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The Role of Maternal Attributions in Treatment Acceptability of Interventions for Problem Behaviour in Children with ADHD

by

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ABSTRACT

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THE ROLE OF MATERNAL ATTRIBUTIONS IN TREATMENT ACCEPTABILITY OF INTERVENTIONS FOR PROBLEM BEHAVIOUR IN CHILDREN WITH ADHD

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Studies have found that a range of interventions, involving psychosocial or medication treatments can lead to reductions in childhood problem behaviour (e.g. Brosnan & Healy, 2011; Connor, Barkley, & Davis, 2000). Treatment acceptability has been implicated as one important factor in understanding why parents vary in their likelihood of engaging with interventions (Kazdin, 1980a). A range of variables have been found to moderate parental treatment acceptability. Recently, attention has been given to parental attributions for their child's problem behaviour as a potential moderator of treatment acceptability, but there has been little evaluation of existing evidence for such a relationship. Systematic searches of existing literatures on both parental treatment acceptability of interventions for childhood problem behaviour and parental attributions for problem behaviour were therefore conducted and reviewed. Preliminary evidence for the potential importance of a link between parental attributions and treatment acceptability was found, but as yet, few studies have specifically addressed this link and a need for further, methodologically rigorous research was identified.

The empirical paper explored whether the attributions for problem behaviour in their 6- to 11-year-olds with ADHD (N = 59), were related to how acceptable mothers found medication, child social-skills training and a parenting intervention as treatments for problem behaviour. Demographic information and reports of severity of their child's ADHD and problem behaviours and diagnosis and treatment history were collected. Results showed that prior experience of medication was significantly positively correlated with medication acceptability. No significant relationships between maternal attributions and treatment acceptability were found. Limitations of the study are considered and implications for researchers and educational psychologists are discussed.

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DECLARATION OF AUTHORSHIP

I, BRYONY LOUISE ALMOND declare that the thesis entitled **The Role of Maternal Attributions in Treatment Acceptability of Interventions for Problem Behaviour in Children with ADHD** and the work presented in the thesis are both my own, and have been generated by me as the result of my own original research. I confirm that:

- this work was done wholly or mainly while in candidature for a research degree at this University;
- where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;
- where I have consulted the published work of others, this is always clearly attributed;
- where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work;
- I have acknowledged all main sources of help;
- where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;
- none of this work has been published before submission

Signed: ……..

Date:…….

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Abbreviations

α	Cronbach's alpha
ABA	Applied behaviour analysis
ADHD	Attention deficit/hyperactivity disorder
APA	American Psychiatric Association
ASD	Autism spectrum disorder
B	Unstandardised regression coefficient
BPT	Behavioural parent training
CD	Conduct disorder
Δ	Value of change
DBD	Disruptive behaviour disorder
df	Degrees of freedom
DSM-IV	Diagnostic and Statistical Manual of Mental Disorders (fourth edition)
EP	Educational psychologist
F	*F*-ratio (*F*-distribution)
f^2	Cohen's effect size for hierarchical multiple regression
ICD-10	International Statistical Classification of Diseases and Related Health Problems (tenth revision)
M	Mean
MPH	Methylphenidate
n	Number of cases
N	Total sample size

NCBRF – TIQ	Nisonger Child Behavior Rating Form – Typical IQ Version
ODD	Oppositional defiant disorder
p	A probability quantifying the strength of evidence against the null hypothesis
PAQ	Parental Attribution Questionnaire
PCIT	Parent Child Interaction Therapy
q	Q-value
r	Pearson's product-moment correlation coefficient
R^2	The percentage of total variation explained by a variable or statistical model
SD	Standard deviation
SDQ	Strengths and Difficulties Questionnaire
SE	Standard error
SES	Socioeconomic status
TARF	Treatment Acceptability Rating Form
TARF-R	Treatment Acceptability Rating Form – Revised
TEI	Treatment Evaluation Inventory
TEI-SF	Treatment Evaluation Inventory – Short Form
UK	United Kingdom
US	United States
VADPRS	Vanderbilt ADHD Parent Diagnostic Rating Scale
VMR	Video-mediated recall

Chapter 1: Parental Acceptability of Interventions for Children's Problem Behaviour: The Role of Parental Attributions. A Review of the Literature

Introduction

During the course of development, some children will display occasional problematic behaviour, most frequently at times of stress or change such as starting school, the birth of a sibling, or a developmental stage (e.g. 'the terrible twos') (Prior, Smart, Sanson, Pedlow, & Oberkiaid, 1992). When problem behaviour during early childhood persists over time and is considered severe and impairing, it is deemed clinically significant (Frauenglass & Routh, 1999). Evidence of chronic problem behaviour can lead to a diagnosis of a disruptive behaviour disorder such as oppositional defiant disorder (ODD) or conduct disorder (CD) (American Psychiatric Association, 2000; Maughan, Rowe, Messer, Goodman, & Meltzer, 2004). Several factors have been found to increase the risk of the development of problem behaviour in childhood, including gender (with more diagnoses in males than females; Bongers, Koot, van der Ende, & Verhulst, 2003) , developmental delay (Baker, Blacher, & Olsson, 2005), intellectual disability such as Down Syndrome or Prader-Willi Syndrome (Dykens & Kasari, 1997) and autistic spectrum disorders (ASD) (Horner, Carr, Strain, Todd, & Reed, 2002). Disruptive behaviour disorders (DBDs) are also commonly found in children with a diagnosis of Attention Deficit Hyperactivity Disorder (ADHD) (Kutcher et al., 2004). Children who have been exposed to alcohol prenatally, those from low-income families and those who have witnessed community violence have also been found to be at greater risk of significant behaviour problems (Qi & Kaiser, 2003; Shahinfar, Fox, & Leavitt, 2000; Sood et al., 2001).

Conduct problems in childhood are associated with significant negative consequences for the child, their family and wider society including academic underachievement, violence, delinquency, economic difficulties and substance abuse throughout the life course (Jakobsen, Fergusson, & Horwood, 2012; Odgers et al., 2008; Webster-Stratton & Taylor, 2001). The chronic nature of many behaviour problems has been extensively demonstrated in the literature (e.g. Aguilar, Sroufe, Egeland, & Carlson, 2000; Broidy et al., 2003; Moffit, Caspi, Harrington, & Milne, 2002) Some researchers have argued that if behaviour problems, such as excessive aggression, are not addressed during early childhood, treatment becomes less effective as difficulties become entrenched and resistant to intervention (Dunlap & Fox, 2009; Francis, Fletcher, Stuebing, Davidson, & Thompson, 1991; Zigler, Taussig, & Black, 1992).

Several studies have found that clinically significant problem behaviour in childhood does not typically resolve without intervention (Murphy et al., 2005; Tolan, Guerra, & Kendall,

1995). Numerous studies have found that behavioural symptoms change following different intervention approaches[1]. For example, there is a strong evidence-base that demonstrates the efficacy of behavioural interventions (based upon operant conditioning principles) for children's problem behaviour (see Brosnan & Healy, 2011; Chronis, Chacko, Fabiano, Wymbs, & Pelham, 2004; Serketich & Dumas, 1996 for reviews). Psychostimulant medication has also been demonstrated to reduce impulsive aggression and oppositional behaviour in boys with ADHD (Hinshaw, Henker, Whalen, Erhardt, & Dunnington, 1989), aggression and conduct problems in boys with CD (Klein et al., 1997) and in oppositional and conduct symptoms amongst children with ADHD and co-morbid ODD or CD (Connor et al., 2000).

Despite empirical support for the effectiveness of behavioural and drug interventions, failure to initiate, or adhere to, recommended treatments is widespread (Bennett, Power, Rostain, & Carr, 1996). Researchers have argued that empirically demonstrable efficacy is not sufficient to ensure comprehensive engagement with treatment programmes for families. Increasingly, studies have focused on identifying and understanding factors that influence treatment acceptability (Kazdin, 1980a).

Treatment acceptability has been considered for intervention with adults who experience mental health difficulties (Landreville, Landry, Baillargeon, Guérette, & Matteau, 2001), challenging behaviour in adults with learning disability (Mccausland, Grey, Wester, & McClean, 2004) and treatment for cancer (Macquart-Moulin et al., 2000). Further studies have looked at treatment acceptability for interventions with children, including behaviours such as trichotillomania (A. J. Elliott & Fuqua, 2002) and sleep problems (Keenan, Wild, McArthur, & Espie, 2007). Most prominent are studies examining treatment acceptability of interventions for problem behaviours in childhood.

Studies have found that a number of factors may play a role in influencing how acceptable parents find interventions for problem behaviour in their offspring, including parent gender (D. L. Miller & Kelley, 1992) and child age (Phares, Ehrbar, & Lum, 1996). In recent years, parental attributions for the cause of their child's problem behaviour have garnered increased interest amongst researchers. Several studies have aimed to test the hypothesis that a mismatch between parental attributions and type of intervention offered may have a deleterious effect upon treatment acceptability, treatment engagement and maintenance (e.g. Choi & Kovshoff, 2013). Research into parental attributions for problem behaviour sits within a wider literature

[1] The terms *intervention* and *treatment* are used interchangeably in this review.

that considers individuals' causal attributions. Attributional theorists have argued that human beings are driven to make judgements about the cause of events in an attempt to increase their understanding of, and control over, their environment (Weiner, 1986). It is proposed that individuals make decisions about their future behaviour based upon perceived causality, taking into consideration perception of the locus of an event (internal or external), the stability of its cause (stable or unstable) and its controllability (controllable or uncontrollable) (Jenson, Green, Singh, Best, & Ellis, 1998).

It has been argued that understanding parental attributions may offer a realistic method of improving treatment acceptability. Understanding parental cognitions can result in treatments that aim to modify attributions and increase acceptability for treatments that are known to be effective for children with behavioural difficulties. There is some evidence, for example, that parental attributions can be modified through cognitive therapy strategies as part of a parenting programme (Sanders & McFarland, 2000) , or through the use of video feedback (Schechter et al., 2006).

Current review

The prevalence and impact of behaviour problems indicate the need to develop interventions that support children and families and facilitate improved outcomes. The literatures on parental treatment acceptability and parental attributions linked to behavioural difficulties in their offspring have burgeoned over the last 35 years. The current review aims to foster links between these literatures to consider whether understanding the role of parental attributions in treatment acceptability will lead to more positive outcomes for children and their families.

Behaviour problems in development that meet criteria for clinical diagnoses in DSM-IV[2] (American Psychiatric Association, 2000) are divided into oppositional defiant disorder (ODD), usually considered a milder condition and conduct disorder (CD), more commonly diagnosed in adolescents, but sometimes considered present in pre-adolescents. The eight ODD symptoms include anger, spitefulness and conflict in relationships, while the 15 CD symptoms include bullying, fighting, theft and cruelty to animals. Diagnosis for either condition is based upon a minimum symptom count over a defined period. Children may, however, display combinations of these behaviours that are distressing for them and their family for which parents have not

[2] It is acknowledged that the DSM-5 was released in May 2013, however since no published studies in this review reference DSM-5 criteria and DSM-IV was current at the time that this review was designed, the author opted to report criteria listed in the earlier publication.

sought or received a medical diagnosis. Therefore, in this review, *problem behaviour* is understood to refer to any combination of behaviours present in the DSM-IV classifications for either disruptive behaviour disorder, or those listed in the Nisonger Child Behavior Rating Form – Typical IQ Version (Aman et al., 2008)problem behaviour subscale, e.g. physically attacks people, runs away from adults, cruelty to others, steals, violates rules.

The current review considers what is known about parental treatment acceptability for interventions used in the treatment of problem behaviour in children[3], based upon a systematic literature search. The results of a second literature search, targeting existing literature about parental attributions for children's problem behaviour are then presented. Findings from both literature searches are then drawn together for a consideration of a proposed relationship between parental attributions for problem behaviour and treatment acceptability. Lastly, methodological issues will be discussed and consideration given to directions for future research and implications for educational psychologists.

Review of Research on Parental Acceptability of Treatments for Problem Behaviour

Methodology

A systematic literature search was carried out using the EBSCO and Web of Knowledge journal databases. Search criteria were chosen to elicit articles that related specifically to parents' reports of treatment acceptability in relation to problem behaviour in children up to 12 years of age (Appendix A). Articles were then filtered by the inclusion and exclusion criteria in Table 1 (see Appendix B for flowchart).

[3] This review focuses on parental treatment acceptability and attributions with reference to problem behaviour in childhood (i.e. children between 0- and 12- years old). Behavioural difficulties in adolescence are outside the scope of this work.

Table 1

Inclusion and exclusion criteria for journal articles for review (treatment acceptability).

Inclusion criteria	**Exclusion criteria**
Reports parent ratings of treatment acceptability of interventions for child problem behaviour.	Study reports non-parent (e.g. teacher, clinician, child) ratings of treatment acceptability
Includes parents of children in the 0-12 age range	Interventions target non-problem behaviour (e.g. pica, sleep difficulties,)
Published in a peer-reviewed journal	Study measures consumer satisfaction
Published after 1980	

The concept of treatment acceptability

The concept of treatment acceptability evolved from Wolf's (1978) work examining the social importance of interventions, which he termed *social validity.* Social validity was conceived of as a measure of whether scientists were achieving something that was considered of social importance by the layperson. Wolf argued that this judgement could be made based upon three characteristics of a treatment: (a) whether the behavioural outcomes of a treatment were socially significant (i.e. what society desired), (b) whether procedures used in treatment could be considered socially appropriate, or acceptable, and (c) whether all effects of the treatment could be considered socially important. The second strand of social validity, social appropriateness/ acceptability, provided the genesis of the concept of treatment acceptability which has become a focus for many researchers interested in consumers' experience of behavioural treatments. Treatment acceptability has been defined as the views of laypeople, including consumers of treatment, as to whether proposed treatment procedures are appropriate, fair and reasonable for both the individual and the problem for which they are being treated (Kazdin, 1980a).

The importance of treatment acceptability

Treatment acceptability has been highlighted by a number of researchers as an important factor in predicting selection, initiation and adherence to interventions (Kazdin, 1980a; Krain, Kendall, & Power, 2005; Reimers, Wacker, Cooper, & DeRaad, 1992). Prior to Kazdin's (Kazdin, 1980a, 1980b) early work, studies of social validity had focused upon parents' views of interventions after a program of treatment was completed (Frentz & Kelley, 1986). However,

relying upon ratings of consumer satisfaction may preclude the collection of important feedback from parents who do not complete treatment and may be confounded by the impact of perceptions of effectiveness and/or experiences with therapists (Kazdin, 1980a; Kiesler, 1983).

Some research has provided support for a link between treatment acceptability and subsequent initiation of treatment. For example, Krain, Kendall and Power (2005) reported that in a clinic sample of children assessed for ADHD, parental acceptability ratings of behaviour therapy did not predict subsequent uptake of this intervention at a 3-4 month follow-up, but acceptability of medication did significantly predict uptake of a pharmacological intervention at this time. A similar relationship between medication acceptability and uptake of medication was reported by Corkum, Reimers and Schachar (1999).

Krain et al. (2005) hypothesised that limited variability in parental ratings of acceptability for behavioural intervention across all participants may have ruled out the possibility of discerning a significant relationship between TA and uptake of the behavioural intervention. However, other studies have also failed to find a significant relationship between treatment acceptability and treatment uptake. Mothers' and fathers' rating of the acceptability of both counselling and medication interventions failed to significantly predict both uptake and adherence in a study by Bennett, Power, Rostain and Carr (1996).

Ongoing adherence to treatment regimens has also been specifically examined in the literature. Reimers, Wacker, Cooper and DeRaad (1992) collected parental ratings of acceptability for positive reinforcement strategies recommended at a paediatric outpatient behaviour management clinic at an initial appointment and 1, 3 and 6 month follow-up. The authors reported significant correlations between acceptability ratings at each follow-up and parent-reported compliance. Other studies have failed to support the argument for a link between treatment acceptability and adherence (Johnston & Fine, 1993; Reimers, Wacker, Cooper, & DeRaad, 1992). It has been suggested that the failure to find a direct relationship may be due to the need to consider additional moderating factors in compliance, such as parent psychopathology, low socioeconomic status and negative publicity about drug treatment (Johnston & Fine, 1993)

Finally, treatment acceptability has also been argued to be predictive of treatment outcome. Kazdin (2000) found that in a clinical sample of 144 children aged 6-14 referred for conduct problems, there was a small, positive correlation between measures of parental treatment acceptability of child-focused and parent-focused behavioural intervention and therapeutic change over a mean treatment duration of 22.6 weeks. Mackenzie, Fite and Bates

(2004) reported a large, highly significant correlation between measures of improvement in frequency and intensity of problem behaviour and mothers' treatment acceptability of a Patterson-model BPT programme (1983). However, Mackenzie et al. confounded the concepts of treatment acceptability and consumer satisfaction.

