

Rebuilding relationships: A pilot study of the effectiveness of the Mellow Parenting Programme for children with Reactive Attachment Disorder

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Abstract

Mellow Parenting is an intensive parenting programme which has been shown to be effective in improving the psychosocial functioning of very vulnerable babies and preschool children. We used a complex interventions model to evaluate its use with school-age children with Reactive Attachment Disorder (RAD), a serious disorder of social functioning associated with maltreatment. The programme had a positive effect on mothers' mental health, but had no measurable effects on symptoms of RAD or on parent–child interaction, although the variation between families after the group suggested that some had responded more than others. Mellow Parenting is an effective programme for vulnerable families with younger children and may be a useful adjunct in the treatment of school-age children with RAD, but it cannot be considered a definite treatment for RAD in this age group. The search continues for safe and effective treatments for RAD in school-age children.

Keywords

intervention, group, parenting, Reactive Attachment Disorder

Introduction

What is Reactive Attachment Disorder?

Reactive Attachment Disorder (RAD) is a serious psychosocial disorder of childhood that was included in the international diagnostic classifications in the early 1990s (World Health Organization, 1992; American Psychiatric Association, 1994) in an attempt to capture a unique cluster of behavioural symptoms displayed by children who are assumed to have been neglected,

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abused, or brought up in institutions in early childhood (AACAP, 2005). The ICD and DSM classifications differ slightly but the core features are the same: there is thought to be a disinhibited type, characterized by overfriendliness with strangers, and an inhibited type, characterized by withdrawn, hypervigilant behaviour. Recent research suggests that mixed types are common (Boris et al., 2004; Minnis et al., 2009).

RAD is an under-researched and poorly defined disorder (O'Connor & Zeanah, 2003) but there is evidence that children with these behaviours use more services and engender greater costs to society even in childhood (Minnis et al., 2006). There is circumstantial evidence that children with RAD are over-represented in a number of socially excluded groups: for example, RAD symptoms are significantly more prevalent in looked-after children compared with general population controls (Minnis & Devine, 2001). There is no published longitudinal data into adulthood, but less than a fifth of serious offenders have *not* experienced significant early adversities including physical, sexual, or emotional abuse or family violence (Coid, 1999). The same assumed risk factors for RAD are, therefore, almost universal features of the early histories of serious offenders. Associations between early abuse or neglect, conduct problems, and adult criminality have been shown in longitudinal research (Dodge, Pettit, & Bates, 1997; Arseneault, Moffitt, Caspi, Taylor, & Silva, 2000), and early onset conduct problems are common in looked-after children who have experienced abuse and neglect in early life (McCann, James, Wilson, & Dunn, 1996; Dimigen et al., 1999; Minnis, Pelosi, Knapp, & Dunn, 2001). Young offenders have an almost 10 times greater risk of premature mortality from all causes compared to the general population (Coffey, Veit, Wolfe, Cini, & Patton, 2003). RAD may therefore be on the developmental trajectory towards some of the most negative adult outcomes and is likely to be of major public health importance.

There are a variety of interventions advocated for RAD but the evidence base is weak and some treatments have even proved dangerous (Steele, 2003). There is an urgent need for theoretically driven and fully evaluated treatments for this condition.

Our previous work on RAD

There are no validated instruments to diagnose RAD in middle childhood but there is a screening questionnaire that has good population norms (Minnis et al., 2007) and a diagnostic instrument is being developed (Minnis et al., 2009). A research programme, in which a standardized assessment package for RAD was developed, fed directly into the current research. Participants in the original assessment study had been actively recruited from social work and child psychology and psychiatry services. Children identified in that study as having RAD were offered the opportunity to participate with their parents/carers in an open treatment trial of a parenting programme (Mellow Parenting) specifically targeting relationship problems. Many of the children with RAD also appeared to have comorbid attention deficit hyperactivity disorder, oppositional or conduct problems, and autism spectrum disorders (Minnis et al., 2009). Unsurprisingly, several also had great difficulty in the school setting both with learning and social behaviour. As RAD is a disorder associated with severe early relationship problems, it seemed a logical first step to test whether an intensive intervention aimed specifically at the parent-child relationship could modify symptoms of RAD and improve the relationship.

