The Effectiveness of Combined Stress Control and Behaviour Management Sessions for Parents who have a Child with a Learning Disability

Alexis A. Patterson

Doctorate in Clinical Psychology
The University of Edinburgh
2010
D. Clin. Psychol. Declaration of own work

This sheet must be filled in (each box ticked to show that the condition has been met), signed and dated, and included with all assessments - work will not be marked unless this is done

Name:

Assessed work  Case Study  SSR  Essay Question Paper  Thesis
(please circle)

Title of work: The Effectiveness of Combined Stress Control and Behaviour Management Sessions for Parents of Child with a Learning Disability.

I confirm that all this work is my own except where indicated, and that I have:

- Read and understood the Plagiarism Rules and Regulations in the Programme Handbook
- Composed and undertaken the work myself
- Clearly referenced/listed all sources as appropriate
- Referenced and put in inverted commas any quoted text of more than three words (from books, web, etc)
- Given the sources of all pictures, data etc. that are not my own
- Not made undue use of essay(s) of any other student(s) either past or present (or where used, this has been referenced appropriately)
- Not sought or used the help of any external professional agencies for the work (or where used, this has been referenced appropriately)
- Not submitted the work for any other degree or professional qualification except as specified
- Acknowledged in appropriate places any help that I have received from others (e.g. fellow students, technicians, statisticians, external sources)
- Complied with other plagiarism criteria specified in the Programme Handbook
- I understand that any false claim for this work will be penalised in accordance with the University regulations

Signature ................................. Date ........28/07/2010...........

Please note:

a) If you need further guidance on plagiarism, you can:
   i/ Speak to your director of studies or supervisor
   ii/ View university regulations at http://www.acaffairs.ed.ac.uk/Administration/GuidanceInformation/AcademicBestPractice/Plagiarism/Index.htm

b) Referencing for most assessed work should be in the format of the BPS style guide, which is freely available from the BPS web site.
Contents

List of Tables  iv
Acknowledgements v
Abstract vi

Chapter 1: Introduction

1.1 Behaviour problems in children with learning disabilities 4-6

1.2 Parental Stress  6-8
  1.2.1 Parent behaviour  8
  1.2.2 Relationship between parent stress and child behaviour  8-10
  1.2.3 Bidirectional relationship  10-12
  1.2.4 Maternal and paternal differences  12-13

1.3 Models of stress and coping  13
  1.3.1 Cognitive theory of coping  14-17
  1.3.2 ABCX model of stress  17-19
  1.3.3 Parent-child interactive stress model  19-20

1.4 Interventions with families who have a child with a learning disability  20-27

1.5 Summary and hypotheses  27-30

Chapter 2: Methodology

2.1 Design  31

2.2 Ethical considerations  32-33

2.3 Participants  33
  2.3.1 Recruitment  34-36
  2.3.2 Inclusion Criteria  36
  2.3.3 Exclusion criteria  36-37

2.4 Measures:
  2.4.1 Participant information  37
  2.4.2 Brief COPE Inventory (Carver, 1997)  37-39
  2.4.3 Hospital Anxiety and Depression Scale (HADS), Snaith & Zigmond (1983).  39-40
  2.4.4 Parenting Stress Index – Short form (PSI-SF), (Abidin, 1990).  40-43
  2.4.5 Aberrant Behaviour Checklist-community version (ABC-C)  43-45
Chapter 3: Results

3.1 Data Integrity
   3.1.1 Missing data
   3.1.2 Distribution

3.2 Characteristics of the sample
   3.2.1 Group differences on outcome variables

3.3 Inferential analysis
   3.3.1 Hypothesis 1-3
   3.3.2 Hypothesis 4-7
   3.3.3 Hypothesis 4
   3.3.4 Hypothesis 5
   3.3.5 Hypothesis 6
   3.3.6 Hypothesis 7

Chapter 4: Discussion

4.1 Interpretation of results
   4.1.1 Hypothesis 1-3
   4.1.2 Hypothesis 4-7

4.2 Clinical implications
   4.2.1 Clinician-Researcher
   4.2.2 Appropriateness of Intervention

4.3 Limitations of the study
   4.3.1 Recruitment
   4.3.2 Measurement
   4.3.3 Methodological limitations

4.4 Future research

4.5 Conclusion

References
Appendices

Appendix 1a  letter of ethical approval
Appendix 1b  Research Governance approval letter
Appendix 1c  Consent from special needs school
Appendix 2  Power calculation
Appendix 3  Participant information questionnaire
Appendix 4  Brief COPE
Appendix 5a  Consent form for parents
Appendix 5b  Cover letter to parents
Appendix 5c  Information sheet
Appendix 5d  Invitation to group
Appendix 5e  Flyer for study
Appendix 5f  Invite letter/cover letter for group recruited from special needs school.
Appendix 6  Skew and Kurtosis results
LIST OF TABLES

Table 1: Parent and child characteristic for the intervention and control group.

Table 2: PSI - means and standard deviations for the total group (time one)

Table 3: ABC - means and standard deviations for the total group (time one).

Table 4: HADS - means and standard deviations for the total group (time one).

Table 5: Brief COPE - means and standard deviations for the total group (time one).

Table 6: PSI means and standard deviations over time for the intervention group.

Table 7: ABC, means and standard deviations over time for the intervention group.

Table 8: HADS, means and standard deviations over time for the intervention group.

Table 9: Brief COPE - means and Standard Deviations over time for the intervention group.
Acknowledgements

I would like to thank my supervisors, Morag Watson and Karen McKenzie, for their greatly appreciated advice and support throughout the research and writing of this thesis. I would also like to thank all the parents who attended the sessions and completed the questionnaires making the research possible.
Abstract

Objectives: There is body of evidence that suggests parents who have a child with a learning disability experience increased stress levels. In addition, research has found a bidirectional relationship between parental stress and child challenging behaviour. Other investigations in this area have found parental stress to be a significant predictor of intervention outcome, and it has been suggested that it should be targeted prior to any child focused intervention. The aim of the current study is to examine the effectiveness of an intervention that targets both parental stress and child challenging behaviour, in families who have a child with a learning disability.

Design & Method: The study employed a questionnaire based, quantitative, within and between groups methodology. The design included two groups, both parents of children with learning disabilities. Group one, attended three sessions targeting parental stress and three on child challenging behaviour and completed measures on parental stress, mood, coping and child behaviour. Group two, received ‘treatment as normal’ and completed the same measures.

Results: Correlations were conducted to look at the relationship between parental stress, coping, mood and child behaviour. The results partially supported a relationship between parental stress, child challenging behaviour and coping. The ANOVA revealed a significant decrease in anxiety scores for the intervention group over time. The results
provide some support the effectiveness of the sessions in reducing parental stress but not child challenging behaviour.

**Conclusions:** The findings provide some support for the use of a brief intervention for parents who have a child with a learning disability. The results indicate high levels of stress and child challenging behaviour, which has been linked to increased risk of mental health problems in both child and parents. The current intervention may be appropriative for families with lower levels of stress and behaviour problems, and alternative approaches may be more suitable to families with chronic difficulties.
1: INTRODUCTION

A great deal of evidence points to the association between severity and frequency of behaviour problems in children with learning disabilities and to stress and other minor psychiatric problems, such as depression in their parents (e.g. Baker et al., 2002; Baxter et al., 2000). When stressed, parents respond differently to their children with behaviour problems (Baker et al., 2002). It is therefore, likely that parents of children with learning disabilities reporting particularly high stress levels will engage in different parenting behaviour that may affect child behaviour (Hastings, 2002). An intervention which targets parents’ stress levels as well as their parenting skills is likely to be effective in helping parents manage challenging behaviours and thus reduce the behaviour itself (Hastings, 2002). Wiggs and Stores (2001) found that behavioural interventions for challenging behaviours in children with learning disabilities led to improvements in child behaviour and maternal stress, as reported by mothers. Sofronoff and Farbotko (2002) demonstrated that parents trained in behavioural principles showed increased self-belief in managing their child’s behaviour. Thus, by promoting parents’ perceived ability to cope it may be beneficial in helping them implement parenting strategies.

Overall, correlational studies have shown that contact with services (i.e. individual contact with support services) is likely to be a useful support for parents, however it is thought that this is unlikely to have a long term effect and more targeted interventions are needed (Hastings & Beck, 2004). Group interventions for parents described in the literature often contain components of the cognitive behavioural model (Cognitive
Behavioural Therapy; CBT). All of the studies using this approach show reasonable evidence for the use of CBT techniques in improving the stress of parents with children who have a learning disability (e.g. Gammon & Rose, 1991; Kirkham & Schilling, 1990). Kirkham and Schilling (1990) showed that an intervention focused on reducing stress, which included a CBT element, was superior to a standard parent support group intervention.

Hastings and Beck (2004) predicted that by addressing parental stress, the impact of parent training would be more positive. To date there does not appear to be any studies examining a combined approach of ‘reducing parental stress’ and ‘improving parenting strategies’. There would be clinical and theoretical implications if such a group was found to make a difference to parents’ stress and childrens’ challenging behaviour. It may lead to future interventions that focus on reducing parents’ stress and improving parents’ ability to cope rather than intervening specifically with the child’s behaviour. It may help develop more effective interventions for children with challenging behaviour with learning disabilities. In addition, it could add to the understanding of how parent interventions help reduce child challenging behaviour.

This introduction will begin with an overview of research findings on parenting stress in families who have a child with a learning disability, including a discussion on models of stress and coping. It will also review research into interventions that have been implemented to address behaviour problems and parenting stress in families who have a child with a learning disability.
Literature was identified using a systematic method from MEDLINE, psychINFO, EMBASE and the Cochrane database of systematic reviews from 1950 to present. Search engines such as ‘Google’ were also searched to identify further articles. Search terms included, learning disability; intellectual disability; mental retardation; coping; stress; parents; mothers and fathers.

Throughout the introduction the term ‘parental stress’ will be quoted and refers to the stress that parents experience as a result of being a parent, including depression and anxiety. ‘Challenging behaviour’ will also be referred to throughout the introduction and has been defined by the Royal College of Psychiatrists, the British Psychological Society and the Royal College of Speech and Language Therapists (2007) as;

‘Behaviour can be described as challenging when it is of such intensity, frequency or duration as to threaten quality of life and/or the physical safety of the individual or others and is likely to lead to responses that are restrictive, aversive or result in exclusion.’ (p. 10)

Finally, the term ‘learning disability’ (‘LD’) will be used throughout. The British Psychological Society (BPS, 2000) outline three core criteria for learning disability, significant impairment in intellectual functioning; significant impairment in social/adaptive functioning; and onset before adulthood. Most of the studies discussed in the current literature review include children who have a diagnosis of both learning
disabilities and autism spectrum disorder. Autism is a neurodevelopmental disorder characterised by severe qualitative impairments in reciprocal social interaction, communication, and restricted repetitive behaviour, interests and activities (American Psychiatric Association, 2000). Studies of children with autism without a learning disability (e.g. Aspergers syndrome or high functioning autism) were not included in the review.

1.1 Behaviour problems in children with learning disabilities

Epidemiological studies have found that challenging behaviour is more prevalent in children with learning disabilities compared with typically developing children (Emerson, 2003; Quine, 1986). In addition, individuals with learning disabilities are at heightened risk of developing behaviour problems and mental disorders, a phenomenon known as dual diagnosis (Dykens et al., 2000, Gath & Gumley, 1986; Reiss 1990). In adulthood it is estimated that between 20 per cent and 35 per cent of adults with LD have psychiatric disorders (Nezu et al., 1992). This increased risk seems to extend to children and adolescents and presents challenges to parents and caregivers (Emerson, 2003). Research has shown that the incidence of behaviour problems is higher in children with autism and pervasive developmental disorder (PDD) (Gadow et al., 2004). In infants with developmental delay (excluding autism), behaviour problems have been demonstrated at an early age and usually persist for over 12 months (Baker et al., 2003).

A study by Eisenhower et al. (2005), considered some of the reasons for dual diagnosis and particularly the relationship between behaviour problems, maternal wellbeing and
specific syndromes. In a longitudinal study that involved 215 families with a child with LD, aged three to five years old, it was found that challenging behaviour was high. The study found that 38.2 per cent of three year old children scored within the borderline or clinical range on the Child Behaviour Checklist (CBCL) (Achenbach & Edelbrock, 1984) for total behaviour problem, compared with 10.3 per cent of typically developing children. They also found that behaviour problems differed by syndrome, with the highest levels being found among children with autism and cerebral palsy. Children with Down syndrome were similar to typically developing children, showing the lowest levels of behaviour problems.

Younger children rarely present diagnosable mental disorders but psychopathology may be evident in the form of increased behaviour problems (Baker et al., 2002). Feldman et al. (2000) found there was no difference in the frequency of behaviour problems in children with developmental delay or LD and their typically developing peers. However, this study used the criteria of extremely low birth weight and children included in the sample did not necessarily have a diagnosable developmental delay, which may account for the lack of difference in results. A study by Baker et al. (2002) found that children with developmental delays showed increased externalizing, internalizing and total behaviour problems on the Child Behaviour Checklist (CBCL) (Achenbach & Edelbrock, 1984). This difference was backed up by a further longitudinal study (Baker et al., 2003).
Further research shows that school-aged children and adolescents with a learning disability are at increased risk of psychiatric disorders (Merrell & Holland, 1997). In a recent epidemiological study, Emerson (2003) analysed a national dataset of diagnostic information from over 10,000 children aged 5-15 years in Great Britain. The study found that 39 per cent of children with LD met the criteria for at least one psychiatric diagnosis according to the Diagnostic and Statistical Manual of Mental Disorders-4th Edition (APA, 2000) and International Classification of Diseases-10th Revision, (WHO, 2007) compared with only 8.1 per cent of children without LD. It was found that children with LD were at particular risk of Attention Deficit Hyperactively Disorder (ADHD), conduct disorder, anxiety disorders and pervasive developmental disorders (Einfeld & Tongue 1996; Emerson, 2003).

1.2 Parental Stress

Early studies investigating parental stress in families who have a child with a learning disability based their approach on a pathological model of family functioning (Holt, 1958). In this approach it was thought that parental distress was inevitable in families who have a child with a learning disability. However, there were many weaknesses with such studies, such as low sample size, inadequate control groups and a narrow focus upon the difficulties of the family and socioeconomic status. Variables relating to the severity of the child’s problems were rarely considered (Quine & Pahl, 1991).

Since the 1980’s, the research approach has changed and has considered mediating factors such as parental coping styles (e.g. Byrne & Cunningham, 1985; Hodapp, 1995;
Minnes, 1998). Recent approaches are based on a ‘normal’ family model, and research has focused on areas such as determining which families may be more vulnerable to stress. In addition studies have examined which aspects of caring for the child are more difficult, what is the most difficult aspect to caring for the child, which families adapt and cope with the stress and how do they do so (Quine & Pahl, 1991). There is agreement that parental stress and adaptation are influenced by many factors and are understood within a multi-dimensional model (e.g. Frey et al., 1989). These dimensions include child characteristics, family and environmental factors and parents’ cognitive styles.

Early research focused on the association of parental mental health and having a child with a learning disability. For example, Olshansky (1962) wrote about the ‘chronic sorrow’ of parents who have children with a LD, due to the mourning of the lost perfect child. Since then research has been carried out to investigate this assertion and has found an increased risk of depression in mothers who have a child with LD (Blacher, 1984; Breslau & Davis, 1986; Olsson & Hwang, 2001). However much of this research is based on the period soon after the diagnosis (Glidden, 1993). In contrast, research over longer periods has found that there is a decline in symptoms of depression and that children with disabilities are regarded as an integral and important part of their family (Flaherty & Glidden 2000; Glidden & Schoolcraft, 2003).

Furthermore, recent research has indicated that parental stress is associated with child behaviour problems independent of the level of learning disability (Baker et al., 2002; Baxter et al., 2000; Beck et al., 2004; Quine & Pahl, 1985). The following section
reviews literature examining the role that parents play in influencing child behaviour problems as well as the impact child behaviour problems have on parental stress. It will specifically consider the use of longitudinal studies in establishing the bi-directional relationship between parental stress and child behaviour problems, and factors that could account for variations in parent and child outcomes.

1.2.1 Parent behaviour

Research has suggested that parent behaviour can influence child outcomes in terms of a reduction in challenging behaviour (Baker et al., 2002). Specifically, research suggests that negative parenting interactions such as harsh, negative or inconsistent behaviours can predict future negative outcomes in terms of challenging behaviour for children (e.g. Baumrind, 1993; Mesman & Koot, 2000). Onufrik et al. (1995) demonstrated that parental stress was linked to less responsive parenting, less effective uses of directives, and subsequent poor development in high-risk premature infants. In addition, it has been found that challenging behaviours can be considered aversive to parents (Hasting, 2002; Oliver, 1995). Due to this, parents may try to avoid the behaviours and inadvertently reinforce them (Hastings, 1999). Parents under stress may be less tolerant of challenging behaviour and possibly avoid active attempts to manage the behaviour.