Measurement of treatment acceptability

Treatment acceptability has most often been assessed in research through the presentation of questionnaires to research participants This approach was pioneered by Kazdin (1980a),who developed the Treatment Evaluation Inventory (TEI) . The original TEI was made up of 16 statements relating to how acceptable a respondent considered a treatment to be, how amenable they would be to carrying it out, whether they considered the procedure to be unfair or cruel and whether they liked the procedure. Participants rated their agreement with each statement on a 7-point Likert scale, with reference to four treatments which might be used with one of two fictional children with behavioural problems. Principal component factor analysis revealed that 15 of 16 items in Kazdin's TEI loaded highly on a single principal component. The 16th was deleted due to its small loading. The TEI has rarely been used in its original form in clinical intervention studies, but it has formed the basis for a number of other instruments.

The Treatment Evaluation Inventory- Short Form (TEI-SF) (Kelley, Heffer, Gresham, & Elliott, 1989), based upon the original TEI, reduced the number of items to nine and employed a 5-item Likert scale, to make it more participant-friendly. The Treatment Acceptability Rating Form (TARF) (Reimers & Wacker, 1988) was developed from the TEI and was extended to include statements about treatment effectiveness and cost. The Treatment Acceptability Rating Form – Revised (TARF-R) (Reimers, Wacker, Cooper, & de Raad, 1992) further expanded the original content by including statements relating to problem severity and understanding of the intervention. The instruments above were all designed to explore treatment acceptability in clinical settings.

Witt and Martens (1983) developed the Intervention Rating Profile (IRP) to extend research into teachers' acceptability of educational treatments. This 20-statement measure required respondents to rate their agreement on a 6-point Likert scale. Researchers subsequently produced variations of the IRP, either reducing or increasing the number of items presented, striving to enhance readability and to improve internal consistency, leading to publication of the IRP-15 (Martens, Witt, Elliott, & Darveaux, 1985), the Behavior Intervention Rating Scale (Brock & Elliott, 1987), and the Abbreviated Acceptability Rating Profile (Tarnowski, Simonian, Park, & Bekeny, 1992). The IRP was also modified by Witt and Elliott

(1985) to be suitable for obtaining ratings of acceptability of educational interventions by children. In an analysis of these measures of treatment acceptability, Finn and Sladeczek (2001) concluded that no one measure could be considered more comprehensive than the others. However, it is notable that these authors were interested only in measuring treatment acceptability of behavioural interventions and did not consider pharmacological treatment acceptability.

Treatment characteristics

A number of treatment characteristics have been found to mediate treatment acceptability of intervention for childhood problem behaviour.

Behavioural interventions. For the purpose of this review, the term behavioural interventions refers to any intervention developed from operant conditioning principles or using behavioural techniques. These are usually divided into positive reinforcement techniques, intended to increase desirable behaviours (e.g. specific praise, token economy) and reductive techniques aimed at reducing unwanted behaviours (e.g. smacking, response cost, time-out) (Jones, Eyberg, Adams, & Boggs, 1998).

A consistent finding in studies of behavioural intervention techniques has been that parents typically prefer positive techniques, rather than reductive intervention for behaviour problems.(e.g.Kazdin, 1980a, 1980b; Norton, Austen, Allen, & Hilton, 1983). For example, a study of the treatment acceptability of the five components of the Forehand-McMahon parent training programme (positive attention, rewards, ignoring, commands and timeout) and three variations in method of introducing new skills to children (giving a rationale, giving a rationale and modelling its use and no rationale or modelling) was conducted with a community sample of 90 mothers of children aged 3-8 (Calvert & McMahon, 1987). Results showed that mothers rated rewards, attention to positive behaviour and giving positive commands as more acceptable than time-out or ignoring. An exception to the marked preference for positive techniques was found by Hobbs, Walle and Caldwell's (1984) who showed that mothers (*n*=28) of 2- to 6-year old boys and girls, who participated in a brief parent training programme, rated social reinforcement and time out as equally acceptable.

Amongst reductive techniques, less severe punitive techniques have typically garnered higher ratings of acceptability amongst parents. Frentz and Kelley (1986) found that mothers in a community sample (n=82) of children aged two to 12 rated response cost (removal of privileges in response to undesirable behaviour) as significantly more acceptable strategy for dealing with problem behaviour than differential attention (increasing attention for positive

behaviour and withdrawing attention for negative behaviour), time out, time out with smacking, or smacking alone. Smacking (with or without timeout) and differential attention failed to achieve a mean rating on the TEI that indicated at least moderate acceptability. The researchers hypothesised, after individual TEI item analysis, that the relatively low rating of differential attention was a consequence of its perceived ineffectiveness in improving child behaviour. As highlighted by Jones et al. (1998), the typically poor acceptability ratings for reductive procedures could be partially explained by social desirability. These authors also suggested that parents' perception of the difficulty of implementing some interventions, such as differential attention, might limit how positively they rate them.

Medication. Studies that have included drug treatment as a potential intervention for problem behaviour have typically found that pharmacologic treatment has been less acceptable to parents than behavioural interventions. For example Tarnowski, Simonian, Park and Bekeny (1992) gathered ratings of treatment acceptability for a token system (i.e. children accumulate tokens towards a reward when displaying target behaviour), time-out and medication as stand-alone interventions and in combination from mothers of children (ages not reported) being seen for routine outpatient hospital treatment (*n*=80). Participants were presented with a written vignette of an 8-year-old child (gender not reported), describing behaviour difficulties such as noncompliance and aggression. They then read descriptions of each of the three single interventions and four possible combinations, rating acceptability of each with reference to the child in the vignette on the AARP. Tarnowski et al. found token systems and time out to be considered acceptable interventions for problem behaviour, but mothers did not score medication as reaching a minimum level of acceptability on the AARP, even when combined with one of the two behavioural treatments.

A number of studies have found that parents consider behavioural interventions, but not medication, to be acceptable for treating the symptoms of children with ADHD. Krain et al (2005) found that 89.1% of parents in their study (n=55) rated behaviour therapy as acceptable, but only 47.3% found medication acceptable, based upon a threshold of acceptability of a score of 28 or higher (range 8 to 48) on the TAQ. However, the generalizability of these findings were limited by a high number of middle-class families in the sample and the participation of only two fathers. The authors speculated that since they had recruited families from a specialist ADHD clinic, participants may have been more aware of, and knowledgeable about, treatment options than parents in the community who are not actively seeking help, potentially affecting their views on acceptability (Krain et al., 2005)

Parents' preference for behavioural interventions over medication has been found to be independent of their beliefs about how effective a treatment is. Johnston, Hommersen and Seipp (2008) found that mothers of boys with ADHD aged 5-12 in their study tended to view medication as equally, or more effective than behavioural interventions, with their own children, but rated behavioural parent training as more acceptable than drug treatment. All 109 participants were asked to read eight case descriptions of boys aged seven or eight, giving information including age at diagnosis, overall health, the child's interests, family history and the nature of behaviour problems. Four case examples depicted a boy with ADHD and four described a child with ADHD and ODD. Mothers were also given either a description of behavioural parent training, or medication treatment, including explanation of likely benefits and side effects. They then rated acceptability of their assigned treatment condition on a 5-item, shortened form of the TEI-SF, with reference to each case description. Mothers also rated likely effectiveness of the treatment for the hypothetical child and how effective they considered behaviour management strategies and medication for their own child. Johnston, Hommersen and Seipp (2008) speculated that the mismatch between treatment acceptability and perceived effectiveness may be explained by factors such as such as religious beliefs, social norms and fear of side effects. The limitations of the study include the use of a shortened form of the TEI-SF and the use of only five behavioural symptoms in each case description, which may have produced a sub-clinical representation of ADHD and ODD behaviour. Furthermore, a large number of parents in the study had children who had been medicated at some point and the researchers failed to control for this in their analysis. Thus, any generalisations should be made with caution.

Parent characteristics

A number of parent-related characteristics have been explored to determine potential influences upon treatment acceptability.

Race/cultural background. Researchers have begun to study treatment acceptability of interventions for problem behaviour in a range of countries and cultures in an attempt to reduce the research bias towards Caucasian, and particularly white American populations. In one study, parental acceptability of medication was found to be significantly higher amongst US Caucasian than non-Caucasian parents, though no significant differences were found for behaviour therapy (Krain et al., 2005). Mexican American parents were found to be more accepting of punishment-based approaches, such as response cost, than of positive reinforcement approaches such as differential attention (Borrego, Ibanez, Spendlove, & Pemberton, 2007).

Yu, Roberts, Wong and Shen (2011) explored acceptability of behavioural family therapy programs developed and used in the US, with caregivers of 2- to 7-year old children in mainland China. Participants reportedly found the positive components of responsive play and contingent praise more acceptable than other more reductive components, including authoritative instruction giving, warnings, room- and chair-time outs, ignoring tantrums and immediate timeouts for aggression. In a comparative study involving Euro-Canadian and Chinese-immigrant mothers of boys aged four to eight, no difference was found in mothers' acceptability of the use of praise, token economy, response cost or time-out in response to problem behaviour between groups (Mah & Johnston, 2012). However, Chinese-immigrant mothers rated both smacking and over-correction as more acceptable than Euro-Canadian participants. The study showed that most of this variation was explained by Chinese mothers' more authoritarian parenting style (characterised by low warmth and high control) .

In another recent study, Calzada, Basil and Fernandez (2013) used interviews and focus groups to explore treatment acceptability of a parent training programme in a community sample of 39 Latina mothers of boys and girls aged 3- to 6-years old with problem behaviour. Mothers were asked questions to elicit their views on what causes children to misbehave and acceptability of evidence-based parenting strategies including play, praise, rewards, selective attention, time-out, response cost and harsh discipline (e.g. smacking and shouting). Participants found parent-child play, praise and social rewards to be acceptable behaviour management strategies, but objected to selective attention and the elimination of smacking. Calzada et al. acknowledged that their findings may have been linked to the mother's socioeconomic status (the majority were from lower-income households and many had limited education), rather than cultural mores. Nonetheless, the researchers suggested a need for awareness that some components of widely used parenting programmes may not be consistent with cultural norms in all groups.

In a comparative study, Njardvik and Kelley (2008) found that 79 Icelandic and 57 US parents of 7- and 8-year old children reported significantly different preferences in their responses to managing problem behaviour. All participants completed a postal survey. This included a vignette describing a disobedient and argumentative 8-year old boy who regularly upset his younger sister, followed by descriptions of seven possible interventions, namely smacking, time-out, response cost, differential attention, twice-daily medication, discussion (parents explain why behaviour is unacceptable) and interrupt-redirect (parents interrupt unwanted behaviour and redirect the child to an alternative activity). Parents then completed the TEI-SF with respect to each strategy and completed the Eyberg Child Behavior Inventory

(Eyberg & Ross, 1978) as a measure of their own child's behaviour. Smacking, medication, time-out and response cost were considered to be significantly more acceptable by US parents than their Icelandic counterparts, who favoured discussion and differential reinforcement. The authors highlighted that while parents from both countries reported similar frequencies of problem behaviours, American parents rated problem behaviours in their own children as twice as severe as did Icelandic respondents. They speculated that while a genuine difference in problem severity may have existed, Icelandic culture might be more tolerant of problem behaviour in its children (Njardvik & Kelley, 2008). To match the relatively high socioeconomic status and religious beliefs of the families in the Icelandic sample, American families were recruited from private, protestant schools, meaning there is a need for extreme caution in generalising these findings.

The studies discussed here suggest that there is a need for sensitivity to the potential impact of cultural differences upon parental treatment acceptability which should inform research design and applied work with parents. However, the limited number of studies exploring the importance of nationality/culture in such diverse groups means that no conclusions can be drawn about the moderating effect of culture on treatment acceptability as yet.

Gender. Miller and Kelley (1992) noted that the majority of studies exploring parental treatment acceptability included mothers and not fathers. In their study they recruited 69 married couples (N=138), who were parents of children aged two to 12, from paediatric and behavioural outpatient clinics. Participants were asked to complete the TEI with respect to six treatment procedures (positive reinforcement, chair timeout, response cost, spanking, room timeout and medication) which might be offered to a fictional 8-year-old with problem behaviour who was described in a vignette. The authors found that in their sample, fathers found physically punitive and intrusive methods (spanking and medication) to be significantly more acceptable interventions than did mothers. However, this finding should be interpreted with caution given that the mean acceptability rating by fathers for both did not reach the threshold of 60 out of a possible 95, which is given to represent at least 'moderate' acceptability (Kazdin, 1980a). Mothers reported significantly greater acceptability of all other interventions, except timeout, than did fathers, but both groups found these five interventions at least moderately acceptable.

Differences in ratings of treatment acceptability between mothers and fathers were also reported by Phares, Ehrbar and Lum (1996). Two hundred parents were recruited from a university psychology course, the majority of whom were Caucasian and had one or two

children. Participants were randomly assigned to read one of eight one-paragraph vignettes, created for the study, describing either a boy or girl, aged six or 15, with either unipolar depression (representing an internalizing disorder) or ODD (representing an externalizing disorder). Parents then rated their perception of the severity of the problem and how acceptable they found four proposed interventions on a scale where a rating of 1 was extremely low and 7 was the highest possible. Interventions suggested were medication, individual therapy for the child, family therapy and behavioural contingencies. While mothers in the study were found to be more accepting of both family and individual therapy interventions than fathers, they were less accepting of increased discipline than male participants. The authors speculated that women (and therefore mothers) are more likely to engage with therapy themselves than men, which may lead them to see psychologically based therapies as more appropriate for tackling emotional and behavioural difficulties (Russo, 1990).

A further study has provided evidence for gender differences in treatment acceptability. A community sample of 40 mother-father pairs, who had a son aged from 2 to 7, were asked to rate treatment acceptability of a Parent-Child Interaction Therapy (PCIT) BPT programme aimed at reducing problematic child behaviours and noncompliance (Tiano, Grate, & McNeil, 2013). Participants were visited in their homes and asked to read a vignette explaining that PCIT is delivered in hour-long weekly sessions for 10 to 14 weeks and in addition to the parenting advice usually offered in BPT, PCIT involves direct coaching from a professional who observes parent-child dyads at play through a one-way mirror and provides instructions to the parent through a microphone connected to an earpiece. Parents are also asked to complete a daily homework task and may be offered some training in their own home. Further, there is an emphasis on responding to non-compliant child behaviour with a chair time-out (the child sits in a designated chair for a short time). Mothers and fathers then completed the TEI-SF with regard to PCIT as a whole and for individual components of the programme. In this study, mothers rated PCIT as a whole as more acceptable than fathers and found use of a one-way mirror, receiving intervention at home, completing daily homework and receiving treatment in a group more acceptable as individual components than men did. In absolute terms, 50% or more of fathers rated a group format for programme delivery and receiving coaching from a professional in the same room as them as unacceptable. Receiving support at home was also unacceptable to 40% of fathers. The researchers highlighted the need for sensitivity to elements of parenting programmes that fathers may find unacceptable if men are to be supported to engage with parent-focused psychosocial interventions (Tiano, Grate, & McNeil, 2013).

Socioeconomic status (SES). A number of studies have explored a potential relationship between SES and acceptability of different interventions. Heffer and Kelley (1987), for example, reported that low-income families rated smacking and medication as more acceptable and time out as less acceptable than higher-earning families. Kelley, Grace and Elliott (1990) also reported that parents in the lower income group in their study of 31 abusive or potentially abusive and 31 nonabusive parents were more accepting of smacking than those reporting a higher income. However, a later replication of Heffer and Kelley's (1987) study found that among 100 participants (9 fathers, 78 mothers and 10 grandparents), those with lower SES saw time-out as more acceptable than both medication and smacking (Miltenberger, Parrish, Rickert, & Kohr, 1989). One possible explanation for the discrepant finding offered by Miltenberger et al. was that parents in their sample were waiting to access support through a clinic where they assumed behavioural approaches would be used, therefore causing them to rate such strategies more highly..

In Tiano et al.'s (2013) research, a community sample of mothers and fathers with lower SES rated a PCIT BPT programme more favourably than parents reporting higher SES and lower SES was also associated with greater acceptability of receiving parenting support in the family home. This finding was in contrast to an earlier study of parental acceptability of a Patterson-model BPT intervention in 21 mothers of 3-8 year olds who being treated for ODD, which found no relationship between SES and treatment acceptability (MacKenzie et al., 2004). This variation in findings may be due to the differences in study populations (potential, versus actual consumers) and differences in the content of the parenting interventions (though Mackenzie et al. do not give information about the programme in their study).

