and 5 out of the 5 papers following-up children showed maintenance of improved child behaviour). It is possible that these effects are due to programmes addressing both maternal and child difficulties and being open to the issues raised by mothers during the programmes. This is further evidenced by the low attrition rates for programmes. This may reflect the fact that programmes were addressing the issues which mothers felt were important.

As proposed earlier in the review, the purpose of a systematic review is to inform the evidence base from which practice guidelines can be developed. The current systematic review includes focussed inclusion and exclusion criteria (reflecting good external validity) and so can be reliably generalised to the wider population of mothers with mental health problems and children with behaviour problems targeted in the review.

### **Implications for research**

Despite common themes across the parent training programmes, each programme was delivered differently (i.e. length of programme; length of treatment sessions; number of hours of treatment; qualification of therapist; level of attrition; level of group attendance; and ratio of girls to boys in groups). If the important factor in a parenting training programme is to address relevant issues for mothers and children together, further research is required to better understand the optimum ways of delivering this intervention.

Currently there are not enough studies adopting this approach with rigorous methodology to reliably compare methodological differences in delivery of treatment programmes.

The current review addresses one sub-group of parents seeking help with mental health problems, child behaviour problems and parenting skills. In order to meet the complex needs of other groups (i.e. teenage mothers, foster mothers, single fathers, children with developmental disorders and mothers and children with learning disabilities) focussed systematic reviews of the current evidence base are required. It is not a valid or useful approach to address these individual groups as one group.

## References

Adams, J.F. (2001) Impact of Parent Training on Family Functioning. *Child and Family Behavior Therapy*, 23, 1, 29 – 42.

Assemany, A. and McIntosh, D.E. (2002) Negative Treatment Outcomes of Behavioural Parent Training Programs. *Psychology in the Schools*, 39, 2, 209 – 219.

Atkeson, B.M. and Forehand, R. (1978) Parental Behavioral Training for Problem Children: An Examination of Studies Using Multiple Outcome Measures. *Journal of Abnormal Child Psychology*, 6, 4, 449 – 460.

Barber, J.G. (1992) Evaluating Parent Education Groups: Effects on Sense of Competence and Social Isolation. *Research on Social Work Practice*, 2, 1, 28 – 35.

Barkley, R.A.; Shelton, T.L.; Crosswait, C.; Moorehouse, M.; Fletcher, K.; Barrett, S.; Jenkins, L. and Metevia, L. (2000) Multi-Method Psycho-educational Intervention for Preschool Children with Disruptive Behavior: Preliminary Results at Post Treatment. *Journal of Child Psychology and Psychiatry*, 41, 3, 319 – 332.

Barlow, J. and Coren, E. (2002) Parent Training Programmes for Improving Maternal Psychosocial Health, Review. *The Cochrane Database of Systematic Reviews*, 2, 1 – 81.

Barlow, J. and Parsons, J. (2002) Group-based parent-training programmes for improving emotional and behavioural adjustment in 0 – 3 year old children. *The Cochrane Database of Systematic Reviews*, 2, 1 – 41.

Barlow, J. and Stewart-Brown, S (2000) Behavior Problems and Group-Based Parent Education Programs. *Developmental and Behavioral Pediatrics*, 21, 5, 356-370.

Baum, C.G and Forehand, R. (1981) Long Term Follow-Up Assessment of Parent Training by Use of Multiple Outcome Measures. *Behavior Therapy*, 12, 643-652.

Beausoleil, R.; Gervais, L.; Gilbert, F. and Valinquette, L. (1984) L'évaluation d'un programme de formation parentale. *Revue de Modification du Comportement*, 14 (3), 123-130.

Benasich, A.A., Brooks-Gunn, J. and Clewell, B.C. (1992) How Do Mothers Benefit From Early Intervention Programs? *Journal of Applied Developmental Psychology*, 13, 311-362.

Brenner, V.; Nicholson, B.C. and Fox, R.A. (1999) Evaluation of a Community-Based Parenting Program with the Parents of Young Children. *Early Child Development and Care*, 148, 1 – 9.

Brunk, M.; Henggeler, S.W. and Whelan, J.P. (1987) Comparison of Multisystemic Therapy and Parent Training in the Brief Treatment of Child Abuse and Neglect. *Journal of Consulting and Clinical Psychology*, 55, 2, 171 – 178.

Bruno, J. and Dribbon, M. (1998) Outcomes in ACC: Evaluating the Effectiveness of Parent Training Program. *AAC Augmentative and Alternative Communication*, 14, 59 – 70.

- Budd, K.S.; Riner, L.S. and Brockman, P. (1983) A Structured Observation System to Clinical Evaluation of Parent Training. *Behavioral Assessment*, 5, 373 – 393.
- Cedar, B. and Levant, R.F. (1990) A Meta-Analysis of The Effects of Parenting Effectiveness Training. *The American Journal of Family Therapy*, 18, 4, 373 – 384.
- Clarke, A.M. and Clarke, A.D.B. (1989) The Later Cognitive Effects of Early Intervention. *Intelligence*, 13, 289 – 297.
- Connolly, L.; Sharry, J. and Fitzpatrick, C. (2001) Evaluation of a Group Treatment Programme for Parents of Children with *Behavioural Disorders*. *Child Psychology and Psychiatry Review*, 6, 4, 159 – 165.
- Culp, R.E., Culp, A.M., Soulis, J. and Letts, D. (1989) Self-esteem and depression in abusive and neglecting and maltreating mothers, *Infant Mental Health Journal*, 10, pp. 243 –251.
- Cunningham, C.E., Bremner, R. and Boyle, M. (1995) Large Group Community-Based Parenting Programmes for Families of Preschoolers at Risk for Disruptive Behaviour Disorders: Utilization, Cost Effectiveness, and Outcome. *Journal of Child Psychology and Psychiatry*, 36, 7, 1141-1159.
- Daly, R.M.; Holland, C.J. and Forrest, P.A. (1985) Temporal Generalization of Treatment Effects Over a Three-Year Period for a Parent Training Program: Directive Parental Counselling (DPC). *Canadian Journal of Behavior Science*, 17, 4, 379 – 388.

Day, C. and Davis, H. (1999) Community Child Mental-Health Services: A Framework for the Development of Parenting Initiatives. *Clinical Child Psychology and Psychiatry*, 4, 4, 475 – 482.

Dembo, M.H.; Sweitzer, M. and Lauritzen, P. (1985) An Evaluation of Group Parent Education: Behavioral, PET, and Adlerian Programs. *Review of Educational Research*, 55, 2, 155 – 200.

Dumas, J.E. (1984) Interactional Correlates of Treatment Outcome in Behavioral Parent Training. *Journal of Consulting & Clinical Psychology*, 52, 6, 946-954.

Dumas, J.E. and Albin, J.B. (1986) Parent Training Outcome: Does Active Parental Involvement Matter? *Behavior Research Therapy*, 24, 2, 227-230.

Draper, T.W.; Larsen, J.M. and Rowles, R. (1997) Developmentally Appropriate Parent Training for Families with Young Children. *Early childhood Research Quarterly*, 12, 487 –504.

Ferber, H.; Keeley, S.M. and Shemberg, K.M. (1974) Training Parents in Behavior Modification: Outcome and Problems Encountered in a Program After Patterson's Work. *Behavior Therapy*, 5, 415 – 419.

Forehand, R.; Furey, W.M. and McMahon (1984) The Role of Maternal Distress in a Parent Training Programme to Modify Child No-Compliance. *Behavioural Psychotherapy*, 12, 93 – 108.



- Forehand, R., Middlebrook, J., Rogers, T. and Steffe, M. (1983) Dropping Out of Parent Training. *Behavior Research Therapy*, 21, 6, 663-668.
- Forehand, R.; Rogers, T.; McMahon, R.J.; Wells, K.C. and Griest, D.L. (1981) Teaching Parents to Modify Child Behavior Problems: An Examination of Some Follow-Up Data. *Journal of Pediatric Psychology*, 6, (3), 313 – 322.
- Forehand, R.; Sturgis, E.T.; McMahon, R.J.; Aguar, D.; Green, K.; Wells, K.C. and Breiner, J. (1979) Parent Behavioral Training to Modify Child Noncompliance. *Behavior Modification*, 3, (1), 3 – 25.
- Fox, R.A.; Fox, T.A. and Anderson, R.C. (1991) Measuring the Effectiveness of the Star Parenting Program with Parents of Young Children. *Psychological Reports*, 68, 35-40.
- Griest, D.L.; Forehand, R.; Rogers, T.; Breiner, J.; Furey, W. and Williams, C.A. (1982) Effects of Parent Enhancement Therapy on the Treatment Outcome and Generalization of a Parent Training Program. *Behaviour Research and Therapy*, 20, 429 – 436.
- Gross, D., Fogg, L. and Tucker, S. (1995) The Efficacy of Parent Training for Promoting Positive Parent - Toddler Relationships. *Research in Nursing & Health*, 18, 489-499.
- Guterman, N.B. (1997) Early Prevention of Physical Child Abuse and Neglect: Existing Evidence and Future Directions. *Child Maltreatment*, 2,1,12 – 23.

Holden, G.W.; Lavigne, V.V. and Cameron, A.M. (1990) Probing the Continuum of Effectiveness in Parent Training: Characteristics of Parents and Preschoolers. *Journal of Clinical Child Psychology, 19, 1, 2 – 8.*

Hornby, G. (1992) Group Parent Training Using Reflective Counselling and Behavioural Procedures. *The British Journal of Mental Subnormality, 2, 75, 79 – 86.*

Hutchings, J. (1996) Evaluating a Behaviourally Based Parent Training Group: Outcomes for Parents, Children and Health Visitors. *Behavioural and Cognitive Psychotherapy, 24, 171 – 183.*

Johnson, S.M. and Christensen, A. (1975) Multiple Criteria Follow-Up of Behavior Modification with Families. *Journal of Abnormal Child Psychology, 3, 2, 135 – 154.*

Karoly, P. and Rosenthal, M. (1977) Training Parents in Behavior Modification: Effects on Perceptions of Family Interaction and Deviant Child Behavior. *Behavior Therapy, 8, 406 –410.*

Kanigsberg, J.S. and Levant, R.F. (1988) Parental Attitudes and Children's Self –Concept and Behavior Following Parents' Participation in Parent Training Groups. *Journal of Community Psychology, 16, 152-160.*

Klein, P.S. and Alony, S. (1993) Immediate and Sustained Effects of Maternal Mediating Behaviors on Young Children. *Journal of Early Intervention, 17, 2, 177-193.*

Klusa, Y., Habbick, B.F. and Abernathy, T.J. (1983) Diabetes in children: family responses and control, *Psychosomatics*, 24, pp. 367 – 372.

Knapp, P.A. and Deluty, R.H. (1989) Relative Effectiveness of Two Behavioral Parent Training Programs. *Journal of Clinical Child Psychology*, 18 (4), 314 – 322.

Krebs, L.L. (1986) Current Research on Theoretically Based Parenting Programs. *Individual Psychology: Journal of Adlerian Theory, Research and Practice*, 42, 3, 375 – 387.

Lambermon, M.W.E. and van Ijzendoorn, M.H. (1989) Influencing Mother-Infant Interaction Through Videotaped or Written Instruction: Evaluation of a Parent Education Program. *Early Childhood Research Quarterly*, 4, 449 458.

Long, P.; Forehand, R.; Wierson, M. and Morgan, A. (1994) Does Parent Training with Young Noncompliant Children Have Long-Term Effects? *Behavior Research and Therapy*, 32, 1, 101 – 107.

Mansager, E. and Volk, R. (1995) The Application of Early Recollections in Intense Psycho-Educational Parenting Sessions. *Individual Psychology*, 51, 4, 375 – 385.

Mira, M (1970) Results of a Behavior Modification Training Program for Parents and Teachers. *Behavior Research and Therapy*, 8, 309 – 311.

Morgan, J.R.; Nu'Man-Sheppard, J. and Allin, W. (1990) Prevention through Parent Training: Three Preventive Parent Education Programs. *Journal of Primary Prevention*, 10, 4, 321 – 332.

Mullin, E.; Proudfoot, R. and Glanville, B. (1990) Group Parent Training in the Eastern Health Board: Programme Description and Evaluation. *The Irish Journal of Psychology*, 11, 4, 342 – 353.

Mullin, E.; Quigley, K. and Glanville, B. (1994) A Controlled Evaluation of the Impact of a Parent Training Programme on Child Behaviour and Mothers' General Well-Being. *Counselling Psychology Quarterly*, 7, 2, 167-179.

Mulrow, C. and Cook, D. (1998) Systematic Reviews: synthesis of best evidence for health care decisions. *ACP, Philadelphia*.

Myers, F.H.; Alvy, K.T.; Arrington, A.; Richardson, M.A.; Marigna, M.; Huff, R.; Main, M. and Newcomb, M.D. (1992) The Impact of a Parent Training Program on Inner-City African-American Families. *Journal of Community Psychology*, Vol. 20, 132- 147.

Nicholson, B.C.; Brenner, V. and Fox, R.A. (1999) A Community-Based Parenting Program with Low-Income Mothers of Young Children. *Families in Society: The Journal of contemporary Human Services*, 247 – 253.

Nicholson, B.C.; Janz, P.C. and Fox, R.A. (1998) Evaluating a Brief Parental Educational Program for Parents of Young Children. *Psychological Reports*, 82, 1107-1113.

O'Dell, S.; Flynn, J. and Benlolo, L. (1977) A Comparison of Parent Training Techniques in Child Behavior Modification. *Journal of Behavior Therapy and Experimental Psychiatry*, 8, 261 – 268.

O'Dell, S.L.; Mahoney, N.D.; Horton, W.G. and Turner, P.E. (1979) Media-Assisted Parent Training: Alternative Models. *Behavior Therapy*, 10, 103 – 110.

Olivares, J.; Rosa, A.I. and Garcia-Lopez, L.J. (1997) El Papel del Video en el Entrenamiento a Madres: Un Estudio Comparativo (Video paper on the Training of Mothers: A Comparative Study). *Psicologia Conductual*, 5, 2, 237 – 254.

Patterson, G.R.; Chamberlain, P. and Reid, J.B. (1982) A Comparative Evaluation of a Parent-Training Program. *Behavior Therapy*, 13, 638 – 650.

Peed, S.; Roberts, M; and Forehand, R. (1977) Evaluation of the Effectiveness of a Standardized Parent Training Program in Altering the Interaction of Mothers and Their Noncompliant Children. *Behavior Modification*, 1, 3, 323 – 350.

Peters, C.L.; Platz, D.L. and Fox, R.A. (1989) Use of the Adjective Generation Technique to Measure Effects of Training Parents. *Psychological Reports*, 65, 1216 – 1218.

Pevsner, R. (1982) Group Parent Training Versus Individual Family Therapy: An Outcome Study. *Journal of Behavior Therapy and Experimental Psychiatry*, 13, 2, 119 – 122.

Pisterman, S.; Firestone, P.; McGrath, P.; Goodman, J.T.; Webster, I.; Mallory, R. and Goffin, B. (1992) The Effects of Parent Training on Parenting Stress and Sense of Competence. *Canadian Journal of Behavioural Science*, 24, 1, 41 – 58.