1.2.2 Relationship between parent stress and child behaviour

As discussed previously, many studies have illustrated that parents of a child with a learning disability are likely to experience significantly higher levels of parenting stress than are parents of typically developing children (e.g. Hastings, 2002). However, despite
these broad findings, it is also acknowledged that parents of a child with a learning
disability vary considerably in the levels of stress they experience, and that their stress
levels are associated with a wide range of variables (Baxter et al., 2000). As well as
evidence for the association between the frequency and severity of behaviour problems in
families who have a child with a learning disability and parental stress and mental health
problems (Baker et al., 2002; Baxter et al., 2000; Beck et al., 2004), there is also
evidence that it is the child behaviour problems that predict parental stress and not the
learning disability itself (Baker et al., 2002; Baxter et al., 2000; Beck et al., 2004; Quine
& Pahl, 1985). Some studies have found associations between parental stress and levels
of disability (Beckman, 1983) and others have found no such association (Baker et al.,
2002). This may be due to sampling differences between the studies (Knussen & Sloper,

Minnes (1998) suggests that specific behavioural characteristics, such as the child’s
communication skills (Frey et al., 1989) are more highly correlated with parental stress
than the level of learning disability (Walker et al., 1992) or physical impairment
(Majnemer et al., 2006). Quine and Pahl (1985) found that stress experienced by parents
of children with multiple disabilities was influenced firstly by child characteristics, and
secondly by the family’s socioeconomic status. Of the child’s characteristics the most
stressful factor seemed to be behavioural problems and night-time disturbance.

In a study of 46 mothers of children attending special schools, Hassall et al. (2005)
examined the relationship between parent self esteem and locus of control, and child
behaviour problems. Participants were interviewed and completed measures of adaptive behaviour, family support, parenting competence, parental locus of control and parent stress. Most of the variance in parental stress was mediated by child negative behaviour difficulties, self-esteem of parents, parental locus of control, and parenting satisfaction. They found a significant relationship between child behaviour difficulties and parenting stress. Social support and self esteem were inversely related to parenting stress. The absence of a longitudinal design limits the conclusions of this study. Furthermore, a recent study by Spratt et al. (2007) examined four clinical paediatric samples of children with special needs. The results indicated a connection between behaviour problems of children and elevated stress levels for their parents, particularly in combination with perceived inadequacy of support and resources. Such findings indicate the importance of parents’ cognitive states as well environmental factors such as social support in mediating the stress attributed to a child with a learning disability, which is in line with current models of parental stress (e.g. Mash & Johnston, 1990).

1.2.3 Bidirectional relationship

Evidence for a strong association between child behaviour problems and parental stress has been widely demonstrated, and this relationship has been established independently of learning disability. To investigate this relationship, longitudinal methodologies have been employed. Such designs can demonstrate that changes in the causal variable precede changes in outcome. Hastings et al. (2006) found that, in all but one longitudinal study (Keogh et al., 2000), there was a bidirectional relationship between behaviour problems and parent outcomes (Baker et al., 2003; Orsmond et al., 2003).
Baker et al. (2003) recruited 205 families with a three year old child to participate in a two year longitudinal study. Children were classified as ‘delayed’ and ‘non-delayed’ and participants completed measures on infant development, child behaviour and family impact. They found behaviour problems to be stable over time and higher in the ‘delayed’ group. In addition, they found that any changes in child behaviour problems were associated with an increase in parental stress and that changes in parental stress over a one year period were associated with an increase in child behaviour problems. This study found an association between parent stress and child behaviour problems providing evidence of the bi-directional relationship between parental stress and child behaviour problems. Baker et al. (2003) suggested that parenting practices interact with child behaviour problems and that child behaviour problems impact on parenting practices and/or parenting stress. Over time this might have a greater impact on some parents than others depending on the protective factors they have available (e.g. coping strategies, social support).

Hastings et al. (2006) conducted a two year longitudinal study aiming to extend previous research on the relationship between parental stress and child behaviour problems. They included 75 families with a child with a learning disability aged three to 19 years and considered both internalising and externalising behaviours. As previous research had not controlled for parental mental health, they included measures of stress and parental mental health. Furthermore, they considered the role of maternal expressed emotion and the relationship with child behaviour problems. They found further evidence of a
bidirectional relationship, specifically maternal distress leading to increases in children’s behaviour problems over time, and children’s behaviour problems leading to increased maternal distress over time. They extended previous literature showing that this bidirectional relationship is present across a broad age range and specific to externalising behaviours as opposed to internalizing behaviours. In addition, they controlled for parental mental health and found there was a relationship between child behaviour and maternal distress that was unrelated to maternal mental health. In a longitudinal regression analysis they found that maternal depression is causally related to parental stress. Furthermore, they found a bidirectional relationship between maternal depression and maternal distress, over and above the effect of the child’s externalising problems. They suggest that their findings indicate that parental mental health and parental distress are risk factors for each other, but suggest further research is needed to confirm this result as it could have important implications on planning interventions.

1.2.4 Maternal and paternal differences

Research in this area has more frequently been with mothers than with fathers. However, research conducted with both parents indicates a similar level of stress in families with a child with a LD (Roach et al., 1999), although different factors may influence stress in fathers compared with mothers. Fathers report more stress related to the relationship with their child, whereas mothers have been more affected by their personal support networks (Krauss, 1993). Baker et al. (2003) found a moderate agreement in their assessment of child behaviour problems and the impact on the family over time. They found that there
was higher agreement in families who have a child with learning disability than those who do not.

1.3 Stress and coping

Researchers have increasingly adopted the view that families with a disabled child are not generally characterised by high levels of pathology and families may adopt various strategies to adapt successfully to the demands of the child (Hodapp, 1995). The cognitive model of stress and coping (Lazarus & Folkman, 1984) has frequently served as the basis for research into parental stress and coping in families with disabilities (Frey et al., 1989). A distinctive feature of this model is the importance attached to the individual’s appraisal of the stressor in affecting their adaptation to the stressful situation. For example, Quine and Pahl (1991) in a study of 166 mothers, found that cognitive appraisals had a mediating influence on the child’s behaviour problems and consequent parenting stress, in particular their adjustment and acceptance of the child.

Taanila et al. (2002) carried out a qualitative study to assess coping strategies in high and low coping families. They found that parents in the high-coping families were more likely to have succeeded in creating a shared understanding of the family situation. They obtained information about their child’s situation and accepted it quickly, adopting an optimistic and realistic attitude about their own and their child’s life and future. They also found parents in the high-coping group had extensive formal and informal support available.
1.3.1 Cognitive theory of coping

The cognitive theory of coping described by Lazurus and Folkman (1984) has been used widely by researchers studying families who have children with disabilities (e.g. Frey et al., 1989; Quine & Pahl, 1991, Sloper & Turner, 1993). Lazurus (1966) defines stress as;

‘The psychological state which derives from peoples’ appraisals of their adaptation to demands which are made of them.’ (p. 59)

In this approach (Folkman et al., 1979) stress is seen as a process which involves continuous interactions and changes, which are called transactions, between the person and their environment. The individual is viewed as active in the process and can influence the stressor through behavioural, cognitive and emotional strategies. Stress occurs when a person views the demands of the situation as greater than their ability to cope with those demands (Folkman et al., 1979; Lazurus, 1966).

Lazurus et al. (1974) define coping as;

‘Problem solving efforts made by an individual when the demands of a given situation tax adaptive resources’. (p.59)

Folkman et al. (1979) describe five categories of coping resources including utilitarian resources e.g. socioeconomic status, money, service availability; health, energy or morale e.g. mental or physical illness; social network; general and specific beliefs e.g.
Coping strategies are actions taken in a specific situation to reduce stress.

A study by Quine and Pahl (1991) offers support to this model. They examined 166 children with severe learning disabilities and found that being middle class with few financial worries appears to be a buffer for the effect of stressful behaviour for mothers of children with severe learning disabilities. Mothers who had positive adjustment and acceptance of their child were also found to have lower stress scores.

This theory also highlights the importance of a person’s appraisal of a situation in determining their emotional response. Folkman and Lazurus (1988) describe two forms of appraisal, “primary appraisal” refers to the person’s evaluation of the situation as threatening and “secondary appraisal” refers to judgments about what coping might be appropriate and available.

Folkman (1997) has argued that the original model needs expansion to accommodate the observation that positive affect and positive perceptions can occur in the context of chronic stress and such positive outcomes do not necessarily occur in the absence of a stressor. Folkman describes three pathways to positive psychological states. The first pathway to positive states is the result of meaning-based processes that people use to cope with stressors, including positive reappraisal, revising goals, planning goal directed problems focused coping and activating spiritual beliefs and experiences. The second pathway describes coping as a response to distress rather than the source of distress.
Folkman argues that the negative psychological states associated with prolonged stress may cause people to seek out positive psychological states, even for short periods. The third pathway suggests that coping processes lead to positive psychological states to help sustain the renewed coping efforts.

Hastings et al. (2002) offer support to the model based on theoretical work that mothers’ positive perceptions are related to coping strategies, specifically positive reframing strategies. That is, positive perception may act as a way to deal with the stress of coping with a child with LD. These effects were found after they controlled for other key variables such as social support and care difficulties. They also found that using social support as a coping mechanism and the helpfulness of formal and informal support resources promoted maternal sense of maturity and personal growth. A further finding was that mothers who reported higher care giving demands for their child with LD also reported more personal growth and maturity, although they note that this could be an artefact of the measurement of care giving demand and requires further research.

Embedded in the Lazarus and Folkman ‘Ways of Coping Scale’ (Folkman & Lazurus, 1988) is a distinction between two types of coping, problem focused coping and emotion focused coping. Problem focused coping is aimed at doing something to deal with the stress. Emotion focused coping is aimed at relieving the emotional distress associated with the coping. Most stressors will elicit both types of coping (Folkman et al., 1979). Problem focused coping is more common when a person thinks something constructive can be done. Emotion focused coping tends to be used more when a person believes the
stress is something that must be endured (Folkman et al., 1979). Research has found that responses to the ways of coping form more than two factors (Carver et al., 1989). Carver et al. (1989) reported that most researchers view factors other than problem focused coping as variations of emotion focused coping. However, these factors have found to be different in nature to the extent of being inversely correlated (Scheier et al., 1986). A review by Knussen and Sloper (1992) found that parents with greater distress use problem-focused coping strategies and more ‘wishful thinking’ in response to stress. A limitation of this model is that a coping behaviour could be viewed as both emotion focused and problem focused simultaneously.

1.3.2 ABCX model of stress

A model that has been widely used in learning disabilities is Hill’s (1949) ABCX model of stress and its variations including the double ABCX model of family adjustment (McCubbin & Patterson, 1982). Hill’s ABCX model asserts that the impact of the child as a stressor (aA) is moderated by parental resources (bB), and parental cognitions (cC), to result in an outcome of stress or some other indicator of adjustment (xX). That is, the stress involved in caring for a child with a disability is associated with child characteristics, the resources available for dealing with the crisis, and the family’s perception of the child. In addition, mediating variables include other family stressors, other social resources available, the coping strategies employed by the family, and the broader meaning the family gives to events. In McCubbin and Patterson’s (1982) double ABCX model, the adaptation to crisis (Xx) is explained by a cumulative impact of other
family stresses (Aa), the families existing and new resources (bB) and the meaning of the stressor to the family (cC).

Orr et al. (1991) evaluated the McCubbin and Patterson’s (1982) double ABCX model in their study of families who have a child with learning disabilities. They found a linear progression from the stressor (A), to the family’s perception of the stressor (B), to the family’s use of resources (C) and to the experience of stress (X), thus supporting Hill’s ABCX model. Saloviita et al. (2003) also applied this model and demonstrated that the most important outcome of parent stress is a negative perception of their child’s disability. They found that this perception for mothers and fathers was associated with levels of challenging behaviour and negatively associated with perceived social acceptance of their child (Saloviita et al., 2003). Nachshen and Minnes (2005) compared both models to examine the factors that contribute to empowerment in parents with and without a child with a learning disability. Their results indicated that empowerment functioned similarly in both groups and supported the use of the ABCX model over the double ABCX model. This is consistent with other studies demonstrating a lack of a significant direct relationship with the stressor (aA) and the family’s resources (bB) (Orr et al., 1991, Shin & Crittenden, 2003), as well as the assertion that the relationship between the stressor and the outcome is mediated by the perceptions of the stressor and the family’s use of resources (Orr et al., 1991).

A strength of this model is that it provides a theoretical basis for examining the mediating variables contributing to family stress, such as severity of disability,
socioeconomic status and the availability of support. A limitation of the model might be that it focuses on dysfunction rather than how families adapt to, or function, with complex demands and a range of resources.

1.3.3 Parent-child interactive stress model

A further model of parent-child interactive stress has been described by Mash and Johnston (1990). This model includes three categories of variables, conceptualised as ‘child characteristics’, ‘parent characteristics’ and ‘environmental characteristics’. They suggest that these variables may interact to influence parent-child interactive stress and that parent-child interactive stress may arise from difficult child characteristics and parental cognitions. It suggests that parenting stress levels will have a reciprocal influence on the child, the parents and the environment. Patterson (1983) described how reactions to challenging behaviour may become less effective and therefore increase parental stress levels. Patterson suggested that increased stress and irritability may actually lead to an increase in the child’s aggressive behaviour. A strength of this model is that it considers the bi-directional relationship between parents and children and how this may impact on parent stress. However, it lacks the complexity to explain the mediating role between parental cognitions and parental behaviour, which may be important when considering interventions.

Using this model Harrison and Sorronoff (2002) found that in children with ADHD, difficult child behaviour and low perceived control was associated with higher levels of maternal stress. In contrast, in abused children, parent-child interactive stress was
associated with a combination of parent and environmental factors. Hassall and Rose (2004) note that this model may be useful to consider when carrying out research with disabled children due to the increased levels of parental stress and child challenging behaviour that have been reported in this population.

1.4 Interventions with families who have a child with a learning disability

Spratt et al. (2007) point out that there are limited interventions for child behaviour problems and/or parental stress for families with a child with a learning disability, placing this group of children at high risk. They discuss how there tends to be a focus on medical needs followed by a focus on developmental and educational needs. However, research in this area is expanding and a range of interventions targeting parent stress and behavioural problems have been evaluated, particularly in relation to parental stress. Literature on interventions that target both parent stress and child behaviour problems are reviewed below.

Interventions that target challenging behaviour in children also seem to have an impact on parental wellbeing (Hasting & Beck, 2004). Hastings and Beck (2004) suggested this is likely to be because the predictors of stress in parents who have children with LD include child characteristics. As discussed previously there is a large body of literature that indicates a strong association between frequency and severity of child behaviour problems and parental stress and/or mental health problems. There is also some prospective evidence that the causal direction is from child to parent (Keogh et al., 2000). Other research supports the bi-directional effect where the child’s behaviour problems
predict parental stress over time, and parental well being predicts child behaviour over time (e.g. Baker et al., 2003; Orsmont et al., 2003).

Parent training approaches have generally employed contingency management training, which teaches parents to use consequences, clear instructions and planned activities. It teaches parents to restructure antecedents to prevent problem behaviour, and compliance training which teaches parents effective ways of requesting appropriate behaviours from their children (Lutzker et al., 1998). Such programmes have found generalised changes in both parent and child behaviour (Harrold et al., 1992; Sanders & Plant, 1989) and thus have shown efficacy for contingency management and planned activities training for parents who have a child with a learning disability.

More recent programmes have focused on enhancing parent-child interactions. For example, Hudson et al. (2003) examined the effectiveness of a programme, which focused on replacing problem behaviour with appropriate behaviour, planning for appropriate behaviour, and teaching children new skills. They found improvements in child behaviour, and that parents were more effective in managing behaviour and were less stressed following training.

The Triple P-Positive Parenting Programme (Sanders, 1999) has recently been adapted for parents of children with learning disabilities. A recent randomised clinical trial of the Stepping Stones Triple P (Sanders et al., 2003) with parents of preschool children with
learning disabilities and problem behaviour found decreased behaviour problems and parental stress (Roberts et al., 2006).

A study by Plant and Sanders (2007) evaluated an intervention aimed at reducing challenging behaviour in children with intellectual disability. The intervention involved an adapted version of Triple P, followed by an additional component that focused on helping parents to cope with the stress of caring for a child with a learning disability, compared with those who attended the adapted Triple P only. They found that both groups were associated with lower negative child behaviour and improved parental competence compared to the waiting list control group. However they found no differences between the intervention conditions on any measures of parental distress (Plant & Sanders, 2007). They report that scores on parental distress were not in the clinical range pre intervention, which may explain why no differences were found.

Brightman et al. (1982) compared a brief intervention (nine sessions over three months) with an individually based training programme for parents of children with moderate to severe LD. They found that the two approaches were equally effective in increasing parental knowledge and proficiency in behaviour management skills but also in reducing child behaviour problems.

Chadwick (2001) carried out a randomised trial of brief individual versus group training for parents of children with behaviour problems and severe learning disabilities. They found the individual interventions were found to be superior to the group intervention in
acceptability, attendance, levels of participant satisfaction and likelihood of reported behavioural change. However, there were no significant differences between frequency or severity of child’s behaviour problems post intervention.