Our previous work on Mellow Parenting

The Mellow Parenting programme (www.mellowparenting.org) has previously been shown to enhance parent-child attunement, child behaviour, and child development. It was developed for

families where there were severe relationship problems and around 25% of participating families had a child on the Child Protection Register (Puckering, Rogers, Mills, Cox, & Mattsson-Graff, 1994; Puckering, Evans, Maddox, Mills, & Cox, 1996). It is an intensive programme which runs one full day per week for 14 weeks. In a previous cohort study, all the children were in the care of their own mothers, but the circumstances of the mothers' lives and those of their children were very unfavourable, with discordant marital relationships, domestic violence, and social disadvantage being prevalent. In the previous cohort study, 34% of the sample of mothers in the Mellow Parenting group had themselves been fostered or in care, suggesting that patterns of adverse relationships might spill over even into the next generation. The majority of the mothers had a psychological disorder of sufficient severity to warrant a psychiatric diagnosis and all the children had behaviour problems. A cohort study of 48 families and 28 control families showed significant improvements in mother-child interaction, maternal well-being, child behaviour, and child IQ during a 14-week treatment programme, and these were maintained over a further 12-month follow-up.

Modifying Mellow Parenting for older children with RAD

For this pilot study, we intended that the mothers' group should proceed in a very similar way to Mellow Parenting as it has been traditionally practised, including a personal group for the mothers, shared mealtimes, activities with mothers and children together, and the careful analysis and feedback of videotaped material. The target RAD group identified by the diagnostic study was a demographically very similar group of children compared to those involved in previous Mellow Parenting research; however, the group differed in age and also in the fact that some children were living in foster or adoptive placements. It was a matter of concern that the foster and adoptive parents, being a selected group, might have less reason to examine their parenting and the feelings that it aroused, although there is evidence that these children carry to later placements patterns of adverse interaction that tend to provoke further conflictual relationships (Rushton & Mayes, 1997). Further issues were expected to arise from the possibility of having, in the same parents' group, mothers who had a history of adverse treatment of their child either through substance abuse or severe maternal mental illness and other parenting figures who were caring for a child adversely affected by similar experiences. The possibilities of splitting and scapegoating were considered. It was hoped that the careful recruitment and preparation of the mothers/carers in the proposed study would enable them to engage in the demanding task of relating to these very vulnerable children and to share with each other their common problems without eliciting blame. This is central to the Mellow Parenting method and philosophy, where an atmosphere of mutual support for the difficult task of parenting is developed, with participants sharing both what they have felt pleased with in the video of themselves and their own child and what they would have liked to have turned out differently. By using the rest of the group to help solve the problems identified by the mother, criticism is deflected and support recruited.

Evaluating complex interventions

It has now been recognized that complex interventions cannot be evaluated simply by using randomized controlled trials. Researchers now suspect that many trials of mental health interventions may have had negative results because the intervention was inadequately developed or the trial was inappropriately designed. Before deciding whether or not to proceed to a randomized controlled trial it is crucial to define the problem and optimize both the intervention and the evaluation (Campbell et al., 2007).

Table 1. Recruitment for Groups 1, 2, and 3

Group	Referred/ assessed	Offered group	Accepted group	Gender
1	8	8	4 + 1 joined Group 2	1 girl 3 boys
2	5	5	4	1 girl 3 boys
3	15	11	4	1 girl 3 boys
<i>Total</i>		24	12	3 girls 9 boys

In our study, we decided to test whether a randomized controlled trial of Mellow Parenting as a treatment for RAD was warranted by conducting a pilot study in which both the intervention and evaluation techniques were optimized. We modified the design of each group iteratively so that what we learned from each group informed the design of succeeding groups.

Methods

The design was an uncontrolled before and after pilot study with both quantitative and qualitative evaluation of outcomes. It could be described as a Phase 1/2 (modelling) study in the MRC complex interventions model (Campbell et al., 2007).