Puckering, C.; Rogers, J.; Mills, M.; Cox, A.D. and Mattsson Graff, M. (1994) Process and Evaluation of a Group Intervention for Mothers with Parenting Difficulties. *Child Abuse Review*, 3, 299 – 310.

Ratzlaff, H.C.; Friesen, J.D.; Neufeld, G. and Paddock, G.M. (1989) Impact of the Creative Parenting Program. *Canadian Journal of Counselling*, 23, 2, 166 – 173.

Rieckhof, A.; Steinbach, I. and Tausch, A.M. (1977) Mutter-Kind-Interaktion in Hauslichen Situationen Vor Und Nach Einem Personenzentrierten Erzieher-Kurs (Mother-Child Interaction at Home Before and After a Personcentred Educational Course). *Psychol. in Erz. u. Unterr.*, 24, 220 – 230.

Rinn, R.C.; Vernon, J.C. and Wise, M.J. (1975) Training Parents of Behaviorally-Disordered Children in Groups: A three Years' Program Evaluation. *Behavior Therapy*, 6, 378 – 387.

Rogers Wiese, M.R. (1992) A Critical Review of Parent Training Research. *Psychology in the Schools*, 29, 229 – 236.

Sanders, M. (1999) The Triple P-Positive Parenting Program: Towards an Empirically Validated Multi-Level Parenting and Family Support Strategy for the Prevention and Treatment of Child Behavior and Emotional Problems. *Clinical Child and Family Psychology Review*, 2, 2, 71 – 90.

Scott, S. (1998) Intensive Interventions to Improve Parenting. *Archives of Disease in Childhood*, 79, 90 – 93.

Scott, S.; Spender, Q.; Doolan, M.; Jacobs, B. and Aspland, H. (2001) Multicentre controlled trial of parenting groups for childhood antisocial behaviour in clinical practice. *British Medical Journal*, 323, 194 – 197.

Serketich, W.J. and Dumas, J.E. (1996) The Effectiveness of Behavioral Parent Training to Modify Antisocial Behavior in Children: A Meta-Analysis. *Behavior Therapy*, 27, 171-186.

Sharry, J.J. (1999) Building solutions in Groupwork with Parents. *Groupwork*, 11, 2, 68 – 89.

Sharry, J.J. (1999) Toward Solution Groupwork: Brief Solution-Focused Ideas in Group Parent Training. *Journal of Systemic Therapies*, 18, 2, 77 – 91.

SIGN (2001) Scottish Intercollegiate Guidelines Network (SIGN) 50: A guideline developers' handbook. Section 5: Systematic Literature Review.

- Spaccarelli, S.; Cotler, S.; and Penman, D. (1992) Problem-Solving Skills Training as a Supplement to Behavioral Parent Training. *Cognitive Therapy and Research*, 16,1, 1-18.
- Spoth, R.; Redmond, C.; Haggerty, K. and Ward, T. (1995) A Controlled Parenting Skills Outcome Study Examining Individual Differences and Attendance Effects. *Journal of Marriage and the Family*, 57, 449 – 464.
- Stahmer, A.C. and Gist, K. (2001) The Effects of an Accelerated Parent Education Program on Technique Mastery and Child Outcome. *Journal of Positive Behavior Interventions*, 3, 2, 75 – 82.
- Strayhorn, J.M. and Weidman, C.S. (1991) Follow –up One Year after Parent-Child Interaction Training: Effects on Behavior of Preschool Children. *Journal of American Academy of Child and Adolescent Psychiatry*, 30:1, 138 – 143.
- Sutton, C. (1992) Training parents to manage difficult children: A comparison of methods. *Behavioural Psychotherapy*, 20, 115-139.
- Taylor, T.K., Schmidt, F., Pepler, D. and Hodgins, C. (1998) A Comparison of Eclectic Treatment with Webster-Stratton’s Parents and Children Series in a Children’s Mental Health Center: A Randomized Control Trial. *Behavior Therapy*, 29, 221-240.
- Tucker, S.; Gross, D.; Fogg, L.; Delaney, K. and Lapporte, R. (1998) The Long-Term Efficacy of a Behavioral Parent Training Intervention for Families with 2-Year Olds. *Research in Nursing and Health*, 21, 199-210.



Thompson, R.W.; Grow, C.R.; Ruma, P.R.; Daly, D.L. and Burke, R.V. (1993) Evaluation of a Practical Parenting Program with Middle and Low Income Families. *Family Relations*, 42, 21-25.

Thompson, R.W., Ruma, R.P., Schuchmann, M.S. and Burke, R.V. (1996) A Cost-Effectiveness Evaluation of Parent Training. *Journal of Child and Family Studies*, 5, 4, 415-429.

Walter, H.I. and Gilmore, S.K. (1973) Placebo Versus Social Learning Effects in Parent Training Procedures Designed to Alter the Behavior of Aggressive Boys. *Behavior Therapy*, 4, 361 – 377.

Wahler, R.G. and Meginnis, K.L. (1997) Strengthening Child Compliance Through Positive Parenting Practices: What Works? *Journal of Clinical Child Psychology*, 26, 4, 433 – 440.

Webster-Stratton, C. (1998) Preventing Conduct Problems in Head Start Children: Strengthening Parenting Competencies. *Journal of Consulting and Clinical Psychology*, 66, 5, 715 – 730.

Whipple, E.E. and Wilson, S.R. (1996) Evaluation of a Parent Education and Support Program for Families at Risk of Physical Child Abuse. *Families in Society: The Journal of Contemporary Human Services*, 227 – 239.

Wiltz, N.A. and Patterson, G.R. (1974) An Evaluation of Parent Training Procedures Designed to Alter Inappropriate Aggressive Behavior of Boys. *Behavior Therapy*, 5, 215 – 221.

Wolfe, D.A. and Edwards, B. (1988) Early Intervention for Parents at Risk of Child Abuse and Neglect: A Preliminary Investigation. *Journal of Consulting and Clinical Psychology*, 56, 1, 40 – 70.

Wright, L.; Stroud, R. and Keenan, M. (1993) Indirect Treatment of Children Via Parent Training: A Burgeoning Form of Secondary Prevention. *Applied and Preventative Psychology*, 2, 191 – 200.

## **CHAPTER 3: PROPOSAL FOR MAJOR RESEARCH PAPER**

**Long term out-come of a parenting group intervention; an investigation into the generalisation and maintenance of treatment effects post intervention.**

**Elise N. Kearney**

**Prepared in accordance with guidelines for application for a mini-project grant in**

**Health Service Research SOHHD – Chief Scientist Office**

**(Appendix 3.1)**

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## Summary

The current study is a long term follow-up of mothers and their children who took part in a parenting group intervention. The initial study: 'Improving the Quality of Family Support: An Intensive Parenting Programme: Mellow Parenting' by Puckering, Mills, Cox, Maddox, Evans and Rogers (final report to The Department of Health) found significant improvements, post intervention, in the treatment group compared to the comparison group in: mothers mental state; child behaviour problems; child development; and parent-child interactions. The current study will compare forty-seven mothers and their children who took part in the parenting intervention group, twenty-eight comparison mothers and a maximum of seventy-five siblings (comparison group plus intervention group). The study will assess: to what extent mothers and children have maintained treatment effects; the mediating factors that are involved in the maintenance/loss of treatment effects; and if treatment effects generalise to siblings. These factors will be measured using a semi-structured interview, standardised measures and National Test Scores. The sample population cover an area of Central Scotland including: Falkirk; Alloa; Boness; Kelty; and Maddiston. Ethical approval will be sought.

## **Introduction**

Parenting has received increased attention in the past two decades, specifically, the effect that 'good' and 'poor' parenting can have on children. Poor parenting has been linked with a variety of problems including anti-social behaviour, interpersonal incompetence and poor academic performance (Strand and Wahler, 1996). Loeber and Dishion (1983) found parenting variables to be the most powerful predictor of general delinquency. Findings such as these have acted as a catalyst to a number of early intervention initiatives. A large number of these are parenting programmes aimed at changing the nature of a child's environment both to prevent negative outcomes, such as those outlined above, in high risk populations and to bring about positive change where difficulties already exist. There is an ever increasing number of papers being written about parenting programmes and a number of terms are used to refer to this work; parent training and parent management training are just two which are used interchangeably. Research evaluating the efficacy of parenting programmes (e.g. Rotto and Kratochwill, 1994; Lusyshyn, Joseph, Albin and Nixon, 1997; Wahler and Menginnis, 1997) and community-based effectiveness (e.g. Cunningham, Bremner, and Boyle, 1995; Connell, Sanders and Markie-Dadds, 1997) give positive short-term results on outcome measures such as child behaviour, child development and maternal mental health. There is a well documented relationship between poverty, sub-optimal cognitive development and academic failure (Seitz, 1990). Campbell et al. (1994) cite evidence (Lazar et al. 1982; Royce et al. 1983) concerning the efficacy of early intervention programmes showing that treated children had significantly fewer placements into special education and a 12.3 percent increase in high school completion. There is consensus that early intervention for children is beneficial in terms of school progress and can lead to an elevation in IQ. However, many studies show that initially higher IQs 'fade out' over time with limited evidence of long-term gain (Webster-Stratton, 1996, Long,

Forehand, Wierson and Morgan, 1994). The role which IQ changes play in producing later life outcomes is not yet clear and Campbell et al. (1994) point to a need to understand more about its long term benefits and the maintenance of its effects. There is some evidence for generalisation of child behavioural improvements across settings (Sanders and Plant, 1989; Sanders and James, 1983) and impact on children in the family who have not been targets for change (Webster-Stratton, 1982a; 1990b; Webster-Stratton, Kolpacoff and Hollinsworth, 1988). However, the methodological design of many of the studies has been questioned; in a review of 148 parent training studies fifty percent of the group work research did not use comparison groups or follow up data (Rogers and Margaret, 1992a). In a review of 117 studies Serketich and Dumas (1996) found that only 26 met the criteria for inclusion in a meta-analysis. Therefore significant evidence exists for short-term gains but it is less clear whether these changes are maintained over time. Eyberg, Edwards, Boggs and Foote (1998) believe that to “understand and improve maintenance of change following Parent Management Training, long-term follow up research with families is clearly necessary”. In particular, they highlight what they believe to be a significant gap in the research; an evaluation of “the family characteristics and the within treatment variables that affect maintenance”.

The current study is a long-term follow-up of mothers and children who took part in a parenting intervention programme ‘Mellow Parenting’. Puckering et al. (final report to The Department of Health) developed and evaluated the Mellow Parenting programme:

‘Improving the Quality of Family Support: An Intensive Parenting Programme: Mellow Parenting’. Mellow Parenting is a group intervention for parents and their children involving direct work with mothers and their child in a group setting which is run over a fourteen week period. It is focused on families with pre-school children where the children

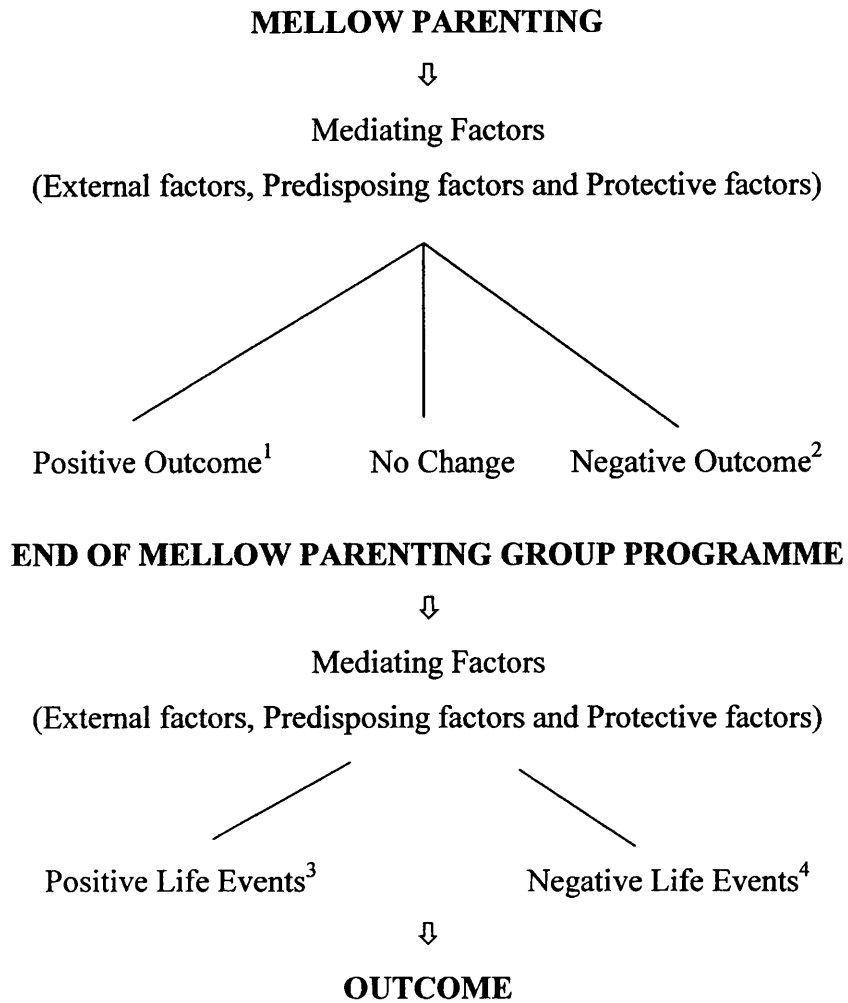
are either on the child protection register or the extent and nature of associated risk factors of child development give significant concerns that child protection might become an issue, as judged by referrers. In their evaluation, Puckering et al. (final report to The Department of Health) compared measures of child behaviour, child development and maternal mental health at baseline, end of programme and one year follow up compared to a comparison group who received the services of their local family centre and other community and mental health services. Significant improvements were evident in the treatment group as compared to the comparison group in: mothers mental state; child behaviour problems; child development; and parent-child interactions. These improvements were maintained at one year follow-up. A small scale pilot study and a single case study have been published confirming the effectiveness of Mellow Parenting (Puckering et al. 1994; Puckering et al. 1996). The current study will follow up these mothers and children, firstly, to assess if treatment gains have been maintained; secondly, to assess the factors underlying the maintenance/loss of change i.e. positive/negative life events, external factors, predisposing factors and protective factors (this will be based on a 'maintenance model' specifying the psychological mechanisms involved in the maintenance of treatment gains); and thirdly, the current study will assess whether treatment gains have generalised to siblings.

The 'maintenance model' is based, firstly, on the results of Puckering et al. (final report to The Department of Health) initial study and secondly on psychological theory underpinning 'Learned Helplessness' (Seligman, 1975) and the research and theory regarding the interaction between maternal mood and the quality of mother-child interaction (i.e. Caplan et al. 1989 and Hipwell et al. 1996). The 'Maintenance Model' outlines three extreme outcomes for mothers following Mellow Parenting intervention:

firstly, a positive outcome; that following Mellow Parenting intervention mothers have an increased sense of control/mastery of parenting, a decrease in 'learned helplessness', an increase in self-esteem and self-efficacy, an increase in positive interaction with their child and an increase in mood and motivation; secondly, that mothers do not change; and thirdly, a negative outcome; that mothers experience a decrease in sense of control/mastery of parenting, an increase in 'learned helplessness', a decrease in self-esteem and self-efficacy, a decrease in positive interaction with their child and a decrease in mood and motivation. It is proposed that the extent to which treatment effects are maintained will be associated with positive and negative life experiences and mediating factors. Mediating factors include: (1) external factors such as socio-economic status, (2) predisposing factors such as mothers own early experience of parenting, and (3) protective factors such as good current relationship. The model will be tested by assessing the extent to which treatment effects have been maintained and the association with life experiences and mediating factors.