A controlled trial of a parent to parent model was carried out by Singer et al. (1989). This model of intervention usually involves parent supporters who will have experience of caring for a child with a disability. Parents referred to the service are then matched to the parent supporters. They self manage their support, which can take the form of emotional support and information. This support usually happens via telephone contact (Hasting & Beck, 2004). The study involved 128 parents, and the results indicated that there was a significant impact of this model. Specifically, parents’ positive perceptions of their child and the positive impact on the family improved in the treatment group.

In relation to addressing parental stress, a multi-component intervention was carried out by Schultz et al. (1993). Their ‘Caring for Parent Caregivers Programme’ was a group based intervention delivered over six weeks which covered stress management, relaxation, problem solving, accessing social support, networking, and awareness of others. They found significant improvements in psychological wellbeing in the treatment group compared with the waiting list control group for both mothers and fathers. A strength of this study is the good internal validity due to the control group comparison.

More recently, it has been suggested that improving acceptance may impact on the adjustment of parents of children with a learning disability (Lloyd & Hasting, 2008).
Acceptance is defined as the ability to take what is offered without trying to avoid experiences (Hayes et al., 1999). It has been suggested that therapeutic interventions that increase parental acceptance and/or reduce avoidant coping may be most successful in positively affecting the adjustment of mothers who have a child with a learning disability. In addition, measures of these constructs should be included in evaluating support interventions for parents who have a child with a learning disability as a method for testing their predictions that parental acceptance and coping type impact on adjustment of mothers who have a child with a learning disability (Lloyd & Hastings, 2008). Blackledge and Hayes (2006) used acceptance and commitment therapy (ACT) (Hayes et al., 1999) as a group intervention to reduce depression and stress in parents of children with autism. The findings were not conclusive, but indicated a mediational relationship between acceptance and psychological distress.

Related to the acceptance approach, Dumas (2005) has developed a mindfulness-based parent training model to encourage everyday mindfulness in parents of children with behaviour problems. Mindfulness refers to the non-judgemental observation and awareness of the present moment (Baer, 2003). This type of treatment has been used successfully in other areas such as with substance abusers (Leigh et al., 2005). Furthermore, Singh et al. (2007) developed a mindfulness-based parenting programme for mothers of children with autism and found a decrease in behaviour problems over a 12 week period. They did not find a relationship with mindfulness and maternal adjustment, but suggested that this could be due to a measurement issue. They suggest a
more valid measure may need to be developed to tap into the mindfulness in the mother-child relationship.

In a meta-analytic review of parenting programmes, Barlow *et al.* (2002) found evidence of small to medium effect sizes in terms of reductions in maternal stress/anxiety and depression following parenting interventions. The study included three studies of mothers of children with LD, but no moderating variables were analysed making it difficult to determine which intervention may be particularly relevant for families who have a child with LD.

Hastings and Beck (2004) reviewed studies of group interventions for parents of children with LD. Rather than restrict their discussion to studies that met the methodological standards imposed by Barlow *et al.* (2002) they broadened the limits to include a wider range of methods and measures. Hastings and Beck (2004) comment that most group interventions use a number of components, utilising elements of Cognitive Behaviour Therapy (CBT), including problem solving, cognitive restructuring, and monitoring thoughts and feelings. They reviewed six interventions using CBT and found a reasonable evidence base for the use of CBT techniques in improving the wellbeing of parents who have children with LD. One of the studies demonstrated that a stress intervention that included CBT elements was more effective than a standard parent support intervention (Kirham & Schilling, 1990). Hastings and Beck (2004) suggested that it is not surprising that studies have found this type of intervention to be effective
given that the measured problems, such as depression and anxiety/stress, have been shown to be amenable to CBT.

Unfortunately Hastings and Beck (2004) found that it is difficult to isolate the evidence for CBT for parents who have a child with an LD as it is often used as part of a broader intervention (Kirham & Schilling, 1990) and the group intervention is usually alongside some other active therapeutic elements such as support from other group members. They have also found that there is a lack of evidence for how fathers respond given that previous evidence suggests that fathers report less stress associated with their child than mothers (e.g. Beckman, 1991; Hastings, 2003).

Other limitations with the evidence examined included a lack of long term follow up and lack of inclusion of process measures (Gammon & Rose, 1991; Kirham & Schilling, 1990). Kirkham (1993) showed treatment gains for parents who attended support groups were maintained over a period of two years, however, Hastings and Beck (2004) pointed out that the follow up was carried out on a much reduced sample. They also pointed out that consistent measures of stress, depression and anxiety were used but recommended that process measures should be used in future evaluation studies.

Hastings and Beck (2004) suggested that it would be helpful to evaluate CBT as an individual mode of therapy compared with a group based intervention. In terms of outcome, they suggested measures of children’s adaptive and problematic behaviours should be a priority for measurement. They suggested that a stress reduction intervention
should have some impact on parental mental health problems and that a cognitive
behavioural programme for depression should have an impact on stress. Given existing
interventions may not typically focus on the stress and mental health issues of parents, a
stress intervention might focus on the child as a stressor and related parental coping skills
(Kirkham, 1993). If the parents’ stress is driven by an underlying mental health problem
then such an intervention may not be as effective. Due to the strong association between
parental stress and child behaviour problems, Hastings and Beck (2004) suggested that by
addressing parent stress, the impact of parent training would be more effective. In
addition, Weiss (2002) has suggested a cognitive intervention could have potential in
reducing the parental stress associated with managing a child with disabilities, in
particular focusing on effective coping strategies and challenging pessimistic
assumptions.

1.5 Summary and Hypotheses

There is a growing body of evidence indicating increased stress levels in parents who
have children with learning disabilities (e.g. Baker et al., 2002). Although this research
focuses on mothers, it is likely this pattern is true for fathers. In addition, challenging
behaviour is more prevalent in children with learning disabilities compared with typically
developing children (Tonge & Einfeld, 2003). Although research findings vary, it is
likely there is a bi-directional relationship between parental stress and child challenging
behaviour. This leads to the conclusion that it is equally important to target interventions
at both domains. Research in ‘coping’ has indicated that particular coping styles may
have a moderating impact on the relationship between parental stress and child
challenging behaviour and should be considered when planning interventions. It is also important to include measures of ‘coping’ in future studies to provide further information on the psychological processes involved in reducing parental stress and child challenging behaviour.

To date no study has examined the effectiveness of groups that focus on both parental stress and child challenging behaviour. A recent study by Hasting and Beck (2004) reviewed a range of evaluations of interventions, both behavioural and those that target parental stress. They made the recommendation that future interventions should focus on addressing parental stress prior to targeting child challenging behaviour given that parental stress is significantly correlated with child challenging behaviour and is a predictor of intervention outcome.

The aim of the present study was to evaluate the effectiveness of a combined ‘stress control’ and ‘parenting’ group in reducing parental stress and child challenging behaviour.

**Hypothesis 1**

There will be a significant positive relationship between levels of parental stress measured by the Parent Stress Index (PSI) (Abidin, 1990), and the Hospital Anxiety and Depression Scale (HADS) (Zigmond & Snaith, 1983) and child challenging behaviour measured by Aberrant Behaviour checklist (ABC) (Aman et al., 1985a).
Hypothesis 2
There will be a significant correlation between parental coping (measured by the Brief COPE, Carver, 1997) and child challenging behaviour (measured by Aberrant Behaviour checklist, ABC Aman et al., 1985a).

Hypothesis 3
There will be a significant relationship between parental coping type (measured by the Brief COPE, Carver, 1997) and parental stress measured by the Parent Stress Index (PSI), and the Hospital Anxiety and Depression Scale (HADS), (Zigmond & Snaith, 1983).

Hypothesis 4
Parents will have significantly lower stress scores as measured by Parenting Stress Index (PSI), (Abidin, 1990), following the combined stress control and parenting skills sessions.

Hypothesis 5
Parents will report significantly lower levels of child challenging behaviour as measured by the Aberrant Behaviour checklist (ABC), (Aman et al., 1985a) following the combined stress control and parenting skills.
Hypothesis 6

Parents will have significantly lower levels of depression and anxiety as measured by the Hospital Anxiety and Depression Scale (HADS), (Zigmond & Snaith, 1983) following the combined stress control and parenting skills sessions.

Hypothesis 7

Parents will have significantly higher adaptive coping scores as measured by the Brief COPE, (Carver, 1997) following the combined stress control and parenting skills sessions.
2: METHODOLOGY

2.1 Design

The study employed a questionnaire based, quantitative, within and between groups methodology to assess the effectiveness of a group based intervention for parents who have a child with a learning disability. The design included two groups; group one was the treatment group who received a six week group based intervention, and group two was the control group. The control group was either waiting to receive the intervention or had declined to take part in the group, but were willing to complete the measures for the purpose of the research. The intervention involved three sessions on managing stress and three sessions on managing child behaviour. The participants were recruited through NHS (Children’s Services) on the basis that they were parents or carers of children with a learning disability and through a special needs school. Both groups completed measures at baseline, after week three (at the end of the stress sessions), and after week six (at the end of the parenting sessions). Participants who received the modified version of the intervention (see section 2.6) were sent questionnaires at the equivalent of week three and asked to return them before the second part of the intervention. Both groups also completed follow up questionnaires, one month after the intervention was complete. Unfortunately insufficient numbers of follow up questionnaire were received to allow comparisons.
2.2 Ethical considerations

Ethical approval was granted in April 2008 by the North of Scotland Research Ethics Committee (see Appendix 1a) and approval was also granted by the Highland Research and Development department (see Appendix 1b).

In addition, some participants were recruited through a special needs school and consent for this was obtained via the depute head teacher (appendix 1c).

The key ethical issues related to confidentiality, informed consent, potential distress caused by the completion of the questionnaires and/or participation in the group. Accordingly, a number of safeguards were put in place.

Informed consent was obtained from all participants (appendix 5b). Participants received an information sheet with details of confidentiality, informing them that any information they provided would be anonymised and personal details would only be accessed by the researcher. Participants were advised that in the unlikely event that their answers should cause serious concern, the researcher would contact them. After speaking to the participant, the researcher would then alert their GP (appendix 5c). In addition to this, confidentiality was discussed at the beginning of the group sessions. Participants were told they were not expected to disclose personal information, during the sessions.

It was a possibility that some of the participants may have been experiencing mental health problems that had not previously been identified and taking part in the research
might have highlighted such problems and caused distress. Participants received an information sheet providing them with details about how to gain additional help. They were also informed at the start of the group that they could speak to the facilitator at any point if they were experiencing difficulties and would like further professional input. It was also explained that the group did not replace individual psychological therapy and refusing a place in the group would not impact on their position on the waiting list or current service provision (Appendix 5c).

2.3 Participants

A power analysis was conducted to determine how many participants would be required to detect any effects in the data. There were no studies found that examined the effectiveness of the specific intervention described in the present study, however, other studies using similar interventions in papers deemed to be of appropriate quality in design (including significant and insignificant results) suggested an estimated large effect size of 0.85 for this intervention. Using a significance level of 0.05 and a power of 0.8, Cohen (1992) estimates that for an ANOVA calculation, 26 participants per group would be needed to detect a large effect size (Appendix 2). A further calculation deemed that a total of 28 participants would be sufficient to detect a large effect size in relation to any correlations conducted.
2.3.1 Recruitment

All parents who had a child with a learning disability (including children who also had a diagnosis of autism) were invited to take part in the research. The participants were identified from Clinical Psychology, Community Nursing, Community Paediatrics and other health professionals working with children who have learning disabilities. In addition parents were recruited via a special needs school. Both mothers and fathers were invited to take part in the research. Professionals were asked to identify parents who have children with learning disabilities and they were subsequently invited to take part in the present study. Parents were given the option to attend the group and complete questionnaires, attend the group without completing the questionnaires or complete the questionnaires only.

The area used for recruitment covered a large geographical area, with remote and rural communities. This made recruitment of participants difficult for a number of reasons, as discussed below.

Initially it was hoped participants could be recruited from within approximately a 30 mile radius of the main hospital. Questionnaires were sent out to all parents on the clinical psychology case load and waiting list who had a child with a learning disability. Paediatricians, community nurses, physiotherapists, occupational therapists and social workers were also asked to identify any suitable parents after receiving a short talk on the nature of the research. Initially 100 invitations were sent out to identified parents.
Initially ten parents replied and consented to take part in group one and attend the parent sessions. These sessions took place from September to October 2008. Two parents from the initial ten attended only one session and were therefore not able to be counted in the analysis. A further four parents said they wanted to attend the sessions but could not make the first dates, therefore it was decided to run a second set of sessions for the identified parents. Despite sending reminder letters to health professionals, no further parents were identified for the sessions. A further set of sessions was delivered and three of the four parents were able to attend. The main reason reported for not being able to attend sessions was child care. Unfortunately, due to lack of funding, childcare was not able to be provided. Parents were not told the time of the sessions until they had agreed to take part to prevent parents making a decision based on the time and dates of sessions, as these were flexible. Several parents expressed interest in the sessions and requested that the researcher contact them with further details, but unfortunately they subsequently decided not to attend the group. Eleven parents who were invited to attend the group were not able to do so, but agreed to complete measures and act as controls.

By the end of December it was felt that recruitment had been exhausted in the location described above. It was decided that, due to the limited number of participants, that further recruitment was required. Recruitment in remote rural locations was therefore investigated. One area in particular that received relatively few services compared to other areas was able to identify enough parents to make further sessions possible. Six parents in total consented to take part in the sessions in the rural location.
After these sessions took place 17 parents had received the parent sessions and 11 controls had been identified. As the sample size was still insufficient to meet statistical power, a further group of parents were identified through the local special needs school and invited to take part in the research. Twelve of these parents attended the six session format, which was delivered in October and November 2009 and 10 completed the outcome measures.

Overall a total of 38 parents took part in the study with 27 in the intervention group and 11 in the control group. Group one (intervention) included 22 mothers and 5 fathers, and group two (controls) included 10 mothers and 1 father.

2.3.2 Inclusion Criteria

All parents who had a child (birth-18) with a learning disability were included. Parents whose children also had a co-morbid diagnosis such as Autism were also included. The children were required to be living in the parental home.

2.3.3 Exclusion criteria:

Children with only a diagnosis of Autism (i.e. high functioning Autism /Aspergers) were excluded from the research. This is because they represent a distinct group making the research less generalisable. An additional exclusion criterion was parents who had severe mental health problems or learning disabilities, as this would have confounded the results and made interpretation difficult. Information relating to parental mental health and/or
learning disability was obtained from professionals involved with the parents. No parents were excluded on this basis.

2.4 Measures
The measures used in the current study were four standardised self-report questionnaires to assess parent stress, coping style, depression and anxiety levels, and child behaviour. In addition a non standardised questionnaire was used to gather demographic information.

2.4.1 Participant information
A general demographic information questionnaire was designed specifically for the study. The questionnaire asked participants to report their age, marital and employment status and provide details of their children, including their ages and any current diagnosis (Appendix 3).

2.4.2 Brief COPE Inventory (Carver, 1997). This was originally designed to assess a broad range of coping responses. The original COPE measure is based on a theoretical approach and focuses on two models of coping as guidelines. These include the Lazarus model of Stress and a model of behavioural self-regulation (Carver & Scheir, 1981). The original instrument included 13 scales based on specific theoretical concepts about functional and less functional properties of coping strategies. The present study used a shortened version of the COPE inventory to assess coping style. The COPE has been used in a number of health related studies (e.g. Tuncay et al., 2008) and more recently in
studies assessing coping in a stress management intervention (Willert et al., 2009) and in caregivers in people with Alzheimer’s disease (Cooper et al., 2008)

The brief COPE comprises of twenty six items. These items consist of four subscales (O’Connor & O’Connor, 2003) that assess type of coping as well as provide an overall coping score. The subscales are as follows;

- Avoidance coping, which can be categorized as maladaptive, as it involves denial, behavioural and mental disengagement and turning to alcohol in response to stress. The factor includes items such as “I refuse to believe it has happened”, “I drink more alcohol and take more drugs in order to think about it less”.

- Emotion focused coping, and problem focused coping are both seen as adaptive coping mechanisms (O’Connor & O’Connor, 2003). The measure of emotion focused coping includes items such as “I’ve been getting emotional support from others”, and “I’ve been saying things to let the unpleasant feelings escape”.

- Problem focused coping is also viewed as adaptive and includes items such as “I’ve been taking action to make the situation better”, and “I’ve been getting help and advice from other people”.

- Cognitive reconstruction coping incorporates positive reinterpretation and growth as well as acceptance and is also viewed as adaptive. One of the items from the positive reinterpretation scale was “I try to see myself in a different light, to make it seem more positive” and one of the items from the acceptance scale was “I accept that it has happened and it cannot be changed”.
Questions are scored on a 4 point scale ranging from ‘I usually don’t do this at all’ to ‘I usually do this a lot’. High scores on the scale indicate adaptive coping and low scores indicate maladaptive coping.

The internal consistency was found to be good (Cronbach’s alpha=.7) for avoidance coping, (Cronbach’s alpha=.73), problem focused coping, (Cronbach’s alpha=.7), emotion focused coping, (Cronbach’s alpha=.63) and for cognitive reconstruction coping. Test-retest reliability has been shown to be stable over 6-8 weeks (Carver et al., 1989). No normative data is currently available for this measure. A copy of this questionnaire can be found in Appendix 4.