Sample selection

For the first two groups, children were recruited from a cohort of children aged 6–9 who had taken part in a study of Reactive Attachment Disorder (RAD). Further details about the selection and nature of that sample are available elsewhere (Minnis et al., 2009). Children with RAD were eligible for group entry whether or not they had other diagnoses and whether or not they were receiving other treatments. Group recruitment is outlined in Table 1. For the first group, eight families were approached. Four families agreed to join the first group while a fifth joined the second group because family factors caused delay. Two families declined to be involved (one adoptive), and a third (a foster family) declined because attendance at the group would have resulted in the child missing a day of school, where she was making good progress. For the second group, five families were invited to take part and four took part. One family (a birth family) declined because of a perception of too many conflicting demands.

The third group was recruited by asking teachers in a school for children with Emotional and Behavioural Disorders (EBD) to complete a screening questionnaire for Reactive Attachment Disorder behaviours (the RPQ). Because this was a school-based sample and many of the potential participants were not currently CAMHS patients, we deemed it more ethical to simply screen for symptoms rather than carry out a full diagnostic assessment of these children. Teachers completed questionnaires on 15 children, 11 of whom were considered eligible due to symptoms of RAD. Four children took part, each of whom had symptoms of RAD according to both teachers and parents. Reasons for non-participation were: mother's employment; mother's ill health; other caring

responsibilities; and previous participation in a parenting group (which we would not have seen as an exclusion criterion, but which made the mother unwilling to engage).

Measures

All measures were administered before and immediately after each group.

The Relationship Problems Questionnaire (RPQ) is a 10-item parent and 14-item teacher questionnaire for RAD behaviours which has been used in large population research (Minnis et al., 2007).

The Strengths and Difficulties Questionnaire (SDQ) is a 25-item screening instrument for child psychopathology which has subscales for hyperactivity, conduct problems, emotional problems (anxiety and depression), problems with peer relations, and prosocial (caring, helpful) behaviour. It has been used in large population research (Goodman, 2001).

The Parenting Daily Hassles Scale (Crnic & Greenberg, 1990) is a self-report measure of the daily events often faced by carers of young children, such as constantly having to clear up and having little time for one's self. The scale has two metrics: one a measure of frequency, that is, how often these events happen; and the second a measure of intensity, that is, how much of a hassle the carer finds these things.

The Hospital Anxiety and Depression Scale (HADS) (Zigmond & Snaith, 1983) is a self-report scale completed by adults. The scale has been used widely in research and clinical practice to detect the presence and severity of mild degrees of mood disorder, anxiety, and depression.

The CAPA-RAD module is a 28-item semi-structured parent-report interview for RAD behaviours which includes items for both the Inhibited and Disinhibited subtypes of RAD. This was developed in our diagnostic study (Minnis et al., 2009) as a module of the Child and Adolescent Psychiatric Assessment (CAPA) (Angold et al., 1995).

The Manchester Child Attachment Story Task (MCAST) measures attachment patterns in middle childhood. Children are given the beginnings of four stories ('story stems') using a doll's house, each containing an attachment-related theme, and the way they complete the stories allows them to be assigned one of 4 attachment categories (secure, insecure-resistant/ambivalent, insecure avoidant, or insecure disorganized) (Green, Stanley, Smith, & Goldwyn, 2000).

Parent-child interaction: A video-taped mealtime was used for rating parent-child interaction in the home setting using the Mellow Parenting rating system, which has been used and validated in other studies (Puckering et al., 1996).

A qualitative evaluation of group outcome was carried out after the completion of all the data collection using focus group methodology (Barbour, 1995). Six clinicians who ran or supervised the groups were asked for their views of the children, their parents, and group process in a group setting. The three focus groups, each beginning with a review of each of the children in one group and then widening to compare and contrast the three groups, were audiotaped, transcribed, and their content analysed.

Study process

At regular points during each group programme, all members of staff running the groups and/or involved in the research met together to discuss progress. These discussions informed our iterative design of future groups.