## Maintenance Model



<sup>1</sup> Characterised by an increase in sense of control/mastery, a reduction in 'learned helplessness', an increase in self-esteem, self-efficacy, an increase in positive interaction with child, an increase in mood and motivation.

<sup>2</sup> Characterised by a reduction in sense of control/mastery, an increase in 'learned helplessness', a reduction in self-esteem and an increase in negative interaction with child, a decrease in mood and motivation.

<sup>3</sup> Leading to a maintenance of self-esteem/self-efficacy, increased mood and positive interaction with child.

<sup>4</sup> Leading to a reduction in self-esteem/self-efficacy and mood and an increase in negative interaction with child.

## **Research Questions**

- (1) Do mothers and children who have taken part in a 'Mellow Parenting' intervention programme maintain the treatment effects (reduction in maternal mental health problems, reduction in child emotional/behavioural problems, increase in child Verbal Scale IQ/Full-Scale IQ) at long term (over one year) follow up?
  
- (2) Are mothers and children who have taken part in 'Mellow Parenting' intervention group 'doing better' (as measured by standardised measures) than the comparison group?
  
- (3) Do siblings of children who were involved in a 'Mellow Parenting' intervention group differ from siblings of children who were in the comparison group (as measured by National Test Scores and Rutter Teachers B Scale)?
  
- (4) Which factors are associated with the maintenance/loss of treatment effects, as measured quantitatively (regression analysis) and qualitatively (reports by mothers)?

## **Plan of Investigation**

### ***Participants***

Inclusion criteria are: mothers and children previously involved in a parenting intervention group in Scotland; mothers and children who acted as comparison subjects; and a younger sibling of intervention and comparison children. Forty-seven mothers and children completed the 'Mellow Parenting' intervention and twenty-eight mothers and children acted as comparison cases. Anticipated numbers are therefore approximately forty-seven treatment mothers and children, twenty-eight comparison mothers and children and a

maximum of seventy-five siblings. Although as a follow-up study the present study has a fixed maximum sample size it was though important to estimate the sample size required to demonstrate a significant between group difference. This sample size is based on the calculation of statistical power using data from Puckering et al. (final report to The Department of Health) initial study. The calculation was completed by submitting the most relevant data from the study to a UCLA website Power calculator ([Http://ebook.stat.ucla.edu/calculators/powercalc/](http://ebook.stat.ucla.edu/calculators/powercalc/)).

This indicated that an estimated sample size of thirty comparison participants and forty-three treatment participants would be necessary to demonstrate a significant between group difference where  $p < 0.05$  at 0.7 power.

### *Measures (Appendix 3.4 – 3.7)*

(1) A semi-structured interview based on the interview developed by (Quinton et al., 1976 and Quinton and Rutter, 1985) and used by Puckering et al. (final report to The Department of Health) in the initial study. This semi-structured interview will include four open ended questions asking the mothers their own view of what factors were associated with the maintenance of treatment effects (1) Did you find the group helpful? (2) In what way did you find it helpful? (3) Have these things continued to be helpful? (4) If yes, how? and If no, how?

(2) Strengths and Difficulties Questionnaire (Goodman, R 1997; Goodman R, Meltzer, Hand Bailey, V 1998).

This scale is a modification of the widely used instruments to screen for emotional and behavioural problems in children and adolescents - the Rutter A + B scales for parents and

teachers. The wording was re-framed to focus on a child's emotional and behavioural strengths as well as difficulties. The scale is for 4-16 year olds and there is a parents and teachers version. The scale has good concurrent validity and predictive validity (Elander and Rutter, 1996). Total difficulties scores range from 0 – 40 with a clinical cut-off at 17 (parent) and 16 (teachers). British normative data was collected in a national survey of child and adolescent mental health by National Statistics (Melzer, Gatward, Goodman and Ford (2000).

(3) Recent Life Events (Brugha, T; Bebbington P; Tennant, C; and Hurry, J 1985).

This scale was taken from Brugha et al. (1985). Events were identified through the semi-structured interview described by Brown and Harris (1978) and by Bebbington, Tennant, and Hurry (1981b). It focuses on recent life events (i.e. those occurring in the last 12 months) but can be used for a longer time-scale. Cox and Bentovim (2000) included an additional nine items and piloted the scale for inclusion in *The Framework for the Assessment of Children in Need and their Families: The Family Pack of Questionnaires and Scales*. Mothers were asked to complete a RLE (1) for the past 12 months and (2) since last involvement in the parenting project. The scale gives a score of total number of life events.

(4) Adult Well-being Scale (Snaith, R.P; Constantopoulos, A.A; Jardine, M.Y; and McGuffin, P, 1978).

This scale was developed by Snaith et al. (1978) as the Irritability, Depression and Anxiety Scale (IDAS). It is a self-report scale. It has good concurrent validity. The scale was reformatted, named and piloted by Cox and Bentovim (2000) for inclusion in *The Framework for the Assessment of Children in Need and their Families: The Family Pack of*

Questionnaires and Scales. The scale gives scores for depression (0 – 14, clinical cut-off of 8), anxiety (0 – 14, clinical cut off of 9), outward irritability (0 – 12, clinical cut-off of 8) and inward irritability (0 – 12, clinical cut off of 8). There is no total score for this scale.

(5) Wechsler Intelligence Scale for Children-III (Wechsler, D, 1991)

The Wechsler Intelligence Scale for Children is an intelligence test for children aged six years to sixteen years.

(6) Wechsler Pre-school and Primary Scale of Intelligence-R (Wechsler, D, 1989).

The Wechsler Pre-school and Primary Scale of Intelligence-R is an intelligence test for children aged three years through seven years.

(7) National Test Scores (5-14 years)

All children have National Test Scores between the ages of five years and fourteen years. National Test Scores of siblings and index children in the treatment group and comparison group will be compared.

(8) Rutter Teachers' B Scales for School Age Children (Rutter 1967; Rutter et al 1970)

This provides a quantitative measure of overall emotional/behavioural difficulties.

***Design and Procedure***

The design is a between subjects design, intervention versus comparison group. Mothers will be contacted by an established contact person from the initial 'Mellow Parenting' group (Appendix 3.2), if they agree to take part in the research, contact for the purpose of

the current study will be made. Consent will be sought from families (Appendix 3.3). In cases where the mothers no longer live at the address held on file contact will be initiated through the family centre. Each family will be asked to take part in one interview lasting approximately three hours. A semi-structured interview detailed above will be carried out with all mothers along side the other standardised measures detailed above and will include four open ended questions. Data from these questions will be recorded by taking detailed notes. Each child will be administered either the WISC-III or the WPPSI-R dependent on age. The interviews will be carried out by a Research Assistant and Trainee Clinical Psychologist. Where appropriate the mother and child will be interviewed concurrently. Mothers and children will be offered breaks through out the interview. This process will be the same for both the intervention group and the comparison group. With the consent of families National Test Scores and Rutter Teachers' B Scale will be requested for index children and siblings.

### ***Settings and Equipment***

Interviews will take place in mothers own homes. The sample population cover an area of Central Scotland including: Falkirk; Alloa; Boness; Kelty; and Maddiston. Research meetings will be held at Royal Hospital for Sick Children Yorkhill NHS Trust. Resources will include travel expenses and photocopy costs.

### ***Data Analysis***

Data collected will be stored on a data base in accordance with the Data Protection Act regulations. Multiple regression and Chi-Square analysis will be used to analyse data

using and up-to-date version of the Statistical Package for Social Scientists. Qualitative data will be analysed manually.

### *Practical Applications*

The current study will add to knowledge, giving a better understanding of the role that mediating factors play in the maintenance of treatment effects in relation to a parenting group intervention and the extent to which these effects generalise. This information has important implications for maintenance of the effect of treatment and so has scope to improve treatment outcome for this client group. In addition, there is a paucity of well conducted research into the treatment of parenting difficulties. This study will contribute to the knowledge that will aid the planning of services in the future.

### *Time scales*

|                 |                           |
|-----------------|---------------------------|
| Data Collection | November 2001- April 2002 |
| Data Analysis   | May 2002 - June 2002      |
| Report Writing  | July 2002 - August 2002   |

### *Ethical Approval*

Ethical approval has been given by Greater Glasgow Primary Care NHS Trust Ethics Committee on the basis that ethical approval is sought from the areas in which the data collection will take place (Forth Valley and Fife).

## References

- Brugha, T., Bebington, P., Tennant, C. and Hurry, J. (1985). The list of threatening experiences: A subset of 12 life events categories with considerable long-term contextual threat. *Psychological Medicine*, 15: 189 - 194.
- Campbell, F.A., Ramey, C.T. (1994). Effects of Early Intervention on Intellectual and Academic Achievement: A Follow-up Study of Children from Low-Income Families. *Child Development*, 65, 684 – 698.
- Caplan, H.L., Coghill, S.R., Alexandra, H., Mordecai Robson, K., Katz, R. and Kumar, R. (1989). Maternal Depression and the Emotional Development of the Child. *British Journal of Psychiatry*, 154, 818 - 822.
- Connell, S., Sanders, M.R. and Markie-Dadds, C. (1997). Self-directed behavioral family intervention for parents of oppositional children in rural and remote areas. *Behavior Modification*, 21, 379 - 408.
- Cox, A. and Bentovim A. (2000). Framework for the Assessment of Children in Need and their Families: The Family Pack of Questionnaires and Scales (Department of Health). London, The Stationery Office.
- Cunningham, C.E., Bremner, R. and Boyle M. (1995). Large group community-based parenting programs for families of pre-schoolers at risk of disruptive behavior disorders: Utilization, cost effectiveness, and outcome. *Journal of Child and Psychology and Psychiatry and Allied Disciplines*, 36, 1114 - 1159.



- Eyberg, M., Edwards, D., Boggs, S.R. and Foote, R. (1998). Maintaining the Treatment Effects of Parent Training: The Role of Booster Sessions and Other Maintenance Strategies. *Clinical Psychology: Science and Practice*, 5 (4), 544 - 555.
- Goodman, R. (1997). the Strengths and Difficulties Questionnaire: A research note. *Journal of Child Psychology and Psychiatry*. 38: 581 -586.
- Goodman, R., Meltzer, H. and Bailey, V. (1998). The strengths and difficulties questionnaire: A pilot study on the validity of the self-report version. *European Child & Adolescent Psychiatry*. 7: 125 -130.
- Hipwell, A.E. and Kumar, R. (1996). Maternal Psychopathology and Prediction of Outcome Based on Mother-Infant Ratings (BMIS). *British Journal of Psychiatry*, 169, 655 - 661.
- Lazar, I., Darlington, R., Murray, H., Royce, J., & Snipper, A. (1982). Lasting effects of early education: A report from the Consortium for Longitudinal Studies. *Monographs of the Society for Research in Child Development*, 47 (2 – 3, Serial no. 195).
- Loeber, R. and Dishion, T. (1983). Early Predictors of male delinquency: A review. *Psychological Bulletin*, 94, 68-99.
- Long, P., Forehand, R., Wierson, M. and Morgan, A. (1994). Does parent training with young non-compliant children have long term effects? *Behaviour Research and Therapy*, 32 (1), 101 - 107.

Lusyshyn, J.M., Joseph, M., Albin, R.W. and Nixon, C.D. (1997). Embedding comprehensive behavioral support in family ecology: An experimental single case analysis. *Journal of Consulting and Clinical Psychology, 65*, 243 -251.

Puckering, C., Mills, M., Cox, A.D., Maddox, H., Evans, J. and Rogers, J. (final report to The Department of Health). Improving the quality of family support: An intensive parenting programme: Mellow Parenting.

Puckering, C., Rogers, J., Mills, M., Cox, A. and Mattsson-Graff M. (1994). Mellow Mothering: process and evaluation of group intervention for distressed families. *Child Abuse Review, 3*, 299 -309.

Puckering, C., Evans, J., Maddox, H., and Mills, M. (1996). Taking Comparison: A Single Case Study of Mellow Parenting. *Clinical Child Psychology and Psychiatry*.

Rogers, W. and Margaret, R. (1992a). A critical review of parent training research. *Psychology in the Schools, 29* (3), 229 - 236.

Rotto, P.C. and Kratochwill, T.R. (1994). Behavioral consultation with parents: Using Competency-based training to modify child non-compliance. *School Psychology Review, 23*, 669-693.

Royce, J.M., Darlington, R.B., &Murray, H.W. (1983). Pooled analyses: Findings across studies. In The Consortium for Longitudinal Studies (Eds.), *As the twig is bent: Lasting effects of preschool programs (pp 411 – 460)*. Hillsdale, NJ: Erlbaum.

- Sanders, M.R. and James, J.E. (1983). The modification of parent behavior: a review of generalisation and maintenance. *Behavior Modification*, 7, 3 - 27.
- Sanders, M.R. and Plant, K. (1989). Programming for generalisation to high and low risk parenting situations in families with oppositional developmentally disabled pre-schoolers. *Behavior Modification*, 13, 283 - 305.
- Seitz, V. (1990). Intervention Programs For Impoverished Children: A Comparison of Educational and Family support Models. *Annals of Child Development, Volume 7*, 73 – 103.
- Snaith, R.P., Constantopoulos, A.A., Jardine, M.J. and McGuffin, P. (1978). A clinical scale for the self-assessment of irritability. *British Journal of Psychiatry*. 132: 163 - 71.
- Strand, P. and Wahler, R. (1996). Predicting maladaptive parenting: role of maternal object relations. *Journal of Clinical Child Psychology*, 25 (1): 43 - 51.
- Wahler, R.G. and Menginnis, K.L. (1997). Strengthening child compliance through positive parenting practices: What works? *Journal of Clinical Child Psychology*, 26, 433 - 440.
- Webster-Stratton, C. (1982a). Long term effects of videotape modelling parent education program: comparison of immediate and 1 year follow-up results. *Behavior Therapy*, 13, 702 -714.

Webster-Stratton, C., Kolpacoff, M. and Hollinsworth, T. (1988). Self administered videotape therapy for families with conduct problem children: comparison with two cost-effective treatments and a comparison group. *Journal of Clinical and Consulting Psychology, 56*, 558 - 556.

Webster-Stratton, C. (1990b). Long term follow up of families with young conduct problem children: From pre-school to grade school. *Journal of Clinical Child Psychology, 57*, 550 - 553.

Webster-Stratton, C. (1996). Early intervention with videotape modelling: programs for families of children with oppositional defiant disorder or conduct disorder. In Hibbs, E.D. & Jensen, P. (Eds.), *Psychological Treatment Research of Child and Adolescent Disorders: Empirically Based Strategies for Clinical Practice*. American Psychological Association, Washington DC.