2.4.3 Hospital Anxiety and Depression Scale (HADS) (Zigmond & Snaith, 1983). This is a 14 item questionnaire that assesses current levels of anxiety and depression. It includes seven items for anxiety and seven for depression. Participants choose one of four responses for each item, which is scored on a scale of 0-3 (higher scores indicating greater levels of anxiety/depression). The following scores indicates the clinical levels of depression and anxiety; 0-7 – normal; 8-10 mild; 11-14 moderate and 15-21 severe. The anxiety subscales (A-scale) covers the state of anxious mood, restlessness and anxious thoughts. The depression subscale (D-scale) focuses on loss of interest and diminished loss of pleasure.

The internal consistency of the two subscales was calculated by Moorey et al. (1991) on the replies of 568 people with cancer; Cronbach’s alpha was 0.93 for the A-scale and
0.90 for the D-scale. The test-retest data from a healthy sample indicated significant correlations of 0.92 for the D-scale and 0.89 for the A-scale (unpublished study by Snaith). The construct validity of the scale was confirmed by a factor analysis of the responses of the 568 cancer patients by Moorey et al. (1991). Two independent factors emerged with a correlation of 0.37 in men and 0.55 in women.

2.4.4 Parenting Stress Index – Short form (PSI-SF), (Abidin, 1990). The PSI-SF is a direct derivative of the Parenting Stress Index full length test and is designed to be completed in under ten minutes (Abidin, 1990). The test consists of thirty six items completed by parents on a five point scale of SA (strongly agree), A (agree), NS (not sure) D (disagree) and SD (strongly disagree).

The PSI-SF yields subscale scores related to a Parental Distress subscale (PD), Parent-Child Dysfunctional subscale (P-CDI), a Difficult Child (DC) subscale and gives a Total Stress score. The PSI-SF additionally includes a Defensive Response scale which assesses the extent to which the respondent approaches the questionnaire with a strong bias to present the most favourable impression of them to minimise indications of problems or stress in the parent-child relationship.

The Total Stress score provides an overall level of parental stress, the stresses reported in the personal parental distress, stresses derived from the parent’s interaction with the child, and stresses that result from the child’s behavioural characteristics. A Total Stress
score at or above the 90\textsuperscript{th} percentile is considered to indicate that the parent may be experiencing clinically significant levels of stress.

The parental distress (PD) subscale determines the distress a parent is experiencing in his or her role as a parent as a function of personal factors that are directly related to parenting (Bendell \textit{et al.}, 1989). The component stressors associated with the PD subscale are; impaired sense of parenting competence, stresses associated with restrictions placed on other life roles, conflict with the child's other parent, lack of social support, and presence of depression. When the PD subscale is at the highest elevation amongst the three subscales it is suggested that further assessment of the parent’s adjustment is conducted (Abidin, 1990). When a parent receives a PD score above the 90\textsuperscript{th} percentile and a DC (see below for further information) score below the 75\textsuperscript{th} percentile, such a profile is indicative of parental personal adjustment problems that are at least partially independent of the parent-child relationship (Abidin, 1990).

Parent-Child Dysfunctional Interaction (P-CDI) subscale focuses on parental perceptions that their child does not meet the parental expectations and that the parent-child interactions are not reinforcing of their parental role. Such parents project the feeling that the child is a negative element in their life. If all three subscales are above the 90\textsuperscript{th} percentile, this interpretation has greater credibility (Abidin, 1990). If the PD subscale is less than the 75\textsuperscript{th} subscale, the results would suggest that parental loss of control is unlikely (Abidin, 1990). If the P-CDI and the DC are above the 90\textsuperscript{th} percentile and the
PD subscale score is below the 75th percentile then it is likely that the parent is coping with exceptionally difficult behaviour.

The Difficult Child (DC) subscale focuses on some of the basic behavioural characteristics of children that can make them easy or difficult to manage. These are often rooted in the temperament of the child but can also be learned patterns of defiant, noncompliant and demanding behaviour (Breen & Barkley, 1988). Parents who have high scores on this scale, regardless of the cause of the problem, are usually in need of professional assistance (Abidin, 1990). If the other two subscale scores are at or below the 75th percentile then intervention in the form of short-term parental consultation or a parent-educational class focused on management strategies should be sufficient to help the situation. If the PD score is below the 75th percentile and the other two are above the 90th percentile, then an intensive, child orientated intervention programme is required (Barkley et al., 1988).

Test-retest reliability was assessed by the authors using 270 people from the initial sample over a six-month retest interval. Results were shown to be stable with coefficients of 0.84 for the Total Stress subscale, 0.85 for PD, 0.68 for P-CDI and 0.78 for DC. The internal consistency was tested using the entire normative sample of 800. This found good alpha reliabilities of 0.91 for Total stress, 0.87 for PD, 0.80 for P-CDI and 0.85 for DC.
Total Stress Scale on the full-length PSI had a correlation of 0.94 with the short-form PSI. The PD subscale is also highly correlated with the Parent Domain score of the full-length PSI \((r = .92)\), which was expected as the PD items are derived from this subscale. Also, the DC subscale is highly correlated with the Child Domain of the full-length version \((r = .87)\). The P-CDI was correlated 0.73 and 0.50 with the Child Domain and Parent Domain scores from the full-length PSI, respectively. This was expected as it contains items from both scales. Although there is no independent research to support the validity of the PSI-short form it is likely to be valid as it is a direct derivative of the full-length PSI and is designed to measure the same constructs.

2.4.5 Aberrant Behaviour Checklist-community version (ABC-C), (Aman et al., 1985a) was initially designed to measure common behaviour problems in children and adults with a learning disability residing in institutional care. It consists of 58 items that are rated on a four point Likert scale of 0 (not a problem at all), 1 (a problem to a slight degree), 2 (moderately serious) and 3 (severe). The psychometric properties of the ABC are well established, with good reliability and validity being reported (Aman et al., 1985b).

This measure has been shown to have satisfactory test-retest reliability and inter-rater reliability (Aman et al., 1985b). The scale has been validated against other measures including direct observation of behaviour (Aman et al., 1985b). These characteristics and the factor structures have been confirmed in further studies in the USA (Aman & Singh, 1986) and the UK (Newton & Sturmey, 1988). The ABC has also been used with
populations of children and its factor structure was found to be reliable (Freund & Reiss, 1991). Factor analysis yields five factors: irritability, aggression and crying (fifteen items); lethargy and social withdrawal (sixteen items); stereotypic behaviour (seven items); hyperactivity and non-compliance (sixteen items) and inappropriate speech (four items).

The present study uses the later version of the ABC, and is named the Aberrant Behaviour Checklist-Community (Aman & Singh, 1994). This version is designed specifically for use in community samples. The main difference is the revision of the wording for the checklist instructions and of individual items to make them appropriate for use in a community setting.

Marshburn and Aman (1992) conducted a large scale factor analytic study of the ABC-C in special education schools in the USA. Teachers rated a total of 66 randomly selected children using the ABC-C. Factor analysis resulted in a four-factor solution that closely paralleled the first four factors of the ABC, with congruence coefficients ranging from 0.87 to 0.96. Coefficient alphas ranged from 0.76 to 0.96 (median=0.90) across subscales. Marshburn and Aman (1992) concluded that the results were sufficiently close for the original scoring method to be used unaltered with community samples of school children.

Although no formal cut-off scores exist for the total and subscale scores for the ABC-C, Aman and Singh (1994) suggest that a score could be regarded as extreme or clinically
significant when a person’s score exceeds the 85th percentile for his or her normative group. The present study used the teacher ratings of children in special educational placements that are given as the normative data in the ABC-C manual (Aman & Singh, 1994).

2.5 Procedure

An information pack was sent to all of the parents identified by professionals as outlined above (Appendix 5a, 5b, 5c, 5f). This included an invitation to take part in the research, an information sheet, consent form and the four standardised questionnaires. The parents were asked to complete the consent form and questionnaires and return them in the stamped addressed envelope provided. Parents were asked to identify if they wanted to take part in the group or if they were willing to complete the questionnaires and act as a control. They were also given the option of taking part in the group without completing the questionnaires. All of those who agreed to take part in the research were sent a letter inviting them to the group and were asked to confirm their attendance (appendix 5d).

Further parents were recruited via a special needs school. The depute head teacher was approached and informed about the study. Following verbal consent the depute head teacher was provided with a flyer (appendix 5e) with information on the study asking parents to contact the researcher directly if they were interested in taking part. The depute head teacher distributed the flyers to the children to give to their parents. Parents who indicated they were interested in taking part were sent an information pack approximately two weeks prior to the commencement of the sessions. They were asked to return their
consent forms and questionnaires by post or to bring them along to the first session.

After the initial session participants completed the measures as discussed below.

After the completion of the stress control sessions all participants were asked to complete a further set of questionnaires to ascertain if there had been any change from the initial baseline data. Those attending the group were asked to complete the questionnaires at the end of session three or at week three if they have taken part in the modified version (see intervention section below for details). Controls were sent copies of the questionnaires by post the same week and asked to return them in the stamped addressed envelope provided. Participants were asked to complete the questionnaires for a third time after the end of the intervention. Again, those attending the group were asked to complete the questionnaires at the end of session six, and controls and those taking part in the modified version were sent them by post. All participants were asked to complete a follow up set of questionnaires one month after the intervention was completed.

2.6 Intervention

The intervention comprised of three sessions targeting parental stress followed by three sessions focusing on child behaviour. The rationale for this was based on previous research indicating that stress is significantly related to child challenging behaviour. A recent study by Hasting and Beck (2004) reviews a range of evaluations of interventions, both behavioural and those that target parental stress. They make the recommendation that future interventions should focus on addressing parental stress prior to targeting child challenging behaviour given that parental stress is significantly correlated with child
challenging behaviour and is a predictor of intervention outcome. They suggest that an explanation for this is that increased stress makes it difficult for parents to implement appropriate strategies, and in fact may lead to behaviour that exacerbates child challenging behaviour. It was therefore decided that the stress sessions should precede those on behaviour.

Previous evaluations of interventions have been carried out on interventions of varied length. However, duration of intervention has not been considered as an outcome variable. Given the anticipated difficulty with recruitment and attendance, in the rural setting, it was decided to keep the intervention brief. After outlining the information that would need to be covered to address the main principals of behaviour management and stress control it was decided that a minimum of six, 90 minutes sessions would be sufficient. Others studies have evaluated interventions of similar length (e.g. Chadwick, 2001).

The initial three sessions on stress control were based on the White (1998) StressPac. This is a six session didactic CBT class for a small or large group. The aim of the approach is to help participants become their own therapist. It differs from other therapies as the therapist becomes the teacher and the participant the student. There is no discussion of personal problems. The approach has been clinically effective and efficient and has been extensively tested (White et al., 2000). The programme was adapted (Patterson & Watson, 2008) so the focus was on stress specifically related to parenting a child with a learning disability.
The second part of the intervention involved three sessions addressing child behaviour. These sessions were based on the Webster Stratton Incredible Years guide, with additional relevant information provided on the impact of sleep, diet and communication on behaviour (Durand, 1998; Legge, 2002; Webster-Stratton, 2005). The incredible years programme is designed to promote good behaviour and diminish undesirable behaviour (Webster-Stratton, 1984). Much of this material is relevant for both typically developing children and those with learning disabilities. Given that sleep difficulties and issues around diet are more prevalent in children with LD (Marcotte et al., 1998) information on these areas was also presented. In addition parents were provided with a framework to assess and understand challenging behaviour in children with LD based on functional analysis (Carr, 1994). All sessions were accompanied by relevant handouts and worksheets. The format remained didactic, but there were opportunities for parents to ask questions.

The intervention was delivered jointly by the researcher, who was a trainee clinical psychologist and a qualified clinical psychologist

**Session 1:**
Session one provided a theoretical rationale as to why the sessions were being offered. There was a brief discussion of the research in the area which demonstrated the increased risk of stress in parents with a child with LD as well as an increased likelihood of child behaviour problems. A model providing a framework to help parents understand the
bidirectional nature of parent stress and child behaviour was presented. The aim of this part of the session was to help parents understand the relationship between parent stress and child behaviour, and that reducing parent stress might have an impact on reducing behavioural difficulties.

In the second part of the session the focus was to help parents understand the nature of stress, and highlight some of the warning signs. Information was provided on how common stress is in the population to help normalise this for parents. It examined some of the factors that can help maintain stress and some ‘quick’ ideas on how to manage stress.

The final part of the session focused on the impact of stress on our bodies in terms of the flight/fight model. Techniques were presented that target the bodily symptoms of stress. These included the use of exercise, deep breathing and relaxation techniques. Participants were given a relaxation CD to use at home as well as handouts on the information presented in the sessions.

Session 2:
This session focused on how thoughts can both trigger and maintain stress. It also illustrated how negative thoughts, with regard to children and/or being a parent, might not only increase stress but also exacerbate and maintain child behaviour difficulties.
The first part of the session focused on identifying negative and unhelpful thinking, and provided examples of how this could lead to increased stress and other problems such as low self-esteem and depression. It was designed to help parents determine the difference between negative automatic thoughts, that can be unhelpful, and legitimate concerns and worries, which need to be addressed.

The final part of the session illustrated two techniques to help parents identify and manage negative thinking as well as any legitimate worries they had. The first technique involved preparing for stress and making a plan to deal with situations that might be stressful. The second technique involved examining worries and negative thoughts and then used specific techniques to help decide how important they actually were.

Session 3:
This session focused on how certain behaviours can increase stress. Some examples of behaviours that might be related to increasing stress were described as well as those that can maintain and exacerbate stress. A CBT model was presented to help parents understand the link between body, thoughts, and behaviour in terms of the maintenance of stress.

This session specifically addressed how avoidance behaviour can increase and maintain stress and discussed ideas about how to assess and target avoidance behaviour. A problem solving technique was presented, which aimed to help identify and tackle problem behaviours that are likely to be impacting on stress. The final part of the session
examined the impact of sleep difficulties on stress and provided information on how to identify and tackle sleep difficulties.

Session 4:

This session discussed some of the reasons why behaviour difficulties are more common in children with learning disabilities as well as why it might be more difficult to address them. A behavioural model was presented to help parents understand how behaviour difficulties might be maintained and increased because of factors related to their child’s learning disability and the increased difficulties in implementing behavioural strategies. A pyramid of intervention was presented, where the bottom tiers included preventative strategies and the upper tiers included more reactive strategies.

In the second part of this session the importance of addressing a child’s basic needs such as diet, sleep and routines was examined. Some information was provided on the impact of diet on behaviour and some basic guidance was given on implementing a healthy diet as well as managing feeding difficulties. Similarly, information on the impact of sleep on behaviour was provided, followed by some basic advice on implementing a good sleep routine and some tips on how to address more chronic sleep difficulties. The final part of the session addressed the importance of a structure for children that includes a range of leisure and educational activities in order to prevent boredom or under stimulation, which could lead to potential behavioural difficulties.
Session 5:
This session offered ideas on how to communicate effectively with children. The first part provided information on the importance of playing and some tips on how to play successfully. This included particular advice on how to adapt general techniques for use with children who have more severe learning disabilities. The second part of the session included information on specific communication difficulties children with learning disabilities might experience, including understanding others and communicating their needs effectively. General tips on how to improve communication with children were discussed as well as the links between communication difficulties and some behaviour difficulties.

Session 6:
The final session focused on preventing and managing challenging behaviour. Parents were presented with a behavioural model to help them understand how behavioural difficulties might be positively or negatively reinforced, making them more likely to happen again. They were encouraged to think about the function of their child’s behaviour and what they might be trying to communicate. The session included information on preventative strategies such as the use of limits and boundary setting as a way to prevent challenging behaviour occurring, alongside the strategies and techniques presented in previous sessions.

Following on from preventative techniques, some advice on what to do if challenging behaviour does occur was presented, which included the use of time-out. Parents were
advised to seek additional advice if they were unsure about using this technique. It was suggested that parents devise a plan of what they would do if challenging behaviour does occur to help them remain calm and in control in the event of difficult behaviour occurring. Parents were advised to consider the physical environment and make sure they have somewhere safe for their child should they need to go into time-out.

Finally the sessions concluded with a discussion around coping with chronic behaviour difficulties. Parents were made aware that in some cases, despite the use of the above strategies, difficult behaviour may persist. In such cases they were advised to seek additional support and advice primarily via health and social work services. In addition, it was suggested that it may be of benefit to seek help for themselves with regard to coping and accepting such difficult situations and for the potential impact it might have on their mental health. Ideas were also provided on how to cope with challenging behaviour when behavioural and medical interventions seem to have limited success.

2.6.1 Modified version: A modified version of the intervention was used in one remote and rural area. This involved a two day long workshop, the first covering parent stress and the second covering child behaviour. This format was decided upon as it was not feasible to travel once a week to long-distance rural locations to deliver the sessions. The same content was delivered in both versions.
3: RESULTS

The following section describes the results from the statistical analysis. To begin with, the data were examined for normal distribution in preparation for parametric analysis. The characteristics of each group are described including any significant differences in demographic and outcome variables. Inferential analysis includes a series of correlations to determine any relationships between the outcome variables and a one-way mixed design ANOVA to determine any significant differences pre and post intervention.