Group design

Group 1—this group was based on the traditional Mellow Parenting design, which has a group for parents lasting all day and a crèche for children. Lunch is taken with parents, children, and staff together, and a lunchtime activity is shared between children, parents, and staff. Childcare had always been offered as part of the Mellow Parenting programme, allowing parents the freedom to work on their own personal issues and parenting topics while free of immediate childcare demands. In all settings the minimum standard is that safe and enjoyable childcare is offered to children. In some settings the children's group has benefited from the input of trained child therapists from a variety of disciplines. For this study, because the children were of school age and had recognizable self-regulation and behaviour problems, we designed a children's group with elements of social skills training and behavioural therapy. It was expected that the children with RAD would have high levels of interpersonal difficulty in regulating both intimacy and aggression. It was therefore considered necessary to provide a children's group with a high level of staff to child input but also with a structured programme addressing some of the expected difficulties of this group of children. A programme drawing broadly on social learning theory and designed to address emotional literacy and the self-regulation of emotions, especially anger, was developed. We used our collective experience to identify established techniques for addressing some of these difficulties or to design new ones where existing techniques did not exist. This was supplemented by a range of freely available materials used in other group programmes, e.g., Circle Time and Dinosaur School programmes (Webster-Stratton, 1990; Mosley, 2005).

During group process meetings, the team considered that children participating in this group were benefiting in terms of learning positive social behaviours but that, conversely, there may have been negative effects in terms of learning antisocial behaviours. In addition, it was very costly to bring both parents and children in taxis, but this was considered necessary because of the very disruptive behaviour of the children and the vulnerability of some of the parents, which made public transport difficult for them to use. Concerns about 'behavioural contagion' (Jones & Jones, 1995) and high cost informed our design of Group 2.

Group 2—the parent's group was based on the traditional Mellow Parenting design, except that children were not brought together at all, so there was no children's group nor shared lunchtime and lunchtime activity. An alternative parent-child experience supported by video feedback was implemented with each participating family and offered 4–6 sessions of Video Interaction Guidance (VIG) which ran in parallel to the group. VIG, also known as Marte Meo (Axberg, Hansson, Broberg, & Wirtberg, 2006) or Video Home Training (Weiner, Kuppermintz, & Guttmann, 1994), is a technique which has been shown in intervention studies to be effective in improving parental sensitivity (Juffer, Hoksbergen, Riksen-Walraven, & Kohnstamm, 1997). Brief home videos are edited so that in feedback sessions parents are shown and asked to comment on short clips in which parent-child interaction went well. There are marked parallels between this method and the use of video recordings in Mellow Parenting, so the main change was in the format of the day: children were not meeting in a group and the shared lunchtime and activity was omitted.

During group process meetings, the team considered that because the VIG was conducted by different workers from those running the group there was a lack of continuity between the parents' group and the video work. There was also concern about the loss of opportunities for building positive interaction during the shared lunch and activity session. These issues informed the development of Group 3.

Group 3—the development of Group 3 was an attempt to deliver the traditional Mellow Parenting model, in which parent and child work was highly integrated, but without the problems

Table 2. Pre- and post-group symptoms and comorbidity for Groups 1 and 2

Child	Gender	History of abuse/neglect	Reactive Attachment disorder symptoms pre group	Comorbidity pre group
Group 1				
1	F	no	Mixed, mainly disinhibited	Neurodevelopmental disorder (some symptoms of ASD plus motor clumsiness) Nocturnal and diurnal enuresis
2	M	yes	Inhibited	Language delay
3	M	yes	Disinhibited	Behaviour
4	M	yes	Disinhibited	Speech disorder Explosive behaviour Withdrawn explosive
Group 2				
1	M	yes	Mixed	Overactivity reported at home, but not elsewhere. Explosive behaviour
2	M	yes	Mixed	Enuresis and encopresis, symptoms of ADHD
3	M	yes	Mixed	ADHD (on methylphenidate), borderline learning disability
4	F	yes	Mixed	Symptoms of ADHD

Note: These data were not available for Group 3, who did not have a full clinical examination.

of behavioural contagion and cost. Many of the children in Groups 1 and 2 were attending Emotional and Behavioural Difficulties (EBD) schools, and it was clear that EBD setting might be one in which the positive elements of Groups 1 and 2 could be combined. With the cooperation of the education authorities, an initial screening in a local EBD school confirmed our suspicion that many of the children in the age range had symptoms of RAD. This group ran in the school setting during the school day and closely resembled the traditional Mellow Parenting model: a parents' group ran in parallel with the children attending ordinary classes. Parents, Mellow Parenting staff, and children met for a shared lunch and lunchtime activity.

Results

There were no significant differences between the groups in terms of child symptoms and parent-child interaction, either at first assessment or in the pattern of outcome after the programme.