Wechsler, D. (1989). Manual for the Wechsler Preschool and Primary Scale of Intelligence-Revised (WPPSI-R). San Antonio, TX: Psychological Corporation.

Wechsler, D. (1991). Manual for the Wechsler Intelligence Scale for Children-Third Edition, (WISC-III). San Antonio, TX: Psychological Corporation.

## **Addendum**

Ethical approval was obtained from Greater Glasgow Primary Care NHS Trust (GGPCT) Research of Ethics Committee (October, 2001), Forth Valley Primary Care NHS Trust (FVPCT) Ethics of Research Committee (December, 2001) and Fife Primary Care NHS Trust (FPCT) Local Research Ethics Committee (November, 2001). Four amendments were made to the original research proposal: (1) in the initial project participants were given supermarket shopping vouchers to thank them for their participation in the study, it was proposed to offer the participants five pounds in supermarket vouchers (this was funded from money left over from the initial study); (2) it was decided that due to the large banding system used on National Test Scores these scores would not provide adequate differentiation between groups, a subtest of the Wechsler Objective Reading Dimensions (Wechsler, 1992) was proposed as a more sensitive measure and would also give an I.Q. measure; and (3) it was proposed that data from the qualitative interviews with mothers be tape recorded and transcribed (4) ethical approval was sought to follow-up families who were untracable due to change of address. Ethical approval in relation to these amendments was obtained from GGPCT Research of Ethics Committee, FVPCT Ethics of Research Committee and FPCT Local Research Ethics Committee and is appended in Appendix 3.8.

## **CHAPTER 4: MAJOR RESEARCH PAPER**

**Long term outcome of a parenting group intervention; an investigation into  
the generalisation and maintenance of treatment effects post intervention**

**Elise N. Kearney**

**Prepared in accordance with requirements for submission to Journal of  
Child Psychology and Psychiatry  
(Appendix 4.1)**

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## **Abstract**

### **Background**

Parenting has received increased attention in the past two decades; specifically, the effect that ‘good’ and ‘bad’ parenting can have on children. The current study is a follow-up to: ‘Improving the Quality of Family Support: An Intensive Parenting Programme: Mellow Parenting’ by Puckering, Mills, Cox, Maddox, Evans and Rogers (final report to The Department of Health). Puckering et al. found significant improvements in a treatment group compared to a comparison group in: mothers mental health; child behaviour problems and child development.

### **Methods**

The design was a between subjects design, treatment versus comparison group, following the original treatment and comparison groups. Families took part in a three hour interview. Standardised measures assessed maternal mental health, child and sibling I.Q., and child and sibling behaviour (as rated by mother and teacher) and factors associated with treatment outcome.

### **Results**

Treatment group mothers maintained mental health gains from post-programme to long-term follow-up. Treatment group mothers rated children as having significantly more behaviour problems than comparison group mothers at long-term follow-up, teachers did not. Treatment group children showed an acceleration in I.Q. pre-programme and post-programme which was not maintained at long-term follow-up. No significant differences were found between treatment and comparison group siblings in behaviour problems. Comparison group siblings had a significantly higher estimated I.Q. Experimental group

significantly predicted maternal depression. Maternal depression significantly predicted child behaviour problems.

### **Conclusions**

Improvements were seen in maternal mental health and child behaviour in the context of early negative life experience, socio-economic disadvantage and a poor level of support.

### **Keywords**

Parent Training Programme, Mother, Children, Behaviour Problems, Anxiety, Depression, Follow-up Study.

### **Abbreviations**

PTP; parent training programme, TG; treatment group, CG; comparison group, FSIQ; Full-Scale I.Q., VIQ; Verbal I.Q., PIQ; Performance I.Q., SDQ; Strengths and Difficulties Questionnaire, AWBS; Adult Well Being Scale, RLE; Recent Life Events Scale.

### **Abbreviated title**

Long-term outcome of a parenting group intervention



## **Introduction**

Parenting has received increased attention in the past two decades; specifically, the effect that 'good' and 'poor' parenting can have on children. Poor parenting has been linked with a variety of problems including anti-social behaviour, interpersonal incompetence and poor academic performance (Strand and Wahler, 1996). Loeber and Dishion (1983) found parenting variables to be the most powerful predictor of general delinquency. There is also a well documented relationship between poverty, sub-optimal cognitive development and academic failure (Seitz, 1990). Findings such as these have acted as a catalyst to a number of early intervention initiatives. A large number of these are group parenting training programmes (PTP) aimed at changing the nature of a child's environment both to prevent negative outcomes, such as those outlined above, in high risk populations and to bring about positive change where difficulties already exist for both mothers and their children.

Research evaluating the efficacy of PTPs (e.g. Rotto and Kratochwill, 1994; Lusyshyn, Joseph, Albin and Nixon, 1997; Wahler and Menginnis, 1997) and community-based effectiveness (e.g. Cunningham, Bremner, and Boyle, 1995; Connell, Sanders and Markie-Dadds, 1997) give positive short-term results on outcome measures such as child behaviour, child development and maternal mental health. Campbell and Ramey (1994) cite evidence (Lazar, Darlington, Murray, Royce and Snipper, 1982; Royce, Darlington and Murray, 1983) concerning the efficacy of early intervention programmes showing that treated children had significantly fewer placements into special education and a 12.3 percent increase in high school completion. There is consensus that early intervention for children is beneficial in terms of school progress and that it can lead to an elevation in I.Q. However, many studies show that initially higher I.Q.'s and improvements in child behaviour and maternal mental health 'fade out' over time with limited evidence of long-term gain (Webster-Stratton, 1996, Long, Forehand, Wierson and Morgan, 1994). The role

which IQ changes play in producing later life outcomes is not yet clear and Campbell and Ramey (1994) point to a need to understand more about its long term benefits and the maintenance of its effects. There is some evidence for generalisation of child behavioural improvements across settings (Sanders and Plant, 1989; Sanders and James, 1983) and impact on children in the family who have not been targets for change (Webster-Stratton, 1982a; 1990b; Webster-Stratton, Kolpacoff and Hollinsworth, 1988).

The methodological design of many of the studies evaluating PTP studies has been questioned; in a review of 148 PTP studies 50% of the group work research did not use control groups or follow up data (Rogers and Margaret, 1992a). In a review of 117 studies Serketich and Dumas, (1996) found that only 26 met the criteria for inclusion in a meta-analysis. Therefore significant evidence exists for short-term gains but it is less clear whether these changes are maintained over time. Eyberg, Edwards, Boggs and Foote (1998) believe that to “understand and improve maintenance of change following Parent Management Training, long-term follow up research with families is clearly necessary”. They highlight a significant gap in the research; an evaluation of “the family characteristics and the within treatment variables that affect maintenance”. The aim of the current study was to carry out a long-term follow-up of families involved in a parent group intervention and address the gaps in the research.

The initial study, to which this is the follow-up, ‘Improving the Quality of Family Support: An Intensive Parenting Programme: Mellow Parenting’ by Puckering, Mills, Cox, Maddox, Evans and Rogers (final report to The Department of Health), found significant improvements post intervention and at one year follow-up in the treatment group compared to the comparison group in: maternal mental health; child behaviour problems; child development; and parent-child interactions.

The research questions for the current study were:

- (1) Do mothers and children who have taken part in a ‘Mellow Parenting’ treatment programme maintain the treatment effects (reduction in maternal mental health problems, reduction in child emotional/behavioural problems, increase in child Full-Scale (FSIQ) and Verbal I.Q (VIQ) at long term follow up?
- (2) Are mothers and children who have taken part in ‘Mellow Parenting’ treatment group (TG) ‘doing better’ (as measured by standardised measures) than the comparison group (CG)?
- (3) Do siblings of children who were involved in a ‘Mellow Parenting’ TG differ from CG siblings (as measured by standardised measures)?
- (4) Which factors are associated with the maintenance or loss of treatment effects?

## **Methods**

### ***Participants***

Forty-seven mothers and children took part in Mellow Parenting and twenty-eight families acted as a CG. Thirty (64%) of the TG families and seventeen (61%) of the CG families were followed-up in the present study. Seven (9%) families declined to take part (6 TG and 1 CG). Twenty-one families (28%) were not traceable due to change of address (12 TG and 9 CG). Two of the mothers in the CG who were untraceable were in prison. One father<sup>1</sup> in the TG completed standardised questionnaires for the child and sibling as the mother had left the family. One child in the TG was not available at the time of interview and only partial data were collected for one TG child.

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<sup>1</sup> The fathers rating of child behaviour is included in the analysis but will not be noted hereafter.

*Description of followed-up participants on entry to the initial project*

The age of mothers on entry to the project ranged from 21 – 45 years (mean age 27) for the TG and 18 – 38 years (mean age 28) for the CG. The age of the children on entry to the project ranged from 1 – 4 years (mean age 3) for the TG and 11 months – 4 years (mean age 3) for the CG.

On initial entry to the project 53% of the TG mothers and 12% of the CG mothers were classified as clinically depressed. One hundred percent of the TG children and 82% of the CG children scored within the clinical range on problem behaviours. Thirty-seven percent of the TG mothers and 35% of CG mothers had experienced one or more changes of major care givers as a child. Five of the TG mothers and 2 of the CG mothers were physically abused as children and 5 of the TG mothers and 1 of the CG mothers were sexually abused as children. The TG had significantly more problems on a list of questions regarding housing problems, crime, immediate threat in the environment and financial debt. The mothers mean Full-scale I.Q on entry to the project was 83 (range 68 to 109) for the TG and 90 (range 77 to 112) for the CG.

*Description of participants at follow-up*

The average length of follow-up from post programme was 7 years 2.5 months (range 6 years 3 months to 8 years 9 months).

The age of mothers at follow-up ranged from 27 to 52 years (mean age 34) for the TG and 24 to 45 years (mean age 32) for the CG. The age of children at follow-up ranged from 9 to 13 years (mean age 10) for the TG and 8 to 12 years (mean age 8) for the CG. Thirty boys and 17 girls were followed-up (20 boys and 10 girls in the TG and 10 boys and 7 girls in the CG).

Since the project four boys in the TG had been diagnosed with Attention Deficit Hyperactivity Disorder (ADHD) and one boy with ADHD and Autism. In the CG one boy had been diagnosed with ADHD and one with Aspergers syndrome (AS).

Twelve younger siblings of TG children and 7 younger siblings of CG children were assessed on a standardised assessment measure Wechsler Objective Reading Dimensions (WORD, Wechsler, 1992). Six of the TG children had no siblings and 3 of the CG children had no siblings. Two eligible siblings in the TG and 1 in the CG were not available at the time of assessment. Five siblings in the TG and 2 siblings in the CG were too young to be assessed on the standardised assessment measure. The average age of siblings assessed was 9 years (range 6 to 16) for the TG and 9 years (range 6 to 14) for the CG. Twelve of the siblings in the TG and 8 in the CG were younger, 5 of the siblings in the TG and 3 in the CG were older.

Twenty-eight (93.3%) of SDQ's for TG children and sixteen (94.1%) for CG children were returned by teachers. Twenty (95.2%) of SDQ's for older and younger TG siblings and eleven (91.6%) for CG siblings were returned by teachers.

### *Procedure*

The design was a between subjects design, TG versus CG. The TG received a fourteen week parenting intervention 'Mellow Parenting'. (Puckering, Rogers, Mills, Cox and Mattsson-Graff, 1994; Puckering, Evans, Maddox, Mills and Cox, 1996). The CG received "treatment as usual" which included a programme at their family centre.

Evaluation of the TG and CGs took place pre-project (T1), post-project (T2) and at 1-year follow-up (T3). Maternal mental health measures and child behaviour measures were administered at T1, T2 and T3. Child I.Q. measures were administered at T1 and T3.

### *Follow-up*

Ethical approval was granted by the three relevant local NHS research ethics committees. Families were sent a letter by a known contact from the initial project explaining the nature of the follow-up study and advised that a named Trainee Clinical Psychologist or Research Assistant would contact them to further discuss the project. When contacted, mothers were told about the project and offered a shopping voucher for their participation (same practice as follow-up at T3). In cases where the mothers no longer lived at the address held on file, contact was initiated through the family centres. Ethical approval was sought and granted to trace the families who were untraceable due to change of address. This was initiated through The Director of Public Health who agreed to send out 'opt-in' letters to those families held on the Community Health Index Database. Due to time limitations no families were followed-up in this way in the current study.

Each family was asked to take part in one interview lasting approximately three hours. The interviews were carried out by a Trainee Clinical Psychologist and Research Assistant (Research Assistants contribution to the project in Appendix 4.2). At interview consent was sought from the families. At interview the child completed the Wechsler Intelligence Scale for Children-III (WISC-III, Wechsler, 1991) whilst the mother filled in the standard measures (Strengths and Difficulties Questionnaire (SDQ), Goodman, 1997; Goodman, Meltzer and Bailey, 1998; Recent Life Events (RLE), Brugha, Bebington, Tennant and Hurry, 1985; and Adult Well Being Scale (AWBS), Snaith, Constantopoulos, Jardine and McGuffin, 1978) and answered questions based on the semi-structured interview (Quinton, Rutter and Rowlands, 1976, Rutter and Quinton, 1984 and Quinton, Rutter and Liddle, 1985) used in the initial study. The semi-structured interview included the Marriage Rating Scale (Quinton, Rutter and Rowlands, 1976). The TG were asked additional questions about the PTP. Data from these question were tape recorded and transcribed.

This process was the same for both the TG and the CG, apart from the additional questions that the TG were asked. With the consent of families teacher ratings on a standardised questionnaire (SDQ) were requested for the index child and siblings. In addition, siblings completed a subsection of the WORD to give an I.Q. measure.

### ***Outcome Measures***

1. *Strengths and Difficulties Questionnaire (SDQ)* (Goodman, 1997; Goodman et al., 1998).

This scale is a modification of the Rutter A + B scales for parents and teachers. The wording was re-framed to focus on a child's (4 to 16 years) emotional and behavioural strengths as well as difficulties. There is a parents and teachers version. The scale has good concurrent validity and predictive validity (Elander and Rutter, 1996). Total difficulties scores range from 0 – 40 with a clinical cut-off at 17 (parent) and 16 (teachers). British normative data was collected in a national survey of child and adolescent mental health by National Statistics (Melzer, Gatward, Goodman and ford (2000).

2. *Recent Life Events (RLE)* (Brugha et al., 1985).

This scale was taken from Brugha et al. (1985). Events were identified through the semi-structured interview described by Brown and Harris (1978) and by Bebbington, Tennant, and Hurry (1981b). It focuses on recent life events (i.e. those occurring in the last 12 months) but can be used for a longer time-scale. Cox and Bentovim (2000) included an additional nine items and piloted the scale for inclusion in *The Framework for the Assessment of Children in Need and their Families: The Family Pack of Questionnaires and Scales (FACNF)*. Mothers were asked to complete a RLE (1) for the past 12 months and (2) since last involvement in the parenting project. The scale gives a score of total number of life events.