3.1 Data Integrity

3.1.1 Missing data

Missing data were managed by employing several strategies recommended by Tabachnick et al. (2001). If there was less than five percent of missing answers, a combination of the mean score and clinical judgement were used to complete the missing scores. When more than five percent of the data were missing a mean estimation was calculated and substituted.

The questionnaires were sent by post to the control sample, therefore there was a delay in returns in comparison to those in the intervention group who completed the questionnaires at the sessions. Second questionnaires were sent out to controls, but due to a very low return rate, only time one for the controls was included in the analysis. In addition the intervention group had a much lower return rate at time two with some of the participants only partially completing the set of measures, which is reflected in the tables below.
3.1.2 Distribution

Boxplots were examined for outliers, and Shapiro-Wilk tests of normality were calculated for each measure. Several of the datasets were not normally distributed (anxiety, cope total, avoidant coping, cognitive reconstructive coping, hyperactivity and inappropriate speech) and several outliers were also identified. These datasets were transformed (using various data transformations) and were then normally distributed.

Kurtosis and Skew were examined at $p = 0.001$ as recommended by Tabachnick and Fidell (2001) (Appendix 6). The data-set for anxiety (HADS) was found to have Kurtosis and Skew out with acceptable parameters. Once the single outlier was removed, this was no longer significant; therefore this participant was removed from the anxiety dataset. It was decided that parametric statistics were appropriate to use as the assumptions had been satisfied.

3.2 Characteristics of the sample

Table one illustrates the characteristics of the current sample. The Intervention group consisted of 22 mothers and five fathers, and the control group consisted of ten mothers and one father. The average age of parents attending the group was 40 years with a standard deviation of 7, with the youngest being 28 and the oldest 57. In the control group the average age was 42 with a standard deviation of 7, with the youngest being 33 and the oldest 53. No significant differences were found between groups [$t(36) = 0.96$, $p<0.05$].
The average age of the child with whom the participants were experiencing challenging behaviour was 10 years old in the intervention group and 11 in the control group. There were no significant differences found between groups \([t(36) = 0.67, p < 0.05]\).

In the intervention group ten participants were unemployed and eight employed, nine participants did not provide this information. In the control group five were employed and two unemployed and four participants did not provide this information. In the intervention group thirteen people were married, two single and five living with their partner, and seven participants did not provide this information. In the control group eight participants were married, one was single and one was living with their partner, and one participant did not provide this information.

Of those in the intervention group, three had a child with a mild learning disability; twelve had a child with a severe LD and nine a child with ASD and a learning disability and three participants did not provide this information. In the control group there were six children with a mild LD, three with a severe LD and two who had autism and a learning disability.

**Table 1: Parent and child characteristic for the intervention and control group**

<table>
<thead>
<tr>
<th></th>
<th>Parent gender</th>
<th>Mean Parent Age</th>
<th>Child diagnosis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Intervention</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(N 27)</td>
<td>Female (22)</td>
<td>40 SD (7)</td>
<td>Mild LD (3)</td>
</tr>
<tr>
<td></td>
<td>Male (5)</td>
<td></td>
<td>Severe LD (12)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ASD + LD (9)</td>
</tr>
<tr>
<td><strong>Control</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(N 11)</td>
<td>Female (10)</td>
<td>42 SD (7)</td>
<td>Mild LD (6)</td>
</tr>
<tr>
<td></td>
<td>Male (1)</td>
<td></td>
<td>Severe LD (3)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ASD + LD (2)</td>
</tr>
</tbody>
</table>
3.2.1 Group differences on outcome variables

To investigate any differences in groups at baseline, a series of t-tests were carried out for each of the outcome variables. The results revealed that there was only an effect of group membership on two subscales of the outcome measures. The intervention group showed higher scores for both emotion focussed coping in parents \([d(36) = 2.393, p<0.05]\) and child irritability \([d(36) = 2.630, p<0.05]\). The means and standard deviations for each of the measures at time one are summarised in the Tables 2-5 below.

Table 2 illustrates the means and standard deviations of the scores for the PSI. The total PSI score for the control group falls within the 95\(^{th}\) percentile, and the score for the intervention group falls within the 90\(^{th}\) percentile. This indicates that both groups were scoring within clinically significant levels of parental stress.

**Table 2: PSI - Means and Standard Deviations for the total group at time one**

<table>
<thead>
<tr>
<th>PSI</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSI total</td>
<td>38</td>
<td>93.8</td>
<td>20.5</td>
</tr>
<tr>
<td>Control</td>
<td>11</td>
<td>101.9</td>
<td>23.9</td>
</tr>
<tr>
<td>Intervention</td>
<td>27</td>
<td>90.4</td>
<td>18.4</td>
</tr>
</tbody>
</table>

Table 3 illustrates the means and standard deviations for the ABC and its subscales. The mean scores for irritability, lethargy and hyperactivity are higher in the intervention group, but this difference was not significant and both control and intervention means fall above the 85\(^{th}\) percentile, which is considered clinically significant. Scores on
stereotypical behaviour and inappropriate speech are similar in both control and intervention group, but again they fall in the clinically significant range.

Table 3: ABC - Means and Standard Deviations for the total group at time one

<table>
<thead>
<tr>
<th>ABC subscales</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Irritability</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>11</td>
<td>19.4</td>
<td>8.2</td>
</tr>
<tr>
<td>Intervention</td>
<td>27</td>
<td>26.3</td>
<td>6.9</td>
</tr>
<tr>
<td>Lethargy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>11</td>
<td>12.1</td>
<td>12.9</td>
</tr>
<tr>
<td>Intervention</td>
<td>27</td>
<td>18.9</td>
<td>8.4</td>
</tr>
<tr>
<td>Stereotypy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>11</td>
<td>8.0</td>
<td>6.6</td>
</tr>
<tr>
<td>Intervention</td>
<td>27</td>
<td>8.4</td>
<td>4.6</td>
</tr>
<tr>
<td>Hyperactivity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>11</td>
<td>24.5</td>
<td>12.7</td>
</tr>
<tr>
<td>Intervention</td>
<td>27</td>
<td>31.5</td>
<td>11.1</td>
</tr>
<tr>
<td>Inappropriate speech</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>11</td>
<td>4.8</td>
<td>4.2</td>
</tr>
<tr>
<td>Intervention</td>
<td>27</td>
<td>5.0</td>
<td>3.2</td>
</tr>
</tbody>
</table>

Table 4 illustrates the means and standard deviations for the HADS, including anxiety and depression subscales. The mean scores for anxiety and depression are higher, although not significantly, in the intervention group. Scores for anxiety in the intervention group fall in the clinically moderate range, and in the control group fall in
the upper end of the clinically mild range. Scores for depression in the intervention and control group fall in the mild range.

Table 4: HADS - Means and Standard Deviations for the total group at time one

<table>
<thead>
<tr>
<th>HADS subscales</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>11</td>
<td>10.1</td>
<td>4.6</td>
</tr>
<tr>
<td>Intervention</td>
<td>26</td>
<td>12.2</td>
<td>3.1</td>
</tr>
<tr>
<td>Depression</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>11</td>
<td>8.0</td>
<td>5.1</td>
</tr>
<tr>
<td>Intervention</td>
<td>27</td>
<td>10.5</td>
<td>2.7</td>
</tr>
</tbody>
</table>

Table 5 illustrates the means and standard deviations for the Brief COPE, including its subscales. The mean scores for both groups were very similar and there were no significant differences.
Table 5: Brief COPE - Means and Standard Deviations for the total group at time one

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total COPE</td>
<td>38</td>
<td>65.0</td>
<td>9.8</td>
</tr>
<tr>
<td>Control</td>
<td>11</td>
<td>62</td>
<td>5.8</td>
</tr>
<tr>
<td>Intervention</td>
<td>27</td>
<td>66.2</td>
<td>10.9</td>
</tr>
<tr>
<td>Avoidance coping</td>
<td>38</td>
<td>28.5</td>
<td>4.0</td>
</tr>
<tr>
<td>Control</td>
<td>11</td>
<td>27.2</td>
<td>2.9</td>
</tr>
<tr>
<td>Intervention</td>
<td>27</td>
<td>29.1</td>
<td>4.3</td>
</tr>
<tr>
<td>Problem focused coping</td>
<td>38</td>
<td>14.4</td>
<td>3.1</td>
</tr>
<tr>
<td>Control</td>
<td>11</td>
<td>12.6</td>
<td>1.5</td>
</tr>
<tr>
<td>Intervention</td>
<td>27</td>
<td>15.1</td>
<td>3.3</td>
</tr>
<tr>
<td>Emotion focused coping</td>
<td>38</td>
<td>14.0</td>
<td>3.3</td>
</tr>
<tr>
<td>Control</td>
<td>11</td>
<td>13.4</td>
<td>2.6</td>
</tr>
<tr>
<td>Intervention</td>
<td>27</td>
<td>14.3</td>
<td>3.6</td>
</tr>
<tr>
<td>Cognitive reconstructive coping</td>
<td>38</td>
<td>8.1</td>
<td>1.7</td>
</tr>
<tr>
<td>Control</td>
<td>11</td>
<td>8.8</td>
<td>2.2</td>
</tr>
<tr>
<td>Intervention</td>
<td>27</td>
<td>7.7</td>
<td>1.4</td>
</tr>
</tbody>
</table>

3.3 Inferential analysis

A series of Pearson’s correlations were conducted to investigate the first three hypotheses. All correlations were conducted on the total group at time one. Due to multiple comparisons being carried out, resetting alpha (the p value) was considered as an option to control for type 1 errors. However, given that this would reduce the likelihood of finding any significant results on such low numbers of participants, it was decided on balance that alpha should remain at p = 0.05. Where possible, total scores were analysed to reduce the number of comparisons conducted.
3.3.1 Hypotheses 1-3

Hypothesis 1 predicted a significant positive relationship between levels of parental stress and child challenging behaviour. Correlations were conducted between stress, which is measured by the Hospital Anxiety and Depression Scale (HADS) and the Parental Stress Index (PSI), and the child challenging behaviour, which was measured using the Aberrant Behaviour Checklist (ABC) subscales (irritability, hyperactivity, stereotypy, inappropriate speech and lethargy). Correlations were conducted on individual subscales as they are measuring independent constructs (Aman & Singh, 1994). However, this increases the number of comparisons that are required to be conducted thus increasing the chance of type 1 errors.

Total parenting stress was found to have a medium to large significant, negative correlation with child lethargy (r= -.42, p<=0.05). This indicates that increased levels of parenting stress are related to decreased levels of child lethargy, which is contrary to the hypothesis.

Hypothesis 2 predicted a significant correlation between parental coping and child challenging behaviour. Correlations were conducted between child behaviour as measured by the ABC (subscales as above) and parental coping measured by the brief COPE, which included the total COPE score and the following subscale scores; avoidance coping, problem focused coping, emotion focused coping and cognitive reconstructive coping. Correlations were conducted on individual subscales as they are
measuring independent constructs. However this increases the number of comparisons that are required to be conducted thus increasing the chance of type 1 errors.

Emotion focused coping was found to have a medium to large significant, positive correlation with child irritability ($r= .4, p<0.05$). This indicates that an increased level of emotion focused coping in parents is related to increased levels of child irritability.

Hypothesis 3 predicted a significant relationship between parental coping and parental stress. Correlations were conducted between parental coping as measured by the brief COPE (subscales as above), and parental stress as measured by the total Parenting Stress Index (PSI) and the HADS subscales. The subscales for the PSI were not included independently in the correlations because they are highly correlated to the total PSI score (Abidin, 1995). Furthermore, carrying out multiple correlations on a low sample size increases the possibility of type 1 errors, while not contributing any further clinical information. The HADS subscales were included, due to the anxiety subscale having a medium, positive significant correlation with total PSI ($r= 0.34, p<0.05$) and depression having a medium to large significant, negative correlation with total PSI ($r=-0.45, p<0.01$). It was decided it was possible that these subscale were measuring different constructs and thus they were included.

Anxiety was found to have a medium negative correlation with problem focused coping ($r= -0.34, p<0.05$) indicating that increased anxiety is associated with decreased problem focused coping. Depression was found to have a medium, negative correlation with cognitive
reconstructive coping ($r = -.361, p<0.05$). This indicates that an increased level of depression in parents is related to decreased levels of cognitive reconstructive coping.

3.3.2 Hypothesis 4-7

A one-way ANOVA was used to investigate whether there were any significant differences pre and post intervention on each of the outcome variables for the intervention group. These included stress, coping, child behaviour and parental stress. It was hoped that any changes over time would be compared with the control group but due to a lack of returns on questionnaires, comparisons were only able to be made at time one.

3.3.3 Hypothesis 4

Hypothesis four predicted that parents in the intervention group would have significantly lower stress scores (as measured by Parenting Stress Index, PSI) following the combined stress control and parenting skills sessions.

Table 6 illustrates the means and standard deviations on the parenting stress index for the intervention group. It was expected that there would be a significant decrease on stress scores from the baseline following the stress control sessions, and a further decrease following the parent skills sessions. It was found that the mean PSI scores increased at each measurement point indicating increased stress, but this change was not significant and all scores had been in the clinically significant range at time one. Examining the change at time two was difficult due only fourteen participants completing the measure.
Comparisons between groups were not made due to insufficient numbers of control participants returning questionnaires.

Table 6: PSI - Means and Standard Deviations over time for the intervention group

<table>
<thead>
<tr>
<th>PSI total</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time 1</td>
<td>27</td>
<td>90.4</td>
<td>18.4</td>
</tr>
<tr>
<td>Time 2</td>
<td>14</td>
<td>94.3</td>
<td>25.6</td>
</tr>
<tr>
<td>Time 3</td>
<td>27</td>
<td>95.7</td>
<td>21.0</td>
</tr>
</tbody>
</table>

3.3.4 Hypothesis 5

Hypothesis five predicted that children of parents in the intervention group who attended the combined stress control and parenting skills sessions would have significantly lower levels of challenging behaviour (as measured by the Aberrant Behaviour Checklist). It was also expected there would be a significant decrease on child challenging behaviour scores from the baseline following the stress control sessions, and a further decrease following the parenting skills sessions.

Table 7 illustrates the means and standard deviation scores on the ABC subscales for the intervention group. The means for each of the subscales show no significant changes in child behaviour over time. The scores at time three remain at, or close to, clinically significant levels. However only fifteen participants completed measures at time two make it difficult to assess whether any actual change at this point.
Table 7: ABC - Means and Standard Deviations over time for the intervention group

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Irritability</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time 1</td>
<td>27</td>
<td>26.3</td>
<td>6.9</td>
</tr>
<tr>
<td>Time 2</td>
<td>15</td>
<td>28.7</td>
<td>7.4</td>
</tr>
<tr>
<td>Time 3</td>
<td>27</td>
<td>25.4</td>
<td>7.8</td>
</tr>
<tr>
<td><strong>Lethargy</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time 1</td>
<td>27</td>
<td>18.6</td>
<td>8.4</td>
</tr>
<tr>
<td>Time 2</td>
<td>15</td>
<td>18.7</td>
<td>9.1</td>
</tr>
<tr>
<td>Time 3</td>
<td>27</td>
<td>18.0</td>
<td>8.6</td>
</tr>
<tr>
<td><strong>Stereotypy</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time 1</td>
<td>27</td>
<td>8.4</td>
<td>4.6</td>
</tr>
<tr>
<td>Time 2</td>
<td>15</td>
<td>8.5</td>
<td>4.6</td>
</tr>
<tr>
<td>Time 3</td>
<td>27</td>
<td>8.7</td>
<td>4.2</td>
</tr>
<tr>
<td><strong>Hyperactivity</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time 1</td>
<td>27</td>
<td>31.5</td>
<td>11.2</td>
</tr>
<tr>
<td>Time 2</td>
<td>15</td>
<td>36.5</td>
<td>10.5</td>
</tr>
<tr>
<td>Time 3</td>
<td>27</td>
<td>29.8</td>
<td>10.5</td>
</tr>
<tr>
<td><strong>Inappropriate</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speech</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time 1</td>
<td>27</td>
<td>5.0</td>
<td>3.2</td>
</tr>
<tr>
<td>Time 2</td>
<td>15</td>
<td>6.5</td>
<td>4.0</td>
</tr>
<tr>
<td>Time 3</td>
<td>27</td>
<td>5.7</td>
<td>2.9</td>
</tr>
</tbody>
</table>

3.3.5 Hypothesis 6

Hypothesis six predicted that parents who attend the combined stress control and parenting skills sessions would have lower levels of depression and anxiety (as measured by the HADS). It was also expected there would be a significant decrease in depression and anxiety scores from baseline following the stress group, and a further decrease following the parenting skills sessions.
Table 8 illustrates the means and standard deviation of the scores on HADS subscales for depression and anxiety for the intervention group. This shows a decrease in mean anxiety scores over time from the moderate to the mild range, and the ANOVA revealed that this difference was significant with a large effect size [F(2, 14) = 4.97, p <0.05] where the intervention accounted for 26 per cent of the variation in anxiety (partial η² =0.26). There was a slight decrease in scores for depression over time however this was not significant and scores remained in the mild range. Twenty seven people completed the anxiety measure at time one and three and 15 people at time two. However, as stated previously an outlier was removed from this analysis resulting in 26 people being included in the analysis at time one and time three and fourteen people at time two for the anxiety measure.