All of the following quantitative results are pooled across the three groups ($n = 12$):

Positive parental interaction with the child during the programme

Total positive interaction was counted across the pre-group and post-group observations, coded from video-tape by independent observers unaware of the pre- or post-group timing of

the observations. Total positive observations fell from a mean of 56.2 ($SD = 69.8$) to 43.9 ($SD = 44.1$), suggesting no improvement over the course of the programme. The very large standard deviations suggest major variability in the sample. One parent refused to allow post-group recording.

Negative parental interaction with the child during the programme

Total negative interaction was counted across the pre-group and post-group observations, coded from video-tape by independent observers unaware of the timing of the observations. Mean negative interaction increased across the duration of the programme from an average of 9.5 ($SD = 19.7$) to 22.5 ($SD = 24.8$). Again, the very large standard deviation suggested excessive variation in the group. One parent refused to allow post-group recording.

Parents' accounts of RAD symptoms during the programme

Parents'/carers' assessment of child RAD symptoms using the RPQ did not fall significantly (Wilcoxon) during the programme (pre-group mean = 28.6, $SD = 4.4$; post-group mean = 26.4, $SD = 8.6$).

Teachers' accounts of RAD symptoms during the programme

Teachers' assessment of child RAD symptoms using the RPQ did not fall significantly (Wilcoxon) during the programme (pre-group mean = 29.4, $SD = 13.8$; post-group mean = 36.0, $SD = 16.0$).

Parents' accounts of child emotional and behavioural symptoms during the programme

According to parents'/carers' assessment, child emotional and behavioural symptoms using the SDQ did not fall significantly (Wilcoxon) during the programme (pre-group mean = 22.6, $SD = 6.5$; post-group mean = 25.4, $SD = 3.7$).

Teachers' accounts of child emotional and behavioural symptoms during the programme

Teachers' assessment of child emotional and behavioural symptoms using the SDQ did not fall significantly (Wilcoxon) during the programme (pre-group mean = 21.2, $SD = 6.8$; post-group mean = 19.4, $SD = 4.5$).

Increase in parents' well-being over the course of the programme

Parents'/carers' scores on the HADS scale changed significantly during the programme (pre-group mean = 18.3, $SD = 6.9$; post-group mean = 14.3, $SD = 7.6$; Wilcoxon signed rank $p = .045$). However, scores on the Parenting Daily Hassles Scale (Frequency of Hassles pre-group mean = 45.4, $SD = 21.6$; post-group mean = 52.4, $SD = 13.1$; Intensity of Hassles pre-group mean = 59.3, $SD = 8.7$; post-group mean = 57.5, $SD = 17.7$) did not change significantly, suggesting that the children still remained very challenging to parents. The marked increase in the size of the standard deviation on Intensity between assessments suggests that some children responded more than others, creating a greater spread of scores after the group.

Focus group findings

Various themes emerged from the focus groups with staff. Each is described below and data are illustrated using quotes from focus group participants.

Characteristics of the children. All of the children had been assessed as suffering from Reactive Attachment Disorder prior to the Mellow Parenting intervention but varied in the extent of abuse and neglect they had experienced and also in the degree to which other neurodevelopmental problems appeared to play a part:

‘I think she is a girl with some kind of intrinsic neurodevelopmental problem.’

‘[These] difficulties seemed outwith or not sufficiently explained by the environment.’

Some of the children were thought to be almost beyond help, but still to have some potential for change:

‘[He] was pretty hard boiled ... but he had a lovely runny centre.’

while others were seen as much less amenable to change:

‘He’s less able to change.’

‘He was not like a 6-year-old; he was like a 15-year-old in all ways...’

Characteristics of the carers. There was an impression among staff that the carers also varied in their ability to change. Some carers were seen as able to use the group to reflect on their own experience of parenting and the way that impacted on their own childcare:

‘[She] was very open and honest in the group ... very reflective’

while others were seen as too damaged to effectively use the group:

‘It was almost impossible to get [her] to reflect...her style was dismissive’.

The carers’ own childhood experiences were seen as having an important impact on their ability to use the group effectively:

‘Her own childhood had been very very tragic hadn’t it. She was a child of abuse and neglect and was unwanted...I think she found us threatening in that we were getting close to her soft centre and that she would have had to unbuckle a lot of defences to really be on the footing she would kind of like to be on and it was safer for her not to be.’