One further study examined the impact of SES on treatment acceptability of behavioural and pharmacological interventions in parents of children aged between 5 and 12 who met diagnostic criteria for ADHD (Krain et al., 2005). The results showed no significant effect of SES on the acceptability of either intervention. . Taken together, the literature suggests that SES may play an important role in treatment acceptability with respect to some specific aspects of interventions, or combinations thereof.

Parents' understanding and prior experience of interventions. Knowledge about, and prior experience of, interventions have been suggested to influence ratings of treatment acceptability. Liu, Robin, Brenner and Eastman (1991), for example, assessed ratings of treatment acceptability of a behaviour modification intervention, medication and a combination of the two with 50 parents of children with ADHD and a control group (reported mean child age of 10 years). They devised the Attention Deficit Disorder Information Questionnaire (ADDIQ)

for the study, which contains 20 true/false questions about knowledge of ADHD, medication and behaviour management strategies. The authors found that in both groups, greater knowledge of ADHD and its management was significantly positively correlated with acceptability of medication, but not behaviour modification. However, no relationship between knowledge of ADHD and counselling and medication treatments and their acceptability was found by Rostain, Power and Atkins (1993).

More recently, Gage and Wilson (2000) hypothesised that the higher ratings of treatment acceptability for medication made by parents of children with ADHD, as compared with parents of children without ADHD, might reflect the high reported rates of medication use in that group. They suggested that prior experience with medication, therefore, was positively associated with acceptability. In support of this association, one study of parents of children with autistic spectrum disorder reported a rise in positive ratings of parental treatment acceptability for the Stepping Stones Triple P parenting programme directly after participants watched a DVD about it (Whittingham, Sofronoff, & Sheffield, 2006).

Mental health. One study has provided evidence that marital distress experienced by parents may affect ratings of treatment acceptability. Miller and Kelley (1992) reported that positive reinforcement strategies targeted at children were reported as less acceptable by parents who were distressed, than other participants who were not. They also found that distressed parents rated room time-out as more acceptable than the non-distressed group.

Child characteristics

Further studies have examined child characteristics as potentially important variables in developing a better understanding of treatment acceptability for child problem behaviour.

Severity of problem behaviour. A relationship between the severity of child problem behaviour and treatment acceptability was first observed by Kazdin (1980a), who found that amongst US college students, ratings of treatment acceptability for several treatment approaches (reinforcement, time out from reinforcement, drug treatment and electric shock therapy) were significantly higher when the problem behaviour described to participants was more severe. He noted, however, that the effect of problem severity was small when compared with the effect of the different treatment conditions themselves. Support for this relationship was subsequently found amongst parents of children aged two to 12 in a community sample, who rated acceptability of five reductive treatment methods for child behaviour problems (Frentz & Kelley, 1986). Participants were presented with vignettes of behaviour problems representing two degrees of severity and all treatments were rated as more acceptable for the more severe

condition. However, the severity of problem behaviour presented by participants' own children did not affect their ratings and the rank order of the treatments was the same for both stimulus conditions.

Parental perception of the severity of problem behaviour was also found to correlate positively with treatment acceptability by Miller and Kelley (1992). Amongst their sample of 69 married couples with children aged 2- to 12-years-old, parents who rated their own child's behaviour as significantly problem viewed medication as significantly more acceptable for the treatment of a fictional child with problem behaviour, than did parents of children who did not present behavioural challenges. Acceptability of smacking was also correlated with level of problem behaviour, with parents who experienced more challenging behaviour from their children rating this intervention as less acceptable. Miller and Kelley speculated that while parents of children with greater behavioural difficulties may have been more likely to resort to spanking amongst a range of responses to conduct problems, they would also then be more convinced of the ineffectiveness of corporal punishment. Following this argument, medication, they suggested, might then become more acceptable as an intervention to those who had thus far found other methods ineffective. Further studies have reported a significant effect of severity of the child's problem behaviour upon parents' acceptability of positive reinforcement strategies In one study, parents of children aged between one year 10 months and 10 years of age rated the acceptability of six treatment procedures (positive reinforcement, chair timeout, response cost, smacking, room timeout and medication) for a hypothetical 8-year-old boy exhibiting noncompliance and aggressive behaviours (D. L. Miller & Kelley, 1992). In this study, severity of problem behaviour in participants' own children was related to treatment acceptability. Parents whose children's behaviour fell into the low severity group rated the intervention as more acceptable in terms of reasonableness, effectiveness, disruptiveness and time needed for implementation than those in the high severity group. Further research has also found a negative correlation between severity of behaviour and treatment acceptability (Choi & Kovshoff, 2013).

Not all studies have found a relationship between problem severity and treatment acceptability. Miltenberger, Parrish, Rickert and Kohr (1989) reported that they failed to find this relationship in their study. They presented 78 mothers, 9 fathers and 10 grandparents with one of four descriptions of different types of problem behaviour of varying severity: tantrum behaviour, noncompliance, aggressive behaviour and hyperactivity. Participants rated treatment acceptability of five interventions (15 minute of differential reinforcement, time-out, response cost, smacking and daily medication) with respect to the assigned vignette. The authors

reported that acceptability was not differentially rated across these examples of problem behaviour and suggested that this finding was in contrast to other published evidence that problem severity influenced treatment acceptability. A further study presented 40 Caucasian and 40 African American mothers with one of two case descriptions, describing problem behaviour at two different levels of severity and asked them to rate acceptability of behavioural and drug treatments using the TEI (Tarnowski et al., 1992). The researchers found no effect of problem severity on treatment acceptability scores. Johnston, Hommersen and Seipp (2008) also failed to find a significant relationship between the severity of problem behaviour described in stimulus vignettes and ratings of treatment acceptability for parent training and medication amongst mothers of boys aged between five and 12 years of age with diagnoses of ADHD, with or without a diagnoses of Oppositional Defiant Disorder. The speculated that treatment acceptability amongst parents of children with ADHD may be less influenced by information about severity of problem behaviour than treatment acceptability for parents of children with more general behaviour problems.

Child age. A limited number of studies have explored whether child age is a factor in parents' ratings of treatment acceptability and findings are mixed. In a study of parents and teachers, Norton, Austen, Allen and Hilton (1983), both groups rated behavioural interventions for problem behaviours as more acceptable for 10-year-olds than for 5-year-olds. In contrast, Phares, Ehrbar and Lum (1996) found that parents rated one intervention, increased behavioural contingencies, as more acceptable for 6-year-olds than for 15-year-olds. It is possible that this difference stems from a greater disparity in the two ages in the second study than the first. While Norton et al. asked parents to compare treatment for children in early and late childhood, Phares Ehrbar and Lum used vignettes about young people in mid-adolescence.

Comorbid diagnoses. One study to-date has explored the potential impact of co-morbid diagnoses on parental ratings of treatment acceptability. Boothe and Borrego (2008) looked at treatment acceptability amongst 87 mothers and fathers of 3-14 year olds who had communication problems and were receiving speech and language therapy. They hypothesised that treatment options (medication, differential attention, positive reinforcement, over-correction, response cost and spanking) would be viewed as more acceptable for children with communication difficulties and problem behaviour, than for children with problem behaviour alone. They reported that this relationship, over all, only approached statistical significance, with only overcorrection being reported as significantly more acceptable for children with both language and behaviour difficulties. The authors noted further research is needed to explore the

impact of diagnoses comorbid with behaviour problems on parental acceptability of interventions for problem behaviour.

Summary

The systematic literature search undertaken for the current review revealed a substantial body of literature pertaining to parents' views on treatment acceptability of interventions for child problem behaviour. A wide range of influential factors linked to the interventions, as well as parent and child characteristics have been explored in relation to treatment acceptability. This has highlighted the need for researchers to take into account the potential influence of key variables on treatment acceptability. The heterogeneity of measures used, sample populations and study aims have meant that knowledge in the area needs further development before any firm conclusions can be drawn about those factors most important in treatment acceptability and how they interact with one another. In addition, it is possible that further factors that have not been thoroughly investigated might potentially impact on treatment acceptability.

For example, attributions for child behaviour may be important in understanding treatment acceptability. Since cognitions are known to be somewhat malleable (Hoza, Johnston, Pillow, & Ascough, 2006; Morrissey-Kane & Prinz, 1999), there has been an interest in exploring this area as a means of understanding parents' ratings of treatment acceptability and potentially enhancing the likelihood of families being more carefully matched with interventions for child problem behaviour that are consistent with their views, where this strategy will positively impact on treatment outcome. The following section presents a review of the research on parental attributions for children's problem behaviour. It aims to summarise key findings in this area which are argued to be pertinent to a consideration of the proposed relationship between parental attributions and treatment acceptability.

Review of Research on Parental Attributions for Child Problem Behaviour

Methodology

A systematic literature search was carried out using the EBSCO and Web of Knowledge journal databases. Search terms were chosen to elicit articles that related specifically to parents' attributions for a child's problem behaviour (Appendix A). Articles were then filtered by the inclusion and exclusion criteria in Table 2 (see Appendix C for flowchart).

Table 2

Inclusion and exclusion criteria for journal articles for review (parental attribution).

Inclusion criteria	**Exclusion criteria**
Reports parental attributions for child problem behaviour. Includes parents of children in the 0-12 age range Published in a peer-reviewed journal Published after 1979	Study reports non-parent (e.g. teacher, clinician, child) attributions for child problem behaviour Study reports parental attributions solely for non-disruptive behaviour (e.g. autistic behaviour, ADHD-related behaviour) Single case studies

The Concept of Parental Attributions

Parental attributions are the causal explanations parents make for their child's behaviour. They are typically divided in child-referent attributions,, i.e. perceptions about the child's role in causing a behaviour, and parent-referent attributions, i.e. parents' cognitions about their own role in causing their child's behaviour (Johnston & Freeman, 1997; Joiner Jr & Wagner, 1996).

The importance of parental attributions.

There is wide empirical support for the importance of parental attributions for child behaviour in influencing parents' reactions to children's behaviour (e.g.Chavira, López, Blacher, & Shapiro, 2000; Johnston & Patenaude, 1994; Wilson, Gardner, Burton, & Leung, 2006). Attributional style has been linked to several other variables including parenting and discipline styles(Snyder, Cramer, Afrank, & Patterson, 2005) (Slep & O'Leary, 1998), treatment adherence (Peters, Calam, & Harrington, 2005) and treatment outcome for children with behavioural difficulties (Whittingham, Sofronoff, Sheffield, & Sanders, 2009a).

Weiner's (1985) theory of motivation and emotion posits that a parent's emotional reaction to a child's behaviour is dependent upon their perception of the child's control over the behaviour. If the parent's perception is that their child can control problem behaviour, then the parent is more likely to respond angrily. This pattern has been found in a number of studies, including those with mothers of developmentally disabled children (Chavira et al., 2000). An attribution of high child controllability has been found to predict not only a negative parental

emotional response, as well as harsh or aggressive parenting behaviour (Bugental, Blue, & Cruzcosa, 1989), which is thought to lead, in turn, to maintenance and/or worsening of child problem behaviour (Nix et al., 1999; Snyder et al., 2005). Consistent with these findings, further research has found that manipulating parental attributions towards a cause external to a child corresponds with behavioural improvement (Slep & O'Leary, 1998) One longitudinal study was able to demonstrate that child behaviour influenced maternal attributions over time (and not vice-versa). Here, a community sample of mothers of pre-schoolers with conduct problems were asked to make child-referent attributions for a hypothetical child's problem behaviour (after recalling an episode of similar behaviour in their own child) on dimensions of internality, stability and globality (Wilson et al., 2006). While findings were consistent with previous reports of correlation between conduct problems and negative maternal attributions (high internality and globality), the authors discerned, through use of longitudinal hierarchical regression analyses, that it was child behaviour that influenced mothers' attributions over time, whereas maternal attributions did not predict problem behaviour.

A further important role for parental attributions has been suggested within families of children with developmental disabilities. Maternal perception of low controllability over behaviour by their child with DD was suggested to be problematic when combined with belief in low parent-referent controllability (L. Woolfson, 2005). The authors suggested that parents needed to believe that they were able to teach their child more appropriate behaviour and that their child has some control over their actions if behaviour was to improve (L. M. Woolfson, Taylor, & Mooney, 2011). Together, this body of research highlights the importance of considering parental attributions in research on parenting and treatment-related behaviours of parents of children with challenging behaviour more generally.

Measuring Parental Attributions

Studies exploring parental attributions for child behaviour have involved a range of different methodologies to understand these attributions. Parents have been asked, for example, to remember their own child's behaviour (Johnston & Freeman, 1997), to respond to vignettes describing a hypothetical child's behaviour (Whittingham et al., 2009a) , or to view video recordings of their child's behaviour (Dix & Reinhold, 1991). One of the most common approaches has been to ask parents to report their perceived cause of a hypothetical child's behaviour across a combination of attributional dimensions such as controllability, responsibility, globality, stability and locus of control. Dimensions are typically rated using a Likert-type scale where parents rate the extent of their agreement with a series of statements about the child's behaviour. In order to understand similarities between different methods,

Johnston and Freeman (1997), for example, presented parents with written descriptions of hypothetical children, videos of target behaviours, and asked them to remember their own child's problem behaviour. The results showed similar parental response patterns across all three methods. Further studies have employed unstructured or semi-structured interview-based techniques to access more spontaneous attributions offered by parents in their own words, which are then coded by researchers (e.g. White & Barrowclough, 1998). Johnston, Reynolds, Freeman and Geller (1998) employed both these interview methods in their study, finding good agreement between the two methods of eliciting and measuring attributions.

A wide range of scales have also been developed to capture parental report of attributions and while it is outside the scope of the present review to explore these fully (see Bugental, Johnston, New, & Silvester, 1998 for review), it is worth noting that these have been biased towards examination of child-referent attributional dimensions (Chavira et al., 2000; Wilson et al., 2006), with fewer studies considering parent-referent attributions or both (Choi & Kovshoff, 2013; Peters et al., 2005; Whittingham et al., 2009a). In addition, most studies have focused on attributional dimensions described in Weiner's (1979) tri-partite model and reflecting stability, globality and internality/externality.

Spontaneous Causal Attributions

Research into parental attributions for child problem behaviour has relied upon the belief that these cognitions occur spontaneously. One research team generated evidence for this phenomenon. In that study, parental responses to an open-ended, thought listing question posed to participants after they had viewed a 20-minute video tape of an interaction between themselves and their own child in a laboratory setting (Johnston et al., 1998). Participants were asked "what were you thinking when…", with reference to examples of their child's inattentive-overactive (IO), oppositional-defiant (OD) or prosocial (PRO) behaviours. Each type of behaviour had been deliberately elicited in the laboratory through tasks and props that the parent and child were given. Parent responses were then coded using a method developed for the study which offered 11 possible categories (including, e.g. attribution, perspective, typicality, negative affect). The authors reported that between 31% and 43% of parent responses were coded as causal attributions, supporting the argument that parents make spontaneous causal attributions in response to child behaviour. Johnston et al. (1998) noted, however, that increased attributional activity may have been encouraged amongst their participants by the laboratory setting or the instructions they received during the study.

Variables Associated with Parental Attributions

A number of factors have been found to correlate with the types of attributions that parents make for their children's problem behaviour. These include parent gender, maternal mental health, child clinical problem and child medication status.

Parent gender. One study reported gender differences in attributions for noncompliant child behaviour between 36 mothers and 36 fathers of children (mean age 6.09 years) with a diagnosis of ADHD, and 25 mothers and 25 fathers of non-ADHD children (mean age 5.67 years) (Sobol, Ashbourne, Earn, & Cunningham, 1989). All parents completed a questionnaire package at home, which included demographic information, measures of their child's behaviour, perceived causality of their child's behaviour and a measure of attributions for behaviour presented in vignettes. Six situations described in the vignettes (parental request for the child to leave their play to come inside, clean his or her room, to stop interrupting during a telephone conversation, to behave during a meal and to get ready for bed) were presented with both positive and negative outcomes. Participants then rated perceived reasons for the hypothetical child's behaviour along dimensions of locus, stability and controllability. Mothers in both groups generally saw the causes of the child's noncompliant behaviour as more external to the child than did fathers. While this can be taken only as preliminary evidence, caution should be taken in assuming that mothers and fathers will make the same attributions for challenging behaviour.