Table 8: HADS - Means and Standard Deviations over time for the intervention group

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Time 1</td>
<td>26</td>
<td>12.2</td>
</tr>
<tr>
<td></td>
<td>Time 2</td>
<td>14</td>
<td>10.0</td>
</tr>
<tr>
<td></td>
<td>Time 3</td>
<td>26</td>
<td>10.0</td>
</tr>
<tr>
<td>Depression</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Time 1</td>
<td>27</td>
<td>10.5</td>
</tr>
<tr>
<td></td>
<td>Time 2</td>
<td>15</td>
<td>11.2</td>
</tr>
<tr>
<td></td>
<td>Time 3</td>
<td>27</td>
<td>9.7</td>
</tr>
</tbody>
</table>

3.3.6 Hypothesis 7

Hypothesis seven predicted that parents in the intervention group would have significantly higher coping scores (as measured by the Brief COPE) following the combined stress control and parenting skills sessions. It was also expected there would
be a significant increase on coping scores from baseline to after the stress control sessions, and a further increase following the parenting skills sessions. Increased scores indicate higher levels of adaptive coping.

Table 9 illustrates the means and standard deviations of the scores on the brief COPE. The ANOVA revealed that there were no significant changes over time on the brief COPE subscales. Only fifteen participants completed measures at time two.

Table 9: Brief COPE - Means and Standard Deviations over time for the intervention group

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total COPE</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time 1</td>
<td>27</td>
<td>66.2</td>
<td>10.9</td>
</tr>
<tr>
<td>Time 2</td>
<td>15</td>
<td>62.2</td>
<td>7.9</td>
</tr>
<tr>
<td>Time 3</td>
<td>27</td>
<td>66.3</td>
<td>10.0</td>
</tr>
<tr>
<td><strong>Avoidance coping</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time 1</td>
<td>27</td>
<td>28.8</td>
<td>4.3</td>
</tr>
<tr>
<td>Time 2</td>
<td>15</td>
<td>27.1</td>
<td>3.5</td>
</tr>
<tr>
<td>Time 3</td>
<td>27</td>
<td>28.7</td>
<td>4.8</td>
</tr>
<tr>
<td><strong>Problem focused coping</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time 1</td>
<td>27</td>
<td>15.1</td>
<td>3.4</td>
</tr>
<tr>
<td>Time 2</td>
<td>15</td>
<td>14.1</td>
<td>2.2</td>
</tr>
<tr>
<td>Time 3</td>
<td>27</td>
<td>14.0</td>
<td>2.7</td>
</tr>
<tr>
<td><strong>Emotion focused coping</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time 1</td>
<td>27</td>
<td>14.4</td>
<td>3.4</td>
</tr>
<tr>
<td>Time 2</td>
<td>15</td>
<td>13.3</td>
<td>3.0</td>
</tr>
<tr>
<td>Time 3</td>
<td>27</td>
<td>14.3</td>
<td>2.7</td>
</tr>
<tr>
<td><strong>Cognitive reconstructive coping</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time 1</td>
<td>27</td>
<td>7.7</td>
<td>1.4</td>
</tr>
<tr>
<td>Time 2</td>
<td>15</td>
<td>7.7</td>
<td>1.5</td>
</tr>
<tr>
<td>Time 3</td>
<td>27</td>
<td>8.9</td>
<td>2.6</td>
</tr>
</tbody>
</table>
4: DISCUSSION

The main aim of this study was to examine the effectiveness of combined stress control and behaviour management sessions for parents of children with learning disabilities. It was hypothesised that attending the sessions would reduce parental stress and child challenging behaviour. The main findings of the study will be highlighted and discussed in terms of their clinical implications. Limitations of the study will be examined and suggestions will be made for future research.

4.1 Interpretation of results

In general the results indicate that parents who have children with a learning disability experience high levels of stress and associated mental health problems, which supports previous research (Baker et al., 2002; Baxter et al. 2000). High scores on the Parental Stress Index indicate extreme levels of parental stress and difficulties in parent child interaction. Authors such as Frey et al. (1989) agree that parental stress can be understood within a multidimensional model, including child characteristics family and environmental factors and parents’ cognitive styles. In addition scores in the ABC were also within clinical levels for all subscales, which again is consistent with previous research that has found a high level of behaviour problems and/or psychiatric diagnoses in this population (Emerson, 2003; Quine, 1986). A study by Najman et al. (2001) found that mothers who were not emotionally impaired reported fewer behaviour problems than the children themselves and as the mothers’ emotional impairment increased so did the reporting of child behaviour problems. Mothers’ attributed more internalising symptoms
to females and more externalising symptoms to males. They suggest that depressed mothers may have a ‘cognitive bias’ which distorts their judgements, including those about behaviour and emotions experienced by their children. That is, they may report symptoms that non depressed mothers may ignore. Fergusson et al. (1993) concluded that the use of maternal reports to measure child behaviour can result in a serious overestimation of correlations between child behaviour and maternal depression.

Despite the evidence that mothers’ ‘perceptions’ of child behaviour are consistently related to stress/mental health it remains important to consider interventions that target child behaviour. Interventions targeting child behaviour and parental stress independently have found there to be promising outcomes (e.g. Hudson et al., 2003; Schultz et al., 1993). However in light of the findings suggesting that depressed mothers may have a cognitive bias towards reporting an increase in child behaviour problems it may be more important to consider how to help families cope with and change their perceptions of child behaviour.

4.1.1 Hypothesis 1-3

It was predicted that there would be a significant relationship between parental stress and child challenging behaviour; parental stress and coping type and child challenging behaviour and coping type.

Total parental stress was found to have a negative correlation with child lethargy, indicating that higher parental stress is related to lower levels of child lethargy. The
concept of ‘lethargy’ could be compared to ‘depression’, which although having some external and observable symptoms, is also considered an internalising problem involving negative and dysfunctional beliefs. Both the DSM IV and ICD-10 include symptoms such as psychomotor retardation/marked tiredness on slight effort and reduced energy, being easily fatigued and diminished activity. Given the possibility that child lethargy may be an internalising problem and less observable it might have been difficult for a parent to rate this behaviour.

No correlations were found between any other ABC subscales and it is possible, given that no other correlations were found and PSI and ABC scores are within high clinical levels, that this result is a type 1 error especially due to the multiple analyses. Most participants reported scores within a high clinical range both pre and post intervention, indicating the measures used may not have been sensitive in assessing child behaviour problems within this group. The same was true for scores on the PSI. Future research may want to consider more robust ways of measuring child behaviour and parental stress in this group, such as, using multiple respondents and possibly qualitative methods such as interviews and observation. This is especially pertinent given research has demonstrated a response bias in depressed mothers reporting an increase in behaviour problems in comparison to non-depressed mothers (Najman et al., 2001).

In addition, there was little support for a relationship between coping and child behaviour. Again high scores on the ABC both pre and post intervention are likely to have made it difficult to consider the relationship with coping due to a ceiling effect.
Given that coping scores did not differ significantly over time it is possible the chronic
tableness of the groups’ difficulties make it problematic to draw conclusions using only self-

report measures. Parents did report that they found coming to the sessions helpful despite
the fact this was not observable in the quantitative results.

A positive significant correlation was found between emotion focused coping and child
irritability. It might be expected that a parent managing a child with such behaviour may
engage in this type of coping. Parents may seek increased emotional support when they
are experiencing such difficulties with their child (e.g. child irritability). Some research
indicates that young adults engage in more problem focused coping strategies and middle
aged adults engage in more emotion focused coping strategies (Lazarus, 1996). Folkman
et al. (1979) discuss emotion focused coping as something people engage in when a
person believes the stress is something that must be endured. Given that the average age
of the children whose parents attended the sessions was ten years old, in addition to
parental reports of long standing behavioural difficulties, it is possible that parents made
the shift from problem focused to emotion focused coping.

There was some support for the prediction that coping styles are related to parental stress.
Anxiety was found to have a significant medium negative correlation with problem
focused coping. Thus increased anxiety may lead to parents becoming unable to engage
in problem focused coping. As discussed previously parents in middle age may opt for
more emotion focused coping (Lazarus, 1996). In addition, research suggests that
depressed mothers with comorbid anxiety may be more likely to demonstrate a bias in
reporting increased behaviour problems (Chilcoat & Breslau, 1997). Given the scores for anxiety were found to be in the clinical range it is possible that increased anxiety acted as an obstacle to parents engaging in problem focused coping. In addition parental anxiety may have increased the likelihood of parents over reporting child behaviour problems. Further research would be needed to test this relationship and examine the direction of this relationship.

Depression was found to have a medium to large negative significant correlation with cognitive reconstructive coping. This indicates that parents who experience depression may engage less in cognitive reconstructive coping. Conversely parents adopting this type of coping may experience lower levels of depression. This type of coping involves reinterpretation of negative thinking (O’Connor & O’Connor, 2003). This result provides some support to the cognitive model, which suggests that depression is maintained by negative thoughts (Carver et al., 1989). This finding has implications in terms of the interventions offered to parents. CBT aims to address negative thinking patterns and unhelpful behaviour, which are thought to influence depressive symptoms (Beck, 1976). Thus, by enabling parents to address negative thinking patterns this is likely to increase their mood and ability to cope with child challenging behaviour.

4.1.2 Hypothesis 4-7

Hypothesis 4 predicted that scores on the PSI would be significantly lower following the stress control and behaviour management sessions. Despite a small increase in scores from pre to post intervention on the PSI, no significant differences were found. One
explanation for the increase in scores might be that the group provided a ‘safe space’ for parents where they felt they could be honest about their stress levels, or it helped them become more in touch with their symptoms of stress.

It is possible that parents’ actual stress levels did increase, which could be due to a number of factors, for example, the requirement to find time to come along to the sessions, arranging childcare and other practical issues. The impact that such practical factors have on parents is recognised in the mental healthcare pathway for children and young people with learning disabilities, which states that families who have a child with a learning disabilities have increased barriers to accessing services and these should be considered when offering appointments (Pote & Goodban, 2007). In addition they point out that families may be involved in several services at the one time and recommend that appointments should be flexible and potentially offered in school or after work to meet the needs of this population.

The intervention itself could be described as ‘problem focused’ as it included practical strategies for parents to help them cope with their own personal stress as well as manage problematic child behaviour. Parents who participated in the intervention reported that it was difficult to find time or support to practise the strategies discussed in the session, which may have increased stress. Similar difficulties have been reported in relation to care staff trying to implement strategies for challenging behaviour with individuals with learning disabilities (McKenzie et al., 2005). The results of the present study highlight
the role of practical barriers in implementing behavioural interventions and provide considerations for future interventions.

A further reason which could explain why stress did not decrease following the intervention may be linked to parental cognitions. Previous research has found that parent cognitions influence their behaviour towards their children in terms of their self efficacy and attributions regarding their causes of their children’s behaviour (Grusec & Mammone, 1995). In addition, research suggests there is a relationship between parental cognitions and stress. Hastings and Johnston (2001) showed that parents of children with learning disabilities reported lower levels of stress and pessimism if they believed a behavioural intervention that they were participating in would be successful. They suggest that attention should be paid to parents’ efficacy beliefs about interventions if they are to be successful.

Gretarsson and Gelfand (1988) found that mothers were more likely to attribute positive characteristics in a child as innate and stable. In contrast negative characteristics were more likely to be attributed to temporary and external causes. They suggest that such attributions might help mothers feel in control and see themselves as effective caregivers. They also noted that mothers made fewer positive attributions to children that were difficult to manage. They suggest that this could impact on the behaviour of the parent who may see difficult to manage children as having a dispositional impairment. The current intervention targeted parent stress and child behaviour and did not aim to target
parental attributions about their children, which might provide some explanations as to why no change was observed post interventions.

Hypothesis 5 predicted that challenging behaviour scores would be significantly lower following the stress control and behaviour sessions. No significant differences were found, and thus the data do not support this hypothesis. Previous research has found that various external factors can influence a parent’s ability to cope, such as, socioeconomic status, family support and other environmental resources (Quine & Pahl, 1985). Many parents reported that they had previously attended parent training and seemed to already understand the principles of behaviour management. Thus, there may be other factors confounding the impact of the intervention such as applying the strategies in practice, often while under stress, lack of social support, financial difficulties and the level of challenging behaviour and other health/medical complexities and conditions their children may suffer from (Quine & Pahl, 1985).

Behavioural interventions which have involved parents in the delivery of the intervention have been shown to be highly effective in a range of child behaviour problems in non-disabled children (e.g. Campbell, 1995, Barlow, 2000). In addition there is a growing evidence base that such interventions have good outcomes in children with learning disabilities (e.g. Harrold et al., 1992; Sanders & Plant, 1989). Many of the parents described how they had attempted to implement behaviour management strategies, such as positive reinforcement schedules and the use of time-out to extinguish negative behaviour. However, despite understanding such strategies they reported a lack of
success in terms of improvement in their child’s behaviour. This is, perhaps, not surprising given the range of skills required to implement successful behavioural interventions, including in relation to assessment, formulation intervention and evaluation (Ball et al., 2004). Given this experience it would have been interesting to assess parents’ beliefs about the effectiveness of behavioural interventions. Previous researchers have suggested that assessing beliefs prior to an intervention can help to increase its effectiveness (Hastings & Johnston, 2001). Baker et al. (2002) found parents respond differently to their children with behaviour problems when stressed and may not implement effective strategies to manage difficult behaviour. Thus if the stress component of the intervention was not effective in reducing parental stress significantly, high stress levels may have made it difficult to implement any of the parent strategies taught throughout the behaviour management sessions.

Hypothesis six predicted that depression and anxiety would decrease following the parent stress control and behaviour management sessions. The analysis indicated that parents’ scores decreased significantly from pre to post intervention on the anxiety subscale. This provides some support for previous research which demonstrates the effectiveness of interventions which target parental stress. For example, Barlow et al. (2002) found evidence of small to medium effect sizes in terms of reductions in maternal stress/anxiety and depression following parenting interventions. The decrease in anxiety scores meant that overall scores moved from the moderate to mild clinical range for anxiety and remained in the mild range for depression. Anxiety and depression were not found to correlate with parental stress, and might indicate that these measures are assessing...
different psychological constructs. For example, the PSI is designed to measure parental stress, which when high, may lead to a decrease in feelings of anxiety and depression due to the focus being on the child’s difficulties. In addition, anxiety decreased significantly following the intervention but scores on the PSI increased, although not significantly. Therefore, although stressed with regard to their parenting, there may be other variables influencing their general stress levels including attributions, expectations in addition to factors such as other children, work, etc. The stress component of the intervention was originally designed to help people reporting symptoms of anxiety and panic disorder (White, 1998). Although the intervention was modified, the core components remained the same, therefore it is possible that this part of the intervention was effective in reducing parent anxiety levels and not any of the other variables. This result supports using interventions that directly target parent anxiety symptoms.

Hypothesis seven predicted that scores on coping would be significantly different following the stress control and behaviour management sessions. The data did not support this hypothesis and scores remained similar pre and post intervention. McCubbin and Patterson’s (1982) ABCX model of stress posits that the impact of stressors is moderated by parental resources and cognitions, including their ability to cope. Due to a lack of results in this study supporting the relationship between child behaviour and parental stress, coping was not able to be tested as a possible moderating or mediating variable. One explanation for the lack of change in coping scores could be that parents who attended the group already had adequate coping skills, and attending the group could be viewed as an adaptive coping type. However, given that attending the sessions did not
reduce stress, what could be viewed as ‘adaptive’ coping was actually having a detrimental impact on their stress. Quine and Pahl (1985) found that stress experienced by parents of children with multiple disabilities was influenced firstly by child characteristics, and secondly by the family’s socioeconomic status. In the present study efforts to cope could have been confounded by a number of variables, including severity of challenging behaviour. In addition, Folkman et al. (1979) describe five categories of coping resources including utilitarian resources e.g. socioeconomic status, money, service availability; health, energy or morale e.g. mental or physical illness; social network; general and specific beliefs e.g. self-efficacy, mastery, self esteem; and problem solving skills. Although parents attending the group may have good ‘coping strategies’ (actions taken in a specific situation to reduce stress, Folkman et al., 1979), they may lack other ‘resources’ for such strategies to be effective. Furthermore a study by Taanila et al. (2002) found families with high coping had increased social and professional supports compared with low-coping families. The participants in the current study reported a lack of both professional and social support therefore this may have over-ridden the support provided by the sessions.

4.2 Clinical and ethical implications

4.2.1 Clinician-Researcher

One of the main ethical issues in relation to the current research is the dual role of clinician and researcher. As a clinician the intervention is the primary focus and involves building rapport and trust with service users. However, in the current study the dual role meant that the clinician was also focused on collecting data for the purpose of scientific
research, thus the relationship becomes reciprocal. That is, as a therapist the patients benefits, but as researcher both researcher and patients benefit.

This was something that may have influenced participant’s attendance at the sessions, as they may have felt some obligation to attend, or it may have influenced how they completed the outcome measures. In addition this dual role may have led to the clinician-researcher becoming less effective in each role given their differing purpose and perhaps conflicting relationship with the participants.