3. *Adult Well-being Scale (AWBS) (Snaith et al., 1978).*

This scale was developed by Snaith et al. (1978) as the Irritability, Depression and Anxiety Scale (IDAS). It is a self-report scale. It has good concurrent validity. The scale was reformatted, named and piloted by Cox and Bentovim (2000) for inclusion in FACNF. The scale gives scores for each subscale and clinical cut-off points. There is no total score for this scale.

4. *Wechsler Intelligence Scale for Children-III (WISC-III) (Wechsler, 1991)*

The Wechsler Intelligence Scale for Children is an intelligence test for children aged six to sixteen years.

5. *Wechsler Objective Reading Dimensions 'Basic Reading Subtest' (WORD) (Wechsler, 1992)*

The WORD are individually administered tests designed for the assessment of children aged from 6 to 16 years. Siblings were administered the WORD to provide an estimated I.Q.

6. *Semi-structured interview (Quinton et al., 1976, Rutter et al., 1984 and Quinton et al., 1985).*

The semi-structured interview was based on the interview developed by Quinton et al., 1976 and Quinton et al., 1985 and used by Puckering et al. (final report to The Department of Health). The semi-structured interview was modified for the current study and included the Marriage Rating Scale (Quinton et al. 1976) and questions about service use. The TG mothers were asked additional questions about the Mellow Parenting group.



## Results

### *Statistical Analysis*

Data were analysed using the Statistical Package for Social Sciences (Version 9.0). Descriptive statistics and frequency distributions were initially explored.

Results are presented in terms of baseline information (T1 – T3) and long-term follow-up (T4). Baseline information is reported for the group of families who were followed up. This procedure was adopted check if the follow-up group differed from the whole group at baseline. Differences between the group followed-up and the whole group are reported.

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INSERT TABLE 1

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Table 1 presents T4 comparison data regarding the TG and CG in terms of maternal and child age and time to follow-up. An independent samples t-test indicated that there were no significant differences between the two groups with respect to these variables. Table 2 presents T4 data regarding the two groups in terms of gender of child, employment, confiding relationship, marital status and number of siblings. Chi Square analysis indicated that there was no significant association between the two groups and these variables. Analyses indicated no significant differences between the untraceable group, the TG and CG in terms of age, child problems, maternal mental health and I.Q. at T3.

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INSERT TABLE 2

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Table 3 presents families who declined to take part. A description of the group is given and no statistical comparison was attempted.

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INSERT TABLE 3

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*Maternal depression and anxiety – AWBS*

Baseline information (T1 – T3)

1. At T1 TG mothers were found to be significantly more depressed than CG mothers.
2. At T2 there was no significant difference between TG and CG mothers.
3. At T3 TG mothers were significantly more depressed than CG mothers. An analysis of improvement, deterioration or no change indicated that there were no significant differences between the two groups.

Baseline information for the follow-up groups was not in line with the baseline information from the whole group. In the whole group, changes in depression between groups was not found to be significant between T1 and T2 and T2 and T3, reflecting an increased variance at T2 and T3 in the TG.

Long-term follow-up (T4)

Exploratory data analyses and visual inspection of the box plot indicated that the AWBS scores were normally distributed. For the purpose of comparison borderline cases were analysed as non-clinical range cases.

1. Chi Square analysis indicated no significant association between the two groups with regards to depression, anxiety, outward irritability or inward irritability (Table 4).

However, a visual inspection of the data revealed that 34.5% of the TG mothers and only 11.8% of the CG mothers had depression scores within the clinical range.

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INSERT TABLE 4

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2. Chi square analysis indicated no significant association between the two groups and how many mothers got better or remained within the non-clinical ranges and how many got worse or remained within the clinical range. However, a visual inspection of the data revealed a higher number of TG mothers than CG mothers stayed within the clinical range or got worse (Table 5).

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INSERT TABLE 5

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*Child behaviour problems – SDQ*

Baseline information (T1 – T3)

1. At T1 the number of behaviour problems in the TG was significantly higher than in the CG.
2. At T2 the number of behaviour problems in the TG was significantly higher than the CG. However, between T1 and T2 the TG improved significantly more than the CG.
3. At T3 the number of behaviour problems was not significantly different between the two groups.
4. At T2 and T3 girls in the TG were doing significantly better than the boys in the TG. There were no significant differences between boys and girls in the CG at T2 and T3.

Data analyses for the whole group at baseline found that behaviour problems did not reduce for girls in the CG. This was not found at T2 and T3 for followed-up families.

#### Long-term follow-up (T4)

Exploratory data analyses and visual inspection of the box plot indicated that the SDQ scores were normally distributed. Borderline cases were analysed as non-clinical range cases.

1. An independent samples t-test indicated that TG children compared to CG children had a significantly higher number of behaviour difficulties as rated by mother (Table 6). Group means showed that the TG children were at the 94<sup>th</sup> percentile as rated by mother relative to normative data (1 point above the clinical cut off point) and the CG were at the 79<sup>th</sup> percentile (6 points below the clinical cut off point).

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INSERT TABLE 6

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2. Chi square analysis indicated a significant association between the two groups in improvement, deterioration or no change (Table 7). Significantly more TG children remained within the clinical range or got worse.

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INSERT TABLE 7

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3. An independent samples t-test indicated no significant differences between boys and girls in the two groups.

4. Chi square analysis indicated a significant association between the girls in the TG and CG and behaviour problems as rated by mother. No significant association was found

between girls in the two groups and behaviour problems as rated by teacher (Table 8). No significant association was found between the boys in the two groups and behaviour problems as rated by mother or teacher.

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INSERT TABLE 8

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5. An independent samples t-test indicated no significant differences between TG children and CG children on number of behaviour difficulties as rated by teacher. Group means placed TG children at the 83<sup>rd</sup> percentile as rated by teacher relative to normative data (7 points below the clinical cut off) and the CG at the 77<sup>th</sup> percentile (9 points below the clinical cut off). No significant differences were found on gender and behaviour problems as rated by teacher (Table 6).

These differences were not changed by removing data for children diagnosed with ADHD or AS.

*Child Behaviour problems – SDQ (Siblings)*

T4

1. An independent samples t-test indicated no significant differences between TG and CG siblings in terms of child behaviour as rated by mother and teacher. Group means placed TG siblings at the 86<sup>th</sup> percentile as rated by mother relative to normative data (4 points below the clinical cut off) and the CG at the 76<sup>th</sup> percentile (7 points below the clinical cut off). Teacher ratings placed the TG siblings at the 77<sup>th</sup> percentile (9 points below the clinical cut off) and CG siblings at the 68<sup>th</sup> percentile (11 points below the clinical cut off).

2. There were no significant differences between boys and girls in the two sibling groups. There were no significant differences between the girls and the boys between the two sibling groups.

### *Child IQ scores – WISC-III*

#### Baseline information (T1 – T3)

1. There was a significant increase in FSIQ and VIQ in the TG from T1 to T3.
2. There were no significant differences in I.Q. in the CG from T1 to T3.

Baseline information for the follow-up groups was in line with the baseline information for the whole group.

#### Long-term follow-up (T4)

Exploratory data analyses and visual inspection of the box plot generated indicated that the WISC-III scores were normally distributed.

1. Data relating to I.Q. change across periods T1, T3 and T4 for both treatment and comparison group are shown in figures 1 – 3.
2. A Repeated Measures Multiple Analysis of Variance indicated no significant differences in I.Q. ( $F=2.12$ ,  $p=0.09$ ) or between groups ( $F=1.53$ ,  $p=0.20$ ) across time points T1, T3 and T4.

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INSERT FIGURE 1

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INSERT FIGURE 2

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INSERT FIGURE 3

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*Younger sibling IQ scores – WORD*

T4

Exploratory data analyses and visual inspection of the box plot indicated that the estimated I.Q. scores were normally distributed for the younger siblings.

1. An Independent Samples t-test indicated that siblings in the CG had significantly higher estimated I.Q.'s than siblings in the TG (Table 9).

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INSERT TABLE 9

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*Regression analysis*

*Maternal mental health - depression*

Three independent variables (experimental group, number of life events since the group and number of childhood changes in major care giver) were entered into a stepwise multiple regression analysis model with maternal depression as the dependent variable. Of the three variables only experimental group (13% of the variance,  $n=41$ ,  $R^2=0.182$ ,  $F=6.35$ ,  $p < 0.000$ ) significantly predicted maternal depression.

*Child behaviour problems as rated by mother*

Three independent variables (experimental group, sex of child and maternal depression) were entered into a stepwise multiple regression analysis model with child behaviour problems as rated by mother as the dependent variable. Of the three variables only maternal depression (36% of the variance,  $n = 46$ ,  $R^2 = 0.363$ ,  $F = 26.67$ ,  $p < 0.000$ ) significantly predicted child behaviour problems.

*Qualitative reports – treatment mothers*

Data were collected from 29 interviews. However, due to limitations of space full analyses of these interviews will be reported elsewhere.



## Discussion

The results of the research will be discussed in relation to the four main research questions. The implications of these findings for clinical practice and future research will also be considered.

1. *Do mothers and children who have taken part in a 'Mellow Parenting' treatment programme maintain the treatment gains?*

### *Maternal mental health*

A significantly higher number of mothers in the TG than in the CG were depressed at T1. Although the TG mothers followed-up were significantly more depressed than the CG at T3, there were no significant differences between the two groups at T4. A visual inspection of the data, however, revealed that a higher proportion of TG mothers scored within the clinical range on depression. Analysis may not have reached significance due to a combination of the power of the statistical test employed and the small sample size. However, in a systematic review of the literature, Kearney (2002) analysed eight papers that described programmes aimed at improving maternal mental health and child behaviour. Six of the seven papers following-up mothers found a maintenance of maternal mental health gains. This is in line with the findings of the current study. Beck (1999) in a meta-analysis of maternal depression and child behaviour problems points to the fact that children of depressed mothers display different types of behaviour and adjustment problems at different ages. The changes in maternal depression may have been linked to child maturational processes (i.e. as the child gets older they become easier to manage).

### *Child behaviour problems*

At T1 TG children had significantly more behaviour problems than the CG children. At T2 the number of behaviour problems in the TG remained significantly higher than the CG

but TG children improved significantly more than the CG children. At T3 there were no significant differences between the two groups. At T4 TG children were rated as having significantly more problems by mother than the CG but this was not the case for teacher ratings. Despite no significant differences between the two groups in terms of behaviour problems, normative data revealed that the TG children continued to display a level of behaviour problems at the upper end of the normal range.

Chilcoat and Breslau (1997) cite several empirical investigations that have suggested that depressed mothers over report problems in their children. However, they also cite studies that report a bi-directional relationship between maternal depression and child behaviour problems. In comparing teacher and mother ratings of child behaviour, Chilcoat and Breslau (1997) found support for both of the above hypotheses. They believe that it may be misleading to force a choice between over reporting of behaviour problems versus real effects of maternal depression on behaviour problems. They cite an alternative explanation that children of depressed mothers may manifest an excess of behaviour problems at home but not in school although there is little empirical support for this hypothesis. Although the TG mothers were not significantly more depressed than CG mothers at T4, a higher proportion of them were clinically depressed. Children in the present study may have been displaying an excess of behaviour problems at home but not at school. Alternatively, mothers may have been overrating their children on child behaviour problems. It is unfortunate that corroborative evidence for child behaviour problems is not available at baseline. This information may have led to a more accurate picture.

*Child I.Q.*

From T1 to T3 there was a significant increase in FSIQ and VIQ in the TG but not the CG. No significant differences were found in I.Q. or between groups between T3 and T4 and T1 and T4.

It is therefore, the case that FSIQ and VIQ in the TG were accelerated between T1 and T3 but evened out between T1 and T4. This is in line with research showing that with intervention a child's full potential can be reached more quickly but once the potential is reached no further gains will be made (Schweinhart, Barnes and Weikart, 1997). The Repeated Measures Multiple Analysis of Variance carried out on the I.Q. data may be criticised as at T1 only 15 TG and 9 CG children were eligible to be assessed on the WPPSI-R which therefore reduced the sample size for this analysis. However, post-hoc analyses using Paired Samples t-tests produced the same results as the Multiple Analysis of Variance. It is also important to note that validation studies of the WISC-III showed that the WISC-III FSIQ is approximately 4 points greater than the WPPSI-R FSIQ. The WISC-II PIQ and VIQ are approximately 2 and 6 points higher respectively, than the corresponding WPPSI-R I.Q. scores. An increase in I.Q. scores between T1 and T3 due to variation in assessment measures can not be ruled out although this was controlled by the CG.

A large body of research refutes the finding that I.Q. can be significantly altered over time. Murray (1996) states that I.Q. can only be raised "in modest amounts, inconsistently, and usually only temporarily...an individual's realized intelligence, no matter whether realized through genes or the environment, is not very malleable". However, this assertion is challenged by empirical findings from a number of sources, for example: adoption studies (Capron and Duyme, 1989; Locurto, 1990; Schiff, Duyme, Dumaret and Tompkiewics,

1982); and studies evaluating early intervention programmes (Lazar and Darlington, 1982; Ramey, Yeates and Short, 1984; Wasik, Ramey, Bryant and Sparling, 1990; Zigler and Muenchow, 1992). A number of early longitudinal studies as well as intervention programmes have also demonstrated that changes in mental test performance can occur (Honzik, Macfarlane and Allen, 1948; Bayley, 1949; and Rees and Palmer, 1970).

It is also widely reported that I.Q. gains in children subject to early intervention disappear over time (i.e. Campbell and Ramey, 1994). Research has shown that I.Q. gains can only be maintained with intensive intervention (Garber, 1988; Garber and Heber, 1981 and Horacek, Ramey, Campbell, Hoffman and Fletcher, 1987).

However, the research methodology in this area has been criticised for presenting the analysis of group mean I.Q. data and individual I.Q. data as equivocal (Ramey, Yeates and Short, 1984; Moffit, Caspi, Harkness and Silva, 1993). Ramey et al. (1984) advocate that group averages are at least moderately alterable through systematic intervention but that individual differences remain largely stable. Ballard (1988) highlights the fact that the stability of test scores in the preschool years is extremely poor and little is known about the stability of test scores through childhood. In addition, Moffit et al. (1993) point to the unreliability of change scores often used to assess change in cognitive development at two time points.

Moffitt et al. (1993) carried out a longitudinal study assessing a non clinical sample of 794 children using the WISC-R at ages 7, 9, 11 and 13 years old. In this study children's individual I.Q. temporal profiles (across four time points) were evaluated. They propose that although the reliability of the Wechsler Intelligence tests are not under question the reliability of temporal profiles is unknown. The authors tested the assumption that many

researchers hold that the reliability of I.Q. profiles is as good as the reliability of single I.Q. scores. Taking into consideration measurement error, they found that for the majority of children I.Q. change is negligible in amount, however, in a significant minority of children naturalistic I.Q. change is marked and real but that the change is variable in timing, idiosyncratic in source and transient in its course. Moffitt et al. (1993) conclude that the observed individual changes in children's temporal I.Q. profiles can be accounted for by Scarr and McCartney's (1983) developmental theory of genotype-environment effects. According to this theory children seek environmental stimulation in line with their ability. Elevated I.Q. measures may decline after an intensive intervention programme if a child does not seek out appropriate stimulation to maintain cognitive gains. The theory can account for their results that children appear to display a self righting tendency i.e. children's I.Q. may vary around their ability in response to environmental input but will ultimately return to their 'true' level of ability.