Maternal mental health. A number of researchers have presented evidence that mothers' mental health plays an important role in the attributions that they make for their child's behaviour (e.g. Dix, 1993; Dix, Ruble, Grusec, & Nixon, 1986). White and Barrowclough (1998) analysed interviews with 25 depressed and 25 non-depressed mothers of preschool children with behavioural difficulties, in relation to attributional dimensions of internality, controllability and stability. They found that depressed mothers more frequently perceived their child's behaviour as having a stable cause. Furthermore, more depressed mothers blamed themselves for the behaviour than their non-depressed counterparts. This work was extended by Corrnah, Sonuga-Barke, Stevenson and Thompson (2003) who sought to explore the role of maternal mental health in influencing maternal attributions in a sample of mothers with and without children with behavioural difficulties, using unstructured interviews. They reported that participants with mental health difficulties were more likely to make internal and global attributions for negative child behaviours, regardless of the severity of their child's problem

behaviour. Cornah et al. noted that they were not able to infer a direction of causality between maternal mental health and attributions; mothers with mental health difficulties may offer more spontaneous negative attributions, but it is also possible that a negative attributional style impacted negatively on their mental wellbeing.

Further work has examined a hypothesised link between expressed emotion, depression and attributions made by mothers of children with behaviour problems (Bolton et al., 2003). In this study, 61 female primary caregivers (58 birth mothers, 2 adoptive mothers and 1 grandmother) of boys and girls aged 4-11 were recruited through a CAMHS clinic treating child problem behaviour. The researchers interviewed participants about their emotional attitudes towards their children using the Camberwell Family Interview (Vaughn & Leff, 1976). Interview content was then rated for expressed emotion (EE), which includes warmth, hostility, criticism and emotional over involvement (EOI) with reference to another person. Participants were rated as high EE if they showed evidence of hostility towards their children, scored three or more for EOI (possible range 0-5), made six or more critical comments about their child, or a combination of these markers. Based upon the same interview material, participants' attributions for their child's problem behaviours were coded using the Leeds Attributional Coding System (Stratton, Munton, Hanks, Heard, & Davidson, 1988) to identify attributional dimension of child-referent stability and both child-referent and parent-referent internality, controllability and stability. The dimension of *personal/universal* was also included, meaning "whether the attribution is indicative of something idiosyncratic or unique about the child, or whether the attributions would be typical of a normal child in a comparable reference group" (p.245). Participants also completed a measure of child behaviour and a self-report measure to assess maternal depressed mood. Results showed that participants high on EOI were more likely to see themselves as more in control of the causes of their child's behaviour, which they saw as more internal to themselves as parents. Mothers who expressed less warmth were more likely to make attributions of higher internality and controllability to their child. Further, mothers reporting more symptoms of depressed mood tended to make more attributions for behaviour that placed responsibility with their child, but also saw more of a causal role for themselves. Supplementary analysis revealed that a combination of more depressed mood and greater child-referent internality were associated with higher levels of criticism of the child (Bolton et al., 2003).

Other researchers (e.g.Wilson & White, 2006) have argued that parents who make more negative attributions about their children's behaviour may, in fact, be protecting themselves against developing mental health difficulties.

Child Factors

Several child-related factors have been reported to affect the types of attributions that parents make for their children's problem behaviour. These include the nature of any clinical problem their child may have, the severity of associated symptoms and whether or not the child is receiving medication.

Child clinical problem. The nature of a child's clinical problem has been argued to be a significant factor in the attributions that parents make for their behaviour. Compas, Friedland-Bandes, Bastien and Adelman (1981) asked both parents and children to make causal attributions for the children's learning or behaviour difficulties, in addition to an area of strength for the child. Both parents and children, who were recruited from families who had contacted a university psychoeducational clinic in a 6-month period, were more likely to attribute child success than difficulties to internal causes. In the group identified as having behaviour difficulties, rather than learning problems, parents made significantly more attributions for behaviour that were internal to the child than did children. Conversely, Latina mothers of children with learning difficulties predominantly viewed responsibility for problem behaviour in their child with developmental disabilities as external to the child (Chavira et al., 2000).

A further study explored a potential role for knowledge of a physical or emotional illness in a child as an influence on parents' attributions for misbehaviour (Walker, Garber, & Van Slyke, 1995). One hundred and sixty mothers and 160 fathers of children and adolescents were recruited from amongst passengers waiting to board flights at a US domestic airport. Each participant read one of 16 vignettes about a male or female child, either 8- or 16-years old, who was described as having behaviour problems at home and at school (e.g. being oppositional and defiant to parents, not handing in work at school). Additionally, one of four outcomes of a recent visit to the child's doctor was described: medically explained abdominal pain which would be treated with medication; unexplained abdominal pain; depression requiring psychological evaluation; no health concerns. Parents then rated their agreement with a series of statements about the child's problematic behaviour and how they would respond to it, using a 7-point Likert scale. Causal and responsibility attributions for the described child behaviour were evaluated along dimensions of internality, externality, intentionality, extenuating circumstances, child/parent responsibility for misbehaviour and child/parent responsibility for improvement in child behaviour. Results showed that behaviour problems amongst children described as having medically explained pain were rated by parents as less intentional and less

likely to be caused by factors internal to the child than problem behaviour in the other three conditions. The authors suggested that parents were more likely to see children with organic illness (as opposed to psychosocial illness) as less responsible for behaving in socially acceptable ways. This was argued to be consistent with Weiner's (1993) theory of perceived responsibility and social motivation, which posited that individuals with physical illnesses or disabilities are not generally viewed by others as responsible for associated problems, but people with psychological and behavioural difficulties tend to be seen as able to control their behaviour (which is therefore deemed less excusable) (Walker et al., 1995).

Parental attributions for challenging behaviour in children with ADHD have also been the focus of significant interest in several studies. In the first of such studies, 71 parents of children with a diagnosis of attention deficit disorder, hyperactive type (ADDH) and a comparison group of 49 parents of non-ADDH children were asked to make causal attributions for hypothetical instance of their own child's compliant and non-compliant behaviour, as described in a series of vignettes in which the children were being asked by a parent to comply with a request (e.g. tidying their bedroom, or to stop interrupting) (Sobol et al., 1989). Mothers of ADDH children in the study (though not fathers), saw the causes of their child's behaviour as less stable than non-ADDH mothers. Mothers and fathers in the ADDH group also rated behaviours as less controllable by the child than parents in the non-ADDH group, though no differences were found on the dimension of locus (i.e. causes of behaviour internal versus external to the child) between the parents of children with and without a diagnosis of ADDH.

A further study by Collett and Gimpel (2004) found that 26 mothers of children with ADHD, aged between seven and 12 years of age, attributed their child's problem behaviour to more stable and global factors than did 24 mothers of children aged seven to 10 without any clinical diagnosis, but there was no significant difference in perceived child controllability between groups. Saltmarsh, McDougall and Downey (2005) compared attributions between a group of 18 mothers and four fathers of children aged six to 12 with ADHD and a control group of 21 mothers and one father of children aged six to 11 with behaviour difficulties (none of the children had additional diagnoses). The sample was drawn from families who had been referred to a UK child and adolescent mental health service due to behavioural concerns. While all parents were most likely to see the cause of problem behaviour as internal to their child, those in the ADHD group saw the behaviour as significantly less controllable by the child than the control group and less intentional. These studies provide preliminary evidence that parents of children with ADHD may present a different attributional profile for their child's challenging behaviour to parents of non-problem children and also that a diagnosis of ADHD may be

related to attributional patterns distinct from those found in parents of non-ADHD children who show challenging behaviour.

Johnston and Patenaude (1994) explored the attributions of parents of children with ADHD for both inattentive-overactive (IO) and oppositional—defiant (OD) child behaviours that were presented to participants in written scenarios. Parents in this study (mostly recruited through a BPT programme) rated OD behaviours as more controllable than IO behaviours. However, the authors reported that within the context of the scales used, both IO and OD behaviours were rated as more controllable than uncontrollable by parents. A subsequent study explored attributions for OD and inattentive-impulsive behaviours amongst mothers of "nonproblem" boys, boys with a diagnosis of ADHD and those with ADHD and OD, who were recruited through newspaper and community adverts (Johnston, Chen, & Ohan, 2006). Mothers did not differ significantly in their judgment of locus as judged by their responses to a series of vignettes and written analogue questionnaire, with all groups rating child behaviour as biased towards internality. Further, no group differences were apparent for controllability. Differences in findings may have been related to Johnston et al.'s (2006) acknowledgement that attributional measures used by them had suffered from lower reliability than desirable and that they employed some broad attributional coding categories. Further, different sources of samples may have had an impact.

Severity of child symptoms. Jenson et al. (1998) reported that parents who rated their child with ADHD as having greater levels of hyperactivity were less likely to locate the cause of negative behaviour within the child than parents of less reportedly hyperactive children. Chavira et al. (2000) took a measure of the level of impairment for children with developmental disabilities in their study, but found no relationship between severity and mothers' attributions. Other studies have not studied this variable, so its potential importance is yet to be established.

Child medication status. Consideration has been given to whether parents make different attributions for their child's behaviour when they are medicated, based on the notion that exhibited behaviour may be less dispositional during treatment (Johnston et al., 2000). One study of a clinic-referred sample of parents of children with ADHD who were taking MPH found that when asked to attribute causes for behaviour on their child's theoretical 'best' day, parents most highly rated their child's own effort, followed by medication and their own effort, which they gave equal weighting (Jenson et al., 1998). On an imagined 'worst' day, parents attributed their child's behaviour first to the child's lack of effort, secondarily to ineffective medication and lastly to their own effort. Parents of medicated children in this sample seemed to have little belief in their own influence on their child's behaviour.

Johnston and colleagues (2000) investigated the attributions of mothers of children with ADHD for the behaviours of their child when both medicated, and unmedicated. Their sample consisted of a group of children who had been receiving stimulant medication for some time and those who were due to begin drug treatment (87% were medication naïve). Participants made attributions for a range of their own children's behaviour in a 'recalled incident' interview. They also completed a written analogue questionnaire eliciting attributions which included written scenarios describing child behaviour (ADHD symptoms, ODD behaviour, noncompliance, compliance and prosocial) which they were asked to imagine their own child exhibiting. Both measures required mothers to make attributions for two hypothetical conditions (medicated and unmedicated). Results from both measure demonstrated that participants rated negative child behaviours in the context of medication as less stable, global and internal to the child, though more controllable by the child than in the unmedicated scenarios. While mothers' attributions were generally more positive in medicated conditions, Johnston et al. noted that an increase of child control for problem behaviour has been found to correspond with harsher discipline practices (Bugental et al., 1989).

Most recently, mothers of children aged seven to 12 with diagnosis of ADHD whose offspring were taking medication at the time of the study were found to be more likely to see the cause of challenging behaviour as outside their child's control than mothers whose children had an ADHD diagnosis but were not receiving drug therapy(Collett & Gimpel, 2004).

Parental Attributions in Treatment Processes

There is some evidence that parental attributions are significant factors in predicting treatment adherence. Two studies have reported a relationship between parental attributions and treatment adherence amongst parents of boys with disruptive behaviour disorders (ODD or CD). Miller and Prinz (2003) studied the attributions of parents of 5-9 year old boys, prior to assignment to one of three treatment groups (parenting intervention, child-focused social problem-solving intervention, or combination). At follow-up, they determined that across all conditions, parents who saw their child's behaviour as child-caused were least likely to complete treatment. A subsequent study (Peters et al., 2005) found that mothers taking on more responsibility for their child's problem behaviours, as indicated by their external, uncontrollable and global child-referent attributions, combined with internal and controllable parent-referent attributions, attended more sessions of a parent management training course and were more likely to complete than those with unhelpful attributions (high on child-referent internality and controllability, low on parent-referent internality and controllability).

Little is known about parental attributions and treatment outcomes in this area, but Hoza et al. (2000) found some evidence of a relationship within a subsample of parents involved in the Multimodal Treatment Study of Children with ADHD (MTA Cooperative Group, 1999). Attributions by fathers (but not mothers) of children with ADHD who viewed the causes of child noncompliant behaviour as a consequence of bad mood and low effort were predictive of less improvement in both ADHD- and ODD-related problem behaviours at 14-month follow-up across medication, behavioural intervention and combined conditions (medication effects were controlled for). While this study did not specifically target attributional dimensions, the ascribed child characteristics can be seen as representative of high child-referent internality. More attention has been focused upon the role of parental attributions at an earlier stage of the treatment process, where treatment acceptability is known to be important.

Treatment Acceptability and Parental Attributions

In recent years, various researchers have argued for a potential relationship between parental attributions and treatment acceptability. Morrissey-Kane and Prinz (1999) proposed a theoretical framework for understanding parental attributions as they relate to child treatment engagement, suggesting an important role for treatment acceptability. Hoza et al. (2006) suggested a heuristic model to guide research into treatment response in ADHD in which they argued for an important role for parental causal attributions for child behaviour in their acceptance of, and engagement with, treatment. In a review of the relationship between social cognitions and the effectiveness of BPT, Mah and Johnston (Mah & Johnston, 2008) also advocated for further examination of the role of parental attributions in shaping views of treatment acceptability and thus influencing the decision made by parents to engage in BPT. Preliminary evidence supporting these claims is considered below.

Research Evidence

Reimers, Wacker, Derby and Cooper (1995) collected data on treatment acceptability of recommended behavioural treatments and causal attributions for child problem behaviour from 58 parents attending a hospital-based behaviour management clinic in the US. Measures were taken pre-intervention and at 1-, 3- and 6-month follow-ups. Parents were asked to rate agreement with 14 statements, half of which suggested an environmental cause for their child's problem behaviour (e.g. stressful life events, parental discipline methods) and half relating to a 'physical' cause (e.g. inborn personality, medical condition). Participants favouring a physical (therefore internal to the child) explanation rated the parent-focused intervention less favourably than those who considered that causes were more likely to be external to their child at the pre-

intervention stage. The authors highlight that causal direction cannot be inferred, suggesting that while parents who conceived their children's problems as physically caused may not see environmentally based treatments as relevant, but equally, those finding behavioural treatments more highly acceptable may lack the tendency to attribute problem behaviour to physical causes (Reimers et al., 1995)

Recruiting a community sample of parents of children with ASD, Whittingham, Sofronoff and Sheffield (2006) sought to establish a relationship between parental attributions and treatment acceptability of a Stepping Stones Triple P (Roberts, Mazzucchelli, Studman, & Sanders, 2006) parenting programme. Participants completed a postal questionnaire which required them to rate their agreement with five attributional and control statements (two each pertained to locus and stability and one to controllability) after reading each of three scenarios. Unfortunately the authors did not report the content of these stimulus scenarios. At a second stage, participants were invited to attend a meeting. Before viewing a DVD about Stepping Stones, parents were asked to complete a measure designed for the study, the Parenting Strategies Questionnaire, based upon previous knowledge of Triple P or other manualised parenting programmes . This contained three items: How acceptable is this as a strategy for your child?; How likely are you to use this strategy with your child? How useful would this strategy be for your child?. They also completed the same measure after the audiovisual presentation. Whitingham et al. (2006) conceived these items as representing treatment acceptability, behavioural intention and 'usability'. No relationship was found between any attributional dimension and treatment acceptability or usability, but there was a significant negative relationship between stability attributions and usability and a strong negative relationship between controllability and usability. It is notable that the items on the Parenting Strategies Questionnaire are very similar to components of the TEI-SF, which are summed to give an overall rating of treatment acceptability. It may be cautiously argued, therefore, that this study does indeed provide indirect evidence of a relationship between attributions and treatment acceptability.

Williford et al. (2009) explored African American mothers' child-referent attributions for their preschool children's problematic behaviour and gathered treatment acceptability ratings for medication, social skills training and a parenting course. Employing the Attributional Style Measure for Parents questionnaire (O'Brien & Peyton, 2002), the authors collected ratings of both parents' causal and responsibility attributions. Principal component analysis revealed that in this study, the causal attributions of locus, stability and globality loaded onto a single factor, therefore Williford et al. chose to compute a single composite score. Participants who were

considered to present the most negative pattern of attribution (i.e. high child-referent internality, stability and globality) rated the acceptability of social skills training most highly. Within that group, mothers reporting elevated contextual risk, such as low SES, also rated medication as more acceptable than did mothers thought to have low contextual risk. Williford et al. did not find any significant correlations between acceptability of the parenting course and mothers' attributions; the authors speculated that the typically high acceptability ratings offered for this intervention may have obscured any potential relationship.

Choi and Kovshoff (2013) carried out a study with parents of children with ASD, examining parental acceptability of a child-focused and a parent-focused intervention for problem behaviour and eliciting both child-referent and parent-referent attributions. While no significant relationships were apparent between child-referent attributions and treatment acceptability, mothers' ratings of high parent-referent stability significantly predicted lower acceptability of a parent-focused intervention. The researchers hypothesised that the high percentage of participants reporting at least moderate acceptability of both interventions could have reduced the likelihood of finding significant relationships amongst variables. They also pointed to the possibility that a larger sample size would have led to greater power to detect any relationships (Choi & Kovshoff, 2013). Significantly, this study highlights the potential importance of including parent-referent attributions in such research.