It has been stated that the clinician-researcher plays an important role in health research (Ahrens, 1992; Rosenberg, 1999). Several discussions have highlighted the need for increased clinician-researchers to conduct patient orientated research, which is defined as research that involves direct contact with human participants (Nathan, 1998). It has been pointed out that researchers who do not have direct clinical experience may miss many of the real life issues that can inspire innovative and relevant research (Padgett, 2004; Rosenberg, 1999). In addition it has been stated that clinician-researchers can make an important contribution to the quality of clinical services, due to the interactive flow of ideas between clinical and research domains (Yanos & Zeidonis, 2006).

At the same time, some authors have expressed concern over the ethical challenges posed by the involvement of clinicians in research that includes human participants (Miller et al., 1998; Pellegrino, 1992). Research ethics studies have noted that there can be conflict in studies between the interest of the individual participant and the scientific aims of the
study (Miller et al., 1998). The clinician-researcher may experience an internal clash between the clinical need to act in the patient’s best interest and the scientific need to pursue truth with appropriate rigor (Pellegrino, 1992). Several ways to address these issues have been discussed. One approach recommends that the clinician-researcher avoids contact with individuals with whom they have a therapeutic relationship (Pellegrino, 1992). In the current study this was not possible due to a small clinical population and limited staffing.

A second approach is for the researcher-clinician to disclose their conflict with potential research participants (Specc, 1996). This approach was used to a certain extent in the current study. Participants were informed that they would be taking part in a research study as well as receiving a clinical intervention and would be asked to complete various questionnaires as part of this process. This was explained via an information sheet and again at the beginning of the intervention. A further suggestion has been to integrate the dual role and develop good ethical judgement (Miller et al., 1998). This position states that clinician-researchers need to be aware that they have an ethical responsibility to both individual client and society. This approach might help deal with situations in which the patient orientated clinician-researchers over identifies with a specific client, client population, or treatment system at the expense of the scientific value of the study (Yanos & Ziedonis, 2006). In the current study two clinician-researchers were involved, which enabled reflective practice to take place and included discussion of ethical issues that arose.
4.2.2 Appropriateness of Intervention

The current study highlights the extreme challenging behaviour that parents of children with learning disabilities can experience and the stress that is present in this population. This makes both the parents and children vulnerable to mental health problems (Baker et al., 2002) and indicates a need for appropriate interventions to be offered to these families.

The current study indicates that a brief group intervention for parents who have a child with a learning disability may not be effective either in reducing parental stress or child challenging behaviour. The complexity of their situations may require a more intensive individualised approach. McKenzie et al. (2009) tested an intensive individualised approach to managing challenging behaviour, where psychology graduates acted as support workers and implemented programmes to tackle challenging behaviour. They found this approach to be effective in reducing challenging behaviour. This kind of approach might be more appropriate alongside a stress intervention for parents in the current population. Despite not finding a significant reduction in stress or behaviour problems, parents commented that they enjoyed attending the sessions, which may have been linked to the supportive element of meeting other parents experiencing similar difficulties. This could be compared to the benefit to parents of attending support groups. For example, Kirkham (1993) showed treatment gains for parents who attended support groups were maintained over a period of two years. In addition a qualitative study by Solomon et al. (2001) highlights that parents found mutual support from other parents of with disabilities very helpful.
Given the average age of the children with learning disabilities in this study, it is likely that families have been experiencing difficulties for a considerable length of time, thus leading to behaviour problems becoming more severe and entrenched (Emerson, 2003). In addition, parents with chronic levels of stress have an increased chance of developing mental health problems (Emerson, 2003; Quine, 1986). This will make the success of any intervention more difficult as it is attempting to meet the mental health needs of both parents and children and as such there is a strong case for early intervention with this population. A study by Von Tezhner (2004) examines the role of early intervention in preventing challenging behaviour in children with learning disabilities. The findings indicate self-regulation, attachment, communication and social cognition may be linked to development of challenging behaviour in children, and therefore should be the focus of early intervention. Spratt et al. (2007) found a connection between behaviour problems of children and elevated stress levels for their parents, particularly in combination with perceived inadequacy of support and resources. In the present study a number of factors may have confounded the implementation of behavioural approaches (including level of challenging behaviour and lack of resources).

Research has suggested that promoting acceptance in parents of children with learning disabilities can be a helpful method to reduce parental stress (Lloyd & Hastings, 2008). Acceptance and Commitment Therapy (ACT) has been used in this population and has demonstrated effectiveness in reducing parental stress (Blackledge & Hayes, 2006) and
perhaps such an approach may have been more applicable to the population used in the current study.

A further clinical implication is the need to consider the holistic needs of such families. It is likely, given the high levels of parental stress and child challenging behaviour that such families will need a range of supports to enhance both their own and their child’s quality of life. In addition evidence that supports the bidirectional relationship between parental stress and child behaviour (Hastings et al., 2006) indicates that both parent and child factors need to be considered when intervening in this population. Such supports might include social, practical, educational and financial resources, given that previous studies such as Spratt et al. (2007) have found a lack of these resources can impact on the success of interventions.

Finally, the current study highlights the importance of considering the parents needs when families are referred to psychological services due to their child’s problem behaviour. In fact it may be equally, if not more important to assess and treat parental mental health alongside assessing the child’s needs.

4.3 Limitations of the study

4.3.1 Recruitment

As outlined in the method section, there was difficulty in recruiting participants for both controls and the intervention group. This was despite running sessions in remote locations to increase accessibility and offering three sets of interventions. The low
numbers of participants led to difficulties in matching the groups, and ensuring homogeneity of the sample. Furthermore, this also prevented comparisons being carried out between the intervention group and control group over time.

Having a control group is particularly relevant as it is important to take into account that factors other than the intervention can have an impact on stress. Thus, a control group reduces the impact of confounding variables (Tabachnick et al., 2001). This is particularly important in this population, given that frequent events and circumstances might occur in families with children with learning disabilities (Pote & Goodban, 2007). For example, confounding variables could include unexpected health problems, numerous appointments, inability to attend sessions, child care etc. By comparing the intervention group to a group of parents who have similar life circumstances the specific impact of the intervention can be more accurately examined.

Participants from a rural setting were included in the sample in addition to the initial sample (recruited from within a 30 mile radius of the city). A review of healthcare in rural settings suggests that there are differences in rural-urban outcomes and that those living in rural areas are disadvantaged in comparison to their urban counterparts (BMA, 2005). This might be related to the services provided in rural areas and/or other social or environmental factors. Participants living in rural settings in the current study reported both a lack of professional services which may have confounded the results. Those in the rural locations also received a modified version of the intervention, which was delivered over two days (three weeks apart), rather than six weekly sessions. Although the material
was the same in both formats, parents in the rural session did not benefit from the additional discussions and support from other parents, which occurred in the six weeks sessions. The format of the sessions allowed time for questions, which often led to discussion amongst the parents. The discussion varied and thus there may have been some differences to the informal discussions across each intervention. Given that research indicates that parents find talking to other parents helpful (Solomon et al., 2001) it is possible that the different format and discussion may have influenced the outcome of the intervention.

4.3.2 Measurement

The brief COPE (Carver, 1997) was used in the current study to measure parents’ coping over time. One disadvantage of the measure is that it has no normative data and thus data in the present study cannot be compared against that of the general population. Thus there is no way to ascertain how coping levels in the current study compare to those in the general population. Higher coping scores equate to an increase in ‘adaptive coping’ and decreased scores indicate an increase in ‘maladaptive coping’. This measure can, however, help assess whether coping scores change over time and whether coping is associated with the other variables including, child behaviour, parent stress, child behaviour and anxiety and depression.

A recent review of interventions for parents who have a child with a learning disability by Hastings and Beck (2004) recommended the use of outcome measures related to parent cognitions. As discussed earlier it may have been appropriate to have included
specific measures of parental attribution regarding locus of control and parental self-efficacy in the current study. Hastings and Johnston (2001) showed that parents of children with learning disabilities reported lower levels of stress and pessimism if they believed a behavioural intervention that they were participating in would be successful. Using measures of adjustment and acceptance may also have been valuable in this study, as research suggests they may have a mediating impact of behaviour problems on parental stress (Quine & Pahl, 1991).

Furthermore, parent interviews following the intervention may have been helpful in providing more detailed information on their views of the success of the intervention, and the process of change. In addition, and more importantly, this would provide information on the appropriateness of the intervention and any obstacles to implementing the strategies presented at the sessions.

4.3.3 Methodological limitations

The current study lacks internal validity due to not having an adequate control group. Hasting and Beck (2004) have highlighted this as a major problem in previous research and recommend controlled trials to improve knowledge about the effectiveness of interventions for parents who have a child with a learning disability. Comparisons were made to a control group prior to the intervention but no comparison was made post intervention due to limited numbers of returned control questionnaires.
A further methodological limitation is the lack of follow up data. Data was collected immediately following the end of the behaviour sessions. This may not have been enough time for parents to implement any strategies and techniques they had been taught at the sessions and a follow up set of data may have provided more information. However, only one participant returned the follow-up questionnaire. This may have been due to the number of questionnaires and parents may not have felt that completing the questionnaires was not a priority, especially as they had already attended the sessions.

4.4 Future research

In the current study it was found that parental stress and child behaviour problems were within the clinical range. Many parents reported throughout the intervention sessions that many factors that were likely to confound the impact of any interventions, such as lack of support to help implement the strategies and maintain behavioural management programmes and manage their own stress levels. Therefore, they may understand what they should do but are unable to put their knowledge into practice. Qualitative research could examine the process involved in ‘learning’ the appropriate stress and behaviour management techniques and putting them into action, for example what obstacles there might be and what might promote this process.

Due to the strong link between stress and challenging behaviour in children, it is important to continue to investigate interventions that will tackle both these areas. Future research might consider whether a brief intervention is appropriate for newly diagnosed families when behaviour difficulties are likely to be less entrenched and parents
potentially less stressed and able to implement behavioural interventions. Furthermore, it would be interesting to compare an approach such as ACT (Blacklege & Hayes, 2006) with a more traditional behavioural approach, which has been shown to be effective in reducing stress in families with long term chronic difficulties. This would be particularly interesting given the results of the current study indicate that a brief intervention for such a population has little impact on reducing parental stress or child behaviour problems.

Finally, it will be important for future research to consider confounding variables such as access to professional support, family support and financial hardship to the success of parent interventions.

4.5 Conclusion

The aim of this study was to examine the effectiveness of combined stress control and child behaviour sessions in reducing parental stress and child challenging behaviour. Results indicate that high levels of parental stress and child challenging behaviour exist in this population. The results provided some support for the relationship between child challenging behaviour, parental stress and coping, which is consistent with previous research.

The results did not support the hypothesis that parental stress and child challenging behaviour would decrease following the intervention. Parental anxiety was found to decrease following the intervention, which provides some support to research demonstrating the effectiveness of parent interventions in reducing stress.
There are a number of limitations to the study, which make the results difficult to generalise. However, the study has generated interesting data that has been of much use clinically, and will help inform future interventions with parents of children with learning disabilities.
References


Appendix 1

a) Letter of ethical approval

b) Research Governance approval letter

c) Consent from special needs school
22 April 2008

Miss Alexis A Patterson
Trainee Clinical Psychologist
Clinical Psychology
Morven House
Raigmore Hospital
INVERNESS
IV2 3UJ

Dear Miss Patterson

**Full title of study:** Combined Stress and Parenting Group: The Effectiveness for Parents of Children and Young People with a Learning Disability

**REC reference number:** 08/S0801/56

Thank you for your letter of 15 April 2008, responding to the Committee’s request for further information on the above research and submitting revised documentation.

**Confirmation of ethical opinion**

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation as revised.
Conditions of approval

The favourable opinion is given provided that you comply with the conditions set out in the attached document. You are advised to study the conditions carefully.

Approved documents

The final list of documents reviewed and approved by the Committee is as follows:

<table>
<thead>
<tr>
<th>Document</th>
<th>Version</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application</td>
<td>5.5</td>
<td>5 March 2008</td>
</tr>
<tr>
<td>Investigator CV</td>
<td></td>
<td>5 March 2008</td>
</tr>
<tr>
<td>Protocol</td>
<td>8</td>
<td>11 January 2008</td>
</tr>
<tr>
<td>Covering Letter</td>
<td></td>
<td>15 April 2008</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Document</th>
<th>Version</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Letter from Sponsor</td>
<td></td>
<td>5 February 2008</td>
</tr>
<tr>
<td>Peer Review</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compensation Arrangements</td>
<td></td>
<td>20 July 2007</td>
</tr>
<tr>
<td>Questionnaire: PSI Short Form</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Questionnaire: HADS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Questionnaire: Brief COPE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Letter of invitation to participant</td>
<td></td>
<td>15 April 2008</td>
</tr>
<tr>
<td>Participant Information Sheet</td>
<td>1.2</td>
<td>9 March 2008</td>
</tr>
<tr>
<td>Participant Consent Form</td>
<td>1.3</td>
<td>22 April 2008</td>
</tr>
<tr>
<td>Response to Request for Further Information</td>
<td></td>
<td>15 April 2008</td>
</tr>
<tr>
<td>Letter of Invitation to Participant: Waiting List</td>
<td>1.2</td>
<td>9 April 2008</td>
</tr>
<tr>
<td>Letter of Invitation to Participant: Group</td>
<td>1.2</td>
<td>9 April 2008</td>
</tr>
<tr>
<td>Response to Ethics Panel</td>
<td>1.1</td>
<td></td>
</tr>
</tbody>
</table>
R&D approval

All researchers and research collaborators who will be participating in the research at NHS sites should apply for R&D approval from the relevant care organisation, if they have not yet done so. R&D approval is required, whether or not the study is exempt from SSA. You should advise researchers and local collaborators accordingly.


Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees (July 2001) and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

After ethical review

Now that you have completed the application process please visit the National Research Ethics Website > After Review.

Here you will find links to the following:

a) Providing feedback. You are invited to give your view of the service that you have received from the National Research Ethics Service on the application procedure. If you wish to make your views known please use the feedback form available on the website.

b) Progress Reports. Please refer to the attached Standard conditions of approval by Research Ethics Committees.

c) Safety Reports. Please refer to the attached Standard conditions of approval by Research Ethics Committees.

d) Amendments. Please refer to the attached Standard conditions of approval by Research Ethics Committees.
e)  End of Study/Project. Please refer to the attached Standard conditions of approval by Research Ethics Committees.

We would also like to inform you that we consult regularly with stakeholders to improve our service. If you would like to join our Reference Group please email referencegroup@nationalres.org.uk.

Please quote this number on all correspondence

With the Committee’s best wishes for the success of this project

Yours sincerely

Dr Angus J Thompson
Chair

Enclosures: Standard approval conditions
The North of Scotland Research Ethics contacts details are:

| 1. | Dr Rachel Venables  
Acting Scientific Advisor  
North of Scotland Research Ethics  
Summerfield House  
2 Eday Road  
Aberdeen  
AB15 6RE | Office Staff:  
Carol Bain,  
Ethics Co-ordinator  
Irene Allan  
and  
Karen Gauld  
Ethics Administrators | Office Hours:  
Monday – Friday  
9am -4pm  
Tele: 01224 558474  
Email: nosres@nhs.net  
www.nhs.grampian.org  
(applying for ethical approval – see under professional) |

2. The NoSRES Committee meetings are twice a month (see timetable on website). The closing date for applications is 3 weeks before each committee meeting.

   The application form and guidance notes are accessed through the National Research Ethics Service (NRES) – www.nres.npsa.nhs.uk (formerly the COREC website).

3. Complete the NRES form Parts A & B, and the SSI* form, version 5.5  
(formerly the COREC application forms A, B, C & D – the SSI form replaced C & D)

   * NHS Highland (NHSH) require the SSI form for ALL project types irrespective of whether the REC approval letter states this is not required.

Before locking this form, contact the NoSRES office for the local reference number referred to on the form and book onto a committee meeting. Send one signed copy of everything to NoSRES, eg:

- One copy of the signed NRES application form (Parts, A, B & the SSI)
- Research protocol
- Patient Information Sheet*
- Consent Form*
- Peer Review
- Investigator CV
- Confirmation of sponsor letter (except for student projects when the supervisor signs the NRES application form and commercial projects)

Please also submit one copy of the following if applicable:

- GP/consultant letter*
- Invitation letter/advertisement*
- Questionnaire, Interview schedule*, etc
- Sample diary card/patient card/case report form*
A summary CV for the Supervisor (for Student Projects)

Investigator's brochure or summary of product characteristics data sheet for all drugs**

* Provided on NHSHs headed paper, clearly showing document name, version number and date.

For any further information regarding your submission, meeting dates, etc contact the administrator on: nosres@nhs.net

4. NHSH Research and Development (R&D) Department should get a duplicate copy of the above paperwork, along with:
   - Any grant application and approval letter
   - REC approval letters and any Notice of Amendments and amendment approval letters

5. Please ensure all NHSH departments involved in the project have given authorisation on the SSI form from the relevant radiologist, pharmacist, etc.

6. You should request a Service Support Cost form the R&D Department for completion whether or not there are any costs to NHSH.