Some parents appeared uncaring or frankly hostile to their children, including one who did not turn up for the group (Group 3) on the day of her daughter’s birthday, even though her daughter was in school and eagerly awaiting her arrival to share a birthday cake with the other group members at lunchtime.

Impact/role of group. Clinicians agreed that there were positive effects of the children's group (Group 1) for some children:

'She responded to modelling from the group leaders and her peers, you know, and she was able to model good behaviour towards the end.'

and of all groups for all adults:

'She got a lot out of the group ... I think they all did.'

'I think the fact that [she] was allowed the space to have her own feelings, to express her own opinions ... and to have feelings and have other people listen to her when she had.'

There appeared to be various components to the benefits for carers:

- *Social support*: 'She definitely got strength out of the other parents, you know, the other Mums';
- *Increased confidence*: 'I remember her being much more, you know, very confident than she had been at the beginning'; 'Towards the end of the group you saw her being a bit more assertive and even though she might not have been able to be directly assertive with her husband, she was subtly assertive';
- *Development of a social life*: 'They [a mother and a grandmother] became actually very good friends [*murmured agreement*]. They have met since the group ... it's a genuinely supportive relationship'; 'They interacted with each other so well ... I think they felt despite it being very, you know, psychotherapeutic, I think they found it quite social and the sort of thing you could do with friends like talking about, you know, how you are getting on with the man in your life and things like that'; 'A day out, a chance to talk, a free lunch. She had an appallingly desert-like social life'.

Despite the benefits of the group for carers, there was an acknowledgement that the behavioural changes in the children were mixed:

'I'd like to think he really did change, but no ... sometimes you would get something, if you got in and he was distressed, if you got in early enough and worked really hard you could divert him.'

'Did you feel there was any change with [him] at all? Not really ... not huge, he showed some improvements ... he enjoyed bits, the bits he enjoyed.'

The effect of improved parenting on children with severe and longstanding difficulties. Some carers seemed to develop improved parenting skills as a result of the group, but these had limited impact on children who were apparently already damaged:

'Based on her videos she looked quite good [*murmured agreement*] in terms of how she was with him but he continued to be an extremely challenging child.'

'She [a Mum] had been told 'Yeah you're doing all the right things', and yet [her child] continued to be this hideous child.'

'She [the worker] seemed to think from the video interaction guidance that there wasn't much scope for change in him because she [Mum] really was doing amazingly with this boy.'

Limited impact on child's environment. Although the group appeared to have effects on the carers and the children, effects on other aspects of the child's home environment were inevitably limited:

'He [male carer at home] was one of the most harsh disciplinarians ... coarse ... I have to say horrible ... he was the most undermining, emotionally abusive man.'

In more than one other participating family, there were suspicions that the child had been or was still being sexually abused, but investigations had been inconclusive:

'The police hadn't discovered it and social workers hadn't discovered it ... but there is certainly something going on there.'

Discussion

Our findings suggest that despite our attempts to optimize an already well-tried intervention to make it appropriate for school-age children with Reactive Attachment Disorder, the intervention appeared to have no measureable effects on the children's emotional and behavioural functioning at a group level. It would have been interesting to make comparisons across groups, but this would not have been fruitful because of the small numbers. We therefore used qualitative methodology to explore our outcomes in more detail.

Our study is limited by the modest sample size and possible biases were introduced by the relatively low proportion of eligible participants who entered the groups. This may have resulted in children with less severe symptoms of RAD taking part in groups, which may have reduced the size of any treatment effect. This is likely to be of greatest significance for the school-based group which was recruited simply on symptom scores, while the two clinic-based groups were recruited from a sample of children all of whom had RAD symptoms of clinical significance (see Minnis et al., 2009).