Summary and Limitations of Research Findings

As argued by other researchers (e.g. Hoza et al., 2006), this review supports the importance of parental treatment acceptability as an important variable at various stages of the treatment process for children with problem behaviour. As such, understanding of all the variables that may influence treatment acceptability must be considered of importance by researchers, practitioners and families. Child-related factors that appear to be significant are severity of problem behaviour (e.g.Tarnowski et al., 1992), child age (Phares et al., 1996) and comorbidity of diagnoses (Boothe & Borrego, 2008). Parent-related variables such as SES (Heffer & Kelley, 1987), gender (D. L. Miller & Kelley, 1992), cultural background (e.g. Njardvik & Kelley, 2008) and understanding experience of interventions (Liu et al., 1991) are also implicated. There is also evidence that treatment acceptability varies with type of intervention (e.g. Frentz & Kelley, 1986).. Thus far, heterogeneity of research design has impeded progress towards a clear picture of variables that are important in treatment acceptability. For example, though the majority of measures of treatment acceptability have their roots in Kazdin's (1980a) original Treatment Evaluation Inventory, they vary greatly in length, content and style, warranting caution when making comparisons. While most research

into parental acceptability for problem behaviour has relied upon clinical samples , other investigations, such as that of Frentz and Kelley (1986) have drawn on community samples. It can be argued that parents recruited through clinics are more likely to be actively seeking treatment of some sort at the time of recruitment and may therefore be more disposed to finding treatment more acceptable than parents in community samples.

It is now well-established that parental attributions can play a pivotal role in both parent and child behaviours and the interaction of the two and therefore increased interest in the area with respect to treatment acceptability seems entirely appropriate. Review of the literature on parental attributions for children's problem behaviour reveals that a number of variables may play a significant part in determining parent cognitions of this type. Maternal mental health has been found to be of importance (Cornah et al., 2003; White & Barrowclough, 1998), but the direction of such a relationship is yet to be adequately proven. It has also been demonstrated that the diagnoses which children have received may also impact upon their parents' attributions for their problem behaviour (e.g. Saltmarsh et al., 2005), as does the child's medication status (Johnston et al., 2000). However, at present, a limited number of studies in support of these relationships exist and further work is needed to understand underlying mechanisms and to establish any interactions between variables.

The literature on parental attributions also suffers from a lack of replication, driven by the use of a widely differing measures and sample populations. Here too, diagnostic labels seem to be significant variables (e.g. Johnston & Patenaude, 1994), but some authors, such as Reimers et al. (1995) and Williford et al. (2009) do not offer a thorough description of their samples, leaving the reader unclear as to whether parents have children with any clinical diagnosis . Some studies have lacked the underpinnings of a clear theoretical model and have sought parents' views about the cause of behaviour (e.g. physical versus environmental) without seeking to crystallise attributional dimensions (e.g.Hoza et al., 2000). Further, the decision by some research groups (e.g.Johnston, Mah, & Regambal, 2010; Williford et al., 2009) to collapse attributional measures into one composite variable precludes consideration of whether individual attributional dimensions might relate to treatment acceptability. The majority of researchers have failed to consider the role of sample size in ensuring sufficient power to detect an effect, which is an important consideration when a multiplicity of variables are being analysed.

Future research into the proposed relationship between parental attributions for their child's problem behaviour and treatment acceptability for interventions targeting that behaviour would benefit from the use of clear theoretical models. The use of Weiner's (1985) well-

established model of attributional dimensions and adoption of theoretical models such as those proposed by Hoza and et al. (2006) or Morrissey-Kane and Prinz (1999) would provide a useful underpinning for studies. Choi and Kovshoff (2013) provide support of the relevance of studying a range of parent-referent attributions, as well as the child-referent attributions that have dominated previous studies. Study design could also usefully incorporate consideration of variables thought to be important factors in treatment acceptability (such as severity of problem behaviour) and parental attributions (e.g. medical diagnoses, maternal mental health) which could be controlled for statistically. Clearly defined sample populations will also be helpful in interpreting any findings, in recognition of the range of variables that may otherwise confound analysis.

Implications for Educational Psychologists (EPs)

Given the high prevalence rates for behaviour problems amongst children, EPs are likely to encounter a high number of cases of this type in their practice. The current review suggests that it is of great importance that EPs seek to understand the attributions that parents make for their children's problem behaviour as part of an interactionist approach to establishing appropriate methods of intervention. EPs may be involved in recommending/referring parents for parenting classes, designing and even delivering such interventions and as such will benefit from an understanding that parental attributions are likely to influence how acceptable they find an intervention and correspondingly, their willingness to participate and complete a course and the potential impact this might have for the child and family.

EPs are also likely to be in a position to recommend, oversee or deliver child-focused behavioural interventions in a school setting. Parents are less likely to give consent for their child to be involved in such an intervention, or be supportive of it, if there is a dissonance between their understanding of the causes of their child's negative behaviour and an attempt to empower a child to learn and use new skills to reduce their difficulties. While EPs do not prescribe medication for any condition, they may be involved in local multi-professional teams that assess and recommend intervention for children with behavioural problems (Burgess, 2002). In these instances they have an opportunity to contribute an understanding of parental attributions and treatment acceptability to the process, potentially enhancing outcomes. They may also become involved with families of children who are already medicated and may benefit from an understanding that this, in itself, can alter parental attributions.

Interpersonal skills and knowledge of psychology may make EPs well placed to explore attributions with parents in the course of consultation and to challenge and

reframe unhelpful attributions. EPs can also offer psychoeducation directly, or signpost to relevant services that allow parents to develop a better understanding of their child's difficulties, which may, in turn, alter their attributions.

Chapter 2: Acceptability of Interventions for Problem Behaviour Amongst Mothers of Children with ADHD: The Role of Parental Attributions.

Introduction

Attention Deficit Hyperactivity Disorder

Attention Deficit hyperactivity Disorder (ADHD) is a medical diagnosis defined at the behavioural level and applied to individuals (adults and children) habitually exhibiting maladaptively high levels of inattention, hyperactivity and impulsivity (National Collaborating Centre for Mental Health, 2009). Diagnosis is based upon guidelines in the Diagnostic and Statistical Manual of Mental Disorders[4] (American Psychiatric Association, 1994, 2000) which lists 18 symptoms across two symptom domains, namely inattention, hyperactivity/impulsivity. Three diagnostic subtypes of ADHD are possible: predominantly inattentive, predominantly hyperactive/impulsive or combined type. Six or more of inattentive and/or hyperactive/impulsive symptoms must persist for at least six months and must have caused "clinically significant" impairment in 2 or more settings (usually home and school in the case of children). There is also a requirement for at least some symptoms to have been present before age 7 and a diagnosis should not be made if symptoms could be explained by the presence of another mental disorder[5] (American Psychiatric Association, 2000). A very similar list of symptoms form the ICD-10 category of hyperkinetic disorder (World Health Organization, 1992), though the diagnostic criteria are much more tightly defined and a diagnosis would be consistent with a DSM-IV diagnosis of combined-type ADHD and only the most severe level of impairment, with symptoms required to be present before the age of 6 (Banaschewski & Rohde, 2010). ADHD is a term frequently used to refer to both ADHD and hyperkinetic disorder.

Estimates of prevalence vary with different diagnostic criteria, the method used to gather information for diagnosis and whether level of impairment has been taken into consideration. One systematic review aiming to establish worldwide prevalence of ADHD amongst children and adolescents proposed rates of 6.5% and 2.7% respectively (Polanczyk, de Lima, Horta, Biederman, & Rohde, 2007). In the US, rates of diagnosis have been climbing for some years, with up to half of referrals to child and adolescent mental health services being related to ADHD in recent years (Currie & Stabile, 2006). A similar phenomenon in the UK has led to

[4] It is acknowledged that the DSM-IV was superseded by the DSM-5 in May 2013, however, the present study was designed and carried out when the DSM-IV was current.

[5] Mental disorders which may otherwise explain some symptoms present in ADHD and preclude diagnosis are mood disorder, personality disorder, dissociative disorder and anxiety disorder (American Psychiatric Association, 2000)

claims that ADHD referrals are now "overwhelming" CAMHS services in Britain (Salmon, 2005) While there is variation in the numbers of children diagnosed with ADHD internationally, it has been argued that this is due to differing cultural perspectives which lead to disparate diagnostic practices, rather than genuine variation in prevalence (Ryan & McDougall, 2009). In the Western world, at least, demand for support for children with ADHD and their families is at a high level that bolsters the case for investment in research and services in this area.

No one cause is thought to underlie ADHD, but it rather evolves through the interaction of many factors. Sonuga-Barke (2010, p. 19) summarised: "…multiple genetic and environmental factors interact during early development to create a neuro-biological liability to disorder, the expression of which is mediated by alterations within different and diverse neural networks and deficits in the neuropsychological functions which they subserve". Environmental factors contributing to risk are thought to exist at the pre-, peri- and post-natal stages of a child's development (Taylor & Rogers, 2005).

Behaviour in Children with ADHD

Children with a diagnosis of ADHD are typically highly physically active, intolerant of delay, often unfocused and lacking self-regulation, needing frequent guidance and redirection by adults (Taylor et al., 2004). The core symptoms of attention difficulties, impulsivity and hyperactivity have been linked with a wide range of difficulties in everyday life, being predictive of poorer mental health, academic difficulties, strained family relationships, peer and teacher rejection and early involvement with criminal behaviour (Barkley, 2006; Mikami, Boucher, & Humphreys, 2005; Rösler et al., 2004). In addition, many children with this diagnosis will also exhibit high levels of problem behaviour that are not diagnostic markers of ADHD (Abikoff & Klein, 1992; Hinshaw, 1987). It has been suggested that strain on family relationships in concert with poor self-regulation and behavioural inhibition leads a significant number of children to exhibit aggressive or oppositional behaviour (Harpin, 2005). Recognition of the relationship between externalising behaviour problems and ADHD has led to the inclusion of aggression/oppositional defiance as behaviours related to ADHD in the Diagnostic and Statistical Manual for Primary Care, Child and Adolescent Version, which acts as a supplement to the DSM-IV to guide identification of subclinical populations (American Academy of Pediatrics, 1996). This relationship is also reflected in research findings. For example, Fischer, Barkley, Fletcher and Smallish (1993) followed 158 4- to 12-year olds meeting diagnostic criteria for ADHD and a community comparison group over eight years. At entry and eight year follow-up, children in the ADHD group received significantly higher

parental ratings of problem behaviours as measured by the Home Situations Questionnaire, the Revised Conners Parent Rating Scale (conduct subscale) and Child Behavior Checklist (delinquent behaviour and aggressive behaviour subscales) than did the control group.

Estimates of the co-occurrence of conduct disorder (CD) and/or oppositional defiant disorder (ODD) amongst children with ADHD range from 30 to 80% (Banaschewski & Rohde, 2010). ODD is diagnosed on the basis of the presence of at least four of eight symptoms which cause significant impairment and represent behaviours inconsistent with the child's developmental stage (National Collaborating Centre for Mental Health, 2013). Symptoms include severe temper tantrums, being argumentative with adults, defiance towards adults, being unwilling to take responsibility for poor behaviour, being easily annoyed, often displaying anger and spiteful and/or resentful behaviour (American Psychiatric Association, 2000). CD is generally considered a more severe group of conduct problems, usually manifesting in adolescence; the 15 diagnostic criteria are often grouped into aggression to people and animals, destruction of property, deceitfulness or theft and serious violation of rules. Evidence of at least three symptoms over a minimum of six months is required for a CD diagnosis (American Psychiatric Association, 2000; National Collaborating Centre for Mental Health, 2013). The most recent survey of child and adolescent mental health in Great Britain reported that 66% of parents of children with hyperkinetic disorder in the study reported that their child had behavioural difficulties, with 62% reporting a co-morbid diagnosis of a disruptive behaviour disorder (H. Green, McGinnity, Meltzer, Ford, & Goodman, 2005). The high rates of prevalence of comorbidity between ADHD and disruptive behaviour disorders has led some to argue that behavioural problems "should often be seen, not necessarily as a differential diagnosis or a comorbid condition, but as a complication" of ADHD (Banaschewski & Rohde, 2010, p. 9). Since marked problem behaviour emerging during early childhood does not typically resolve without intervention (Murphy et al., 2005; Tolan et al., 1995) and, like ADHD, is associated with a range of poor life outcomes, including academic, work, social, and economic difficulties and higher risk of engagement in criminal behaviour and substance abuse (Jakobsen et al., 2012; Odgers et al., 2008; Webster-Stratton & Taylor, 2001), developing effective interventions for behaviour problems in ADHD can be considered of great importance. Further, since it is thought that problem behaviour becomes more resistant to intervention over time, as attitudes and behavioural patterns become entrenched, early intervention is required (Dunlap & Fox, 2009; Francis et al., 1991; Zigler et al., 1992).

Treatment Acceptability of Interventions for Problem Behaviour

Treatment acceptability refers to the views of consumers about the appropriateness, fairness and reasonableness of a proposed intervention; the term was first coined in the context of research into the treatment process for children exhibiting problem behaviour (Kazdin, 1980a). It is seen by many (Boothe & Borrego, 2008; Calvert & Johnston, 1990; S. N. Elliott, 1988; Kazdin, 1980b, 2000) as a crucial factor in determining the success of an intervention, since it has been demonstrated to play a role in initiation of, and adherence to interventions for problem behaviour (Krain et al., 2005; Reimers, Wacker, Cooper, & DeRaad, 1992) and greater acceptability of interventions has even been linked with improved intervention outcomes in some studies (Kazdin, 2000; MacKenzie et al., 2004). Crucially, how acceptable parents find a treatment for their child's behaviour is not always consistent with how effective they perceive that treatment to be: For example, in one study, parents who rated medication as the most effective intervention for their own child, nonetheless saw medication as less acceptable than a behavioural intervention (Johnston et al., 2008).

Despite over thirty years of research in the area, understanding of factors that impact upon parental treatment acceptability is still developing. However, it is well established that some interventions are typically more acceptable to parents than others. Parents have consistently been found to find positive behaviour management techniques, such as positive reinforcement, more acceptable than punitive interventions such as time out (e.g. Kazdin, 1980a, 1980b; Norton et al., 1983). Amongst reductive techniques the trend has been towards greater acceptability of less intrusive, non-physical interventions such as differential attention, rather than spanking or time out in a separate room (Frentz & Kelley, 1986; Yu et al., 2011). Studies that have explored parental treatment acceptability for both behavioural interventions and medication have typically yielded much more positive ratings for behavioural techniques than drug treatment (Kazdin, 1980a, 1980b; Krain et al., 2005; Liu et al., 1991; Tarnowski et al., 1992). A notable exception was Gage and Wilson's (2000) finding that amongst parents of children with ADHD, a combination of behavioural intervention and medication was rated as more acceptable than either option alone.

Acceptability of interventions has also been found to vary with some child characteristics. Evidence has been offered that parents find a range of interventions (including spanking, medication and time-out) more acceptable for children with more severe problem behaviour (Frentz & Kelley, 1986; D. L. Miller & Kelley, 1992), whereas other studies researchers have found the opposite relationship, where increased severity of problem behaviour was correlated with lower treatment acceptability (Reimers, Wacker, Cooper, & DeRaad, 1992). Child age has

also been found to correlate with parental treatment acceptability but there have been mixed findings about the direction of this relationship with some studies pointing to greater acceptability of behavioural interventions for older children (Norton et al., 1983), while younger age has been associated with higher parental acceptability ratings elsewhere (Phares et al., 1996). There is also some preliminary evidence that parents may find interventions more acceptable when their child with behaviour problems has a co-morbid diagnosis, though the study in question only examined co-morbid behaviour and language problems (Boothe & Borrego, 2008).

A number of parent characteristics have also been identified as important in treatment acceptability. Work examining treatment acceptability with respect to race and cultural background has revealed that variations exist both between different nationalities (Njardvik & Kelley, 2008) and between cultural groups within the same country (Krain et al., 2005; Mah & Johnston, 2012). Calzada, Basil and Fernandez (2013) also demonstrated that aspects of widely used behavioural interventions may not be acceptable to parents of all backgrounds, finding that US Latina mothers in their study were not generally accepting of a requirement to forego spanking as a discipline method. Parent gender also appears to affect treatment acceptability, for example fathers rated spanking and medication as more acceptable than mothers in one study (D. L. Miller & Kelley, 1992) and mothers had significantly higher acceptability (Phares et al., 1996) of both individual and family therapy than fathers in another. Socioeconomic status has also found to be linked to treatment acceptability in some studies (Heffer & Kelley, 1987; Miltenberger et al., 1989), particularly with respect to greater acceptability of spanking amongst lower income parents but other studies have failed to discern any such effect (Krain et al., 2005). A role for parents' knowledge and prior experience of interventions has also been evidenced (Gage & Wilson, 2000; Whittingham et al., 2006), though such relationships cannot be considered to be straightforward since Liu et al. (1991) found that greater parental knowledge of ADHD, medication and behavioural interventions was consistent with higher ratings of acceptability for medication, but not behavioural interventions. Lastly, there is some evidence that maternal mental health may impact upon ratings of treatment acceptability made by mothers, since Miller and Kelley (1992) found that mothers experiencing significant emotional distress were less accepting of positive reinforcement as a behaviour management strategy than their non-distressed counterparts.