7. Any non-NHSH employed researcher who will have contact or influence on the care of an NHSH patient could notify the R&D Department to highlight this requirement as Disclosure Scotland Clearance and an NHSH Honorary Research Contract will be required.

8. Following receipt of the NoSRES approval letter, the process for obtaining NHSHs Management Approval can be progressed. Research cannot begin until the Management Approval letter, signed by NHSHs R&D Director, is issued.

9. For NHSH Site Specific Assessment approval ONLY, please submit to NoSRES:
   - The signed SSI form
   - Your CV

Submit the following to NHSHs R&D Department:
   - The signed SSI form
   - The full document set complete with signature pages using NHS Highland headed paper where appropriate, eg patient information sheets, etc.

For further advice please do not hesitate to contact
NoSRES

or

Jackie Fraser, Research Administrator (details below)
To whom it may concern

Following a request by Alexis Patterson I would like to confirm that I granted permission to invite parents to take part in the parent stress sessions and research project as part of her Doctoral thesis. In October 2009 I gave a flyer to the children of parents deemed appropriate to be invited to the parent stress/behavioural management sessions, which asked parents to contact Alexis directly if they were interested in taking part.

Yours sincerely

Deputy Head Teacher
Appendix 2  Calculation of Effect size.

The square root of the average of the square of the r value for all correlations in the papers deemed to be of appropriate quality of design (including the significant and insignificant results) suggested an estimated effect size of $d=0.846481$ for the effect of groups on stress and child behaviour. If $d=0.85$ then we anticipate a large effect size. $d=0.8$, at $p=0.05$, and power=80 then $n=26$. 
Appendix 3

Participant information questionnaire
Study title:
Reducing parental stress and improving child behaviour:
In families with children and young people with learning disabilities

Please complete the following information:

1. Male    Female (please circle)

2. Age ______

3. Marital status _________________________

4. Employed    Unemployed (please circle)

5. Children:

<table>
<thead>
<tr>
<th>Age</th>
<th>Gender</th>
<th>Diagnosis (if appropriate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>______</td>
<td>__________________________</td>
</tr>
<tr>
<td>2.</td>
<td>______</td>
<td>__________________________</td>
</tr>
<tr>
<td>3.</td>
<td>______</td>
<td>__________________________</td>
</tr>
<tr>
<td>4.</td>
<td>______</td>
<td>__________________________</td>
</tr>
<tr>
<td>5.</td>
<td>______</td>
<td>__________________________</td>
</tr>
</tbody>
</table>
Appendix 4

Brief COPE
Brief COPE

These items deal with ways you've been coping with the stress in your life since you found out you were going to have to have this operation. There are many ways to try to deal with problems. These items ask what you've been doing to cope with this one. Obviously, different people deal with things in different ways, but I'm interested in how you've tried to deal with it. Each item says something about a particular way of coping. I want to know to what extent you've been doing what the item says. How much or how frequently. Don't answer on the basis of whether it seems to be working or not—just whether or not you're doing it. Use these response choices. Try to rate each item separately in your mind from the others. Make your answers as true FOR YOU as you can.

1 = I haven't been doing this at all  
2 = I've been doing this a little bit  
3 = I've been doing this a medium amount  
4 = I've been doing this a lot

Please **Circle** the most appropriate number,

1. I've been turning to work or other activities to take my mind off things. 1 2 3 4
2. I've been concentrating my efforts on doing something about the situation I'm in. 1 2 3 4
3. I've been saying to myself "this isn't real.". 1 2 3 4
4. I've been using alcohol or other drugs to make myself feel better. 1 2 3 4
5. I've been getting emotional support from others. 1 2 3 4
6. I've been giving up trying to deal with it. 1 2 3 4
7. I've been taking action to try to make the situation better. 1 2 3 4
8. I've been refusing to believe that it has happened. 1 2 3 4
9. I've been saying things to let my unpleasant feelings escape. 1 2 3 4
10. I've been getting help and advice from other people. 1 2 3 4
11. I've been using alcohol or other drugs to help me get through it. 1 2 3 4
12. I've been trying to see it in a different light, to make it seem more positive. 1 2 3 4
13. I've been criticizing myself. 1 2 3 4
14. I've been trying to come up with a strategy about what to do. 1 2 3 4
15. I've been getting comfort and understanding from someone. 1 2 3 4
16. I've been giving up the attempt to cope. 1 2 3 4
17. I've been looking for something good in what is happening. 1 2 3 4
18. I've been making jokes about it. 1 2 3 4
19. I've been doing something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping, or shopping. 1 2 3 4
20. I've been accepting the reality of the fact that it has happened. 1 2 3 4
21. I've been expressing my negative feelings. 1 2 3 4
22. I've been trying to find comfort in my religion or spiritual beliefs. 1 2 3 4
23. I've been trying to get advice or help from other people about what to do. 1 2 3 4
24. I've been learning to live with it. 1 2 3 4
25. I've been thinking hard about what steps to take. 1 2 3 4
26. I've been blaming myself for things that happened. 1 2 3 4
27. I've been praying or meditating. 1 2 3 4
28. I've been making fun of the situation. 1 2 3 4
Appendix 5

a) Cover letter
b) Consent form for parents
c) Information sheet
d) Invitation to group
e) Flyer for parent stress sessions
f) Invite for parents recruited from special needs school
Study title:
Reducing parental stress and improving child behaviour:
In families with children and young people with learning disabilities

Dear Parents/Guardian

We would like to invite you to participate in the above study. The study is being carried out as part of an academic qualification in collaboration with Edinburgh University. We hope the study will help us find the most effective ways to provide a service to you and your family.

To help you decide whether you would like to take part, please read the enclosed information sheet. After reading this we would be very grateful if you could complete the following enclosed forms and return them in the stamp addressed envelope provided:

- A consent form to state whether you agree to participate in the study.
- A PSI form (Parenting Stress Index). This will inform us of current levels of your parental stress and find out about the appropriateness of these sessions for you.
- An ABC form (Aberrant Behaviour Checklist). This will provide us with information on your child’s behaviour and find out about the appropriateness of these sessions for you.
- Brief COPE. This will inform us of your current coping strategies.
- HADS (Hospital Anxiety and Depression Scale). This will provide information on any current levels of depression and anxiety.

If you agree to take part in the study you will shortly be sent a letter with further details.

Please contact us on the above number if you have any questions regarding any part of this or the enclosed forms. Otherwise, we would be very grateful if you could complete this and return it to us within two weeks.

Yours sincerely

Dr Morag Watson
Clinical Psychologist

Alexis Patterson
Researcher (contact details above)
CONSENT FORM

Title of Project: Reducing Parental Stress and Improving Child Behaviour: In Families with Children and Young People with Learning Disabilities

Name of Researcher: Alexis Patterson

1) I confirm that I have read and understand the information sheet dated 18th June for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.

2) I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, without my care or legal rights being affected.

3) I understand that relevant sections of my data collected during the study may be looked at by individuals from regulatory authorities, or from the NHS trust, where it is relevant to my taking part in this research. I give permission for these individual to have access to my records.

5) I understand that my GP may be informed of my participation in the study.

6) I agree to take part in the above study.

___________________  ________________  ____________________  
Name of participant                           Date                                       Signature

_________________________  ________________              ____________________  
Name of person taking consent                 Date                                       Signature
(If different from researcher)

_________________________  ____________________  
Researcher                                      Date                                       Signature
INFORMATION SHEET

1 Study title

Reducing Parental Stress and Improving Child Behaviour: In Families with Children and Young People with Learning Disabilities

2 Invitation

You are being invited to take part in a research study. Before you decide it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask us if there is anything that is not clear or you would like more information. Take time to decide whether you would like to take part. Thank you for reading this.

3 What is the purpose of the study?

The purpose of the study is to evaluate the effectiveness of a series of talks designed to reduce parental stress and child behaviour problems.

Many parents of children with learning disabilities experience high levels of stress. This can make it more difficult to manage children’s behaviour. Furthermore, research has indicated that children with learning disabilities display more frequent and severe challenging behaviour. Challenging behaviour is described as a range of behaviours that can be dangerous to one self or others and limit everyday functioning.

The purpose of the talks is to help prevent any difficulties occurring, as well to help people who are currently experiencing problems

4 Why have I been chosen?

We are aware that you are in contact with NHS services in relation to your child with learning disabilities. We are inviting all parents who are in this situation, in the Inverness area, to be involved in the study.

If you agree to take part, you are free to withdraw at any time, without giving a reason. Whether you agree to attend these sessions, or withdraw, will have no impact on your current service or on your placement on the waiting list.

5 Do I have to take part?

No. It is up to you to decide whether to take part. If you do decide to take part, you will be given this information sheet to keep and asked to sign a consent form. If you do decide to take part, you are still free to withdraw at any time without giving a reason. A decision to withdraw at any time, or a decision not to take part, will not affect the standard of care you receive.
6 What will happen to me if I take part?

There will be six weekly talks in a presentation format, each lasting 1½ hours. This is not personal therapy and you will not be asked to share any personal information. You will be welcome to ask questions but will only be expected to listen. It would be best if you could attend all sessions offered, however we understand that this may not be possible.

In order to evaluate whether these talks are helpful to you and your family, we will use questionnaires to collect information about your stress levels and your child’s behaviour. We will be running two blocks of talks, one beginning in the middle of August and one beginning at the end of October.

If you attend the second block of talks we would be grateful if you could complete the questionnaires by post on two further occasions. This is so we can evaluate the effectiveness of the group.

During the course of the talks, we would be very grateful if you would complete a set of four short questionnaires. We will then ask you to complete the same questionnaires two months after the final session.

7 What will the talks be about?

There will be 3 talks focusing on reducing parental stress and 3 talks on managing child behaviour.

The titles of the talks will be:

<table>
<thead>
<tr>
<th>Parental Stress 1-3</th>
<th>Managing Child Behaviour 4-6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Talk 1 – Intro &amp; controlling your body</td>
<td>Talk 4 – Sleep, activities &amp; diet</td>
</tr>
<tr>
<td>Talk 2 – Controlling your thoughts</td>
<td>Talk 5 – General parenting strategies</td>
</tr>
<tr>
<td>Talk 3 – Controlling your actions &amp; sleep</td>
<td>Talk 6 – When things go wrong</td>
</tr>
</tbody>
</table>

8 What are the alternatives for treatment?

Further individual psychological intervention will be available from the Clinical Psychology Service if you are not already involved with this service.

9 What happens when the research stops?

The intervention will last 6 weeks. This will not affect any treatment you are currently receiving or your place on any waiting list.

10 What if something goes wrong?

If you find any of the material in the questionnaires raises any personal issues for you, please feel free to contact us on the above number or alternatively contact your GP for advice. If your responses indicate that you, or someone else, is at risk of harm then we would contact you personally to discuss this further. If we were unable to do this we would be obliged to notify your GP.

If you would like independent advice about participating in the study, please contact Frances Hines (Research Manager) at the local NHS Research & Development office on 01463 667 317.

8 Will my taking part in this study be kept confidential?

All information, which is collected during the course of the research, will be kept strictly confidential. Any information that leaves the hospital will have your name and address removed so that you cannot be recognised from it.

At the end of the study, you will be provided with information regarding the findings.

Thank you for taking the time to read this
Study Title:
Reducing Parental Stress and Improving Child Behaviour:
In families with children and young people with learning disabilities

Dear

Thank you for responding to our letter inviting you to take part in the parent stress group. You completed the questionnaires and indicated that you would like to attend the groups but have not attended any of the sessions. We would like to invite you to the next group that we will be running starting on the 29th October at 1.00-2.30pm.

In the meantime we were hoping that you would complete a further set of questionnaires so that we can compare how you are doing with the people who are currently attending the group. Please return them to us in the envelope provided.

The sessions in October will be held at:

[Inshes Church (Opposite Matalan, Inshes Retail Park)]

Inverness.

Please contact if you would like to attend the group or if you have any further questions.

Many thanks for your help.

Yours sincerely

Dr Morag Watson
Clinical Psychologist

Alexis Patterson
Researcher (Contact details above)
Reducing Parental Stress and Improving Child Behaviour: In Families with Children and Young People with Learning Disabilities

- We would like to invite you to take part in the above study. The purpose of the study is to evaluate the effectiveness of a series of talks designed to reduce parental stress and child behaviour problems.

- There will be six weekly talks in a presentation format, each lasting 1½ hours. This is not personal therapy and you will not be asked to share any personal information.

- There will be 3 talks focusing on reducing parental stress and 3 talks on managing child behaviour.

- In order to evaluate whether these talks are helpful to you and your family, we will use questionnaires to collect information about your stress levels and your child’s behaviour. You can also attend the talks without completing the questionnaires.

How do I get more information? If you would like to find out more information please contact Alexis Patterson on 01463 704665 or to discuss further and to receive an information pack.
Study title:
Reducing parental stress and improving child behaviour:
In families with children and young people with learning disabilities

Dear Parents/Guardian

We would like to invite you to participate in the above study. The study is being carried out as part of an academic qualification in collaboration with Edinburgh University. We hope the study will help us find the most effective ways to provide a service to you and your family.

To help you decide whether you would like to take part, please read the enclosed information sheet. After reading this we would be very grateful if you could complete the following enclosed forms and send them back in the stamped addressed envelope provided or bring them to the first talk.

- A consent form to state whether you agree to participate in the study.
- A PSI form (Parenting Stress Index). This will inform us of current levels of your parental stress and find out about the appropriateness of these sessions for you.
- An ABC form (Aberrant Behaviour Checklist). This will provide us with information on your child’s behaviour and find out about the appropriateness of these sessions for you.
- Brief COPE. This will inform us of your current coping strategies.
- HADS (Hospital Anxiety and Depression Scale). This will provide information on any current levels of depression and anxiety.

The first talk will be held at the [Pines, Drummond Road] on the 29th October 2009 from 9.30-11am.

Please contact us on the above number if you have any questions regarding any part of this or the enclosed forms.

Yours sincerely

Dr Morag Watson
Clinical Psychologist

Alexis Patterson
Researcher (contact details above)
Appendix 6

Skew and Kurtosis
<table>
<thead>
<tr>
<th>Variable</th>
<th>Group</th>
<th>Skew</th>
<th>SE skew</th>
<th>Kurtosis</th>
<th>SE kurt</th>
<th>Z skew</th>
<th>Z kurtosis</th>
<th>Sig skew</th>
<th>Sig kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td></td>
<td>0.354</td>
<td>0.448</td>
<td>0.330</td>
<td>0.872</td>
<td>0.790</td>
<td>0.378</td>
<td>0.429</td>
<td>0.705</td>
</tr>
<tr>
<td>Anxiety</td>
<td></td>
<td>0.074</td>
<td>0.456</td>
<td>1.154</td>
<td>0.887</td>
<td>0.162</td>
<td>1.301</td>
<td>0.871</td>
<td>0.193</td>
</tr>
<tr>
<td>Hads</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cope total</td>
<td></td>
<td>0.773</td>
<td>0.448</td>
<td>0.210</td>
<td>0.872</td>
<td>1.725</td>
<td>0.241</td>
<td>0.084</td>
<td>0.810</td>
</tr>
<tr>
<td>Avoidance</td>
<td>Prob</td>
<td>0.935</td>
<td>0.448</td>
<td>0.538</td>
<td>0.872</td>
<td>2.087</td>
<td>0.617</td>
<td>0.037</td>
<td>0.537</td>
</tr>
<tr>
<td></td>
<td>focussed</td>
<td>0.036</td>
<td>0.448</td>
<td>0.547</td>
<td>0.872</td>
<td>0.080</td>
<td>0.627</td>
<td>0.936</td>
<td>0.530</td>
</tr>
<tr>
<td>Emotion focussed</td>
<td></td>
<td>0.38</td>
<td>0.448</td>
<td>0.432</td>
<td>0.872</td>
<td>0.848</td>
<td>0.495</td>
<td>0.396</td>
<td>0.620</td>
</tr>
<tr>
<td>Cogn reconst</td>
<td></td>
<td>0.495</td>
<td>0.448</td>
<td>0.073</td>
<td>0.872</td>
<td>1.105</td>
<td>0.084</td>
<td>0.269</td>
<td>0.933</td>
</tr>
<tr>
<td>PSI</td>
<td></td>
<td>0.267</td>
<td>0.448</td>
<td>0.052</td>
<td>0.872</td>
<td>0.596</td>
<td>0.060</td>
<td>0.551</td>
<td>0.952</td>
</tr>
<tr>
<td>Irritability</td>
<td></td>
<td>0.181</td>
<td>0.448</td>
<td>0.705</td>
<td>0.872</td>
<td>0.404</td>
<td>0.808</td>
<td>0.686</td>
<td>0.419</td>
</tr>
<tr>
<td>Hyperactivity</td>
<td></td>
<td>1.076</td>
<td>0.448</td>
<td>0.523</td>
<td>0.872</td>
<td>2.402</td>
<td>0.600</td>
<td>0.016</td>
<td>0.549</td>
</tr>
<tr>
<td>inapprop speech</td>
<td></td>
<td>0.875</td>
<td>0.448</td>
<td>0.184</td>
<td>0.872</td>
<td>1.953</td>
<td>0.211</td>
<td>0.051</td>
<td>0.833</td>
</tr>
</tbody>
</table>