In summary, research evaluating I.Q. change in group samples may be unreliable as it does not adequately account for individual differences and measurement error. Where individual differences in I.Q. change on a temporal profile are evident this may be accounted for by a theory of developmental self-regulation. Importantly, there is a dearth of research investigating individual differences in I.Q. change at a more analytic level. In studies where individual changes in I.Q. are evident, further analysis as to what aspects of a child's ability are changing is neglected.

Scarr and McCartney's (1983) theory may account for the change in I.Q. seen between T1 and T3 in the present study; group mean Full-Scale I.Q. and Verbal I.Q. were elevated following intervention but children may have returned to their 'true' level of ability in the longer term. In addition, the analysis of group mean I.Q. scores may have obscured important individual I.Q. change profiles. In the present study, therefore, the TG

children's initially accelerated I.Q.'s did not lead to long-term increased I.Q.'s. However, TG children were rated by their teacher as having no more behaviour problems than the CG children, although it is important to acknowledge that the TG continued to display a high level of behavioural problems. This finding might be interpreted as treatment children's better overall school adjustment. Again, it is unfortunate that there are no corroborative measures of behaviour at baseline to make a comparison.

It is important to note that a higher than expected number of the TG children were diagnosed with ADHD given the prevalence of this disorder in the general population.

In summary, TG mothers maintained mental health gains from T2 to T4 with an increase in depression at T3. TG mothers rated children as having significantly more behaviour problems than CG mothers at T4 but teachers did not. TG children showed an acceleration of I.Q. between T1 and T3. However, there were no clinical or statistically significant differences in I.Q. between T3 and T4 and T1 and T4.

*2. Are mothers and children who have taken part in 'Mellow Parenting' treatment group 'doing better' than the comparison group?*

The CG mothers and their children were doing significantly better on all measures at T1. TG mothers faced a higher level of adversity at T1 than the CG mothers. The finding that there were no significant differences between the TG and the CG on the majority of measures is in itself significant. TG children were found to have made significantly greater gains in behaviour between T1 and T3 than the CG. It is possible that this was due to them having a significantly greater number of behaviour problems at T1, allowing more scope for change at this time.

*3. Do siblings of children who were involved in a 'Mellow Parenting' treatment group differ from siblings of children who were in the comparison group?*

*Child behaviour problems*

No significant differences were found between TG and CG siblings on child behaviour problems as rated by mother and teacher.

Several studies (Webster-Stratton, 1982a, 1990b; Webster-Stratton, Kolpacoff and Hollinsworth, 1989; Forehand, Lautenschlager, Gaust and Graziano, 1986; and Arnold, Levine and Patterson, 1975) have found evidence for the generalisation of parenting programmes to children in the family who have not been the targets for change. Although TG children may have been vulnerable to behaviour problems due to factors other than parenting, the finding that there were no significant differences between the TG and CG siblings on child behaviour could be interpreted as the generalisation of treatment effects.

*Sibling I.Q.*

Younger siblings in the TG and CG were compared on estimated I.Q. CG siblings were found to have a significantly higher estimated I.Q. than the TG siblings.

A visual inspection of the data reveals that mean TG siblings estimated I.Q. scores are comparable to their siblings whereas CG siblings estimated I.Q. scores exceed those of their siblings. The small numbers and the use of the WORD to generate an equivalent I.Q. must be taken into consideration when interpreting these results.

*4. Which factors are associated with the maintenance and/or loss of treatment effects as measured quantitatively?*

The factors entered into a stepwise multiple regression analysis model were determined by the size of the sample and informed by the literature. Of the three variables entered into the analysis model, experimental group predicted eighteen percent of the variance in maternal depression. . Of the three variables entered into the analysis model maternal depression predicted thirty-six percent of the variance in child behaviour problems.

Conflicting outcomes of PTPs have led several studies to investigate why PTPs may work for some families but not for others (Griest and Wells, 1983; Reid and Paterson, 1976; Wahler and Graves, 1983; Dumas and Wahler, 1983; and Webster-Stratton, 1985). Webster-Stratton (1985) found no single predictor responsible for treatment success or failure. However, she found that life experience and socio-economic disadvantage, single parent families and lack of support added a significant amount of variance to their models, accurately predicting 70% to 80% of the families at follow-up. Dumas and Wahler (1983) found socio-economic disadvantage and mother insularity as significant predictors of PTP outcome.

*Follow-up studies*

It has been reported that long-term follow-up studies can be methodologically flawed by including 'convenience samples'. Only following-up those people who are easily contactable may lead to a self-selected and unrepresentative sample (McGlashan, 1984). A loss to a sample potentially distorts the findings and the direction of the distortion is frequently towards favourable outcomes (Fischer, Dornelas and Goethe, 2001). Follow-up rates can vary considerably but have been estimated between 30% and 80% (Fischer et al.,



2001). The current study followed-up 63% of participants. A rigorous comparison of the families lost to follow-up with the families followed-up revealed no significant differences.

### **Implications for clinical practice**

This study replicated the important finding of previous studies: that mothers and children facing adverse social and psychological circumstances can benefit from group PTPs and can maintain many of the treatment gains. Despite a 'fading-out' of I.Q. gains and an initial indication of behavioural disturbance, children in the TG were not rated by their teacher as having more behaviour problems than CG children at T4. Seitz (1990) reports evidence that pre-school intervention leads to better overall school adjustment even if initially higher I.Q.'s 'fade-out' over time. Furthermore, Campbell and Ramey (1994) cite Woodhead (1988) who believes that the benefit of early treatment may not lie in producing higher levels of academic achievement but in changing children's behavioural styles. Woodhead (1988) found that treated children may relate to school in a different way and therefore, be perceived differently by teachers. This finding has important implications for practice, for example better adjustment at school may lead to a longer education. In addition, research shows that early child behaviour problems often lead to problems in adolescence and adulthood (Mullin, Proudfoot and Glanville, 1990). Early intervention may change the path that many of these children take and avoid longer term difficulties.

### **Implications for future research and methodological issues**

The results from the present study should be interpreted cautiously. The sample size is small. The follow-up study compares child behaviour and mothers mental health using different measures and places borderline cases within the non-clinical population. Measures used to estimate siblings I.Q. may not have been sensitive enough. A number of

issues could have been explored in more detail; future research should provide a more analytic approach to I.Q. scores, taking into consideration individual differences, measurement error and a more detailed analysis of change, for example, analysis of subtest scores on the Wechsler Intelligence test may provide information as to which aspects of cognition are more amenable to alteration; and the intercorrelation of mothers mental state with her perception of child behaviour problems deserves further investigation.

Although there are many studies evaluating PTPs many of them are methodologically flawed. In order to reach more sound conclusions larger scale studies using corroborative child behaviour data are needed. The question as to what predicts outcome following PTPs also merits further research.

### **Post hoc Power analysis**

More significant results may have been achieved if a larger number of families had participated in the research. Initial power calculations, assuming a significance level of  $p < 0.05$  and a desired power level of 0.07, suggested that all of the families (43 treatment group mothers and 30 comparison families) would be required to participate in the project. A post hoc power analysis was conducted, based on the child behaviour data obtained, and a power level of 0.62 ( $p < 0.05$ ) was calculated. This suggests that the actual number of participants was not entirely unsatisfactory.

### **Conclusions**

Webster-Stratton (1985) found that life experience, socio-economic disadvantage, single parent families and lack of support significantly predicted 70% to 80% of families followed-up after PTPs. Both the TG and the CG were drawn from a socio-economically deprived population, indeed the majority of family centres are located in socio-

economically disadvantaged areas. Aiming to eradicate all psychopathology in this population would have been unrealistic. Improvements were seen in maternal mental health and child behaviour in the context of early negative life experience, socio-economic disadvantage and a poor level of support. The families micro-environment was the target for change and such changes as were achieved, therefore, took place within an unchanged macro-environment. The changes following treatment may have been significant enough to set the families on a different path. Long term follow-up of the families would reveal if better child adjustment at school leads to positive longer-term gains.

**Table 1: Comparison between two groups: maternal age, child age and length of time to follow-up**

|                   | Treatment |      | Comparison |      |       | 95% CI |       |       |
|-------------------|-----------|------|------------|------|-------|--------|-------|-------|
|                   | Mean      | SD   | Mean       | SD   | t     | p      | Lower | Upper |
| Maternal age      | 34.33     | 6.35 | 32.88      | 5.72 | 0.779 | 0.440  | -2.30 | 5.20  |
|                   | n=29      |      | n=17       |      |       |        |       |       |
| Child age         | 10.30     | 1.15 | 10.24      | 1.25 | 0.180 | 0.858  | -0.66 | 0.79  |
|                   | n=30      |      | n=17       |      |       |        |       |       |
| Time to follow-up | 87.90     | 8.04 | 86.41      | 9.51 | 0.544 | 0.590  | -4.10 | 7.08  |
|                   | n=30      |      | n=17       |      |       |        |       |       |

Table 2: Chi-Square analysis of variables

|                            | Treatment<br>n=30                      |      | Comparison<br>n=17 |      | X <sup>2</sup>     | p                  |
|----------------------------|--|------|--------------------|------|--------------------|--------------------|
|                            | n                                      | %    | n                  | %    |                    |                    |
| Gender of child            | Male                                   | 20   | 66.7               | 10   | 58.8               | 0.289 <sup>i</sup> |
|                            | Female                                 | 10   | 33.3               | 7    | 41.2               |                    |
| Marital status             | n=29                                   |      |                    |      |                    |                    |
|                            | Living with biological father of child | 11   | 37.9               | 9    | 52.9               | 1.652              |
|                            | Living with new partner                | 7    | 24.1               | 2    | 11.8               |                    |
|                            | Non-cohabiting partner                 | 3    | 10.3               | 1    | 5.9                |                    |
| No partner                 | 8                                      | 27.6 | 5                  | 29.4 |                    |                    |
| Any confiding relationship | n=29                                   |      |                    |      |                    |                    |
|                            | yes                                    | 18   | 62.1               | 13   | 81.3               | 1.770              |
| no                         | 11                                     | 37.9 | 3                  | 18.8 | 0.160 <sup>i</sup> |                    |
| Employment                 | n=29                                   |      |                    |      |                    |                    |
|                            | yes                                    | 11   | 37.9               | 11   | 64.7               | 3.079              |
| no                         | 18                                     | 62.1 | 6                  | 35.3 | 0.073 <sup>i</sup> |                    |
| Number of siblings         | n=30                                   |      |                    |      |                    |                    |
|                            | 0                                      | 6    | 20.0               | 3    | 17.6               | 0.610              |
|                            | 1                                      | 15   | 50.0               | 7    | 41.2               |                    |
| 2 - 4                      | 9                                      | 30.0 | 7                  | 41.2 |                    |                    |
| <b>Fisher's Exact Test</b> |  |      |                    |      |                    |                    |
|                            |  |      |                    |      | 0.737              |                    |

**Table 3: Description of the seven families who declined to take part in the project**

| <b>Family</b> | <b>Group</b> | <b>Age of mother</b> | <b>Age of child</b> | <b>Sex of child</b> | <b>Child behaviour problems T3 (caseness)</b> | <b>Maternal mental health T3 (caseness)</b> | <b>Reason for non-participation</b>   |
|---------------|--------------|----------------------|---------------------|---------------------|---|---|---|
| 1             | Treatment    | 30                   | 12                  | Male                | Clinical range                                | Non-clinical range                          | Too busy at time of interviews.   |
| 2             | Treatment    | 45                   | 11                  | Male                | Clinical range                                | Clinical range                              | All children had chickenpox, too busy at time of interviews.                                  |
| 3             | Comparison   | 35                   | 10                  | Male                | Non-clinical range                            | Non-clinical range                          | Too busy at time of interviews.   |
| 4             | Treatment    | 34                   | 11                  | Female              | Non-clinical range                            | Non-clinical range                          | No reason given.  |
| 5             | Treatment    | 33                   | 10                  | Female              | Not followed-up at one year                   | Not followed-up at one year                 | No reason given.  |
| 6             | Treatment    | 36                   | 9                   | Male                | Clinical range                                | Non-clinical range                          | Too busy at the time of interviews.   |
| 7             | Treatment    | 29                   | 11                  | Male                | Non-clinical range                            | Non-clinical range                          | Child no longer lived with mother. Partner did not want mother to be involved in the project. |

**Table 4: Chi-Square analysis of the two groups in terms of psychopathology at T4**

|                      | Treatment<br>n=29  |    | Comparison<br>n=17 |    | X <sup>2</sup> | p                  |
|----------------------|--------------------|----|--------------------|----|----------------|--------------------|
|                      | n                  | %  | n                  | %  |                |                    |
| Depression           | Clinical range     | 10 | 34.5               | 2  | 11.8           | 0.086 <sup>i</sup> |
|                      | Non-clinical range | 19 | 65.5               | 15 | 88.2           |                    |
| Anxiety              | Clinical range     | 4  | 13.8               | 2  | 11.8           | 0.611 <sup>i</sup> |
|                      | Non-clinical range | 25 | 86.2               | 15 | 88.2           |                    |
| Outward irritability | Clinical range     | 5  | 17.2               | 1  | 5.9            | 0.266 <sup>i</sup> |
|                      | Non-clinical range | 24 | 82.8               | 16 | 94.1           |                    |
| Inward irritability  | Clinical range     | 4  | 13.8               | 1  | 5.9            | 0.381 <sup>i</sup> |
|                      | Non-clinical range | 25 | 86.2               | 16 | 94.1           |                    |

<sup>i</sup> Fisher's Exact Test

**Table 5: Chi-Square analysis of the two groups in terms of how many mothers got better or stayed within the non-clinical range and how many mothers stayed within the clinical range or got worse in terms of depression between T3 and T4**

|                                     | Treatment<br>n=29 |      | Comparison<br>n=17 |      | X <sup>2</sup> | p    |
|-------------------------------------|-------------------|------|--------------------|------|----------------|------|
|                                     | n                 | %    | n                  | %    |                |      |
| Maternal mental health (depression) |                   |      |                    |      |                |      |
| Same positive or better             | 19                | 65.5 | 15                 | 88.2 |                |      |
| Same negative or worse              | 10                | 34.5 | 2                  | 11.8 | 2.869          | 0.09 |

\*p<0.01



**Table 6: Comparison between the two groups with regard to child behaviour difficulties at T4 as rated by mother and teacher**

|  | Treatment<br>n=30 |      | Comparison<br>n=17 |      | t     | p      | 95% CI |       |
|--|-------------------|------|--------------------|------|-------|--------|--------|-------|
|  | Mean              | SD   | Mean               | SD   |       |        | Lower  | Upper |
| Child behaviour<br>rated by mother           | 17.53             | 8.22 | 11.88              | 7.52 | 2.334 | 0.024* | 0.78   | 10.53 |
|  |                   | n=28 |                    | n=15 |       |        |        |       |
| Child behaviour<br>rated by class<br>teacher | 11.11             | 7.09 | 9.27               | 5.80 | 0.862 | 0.394  | -2.47  | 6.15  |