Knowledge of the potential role of the variables discussed above in predicting treatment acceptability has furthered an understanding of how families with different profiles might respond differentially to proposed treatments. However, the potential to change any of these

factors, with the exception of knowledge of treatments, is very limited. Therefore, some researchers have become interested in the role that parents' cognitions might play in how acceptable they find interventions, since these are known to be adaptable and responsive to intervention (Bugental et al., 2002; Wilson & White, 2006). In particular, parents' attributions for the causes of their child's problem behaviour have been proposed to be a potential target for intervention to improve treatment acceptability (Hoza et al., 2006; Morrissey-Kane & Prinz, 1999).

The Role of Parental Attributions in Treatment Acceptability

Parental attributions have been described as "*interpretive filters* through which meaning is assigned to the behaviours and characteristics of children and to the nature of the parent-child relationship" (Bugental et al., 1998, p. 460). Parents' attributions for their children's behaviours have been conceptualised as being either child-referent (relating to the child's perceived causal role in the behaviour) or parent-referent (representing parents' beliefs about their own causal role in the behaviour) (Johnston & Freeman, 1997; Morrissey-Kane & Prinz, 1999; Slep & O'Leary, 1998).

The potential for parental attributions for child behaviour to shape parents' emotional reactions and behaviour in response to that behaviour is well-established (e.g.Chavira et al., 2000; Johnston & Patenaude, 1994; S. A. Miller, 1995; Wilson et al., 2006). For example, parents who view their child's problem behaviour as intentional and within the child's control are more likely to offer a negative emotional and behavioural response (Bugental et al., 1989; Slep & O'Leary, 1998). Recognition of the centrality of parental attributions in child-parent interactions and parenting style has stimulated interest in a proposed role for parental attributions within treatment processes for problem behaviour in recent years (Hoza et al., 2006; Morrissey-Kane & Prinz, 1999). Parents' attributional patterns have been linked with treatment adherence (Peters et al., 2005) and treatment outcome (Whittingham et al., 2009a) in behavioural parent training (BPT), but there has been a call to examine their importance at the pre-treatment stage, since treatment acceptability is argued to precede initiation, adherence and outcome (Morrissey-Kane & Prinz, 1999).

It has been argued that when the characteristics of interventions recommended for behavioural problems are not congruous with parents' causal attributions for the target behaviour, parents may lack confidence in the appropriateness of the approach which leads to poor treatment acceptability and engagement in the treatment process (G. E. Miller & Prinz, 2003). For example, the belief that their child's behaviour is symptomatic of a medical disorder

(internal, stable and uncontrollable) which requires medication may cause a parent to see behavioural treatments as inappropriate , leading to reluctance to engage in psychologically based interventions (Hoza et al., 2006). Conversely, parents who perceive that their child can exercise control over their problem behaviour may see behavioural interventions as a genuine opportunity for their child to learn self-control and make better choices about their behaviour, increasing acceptability (Hoza et al., 2000). Morrissey-Kane and Prinz (1999) have developed a conceptual model suggesting a pathway from parental attributions to engagement in child mental health treatment (Figure 2). They contended that that parents make spontaneous causal attributions about problem behaviour with reference to their child and to themselves which

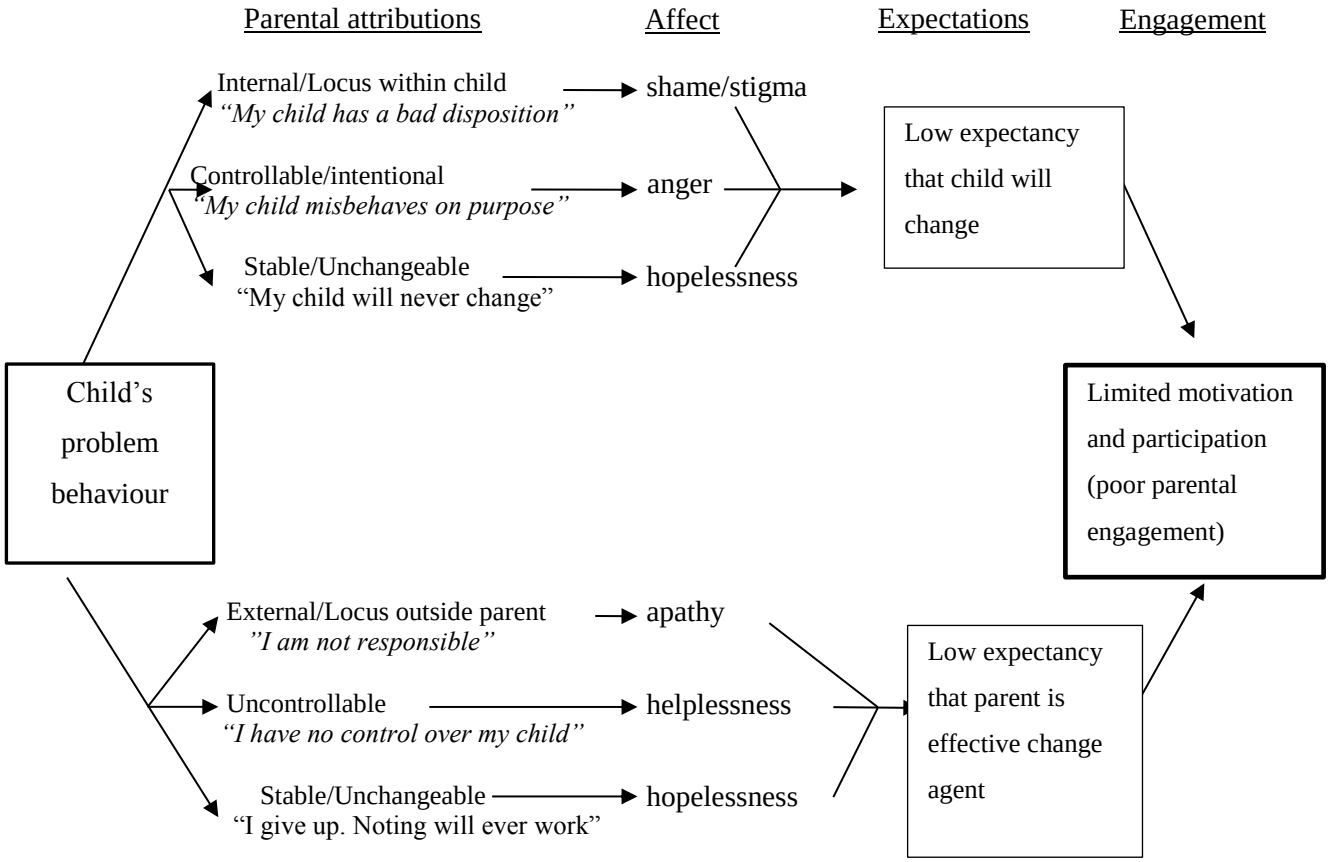


Figure 1. A conceptual framework of the parental attributional process as it relates to engagement in child mental health treatment. Adapted from "Engagement in Child and Adolescent Treatment: The Role of Parental Cognitions and Attributions", by E. Morrissey-Kane and R.J Prinz, 1999, *Clinical Child and Family Psychology Review,* 2, p.192. Copyright 1999 by Plenum Publishing Corporation.

triggers an affective response shaping their expectations for change and subsequent treatment engagement. Morrissey-Kane and Prinz (1999) conceptualised parenting as an achievement process where child outcomes can be seen as successes or failures, drawing upon Weiner's (1986) theory of attributional theory of motivation and emotion.

Weiner's (1979, 1985, 1986) approach incorporates three causal attributional dimensions: locus/internality (internal-external), controllability (controllable-uncontrollable) and stability (stable-unstable). In the present theoretical context, internality represents how far the parent's causal explanation for their child's behaviour is located inside or outside the child or the parent. For example, parents seeing challenging behaviour as caused by a biologically based condition might rate this as highly internal to the child and highly external to themselves. Controllability refers to the extent to which the parent perceives that their child, or they themselves, can control the causes of the behaviour in question. For instance, someone who attributes the parent-referent or child-referent causes of difficult behaviour as being due to their own or their child's inherent temperament may see this as uncontrollable. Stability represents the parent's perception of how enduring the child-related and parent-related causes of the behaviour are. In a case where a parent sees the causes of child behaviour as related to a developmental stage, they might believe that they may change with maturation and are therefore unstable, or perhaps they may believe their own causal role in the behaviour is due to a period of stress and liable to change as their sense of wellbeing improves.

Morrissey-Kane and Prinz's (1999) parent-referent pathway illustrates the process whereby parents struggling to manage their child's behaviour often have an external locus of control (Johnston & Patenaude, 1994; Sobol et al., 1989) which engenders helplessness, apathy and hopelessness. The child-referent pathway illustrates the contention that parental experience of failure to successfully manage behaviour leads parents to locate the cause of the behaviour within the child and to see it as stable and controllable (i.e. intentional). The authors argued that the most dysfunctional attributional pattern exists when parents hold negative attributions on both pathways, i.e. high child-referent controllability, internality and stability and parent-referent low internality and controllability with high stability (Morrissey-Kane & Prinz, 1999).

Parental Attributions and ADHD

Research has demonstrated that parental attributions for their child's problem behaviour vary according to the child's clinical problem. For example the literature describes different attributional tendencies with respect to learning, behaviour difficulties and developmental disabilities (Chavira et al., 2000; Compas et al., 1981). Considerable attention has been paid to

attributions in the parents of children with ADHD though findings have been mixed. One study found that parents of children with ADHD saw their child's problem behaviour as significantly less controllable by, and internal to their child than did parents of children with behaviour difficulties in a control group, though both made attributions internal to the child (Saltmarsh et al., 2005). By contrast, Collett and Gimpel (2004) found no differences in parents perception of their child's controllability of their problem behaviour between an ADHD and 'non-problem' control group, but reported that parents in the ADHD group made more stable and global child-referent attributions.

Some attempts have been made to explore any distinction between parental attributions for inattentive-overactive (IO) behaviour (core symptoms) and oppositional-defiant (OD) type behaviours amongst parents of children with ADHD. Johnston and Patenaude (1994) reported that parents in their study attributed OD behaviours as relatively more controllable by their child than IO behaviours, though both behaviour types were seen as tending towards controllable on the scales used. A more recent study failed to find any significant differences in mothers' attributions for oppositional defiant and inattentive-impulsive behaviour across ADHD, combined ADHD and OD and non-problem control groups (Johnston et al., 2006).

The existing research suggests parents of children with ADHD tend to make different attributions for problem behaviour in their children to parents of children with other clinical problems, or no reported difficulties. Furthermore, there is preliminary evidence that parents of children with ADHD make differential attributions for behaviour related to core symptoms, as opposed to other problem behaviour, suggesting a need to make a distinction between the two in research.

Correlates of Parental Attributions

In addition to children's clinical problems, research has pointed to a number of variables that are correlated with parental attributions. One parent-related variable in particular, mothers' mental health status, has been found to predict attributional patterns (Dix, 1993; Dix et al., 1986). For example, depressed mothers of pre-schoolers with problem behaviour made more stable causal attributions and were more likely to locate the cause of blame within themselves than non-depressed mothers (White & Barrowclough, 1998). In a subsequent study, mothers of children with behavioural difficulties and those with non-problem children who reported mental health difficulties were found to make more internal and global attributions for negative child behaviours than mothers reporting good mental health (Cornah et al., 2003). This suggests

that while there may be a direct relationship between maternal mental health and attributions, it is also possible that mental health acts as a mediator of attributional patterns.

In families of children with ADHD, child medication status has been found to impact upon parental attributions. Johnston et al. (2000) asked mothers to make attributions for negative behaviours in hypothetical medicated and unmedicated conditions. In the medication condition, participants saw problem behaviour as more controllable, but less stable, global and internal to the child than in the unmedicated scenario. This suggests that there is potential for parental attributions to improve when a child is medicated, though causal direction cannot be inferred. Less positively, Jenson et al. (1998) found that parents of children with ADHD taking methylphenidate who were asked to make attributions for their own child's behaviour on an imagined 'worst day' located the cause of problem behaviour firstly to the child's poor effort, then to failure of medication and lastly to their own efforts. Although Jenson et al. did not directly access attributional dimension, their findings suggest that parents in the study saw the cause of problem behaviour as primarily internal to the child.

Evidence for the Role of Parental Attributions in Treatment Acceptability

A limited number of studies have explored the proposed relationship between parental attributions and treatment acceptability in recent years. Preliminary evidence in favour of an association was provided by Reimers, Wacker, Derby and Cooper (1995) who recruited parents from a US child behaviour management clinic. Participants were asked to rate the acceptability of behavioural interventions that were being recommended to them in clinic pre-intervention and at 1-, 3- and 6-month follow-up. They also completed a measure to assess whether they favoured causal explanations for their child's problem behaviour rooted in the environment (e.g. parenting practices, stressful life events) or those 'physical' in nature (e.g. medical condition, personality). At the pre-intervention stage, parents who favoured causes that were environmental and therefore external to the child, rated a parent-focused intervention as more acceptable than those who preferred physical explanations. While Reimers et al. noted that a causal direction cannot be assumed from these correlations, the potential implication that parents who make child-referent attributions high on internality may not be well-disposed to an intervention targeting parents is consistent with theory (G. E. Miller & Prinz, 2003) and worthy of further investigation.

The potential existence role of parental attributions in treatment acceptability for the Stepping Stones Triple P parenting programme (Roberts et al., 2006) was explored by Whittingham, Sofronoff and Sheffield (2006) in a community sample of mothers of children

with ASD. The researchers devised a measure for the study comprising three items which elicited participant ratings for treatment acceptability, likelihood of using the intervention and usability. After reading three behavioural scenarios, parents completed a questionnaire requiring them to indicate extent of agreement with five "attributional and control statements", one of which tapped the attributional dimension of controllability, with the remaining four divided equally between locus and stability dimensions, plus a further five items relating to parents' perceived control over child behaviour. While there were no significant relationships between any attributional dimension and treatment acceptability or intention to use the intervention, Whittingham et al. reported that multiple regression analysis revealed that usability was significantly predicted by perceived control, stability and controllability. Specifically low perceived parental control, high stability and high child controllability predicted low usability. Since the construct of usability (how useful would this be) in this study bears some similarity to items in multi-component measures of treatment acceptability, such as the TEI-SF (e.g. *I like the procedures used in this treatment, I believe this treatment is likely to be effective)*, it can be tentatively argued that this finding does provide preliminary support for a relationship between concepts closely related to treatment acceptability and parental attributions. However, the failure to tightly define treatment acceptability, and attempt to measure it with a single item, were significant limitations of this study.

Efforts to assess the role of parental attributions in treatment acceptability for a range of interventions (medication, social skills training and parenting course) amongst African American mothers of preschoolers were made by Williford et al. (2009). While the child-referent dimensions of locus, stability and globality were all assessed, the authors chose to compute a single composite score for attributions, since all three dimensions were found to load onto a single factor. Mothers who offered the most negative attributional pattern (high child-referent internality, stability and globality) rated the child-focused behavioural intervention, social skills training, most favourably. Participants with higher contextual risk factors (such as low income) rated medication as more acceptable than their low-risk counterparts within that negative attribution group. Williford et al. (2009) suggested that the lack of relationship between attributions and acceptability of the parenting intervention might arise from the almost universally high acceptability ratings made for this option.

Most recently, Choi and Kovshoff (2013) conducted a rigorously designed study to explore parental acceptability of a child-focused and a parent-focused behavioural intervention for children with ASD in the context of both child-referent and parent-referent attributions. A single attributional dimension, parent-referent stability, was found to significantly predict

acceptability of the parent-focused intervention. Mothers who saw the parent-related causes of their child's problem behaviour as likely to persist over time found parent training less acceptable than participants with lower parent-referent stability. No other significant relationships were discovered, but the authors hypothesised that the high proportion of mothers recording at least moderate acceptability of both interventions may have explained the limited findings (Choi & Kovshoff, 2013). Results from this study and to some extent that of Whittingham et al. (2006) speak to the importance of including parent-referent attributions in future research.