The parents or carers of the children derived support and some amelioration of their own distress by taking part in the group. No parallel improvement was seen at a group level for the children, though some children were able to make progress in the Mellow Parenting group, as evidenced by a wider spread of measures after than before the group. In attempting to understand who benefited and who did not, reflection by the staff highlighted differences in the origin of the problems and capacities of the children. Though all met the diagnostic criteria for Reactive Attachment Disorder, some had other neurodevelopmental problems which might have contributed to their presenting problems even in the presence of less clearly abusive early relationship problems. For these children, behaviour seemed more amenable to changes in parenting. While this might seem counterintuitive if the underlying problem is seen as 'hard-wired', there is good evidence that even children with organic problems respond well to good parenting and behaviour management (Oddy & Herbert, 2003). By contrast, we still lack an effective intervention to reduce the adverse effects of early abuse and neglect on emotional regulation and the capacity to form empathic relationships after the first few years of life.

Mellow Parenting has been shown to have medium effect sizes in younger children (partial $\eta^2 = .62$ for mother's depression, $.83$ for positive interaction, and $.32$ for negative interaction). Various studies have now demonstrated the greater cost-effectiveness of interventions in the very early months and years of life compared to those delivered at school age (see WAVE, 2005 for a summary). Our lack of effect, using a programme with demonstrable benefits in younger children, adds to the evidence that early intervention is crucial for children affected by early abuse and neglect.

The reasons for this greater effect in the early years are likely to be various. In older children, who have a full school timetable and a much more complex social setting (including peers and

often reconstituted families), it is considerably more practically difficult to find appropriate times and locations to run groups, and the groups may play a proportionately less significant part in these children's lives. Perhaps more importantly, our focus groups suggested that despite apparent improvements in parenting, many of the children continued to demonstrate significant behavioural problems which appeared to respond poorly to changes in parenting. There is evidence that children exposed to maltreatment beyond the very early months and years may have more intractable problems with both their behaviour and physiological regulation (Dozier, Lindhiem, & Ackerman, 2005; Stovall-McClough & Dozier, 2004). The role of early trauma in the development of RAD has attracted attention (Prior & Glaser, 2006) and research both in adults and animals has shown that trauma and maltreatment can be associated with structural changes in the brain and abnormalities of the hypothalamic-pituitary-adrenal axis (HPA) (Teicher et al., 2003). The development of the HPA has attracted particular attention recently. In children from the general population, the diurnal rhythm of cortisol production develops throughout the pre-school period, apparently reflecting gradual changes in both sleep-wake cycles and behaviour (Gunnar & Donzella, 2002). Abnormalities in diurnal cortisol production have been found in maltreated infants, but these can be rectified if intervention is provided early enough (Dozier et al., 2006).

In addition, young maltreated children placed in foster care can rapidly develop secure attachment, but this is more of a challenge for children more than a year old (Stovall-McClough & Dozier, 2004). Recent research has shown that maltreated children are particularly susceptible to developing disorganized attachment if their caregiver has an insecure state of mind with respect to her own early attachments (Dozier, Stovall, Albus, & Bates, 2001), so working directly to modify caregivers' review of their own early relationships is theoretically logical. Although we did not directly measure caregivers' state of mind with respect to attachment in this study, Mellow Parenting specifically encourages participating mothers to reflect on their early relationships. We were able to demonstrate a positive effect on carers' perceptions of their own anxiety and depression, which suggests that this approach may have been beneficial for these mothers' functioning. Our qualitative findings suggest that in addition to the opportunity to reflect on early relationships, these positive changes in mothers' mental health might have been brought about by improvements in social support and networking for these previously isolated women.

The negative outcome of the intervention was disappointing but fully justified using an iterative design to optimize our intervention for older children with RAD, a severe and pervasive disorder. Prior to the MRC Complex Intervention framework (Campbell et al., 2007), pressure was on researchers to adhere strictly to the rigours of the randomized controlled trial. Had we taken this approach, a large amount of time, effort, and finance of researchers and families may have been used to demonstrate that the simple application of a method which had been proved effective in another context was inappropriate with these older children. Although Mellow Parenting is unlikely to provide the definitive treatment for RAD in school-age children it may be a useful adjunct to other treatments by positively affecting mothers' mental health.

Conclusions

We are satisfied from these results that a randomized controlled trial of Mellow Parenting as a treatment for RAD in this age group would not be justified. There are two possible interpretations of this: that Mellow Parenting would not be an effective treatment for RAD in any age group, or that it would only be an effective treatment for RAD if applied early enough. Future research efforts would be well-spent investigating this. The search continues for safe and effective treatments for school-age children with RAD.

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