\*p &lt; 0.05

**Table 7: Chi-Square analysis of the two groups in terms of how many children got better or stayed within the non-clinical range and how many children stayed within the clinical range or got worse between T3 and T4**

|                                    | Treatment<br>n=30 |      | Comparison<br>n=17 |      | X <sup>2</sup> | p      |
|------------------------------------|-------------------|------|--------------------|------|----------------|--------|
|                                    | n                 | %    | n                  | %    |                |        |
| child behaviour as rated by mother |                   |      |                    |      |                |        |
| Same positive or better            | 10                | 33.3 | 14                 | 82.4 |                |        |
| Same negative                      | 14                | 46.7 | 2                  | 11.8 |                |        |
| Worse                              | 6                 | 20.0 | 1                  | 5.9  | 10.411         | 0.005* |

\*p<0.01

**Table 8: Chi Square analysis of the girls in the treatment group and the comparison group at T4 in terms of child behaviour problems rated by mother and teacher.**

|   | Treatment |      | Comparison |       |                |                      |
|---|-----------|------|------------|-------|----------------|----------------------|
|   | n         | %    | n          | %     | X <sup>2</sup> | p                    |
| Child behaviour as rated by mother        |           |      |            |       |                |                      |
|   | n=10      |      | n=7        |       |                |                      |
| Clinical range                            | 6         | 60.0 | 0          | 0     |                |                      |
| Non-clinical range                        | 4         | 40.0 | 7          | 100.0 | 6.491          | 0.017 <sup>i</sup> * |
| Child behaviour as rated by class teacher |           |      |            |       |                |                      |
|   | n=9       |      | n=7        |       |                |                      |
| Clinical range                            | 1         | 11.1 | 1          | 14.3  |                |                      |
| Non-clinical range                        | 8         | 88.9 | 6          | 85.7  | 0.036          | 0.700 <sup>i</sup>   |

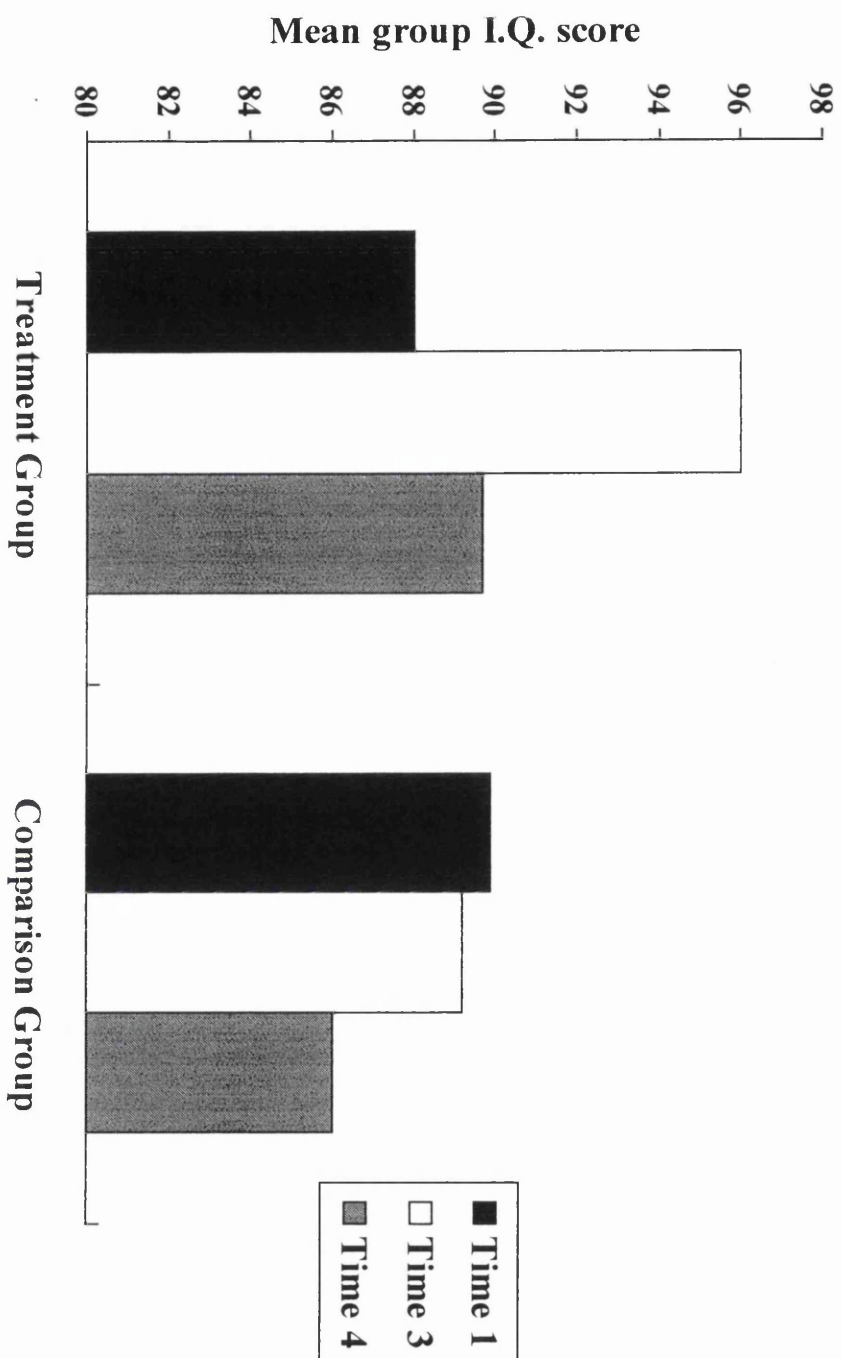
<sup>i</sup> Fisher's Exact Test

\*p<0.01

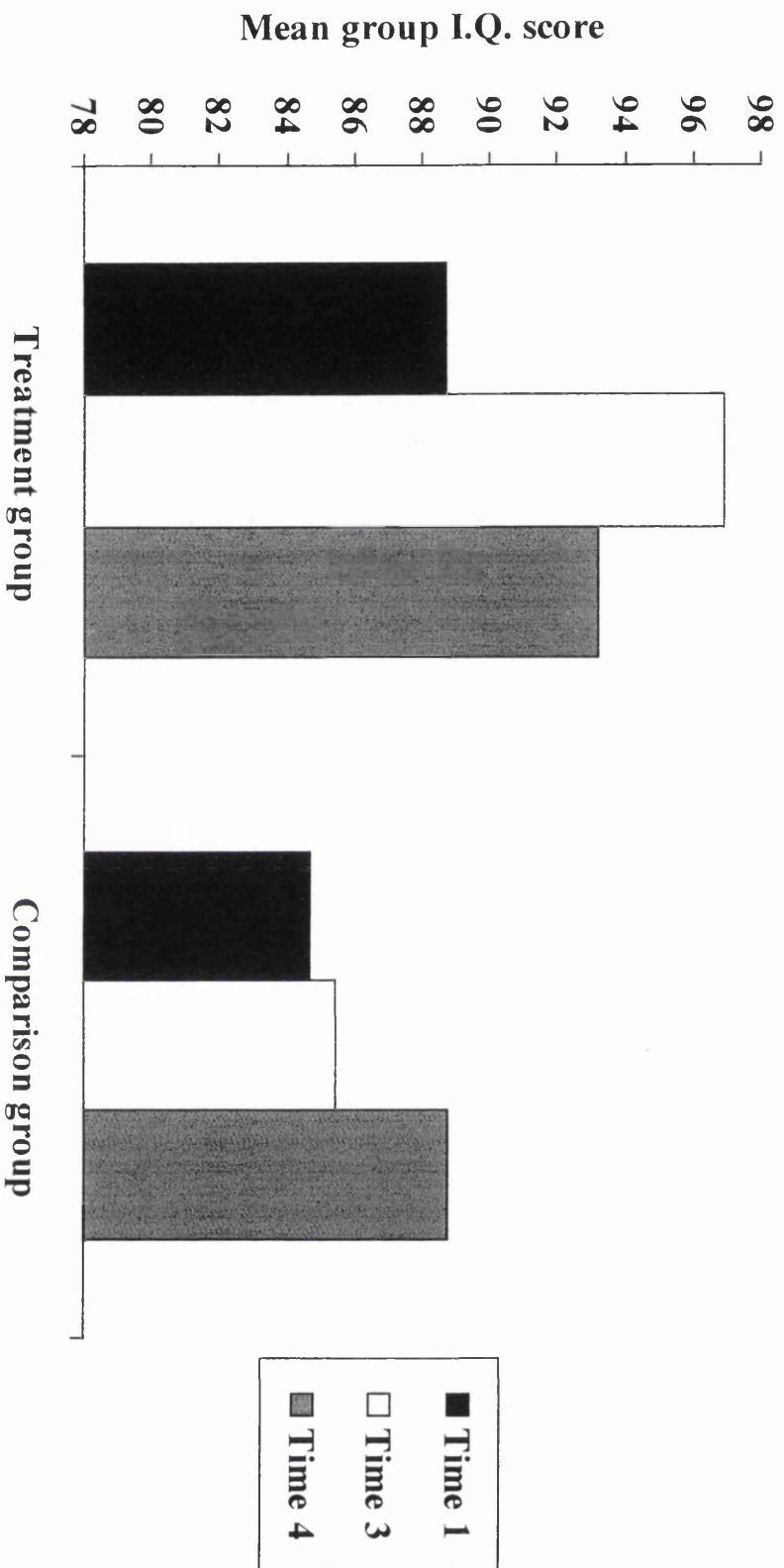
**Table 9: A comparison of younger siblings in the treatment and comparison group on I.Q. as measured by the WORD**

|             | Treatment<br>n=12 |       | Comparison<br>n=7 |       | t     | p      | 95% CI |       |
|-------------|-------------------|-------|-------------------|-------|-------|--------|--------|-------|
|             | Mean              | SD    | Mean              | SD    |       |        | Lower  | Upper |
| Sibling I.Q | 83.83             | 21.15 | 105.71            | 16.58 | 2.340 | 0.032* | -41.61 | -2.15 |

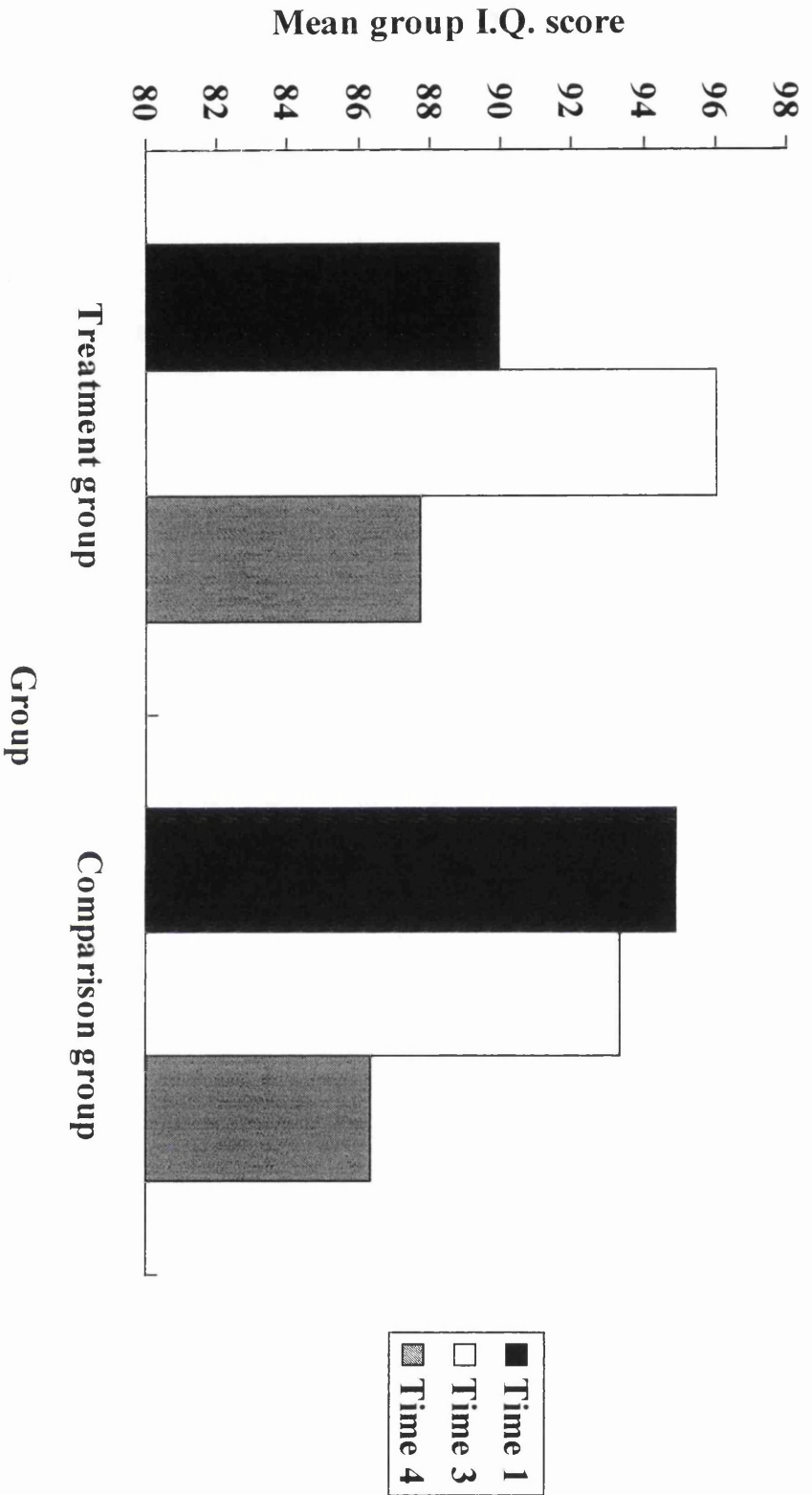
\*p &lt; 0.05



**Figure 1:** Full-Scale I.Q. at Time 1, Time 3 and Time 4 for treatment and comparison group children.



**Figure 2:** Verbal I.Q. at Time 1, Time 3 and Time 4 for treatment and comparison group children.



**Figure 3:** Performance I.Q. at Time 1, Time 3 and Time 4 for treatment and comparison group children.

## References

- Arnold, J., Levine, A. and Patterson, G.R. (1975) Changes in sibling behaviour following family intervention. *Journal of Consulting and Clinical Psychology*, 43, 683 – 688.
- Ballard, K.D. (1988) Interpreting Stanford-Binet and WISC-R IQs in New Zealand: The need for more than caution. In M Olssen (Ed.), *Mental testing in New Zealand: critical and oppositional perspectives* (pp. 113-127). Dunedin, New Zealand: University of Otago Press.
- Bayley, N. (1949) Consistency and variability in the growth of intelligence from birth to eighteen years. *Journal of Genetic Psychology*, 75, 165-196.
- Brown, G.W. and Harris, T. (1978) *The Social Origins of Depression*. Tavistock Publications: London.
- Bebbington P.E., Tennant, C. and Hurry, J. (1981b) Life events and the nature of psychiatric disorder in the community. *Journal of Affective Disorders*, 3, 345 – 366.
- Beck, C.T. (1999) Maternal depression and child behaviour problems: a meta analysis. *Journal of Advanced Nursing*, 29, 3 623 – 629.
- Brugha, T., Bebbington, P., Tennant, C. and Hurry, J. (1985). The list of threatening experiences: A subset of 12 life events categories with considerable long-term contextual threat. *Psychological Medicine*. 15: 189 - 194.