The small existing body of literature suffers from inconsistent findings and some methodological flaws. Wide variation in methods of assessing both treatment acceptability and parental attributions is apparent and some researchers failed to offer a theoretical model to underpin their work. For example, in Whittingham et al.'s (2009b) study, the concept of treatment acceptability was not well-defined and was only directly measured by one item, whereas Williford et al.'s (2009) decision to collapse attributional dimensions into a single variable precluded the possibility of examining the relationship of different dimensions on treatment acceptability. Further, Reimers et al. (1995) only elicited parents' broad views of the cause of the behaviour without drawing upon a more specific model of attributional dimensions. Some researchers also failed to specifically address parent-referent attributions (Reimers et al., 1995; Williford et al., 2009) and the majority of studies fail to measure and control for variables such as severity of child behaviour and parent SES that have been found to relate to treatment acceptability.

Aims and Objectives of Current Study

The high number of children being diagnosed with ADHD who also present with conduct problems make this population an important focus for research. There are concerns amongst researchers and professionals working in the area of ADHD that parents' non-acceptance of, and adherence to, both medication and psychosocial interventions create a barrier to positive outcomes for children and families (Johnston, Seipp, Hommersen, Hoza, & Fine, 2005; Pliszka et al., 2003). Furthermore, the NICE Guideline Development Group have expressed dissatisfaction based upon their perception that medication is the routine response to an ADHD diagnosis, despite evidence that many families would benefit significantly from psychosocial intervention alone (National Collaborating Centre for Mental Health, 2009). It is therefore argued that an enhanced understanding of the factors influencing parental treatment acceptability of interventions for problem behaviour will inform professionals in their efforts to match families of children with interventions that they are likely to initiate and continue and

potentially enable them to address unhelpful cognitions that may prevent parents from engaging with treatment that would be beneficial to their child.

The aim of this study was to explore whether the attributions that mothers of children with a diagnosis of ADHD make for their child's problem behaviour are related to maternal treatment acceptability of three interventions. The interventions of interest are prescription medication for the child, a psychosocial intervention targeted at the parents (a parenting programme) and a psychosocial intervention targeted at the child (social skills training). Study design is informed by methodological limitations identified in existing studies in this area. Therefore, parental attributions are conceptualised here in line with Weiner's (1985, 1986; 1979) and Morrissey-Kane and Prinz's (1999) conceptual framework for parental attributional processes in engagement with child mental health treatment underpins the research. Further both parent-referent and child-referent attributions are examined with a view to identifying any role for individual attributional dimensions. Some variables identified in existing research as having an association with treatment acceptability are also controlled for.

It was hypothesised that treatment acceptablity for each of the three interventions would be differently affected by the attributions that mothers make for their child's problem behaviours. Specifically, mothers who saw a role for themselves in their child's problem behaviour would be more accepting of a parenting intervention and those who attributed behaviour to within-child characteristics would prefer a child-focused intervention, with drug treatment being most acceptable to those who see their child's behaviour as stable and uncontrollable. A further hypothesis based upon existing literature was that characteristics of the parent, child and family, such as treatment experience, level of maternal education and severity of child problem behaviour may be important in understanding these relationships.

Method

Ethics

Ethical approval was obtained from the University of Southampton's Psychology Ethics Committee and Research Governance Office (see Appendix D).

Participants

UK mothers of a child aged between 6 and 11 with a formal, medical diagnosis of ADHD, were invited to participate in the present study. To meet inclusion criteria, mothers had to report (a) that they were the birth mother of a child who had been diagnosed with ADHD,

aged between 6 and 11 years, (b) the job title of the professional who made the diagnosis, (c) the age at which the diagnosis was made, (d) the specific diagnosis made, i.e. ADHD combined type, ADHD predominantly inattentive type or ADHD predominantly hyperactive type and (e) that ADHD was the only, or primary area of difficulty for their child Participants were excluded if their report of their child's ADHD symptoms did not meet the threshold for the diagnosis on the Vanderbilt ADHD Diagnostic Parent Rating Scale. The lower age limit of 6 years was chosen because the study involved questions about the treatment acceptability of medication; the commonly prescribed medications methylphenidate and atomoxetine are licensed for treatment of symptoms of ADHD in children over 6 years old . The upper limit of 11 years was set in recognition that ADHD in childhood is linked to other factors manifesting in adolescence such as juvenile delinquency (Sibley et al., 2011), substance misuse (Molina & Pelham, 2003) and antisocial behaviour (Bor, McGee & Fagan, 2004) which are distinct from the problem behaviour seen in earlier years. Further, it is suggested that early intervention is desirable, especially since problem behaviour is more responsive to intervention earlier in the life course (Dunlap & Fox, 2009). If participants had more than one child with a diagnosis of ADHD, they were asked to complete the survey with respect to the child whose behaviour caused them the greatest concern.

Participants were recruited from local and national support groups for ADHD. Mothers could opt to complete either an online survey or a paper survey. 89 participants completed the online survey and 1 participant returned a paper survey pack. 30 participants were excluded from data analyses as they did not meet the inclusion criteria. Three self-identified as adoptive mothers, rather than birth mothers. A further three were excluded because the threshold for an ADHD diagnosis was not met during screening with the VADPRS. Those reporting a co-morbid diagnosis for their child of an autistic spectrum disorder (n=11) were also removed from the data set, as were a further 13 who reported other co-morbid diagnoses such as cystic fibrosis and global developmental delay.

The final study sample comprised 59 participants who were biological mothers of a child with ADHD. Children were aged from 6.00 years, to 11.83 years (M= 9.18, SD= 1.57). Further demographic information is presented in Table 3 and information on child characteristics is presented in Table 4.

Table 3

Demographic Information

	n	%
Household		
Single-parent household	11	18.6
Two-parent household	45	76.3
Other	3	5.1
Ethnicity		
White British	55	93.2
Any other White background	2	3.4
Indian	2	3.4
Home region		
South East England	13	22.0
North West England	11	18.6
South West England	2	3.4
East Midlands	5	8.5
West Midlands	4	6.8
London	7	11.9
Scotland	3	5.1
East of England	3	5.1
Wales	7	11.9
Yorkshire and the Humber	3	5.1
Annual household income		
Less than £10,000	7	11.9
£10,000 - £19,999	15	25.4
£20,000 - £29,999	4	6.8
£30,000 -£49,000	12	20.3
£50,000 - £74,999	10	16.9
More than £75,000	3	5.1
Not reported	8	13.6
Highest level of education of mother		
Secondary education	12	20.3
Post-secondary education	24	40.7
Undergraduate degree	18	30.5
Postgraduate degree	5	8.5
Number of children in family		
1	10	16.9
2	28	47.5
3	11	18.6
4	9	15.3
5 or more	1	1.7

Table 4

Child Characteristics

	n	%
Gender		
Male	49	83.1
Female	10	16.9
Diagnosis as Reported by Mother		
ADHD Combined Type	50	84.7
ADHD Inattentive Type	2	3.4
ADHD Hyperactive/Impulsive Type	6	10.3
Treatment History		
Experience of medication	49	83.1
Experience of social skills for child	15	74.6
Experience of parenting course	27	45.8

Note. One participant did not report the diagnostic subtype of her child's ADHD diagnosis

Materials

Demographic questionnaire. A questionnaire was designed to collect demographic information about participants (see Appendix H). Data about age, ethnicity, family structure, household income, maternal education, geographical location and age and gender of the child were gathered.

Diagnosis and treatment history questionnaire (see Appendix I). Participants gave information about their child's diagnosis of ADHD, based upon the inclusion criteria. Mothers were also asked to report prior treatment history relating to experience of parent-focused behavioural intervention (e.g. Triple P, Stepping Stones), child-focused behavioural intervention (e.g. social skills training) and medication (e.g. Concerta 56mg) and to state anything else they had tried to assist with their child's ADHD and difficult behaviours (e.g. family therapy, diet, cognitive behavioural therapy. They were asked to specify whether these interventions were in place either now, or in the past. These variables were coded categorically

with "0" indicating no current or prior treatment for each option, "1" indicating treatment in the past for each option and "2" indicating current treatment for each option. Participants were also asked to state the nature of any co-morbid diagnoses, date of diagnosis and job title of diagnosing professional.

The hyperactivity/inattention subscale of the Strengths and Difficulties Questionnaire – Parent (Goodman, 2001)**.** Mothers' reports of ADHD symptoms were assessed using the 5-item subscale of the Strengths and Difficulties Questionnaire – Parent (see Appendix K). Participants were asked to indicate whether each of five statements is not true (0), somewhat true (1), or certainly true (2) of their child. Statements included "restless, overactive, cannot stay still for long" and "thinks things out before acting". Scores were then summed. A score of 0-5 on this subscale is classified as normal, 6 as borderline and 7-10 as abnormal. A recent review of the psychometric properties of the SDQ (Stone et al., 2010), drawing on 48 studies reported weighted mean internal consistency of the hyperactivity/inattention subscale of $\alpha = 0.76$ and concurrent validity with the Childhood Behaviour Checklist (Achenbach, 1991) of $r = 0.69$ In the present study the internal consistency coefficient was .241. Since this was unacceptably low, data from this measure were not used for further analysis in the present study.

The conduct problem subscale of the Strengths and Difficulties Questionnaire – Parent (Goodman, 2001)**.** Severity of child behaviour problems was measured using the 5-item conduct subscale of the Strengths and Difficulties Questionnaire – Parent (Appendix L). Respondents were asked to state whether each of five statements is not true (0), somewhat true (1), or certainly true (2) of their child. Statement included: "often has temper tantrums" and "often lies and cheats". Item scores were then summed. A score of 0-2 is classified as normal, 3 as borderline and 4-10 as abnormal. A recent review of the psychometric properties of the SDQ (Stone et al., 2010), drawing on 48 studies reported weighted mean internal consistency of the conduct problem subscale of $\alpha = 0.58$ and concurrent validity with the Childhood Behaviour Checklist (Achenbach, 1991) of $r = 0.71$. In the present study the internal consistency coefficient was .715.

Vanderbilt ADHD Diagnostic Parent Rating Scale (VADPRS) (M. Wolraich, 2003)**.** Severity of ADHD symptoms and associated functional impact on the child's daily activities were measured using the VADPRS, the parent version of the VADTRS (M.L. Wolraich, Feurer, Hannah, Baumgaertel, & Pinnock, 1998), provided in Appendix J. Due to the poor internal consistency of the SDQ Hyperactivity subscale in this study, the VADPRS was also employed as a screen for ADHD. The measure includes the 18 DSM-IV criteria for ADHD. Participants

were asked to rate the severity of each behaviour in their child on a 4-point scale ranging between "*never*" (0) to "*very often*" (3). Examples of items are: "has difficulty sustaining attention to tasks and activities" and "has difficulty waiting his or her turn" . Respondents then also completed an 8-item performance scale, with four items focusing on academic performance(e.g. " how is your child getting along in reading?"). and four relating to relationships (e.g. "how does your child get along with children their own age?") . Ratings in the performance section are given on a 5-point scale ranging from "problematic" to "above average". A score of 1 (serious problem) or 2 (something of a problem) indicates some impairment in that area. A diagnosis is considered present if a behaviour is reported as "often" (2) or "very often" (3) present in the number of criteria required for an ADHD diagnosis by the DSM-IV definition. Predominantly inattentive subtype requires 6 or more counted behaviours on items 1 to 9 and a score of 1 or 2 in any of the items on the performance section. Predominantly hyperactive/impulsive subtype requires 6 or more counted behaviour on items 10 to 18 and a score of 1 or 2 in any of the items on the performance section. Combined subtype requires 6 or more counted behaviours in both of the inattention and hyperactivity/impulsivity subscales The VADPRS is reported to have high concurrent validity with the ADHD section of the C-DISC-IV (Shaffer, Fisher, Lucas, Dulcan, & Schwab-Stone, 2000) and excellent internal consistency ($\alpha = 0.93$) (M. L. Wolraich et al., 2003). In the present study the internal consistency coefficient was .895.

Parental Attribution Questionnaire (Whittingham, Sofronoff, Sheffield, & Sanders, 2008). The PAQ (see Appendix M) was administered to assess mothers' attributions for their child's problem behaviour across the following dimensions: child-referent internality, child-referent controllability, child referent stability, parent referent internality, parent-referent controllability and parent-referent stability. The PAQ was designed to be used with parents of children with a diagnosis of Autistic Spectrum disorder, but was used in the present study due to its status as the only available published measure based upon both Weiner's (1980) attributional theory and Morrissey-Kane and Prinz's (1999) model. Originally the questionnaire comprised three scenarios describing good, bad/ naughty and ASD-related behaviours, but in the present study, only the bad/naughty behaviour scenario was used. Respondents were asked to think of a recent time when their child did something they consider to be bad or naughty behaviour and briefly describe this. A list of examples of problem behaviours was provided to ensure that participants would be focused on disruptive behaviour, rather than ADHD-related behaviour such as impulsivity or poor concentration. These examples were consistent with the behaviours described in the conduct subscale or the Nisonger Childhood Behaviour Rating Form Typical IQ Version (Aman et al., 2008), also having been reviewed by a senior researcher and

experienced educational psychologist. Participants were asked to consider what they thought the *main* causes of that behaviour incident were and to rate their agreement with 12 statements about their perception of the causes of that behaviour. Each attributional dimension was referenced with two statements. Examples of statements are: "in my opinion my child has no control over this behaviour" and "in my opinion, the causes of my child's behaviour are nothing to do with me". Responses were given on a 5-pont Likert scale, where 1= *strongly disagree* and 5= *strongly agree*. Statements 2,4,6,8,10 and 12 were reverse scored. A score for each attributional dimension was obtained by summing the subscale items, with a higher score equating with stronger attributions on a particular dimension.

Adequate internal consistency was reported for each subscale, ranging from α = .61 to α=.84 in Whittingham et al.'s (2008) original study. In the present study, internal consistency coefficients were -.378 for child-referent internality, .652 for child-referent controllability, .773 for child-referent stability, .613 for parent-referent internality, .798 for parent-referent controllability and .721 for parent-referent stability. The unacceptable reliability for child-referent internality led to the exclusion of this scale from analyses. A negative Cronbach's alpha is unusual, but possible, and is indicative of very poor covariance (Field, 2013).

Treatment Evaluation Inventory – Short Form (TEI-SF; Kelley et al., 1989**).** Treatment acceptability of all three intervention options described in treatment description devised for this study was assessed using the 9-item TEI-SF (see Appendix N). Sample statements are "*I believe the child will experience discomfort during this treatment*" and "*overall, I have a positive reaction to this treatment*". Participants' responses to the statements in the TEI-SF are recorded on a 5-point Likert scale (1= *strongly disagree* and 5 = *strongly agree*). Item 6 was reverse scored. A total score was obtained by summing all items, with a higher score representing greater acceptability of a treatment option. Moderate acceptability is indicated by a score of 27 (range 9-45), based upon Kazdin et al.'s (1980a, 1980b) formula for the TEI (Kelley et al., 1989). The TEI-SF is reported to have excellent psychometric properties and allow effective discrimination between interventions (Kelley et al., 1989). In this study, internal consistency was calculated for the parent focused behavioural intervention (α = .910), the child-focused behavioural intervention (α = .772) and medication (α = .881).

Participants were asked to respond to the TEI-SF after reading a case vignette (Appendix N) that was developed for the current research to summarise information about the problem behaviour exhibited by a hypothetical 8-year-old boy with a diagnosis of ADHD. A male character was chosen due to the higher prevalence of ADHD in boys than girls (Ford et. al,2003). The vignette was one paragraph long. Respondents then read each of three treatment

descriptions, designed for this study, to provide an outline of procedures typically used in treatment with medication, child-focused behavioural interventions and parent-focused behavioural interventions. The descriptions were based on the literature (e.g. Antshel & Remer, 2003; National Collaborating Centre for Mental Health, 2009; E. J. S. Sonuga-Barke, Daley, Thompson, Laver-Bradbury, & Weeks, 2001) and were similar in length, each comprising two paragraphs. Presentation of the treatment descriptions was counterbalanced. After each treatment description, a corresponding TEI-SF was presented for completion. At the end of this section, participants were also asked to make a forced choice about their preferred intervention.

The case vignette and treatment descriptions were based upon clinical experience and reviewed by a senior researcher and an educational psychologist with a special interest in ADHD. This format for assessing treatment acceptability has been widely used by researchers in this field (e.g.Borrego et al., 2007; Jones et al., 1998; Njardvik & Kelley, 2008).

Procedure

A wide range of local and national UK organisations providing support to the parents of children with ADHD were contacted to ask them to assist in publicising the opportunity to participate in the study. Organisations that consented to this forwarded information to potential participants electronically and/or posted a study advert (see Appendix E) on their websites. The researcher also posted short study adverts on online parenting forums..