Campbell, F.A., Ramey, C.T. (1994). Effects of Early Intervention on Intellectual and Academic Achievement: A Follow-up Study of Children from Low-Income Families. *Child Development*, 65, 684 – 698.

Caplan, H.L., Coghill, S.R., Alexandra, H., Mordecai Robson, K., Katz, R. and Kumar, R. (1989). Maternal Depression and the Emotional Development of the Child. *British Journal of Psychiatry*, 154, 818 - 822.

Capron, C. and Duyme, M. (1989) Assessment of effects of socioeconomic status on IQ in a full cross fostering study. *Nature*, 340, 552-554.

Chilcoat, H.D. and Breslau, N. (1997) Does Psychiatric History Bias Mothers' Reports? An Application of a New Analytic Approach. *Journal of the American Academy of Child and Adolescent Psychiatry*, 36, 7, 971 – 979.

Connell, S., Sanders, M.R. and Markie-Dadds, C. (1997). Self-directed behavioral family intervention for parents or oppositional children in rural and remote areas. *Behaviour Modification*, 21, 379 - 408.

Cox, A. and Bentovim A. (2000). Framework for the Assessment of Children in Need and their Families: The Family Pack of Questionnaires and Scales (Department of Health). London, The Stationery Office.

Cunningham, C.E., Bremner, R. and Boyle M. (1995). Large group community-based parenting programs for families of pre-schoolers at risk of disruptive behaviour disorders:

Utilization, cost effectiveness, and outcome. *Journal of Child and Psychology and Psychiatry and Allied Disciplines*, 36, 1114 - 1159.

Dumas, J.E. and Wahler, R.G. (1983) Predictors of Treatment Outcome in Parent Training: Mother Insularity and Socioeconomic Disadvantage. *Behavioral Assessment*, 5, 301 – 313.

Elander, J. and Rutter, M. (1996) Use and Development of the Rutter Parents' and Teachers' Scales. *International Journal of Methods in Psychiatric Research*, 6, 63 – 78.

Eyberg, M., Edwards, D., Boggs, S.R. and Foote, R. (1998). Maintaining the Treatment Effects of Parent Training: The Role of Booster Sessions and Other Maintenance Strategies. *Clinical Psychology: Science and Practice*, 5 (4), 544 - 555.

Fischer, E.H., Dornelas, E.A., Goethe, J.W. (2001) Characteristics of People Lost to Attrition in Psychiatric Follow-up Studies. *The Journal of Nervous and Mental Disease*, 189, 1, 49 –55.

Forehand, R., Lautenschlager, G.J., Faust, J. and Graziano, W.G. (1986) Parent perceptions and parent-child interactions in clinic referred children: A preliminary investigation of the effects of maternal depressive moods. *Behaviour Research and Therapy*, 24, 73 – 75.

Garber, H.L. (1988) *The Milwaukee Project: Preventing mental retardation in children at risk*. Washington, DC: American Association on Mental Retardation.

Garber, H.L. and Heber, R. (1981) The efficacy of early interventions with family rehabilitation. In M.J.Begab, H.C. Haywood, and H.L. Garber (Eds.), *Psychosocial*

*influences in retarded performance. vol II: Strategies for improving competence (pp. 71-88). Baltimore, MD: University Park Press.*

Glaser, B. and Strauss, A. (1967) The discovery of grounded theory: strategies for qualitative research. *Chicago Aldine.*

Goodman, R. (1997). the Strengths and Difficulties Questionnaire: A research note. *Journal of Child Psychology and Psychiatry. 38: 581 -586.*

Goodman, R., Meltzer, H. and Bailey, V. (1998). The strengths and difficulties questionnaire: A pilot study on the validity of the self-report version. *European Child & Adolescent Psychiatry. 7: 125 -130.*

Griest, D.L. and Wells, K.C. (1983) Behavioral family therapy with conduct disorders in children. *Behaviour Therapy, 14, 37 – 53.*

Hipwell, A.E. and Kumar, R. (1996). Maternal Psychopathology and Prediction of Outcome Based on Mother-Infant Ratings (BMIS). *British Journal of Psychiatry, 169, 655 - 661.*

Honzik, M.P., Macfarlane, J.Q. and Allen, L. (1948) The stability of mental test performance between two and eighteen years. *Journal of Experimental Education, 309-324.*

Horacek, H.J., Ramey, C.T., Campbell, F.A., Hoffmann, R.P. and Fletcher, R.H. (1987) Predicting school failures and assessing early intervention with high-risk children. *Journal of the American Academy of Child and Adolescent Psychiatry, 26, 758 – 763.*

Kearney, E.N. (2002) Group Based Parenting Programmes for Improving Psychosocial Outcomes for Mothers and their Children: A review of the literature. *Unpublished*.

Lazar, I. and Darlington, R. (1982) Lasting effects of early education: A report from the consortium for longitudinal studies. *Monographs of the Society for Research in Child Development, 47, issues 2-3*.

Lazar, I., Darlington, R., Murray, H., Royce, J., & Snipper, A. (1982). Lasting effects of early education: A report from the Consortium for Longitudinal Studies. *Monographs of the Society for Research in Child Development, 47 (2 – 3, Serial no. 195)*.

Locurto, C. (1990) The malleability of IQ as judged from adoption studies. *Intelligence, 15, 295-312*.

Loeber, R. and Dishion, T. (1983). Early Predictors of male delinquency: A review. *Psychological Bulletin, 94, 68-99*.

Long, P., Forehand, R., Wierson, M. and Morgan, A. (1994). Does parent training with young non-compliant children have long term effects? *Behaviour Research and Therapy, 32 (1), 101 - 107*.

Lusyshyn, J.M., Joseph, M., Albin, R.W. and Nixon, C.D. (1997). Embedding comprehensive behavioral support in family ecology: An experimental single case analysis. *Journal of Consulting and Clinical Psychology, 65, 243 -251*.

McGlashan, T.H. (1984) The Chestnut Lodge follow-up study: I. Follow-up methodology and study sample. *Archives of General Psychiatry*, 41, 573 – 585.

Meltzer, H., Gatward, R., Goodman, R. and Ford. (2000) Mental Health of Children and Adolescents in Great Britain. London: The Stationary Office.

Moffitt, T.E., Caspi, A., Harkness, A.R. and Silva, P.A. (1993) The Natural History of Change in Intellectual Performance: Who Changes? How Much? Is it Meaningful? *Journal of Child Psychology and Psychiatry*, 34, 4, 455-506.

Mullin, E.; Proudfoot, R and Glanville, B. (1990) Group Parent Training in the Eastern Health Board: Programme Description and Evaluation. *The Irish Journal of Psychology*, 11, 4, 342 – 353.

Murray, C. (1996) Murray's Précis. *Current Anthropology*, 37, Supplement, February, S143-S151.

Puckering, C., Rogers, J., Mills, M., Cox, A. and Mattsson-Graff M. (1994). Mellow Mothering: process and evaluation of group intervention for distressed families. *Child Abuse Review*, 3, 299 -309.

Puckering, C., Evans, J., Maddox, H., Mills, M. and Cox, A.D. (1996) Taking control: A single case study of Mellow Parenting. *Clinical Child Psychology & Psychiatry*, 1, 4, 539 – 550.

Puckering, C., Mills, M., Cox, A.D., Maddox, H., Evans, J. and Rogers, J. (in preparation). Improving the quality of family support: An intensive parenting programme: Mellow Parenting. *Grant report submitted to The Department of Health. Unpublished.*

Quinton, D., Rutter, M. and Rowlands, O. (1976) An evaluation of an interview assessment of marriage. *Psychological Medicine*, 6, 4, 577 – 586.

Quinton, D. and Rutter, M. and Liddle, C. (1985) Institutional rearing, parenting difficulties, and marital support. *Annual Progress in Child Psychiatry and Child Development*, 173 – 206.

Ramey, C.T., yeates, K.O. and Short, E.J. (1984) The plasticity of intellectual development: Insights from preventive intervention. *Child Development*, 55, 1913-1925.

Rees, A.H. and Palmer, F.H. (1970) Factors related to change in mental test performance. *Developmental Psychology Monographs*, 3, 1-57.

Reid, J.B. and Patterson, G.R. (1976) Follow-up analysis of a behavioral treatment program for boys with conduct problems: A reply to Kent. *Journal of Consulting and Clinical Psychology*, 44, 297 – 302.

Rogers, W. and Margaret, R. (1992a). A critical review of parent training research. *Psychology in the Schools*, 29 (3), 229 - 236.

Rotto, P.C. and Kratochwill, T.R. (1994). Behavioral consultation with parents: Using Competency-based training to modify child non-compliance. *School Psychology Review*, 23, 669-693.

Royce, J.M., Darlington, R.B., & Murray, H.W. (1983). Pooled analyses: Findings across studies. In The Consortium for Longitudinal Studies (Eds.), *As the twig is bent: Lasting effects of preschool programs* (pp 411 – 460). Hillsdale, NJ: Erlbaum.

Rutter, M. and Quinton, D. (1984) Long-term follow-up of women institutionalized in childhood: Factors promoting good functioning in adult life. *British Journal of Developmental Psychology*, 2, 3, 191 – 204.

Rutter, M. and Quinton, D. (1984) Parental psychiatric disorder: Effects on children. *Psychological Medicine*, 14, 4, 853 – 880.

Sanders, M.R. and James, J.E. (1983). The modification of parent behaviour: a review of generalisation and maintenance. *Behaviour Modification*, 7, 3 - 27.

Sanders, M.R. and Plant, K. (1989). Programming for generalisation to high and low risk parenting situations in families with oppositional developmentally disabled pre-schoolers. *Behaviour Modification*, 13, 283 - 305.

Scarr, J.M. and McCartney, K. (1983). How people make their own environments: a theory of genotype-environment effects. *Child Development*, 54, 424-435.

Schiff, M., Duyme, M., Dumaret, A. and Tompkiewics, S. (1982) How much could we boost scholastic achievement and IQ scores? A direct answer from a French adoption study. *Cognition*, 12, 165-196.

Schweinhart, L.J., Barnes, H.V. and Weikart, D.P. (1997) The High/Scope Perry Preschool Study Through Age 27. *High/Scope Educational Foundation (Ypsilanti, Michigan)*

Serketich, W.J. and Dumas, J.E. (1996) The Effectiveness of Behavioral Parent Training to Modify Antisocial Behaviour in Children: A Meta-Analysis. *Behaviour Therapy*, 27, 171-186.

Seitz, V. (1990). Intervention Programs For Impoverished Children: A Comparison of Educational and Family support Models. *Annals of Child Development, Volume 7*, 73 – 103.

Snaith, R.P., Constantopoulos, A.A., Jardine, M.J. and McGuffin, P. (1978). A clinical scale for the self-assessment of irritability. *British Journal of Psychiatry*. 132: 163 - 71.

Strand, P. and Wahler, R. (1996). Predicting maladaptive parenting: role of maternal object relations. *Journal of Clinical Child Psychology*, 25 (1): 43 - 51.

Wahler, R.G. and Graves, M.G. (1983) Setting events in social networks: Ally or enemy in child behaviour therapy? *Behaviour Therapy*, 14, 19 – 36.



Wahler, R.G. and Menginnis, K.L. (1997). Strengthening child compliance through positive parenting practices: What works? *Journal of Clinical Child Psychology*, 26, 433 - 440.

Wasik, B.H., Ramey, C.T., Bryant, D.M. and Sparling, J.J. (1990) A longitudinal study of two early intervention strategies: Project CARE. *Child Development*, 61, 1682-1696.

Webster-Stratton, C. (1982a). Long term effects of videotape modelling parent education program: comparison of immediate and 1 year follow-up results. *Behaviour Therapy*, 13, 702 -714.

Webster-Stratton, C. (1985) Predictors of Treatment Outcome in Parent Training for Conduct Disordered Children. *Behaviour Therapy*, 16, 223 – 243.

Webster-Stratton, C., Kolpacoff, M. and Hollinsworth, T. (1988). Self administered videotape therapy for families with conduct problem children: comparison with two cost-effective treatments and a comparison group. *Journal of Clinical and Consulting Psychology*, 56, 558 - 556.

Webster-Stratton, C. (1990b). Long term follow up of families with young conduct problem children: From pre-school to grade school. *Journal of Clinical Child Psychology*, 57, 550 - 553.

Webster-Stratton, C. (1996). Early intervention with videotape modelling: programs for families of children with oppositional defiant disorder or conduct disorder. In Hibbs, E.D. & Jensen, P. (Eds.), *Psychological Treatment Research of Child and Adolescent Disorders: Empirically Based Strategies for Clinical Practice*. American Psychological Association, Washington DC.

Wechsler, D. (1989). Manual for the Wechsler Preschool and Primary Scale of Intelligence-Revised (WPPSI-R). San Antonio, TX: *Psychological Corporation*.

Wechsler, D. (1991). Manual for the Wechsler Intelligence Scale for Children-Third Edition, (WISC-III). San Antonio, TX: *Psychological Corporation*.

Wechsler, D. (1992) Manual for the Wechsler Objective Reading Dimensions. (WORD). San Antonio, TX. *Psychological Corporation*.

Zigler, E. and Muenchow, S. (1992) Head Start: The Inside Story of America's Most Successful Educational Experiment. *New York: Basic Books*.

## **CHAPTER 5: CLINICAL RESEARCH CASE STUDY**

### **Cognitive behaviour therapy for panic disorder with nocturnal panic attacks during pregnancy: a clinical report**

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**Prepared in accordance with guidelines for contributors to Journal of Psychosomatic  
Obstetrics and Gynaecology**

**(Appendix 2.1 PART TWO)**

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**Abstract**

This paper reports the experimental investigation into the treatment of a woman in the second and third trimester of pregnancy with panic disorder and nocturnal panic, using a modified cognitive-behavioural treatment package. The treatment package consisted of progressive relaxation, psychoeducation, sleep hygiene and cognitive restructuring. It did not include interoceptive exposure or situational exposure therefore avoiding an intervention that required intense effort or evoked intense anxiety or arousal-related sensations. The paper aims to evaluate the efficacy of this treatment package in the treatment of panic disorder with nocturnal panic during pregnancy. In particular, this paper aims to identify which components of treatment are effective in reducing panic symptoms during pregnancy.

The treatment package demonstrated clinical improvements on all measures, total number of panic attacks decreased across treatment and all panic attacks were eliminated. The only statistically significant decrease in panic attacks was for the nocturnal panic attacks following the progressive relaxation component of treatment. It is likely that a combination of the treatment components contributed towards reducing overall panic symptomatology. However, extinction of panic attacks occurred during the cognitive restructuring component of treatment. The cognitive component of treatment was equally effective in reducing symptoms of day panic and nocturnal panic.

Key words: pregnancy, panic disorder, nocturnal panic attacks, cognitive- behaviour therapy, single-n research