The information and questionnaires provided in the online and paper versions of the survey were identical in content, while format and some aspects of presentation varied to accommodate the different communication methods. For example “circle the appropriate response” in the paper version was replaced with “click on the appropriate response” in the online version.

Survey materials comprised a participant information sheet, opt-in consent form, a demographic and treatment history questionnaire, the SDQ-Parent Conduct and Hyperactivity subscales, the VADPRS, the PAQ, the treatment acceptability measure and a debriefing statement. After giving consent, participants then completed the demographic questionnaire and diagnosis and treatment history questionnaire, followed by the VADPRS, then the SDQ conduct subscale and SDQ hyperactivity subscale, followed by the PAQ and lastly the treatment acceptability measure.

After completing all questionnaires, participants were presented with a debriefing statement (see Appendix O) and offered the chance to enter a prize draw for one of 10 £25

Tesco vouchers as an honorarium for their participation (see Appendix P). In the online version of the survey, participants were asked to click on a link to a separate i-survey site so that their details could not be linked back to their survey responses. Those completing a paper survey were assured that that contact details would be stored separately to their questionnaire responses to maintain confidentiality.

Design and Data Analysis

The design of the present study was correlational. Data inspection was carried out prior to analysis. Correlational analyses were undertaken to identify any associations of demographic variables, severity of problem behaviour and severity of ADHD symptoms with treatment acceptability ratings of all three intervention options. Those variables that were significantly associated with treatment acceptability ratings were then included as covariates in subsequent regression analyses. Relationships between attributional dimensions and treatment acceptability of each of the three interventions were examined through hierarchical regression analysis, controlling for covariates.

Results

Data Inspection

Data were inspected to test for normality of distribution and to remove any outliers. For example, one outlier was identified for the TEI-SF scores for the parent-focused behavioural intervention, using the outlier identification rule proposed by Hoaglin (Hoaglin, Iglewicz, & Tukey, 1986). This was replaced with a score equal to one unit below the nearest non-outlier score (Tabachnik & Fidell, 2007). No outliers were identified on other variables. Analysis using the Kolmogorov-Smirrnov test suggested that the majority of variables were non-normally distributed. Missing values due to participant error were excluded through the pairwise method throughout all analyses .

Descriptive Statistics

Means and standard deviations for dimensions of parental attributions, treatment acceptability of child-focused and parent-focused behavioural interventions and medication, severity of problem behaviour and severity of ADHD symptoms are presented in Table 5. Seventy eight per cent of mothers (n=46) found medication at least moderately acceptable (a score of 27 or higher), social skills training was seen as at least moderately acceptable by 96.6%

(*n*= 57) of participants and 93.2 % of mothers (*n*= 55) reported at least moderate acceptability of the parenting intervention. When mothers were asked to make a forced choice between the three options, 42% *(n*=25) chose medication, 41% (*n*=24) chose social skills training for the child and only 17% (*n*=10) preferred the parenting course.

Table 5

Means and Standard Deviations for Parental Attributions, Treatment Acceptability, Severity of Problem Behaviour and Impact of ADHD Symptoms.

Measure	*n*	*M*	*SD*	Range
Parental Attribution Questionnaire				2-10
Child-referent Controllability	59	5.02	1.85	2-8
Child-referent Stability	59	7.24	1.76	4-10
Parent-referent Internality	59	4.76	1.70	2-8
Parent-referent Controllability	59	4.67	1.80	2-9
Parent-referent Stability	58	6.81	1.72	2-10
Treatment Evaluation Inventory-Short Form				
Medication	59	30.14	6.56	13-45
Child-focused Behavioural Intervention	59	33.66	4.70	25-45
Parent-focused Behavioural Intervention	59	34.58	5.71	21-45
Strengths and Difficulties Questionnaire -Conduct	58	5.29	2.35	1-10
Vanderbilt ADHD Diagnostic Parent Rating Scale – items 1-18	59	45.36	7.27	29-54
Vanderbilt ADHD Diagnostic Parent Rating Scale-Performance	49	26.76	4.40	13-34

*Note. n*s vary due to missing values. Scores from the Strengths and Difficulties Questionnaire of 4 or greater are classified as abnormal (n=43). Analysis showed no significant differences between included and excluded participant groups.

Analyses

Links between the PAQ and treatment acceptability

Correlations between child-referent and parent-referent attributions and treatment acceptability were carried out using Spearman's rho. Due to the multiple correlational analyses being conducted, the classical one-stage method[6] for controlling false discovery rates in multiple comparisons (Benjamini & Hochberg, 1995) was used to derive a threshold significance that adjusts p-values to minimise the false positive paradox. These values were computed using Pike's (2010) FDR spreadsheet program Results are presented in Table 6.

Table 6

Parental Attributions and Treatment Acceptability Correlation Matrix

Measure	1	2	3	4	5	6	7	8
Child-referent Attributions								
1 PAQ Child Controllability	-	–.329†	-.359†	-.367†	.550†	-.055	-.012	.057
2 PAQ Child Stability	-	-	-.481†	.730†	-.320†	.122	.150	-.038
Parent-referent Attributions								
3 Parent controllability	-	-	-	-.403†	.374†	-.272*	-.084	.23
4 Parent Stability	-	-	-	-	-.472†	.121	.049	-.199
5 Parent Internality	-	-	-	-	-	-.201	.084	.166
Treatment Acceptability								
6 Medication	-	-	-	-	-	-	.189	-.057
7 Social Skills Training	-	-	-	-	-	-	-	.511†
8 Parenting	-	-	-	-	-	-	-	-

Note. *p<.05 (2-tailed), †adjusted p<.002 (1-tailed)

Considering relationships between attributions and treatment acceptability, it was found that in this study acceptability of medication had small, negative correlation with parent-referent controllability, p =.037 (1-tailed) , indicating that mothers reporting less control over behaviour were likely to find medication a more acceptable intervention than those with scores corresponding to more control. However, with the false discovery rate correction applied, this

[6] The significance threshold is set at the highest p-value for which the inequality $P_i \leq iq/m$ holds true. This and all smaller p-values are judged to represent significant comparisons.

relationship ceased to be significant at the adjusted level of p<.002. No other significant relationships between attributions and treatment acceptability were found.

With regard to child-referent attributions, a significant negative correlation was found between child-referent controllability and child-referent stability, meaning that mothers who saw their child as having less control over the causes of their problem behaviour saw the causes of their child's behaviour as being more likely to persist over time, p=.011. There was a significant inverse correlation between child-referent and parent-referent controllability,, p=.005 , indicating that mothers in the sample believed that the more control the child had over their own behaviour, the less they themselves had. However, there was a moderate, positive correlation between child-referent controllability and parent-referent internality , r_s = .550 , p<.001 , suggesting that mothers who believed that their children had more control over their own behaviour, also saw more of a role themselves in contributing to the cause of that behaviour.

Child-referent stability showed a small, but very significant, negative correlation , p<.001, with parent-referent controllability, indicating that mothers who thought that child-related causes of problem behaviour were more likely to pass with time thought that they, as parents, had more control over the behaviour. There was a moderate to high positive correlation between child-referent stability and parent-referent stability, p<.001 , indicating that those who thought that child-related causes for problem behaviour would persist over time also believed that parent-related causes would be enduring. Child-referent stability was also found to have a small, negative correlation with parent-referent internality, p=.013, suggesting that participants who thought the child-related causes of problem behaviour would persist in the longer term were less likely to see as great a role for themselves in the behaviour.

Considering parent-referent attributions, parent-referent controllability was found to have a small but highly significant negative correlation with parent-referent stability, p=.002 , showing that mothers in this sample who felt more in control of their child's behaviour thought that parent-related causes of behaviour were more amenable to change over time. There was also a small but significant positive correlation between parent-referent controllability and parent-referent internality, p=.004 , indicating that participants reporting a greater sense of control over behaviour also tended to see the causes of their child's behaviour as more internal to themselves.

Analysis also revealed a moderate correlation between acceptability of the child-focused behavioural intervention and the parent-focused behavioural intervention, p<.001, suggesting

that participants who were accepting of one type of behavioural treatment were more likely to feel positively towards the other too. No other correlations with measures of treatment acceptability were found.

Understanding Factors Associated with Treatment Acceptability

Spearman's rho was used to explore potential correlations between scores from the TEI-SF for each intervention and psychopathology and participant characteristics.. Scores on the SDQ Conduct subscale were positively correlated with child-referent stability, p=.004. They also showed a positive correlation with parent-referent stability, p=.017 and a negative correlation with parent-referent control, p=.003. Therefore, parents who reported their children as having more severe behaviour saw both their own, and their child's roles in the causes of their behaviour as less likely to change with time and reported believing they had less control over the behaviour. Scores on the VADPRS Performance Section were significantly positively correlated with acceptability of medication, p=.045, indicating that mothers of children who reported that their child's ADHD caused them greater impairment in daily life, were more likely to rate medication as more acceptable in this study.

When adjusted p-values were applied, only prior experience of medication was found to be significantly, positively correlated with acceptability of medication , adjusted $p < .003$. No other variables were significantly associated with acceptability of medication, social skills or parenting intervention. Amongst the other correlations, the only further significant relationship was a positive correlation between acceptability of social skills training and acceptability of parenting interventions, adjusted $p < .003$.

Table 7 *Treatment Acceptability, Psychopathology and Participant Characteristics Correlation Matrix*

Measure	1	2	3	4	5	6	7	8	9	10	11	12	13
Treatment Acceptability													
1 Medication	-	.189	-.057	.302*	.288*	-.078	.275*	-.022	-.241	.008	.539†	.074	-.105
2 Social Skills Training	-	-	.511†	.281*	-.121	.073	.122	-.288*	-.043	-.027	-.080	.058	.064
3Parenting course			-	.193	.174	.060	.096	-.191	.148	.202	-.238	.112	.186
Measures of Psychopathology													
4 VADPRS 1-18	-	-	-	-	.060	.346**	.238	-.153	-.029	-.050	.067	.118	.081
5 VADPRS Impact	-	-	-	-	-	.170	-.167	.161	-.133	.043	.253	.013	.065
6 SDQ Conduct	-	-	-	-	-	-	.016	.004	-.244	-.127	-.073	.146	.281*
Participant Characteristics													
7 Child Gender	-	-	-	-	-	-	-	.044	.083	.332*	.278*	.284*	.234
8 Child Age	-	-	-	-	-	-	-	-	.056	-.172	.261*	.167	.191
9 Maternal Education	-	-	-	-	-	-	-	-	-	.145	-.102	-.147	.103
10 Family Income	-	-	-	-	-	-	-	-	-	-	-.042	.174	.100
11 Experience of medication	-	-	-	-	-	-	-	-	-	-	-	-.047	.052
12 Experience of social skills	-	-	-	-	-	-	-	-	-	-	-	-	.167
13 Experience of parenting course	-	-	-	-	-	-	-	-	-	-	-	-	-

Note. *p<.05 (2-tailed), **p<.005 (2-tailed), †adjusted p<.003 (2-tailed)

Discussion

The current study was the first to explore the relationship between both child-referent and parent-referent attributional dimensions and treatment acceptability for medication, social skills training and a parenting intervention amongst mothers of children with ADHD. Correlational analyses revealed no relationship between any child-referent or parent-referent attributions and parental treatment acceptability for medication, social skills training, or a parenting intervention. The only significant relationship discerned was that between prior experience of medication and acceptability of medication, in line with Gage and Wilson's (2000) finding.

Choi and Kovshoff's (2013) study offered preliminary evidence of the importance of parent-referent stability in understanding treatment acceptability of behavioural interventions amongst mothers of children with ADHD. However, the present study failed to provide any further evidence of stability, or any other parent-referent attributional dimension, as a key variable with respect to parental treatment acceptability for problem behaviour. The absence of any relationship between child-referent attributions and treatment acceptability for any of the interventions in the present research is consistent with the outcome of some previous studies (Choi & Kovshoff, 2013; Whittingham et al., 2006; Williford et al., 2009). However, Reimers et al. (1995) did find evidence for a role for the child-referent attributional pathway. . It is argued that mothers would need to believe in the potential for the child's behaviour to change by some means, regardless of belief in their own ability to make changes. Therefore, the absence of any significant child-referent attributions is somewhat surprising. Inconsistency of findings may be reflective of varying methodological approaches, including different measurements of both attributions and treatment acceptability and in the present study, a consequence of methodological limitations discussed below.

While the mean acceptability rating was highest for the parenting intervention, followed by social skills training for the child and lastly medication, when asked to make a forced choice about their preferred option, this pattern was reversed, with the highest percentage of parents opting for medication and fewer than half as many choosing the parent-focused behavioural intervention. This suggests that the relationship between the factors measured by the TEI-SF and the intervention that mothers ultimately prefer may not be straightforward.

Limitations and Future Directions

A number of limitations must be noted with the respect to the present study. One possible explanation for the lack of significant findings may be sample size, leading to very limited statistical power to detect an effect. Based on Green's (1991) table of sample sizes,

developed to guide identification of samples big enough to ensure sufficient power to detect relationships, it was estimated that a minimum sample size of 97 would be required to detect a medium effect in the present study (p.503). Suggested sample sizes, derived by Green, were based on an alpha set at .05 and power set at .80, the latter being the value identified by Cohen (1988) as appropriate for use in behavioural research. Green (1991) proposed a minimum of 725 participants to allow detection of a small effect size, making it likely that the present study was underpowered to detect any small effects .Further, given that Choi and Kovshoff's(2013) study found relationships between parent-referent attributions and treatment acceptability with small effect size, future studies in this area should aim to recruit a much larger sample.

A further significant limitation was the failure to control for maternal mental health as a variable in the study, since it is possible that the proposed relationships between parental attributions and treatment acceptability are, in fact, mediated by maternal mental health, as suggested by previous studies (e.g. Cornah et al., 2003; White & Barrowclough, 1998). The decision to exclude a measure of maternal mental health was made in the interests of limiting the length of the participant survey materials, however, in retrospect, a short measure, such as the Hospital Anxiety and Depression Scale (Zigmond & Snaith, 1983) would have merited inclusion as a source of potentially valuable data.

The decision to use the PAQ in the present study was based upon its status as the only published measure of parental attributions for child behaviour with a sound theoretical basis that accessed both child-referent and parent-referent attributions, however, the psychometric properties of the PAQ proved to be a limitation. The internal consistency coefficient for child-referent internality of -.378 led to this dimension being excluded from analysis. The same measure was used by Choi and Kovshoff who reported a poor coefficient for this subscale of .52, suggesting that it may not be as reliable as Whittingham et al. (2008) found in their original study. Future research may benefit from the use of alternative, psychometrically validated measures of parental attributions. Further, some researchers have questioned the ecological validity of parent self-report rating scales, arguing that responses may not be representative of attributions made spontaneously in daily life (e.g. Bugental et al., 1998). The absence of an alternative, more naturalistic measure of attributions in the present research, such as recalled incident interviews (Freeman, Johnston, & Barth, 1997) or observation techniques developed in other studies (Johnston et al., 1998) is also, therefore, a limitation. Despite some evidence that analogue and naturalistic measures do yield comparable results, replication of the present study might usefully include a naturalistic methodology.

A further methodological limitation, with respect to the measure of parental attributions, was that participants were asked to recall only one incident of disruptive behaviour in their own child, before making attributions for that behaviour. It is not possible to know whether mothers were recalling a particularly memorable, single event that involved particularly challenging, but possibly highly unusual, behaviour from their child or a behaviour that is commonplace. It cannot, therefore, be assumed that attributions reported by participants within the context of the recalled incident were representative of an attributional style towards their child's disruptive behaviour more generally. A preferable approach would have been to ask participants to recall and describe several instances of challenging behaviour in their child, which would have allowed exploration of the stability of attributional patterns across situations.

With respect to measurement of treatment acceptability, the use of a single vignette describing problem behaviour in a single hypothetical child may have had limited resonance with the experience of some parents. Future studies could therefore employ a range of vignettes representing children of different gender, ages and behavioural patterns. It is also noteworthy that each of the three possible interventions received mean acceptability ratings equivalent to at least moderate acceptability, i.e. 27 or greater, which may have limited the possibility of discerning significant relationships between treatment acceptability and attributions. While medication was the rated as the least acceptable option in the present study, the finding that 78% of mothers found it to be at least moderately acceptable is inconsistent with the trend in the majority of previous studies. It is possible that the rise in prescriptions for medication amongst children with ADHD (National Collaborating Centre for Mental Health, 2009) may have led to a reduction in the stigma previously associated with drug treatment for this population, which may have implications for our understanding of patterns of treatment acceptability. Furthermore, only 17% of children whose parents participated in the current study were medication naïve. Since the majority of mothers and their children had already received health service support, it is impossible to be sure that only treatment acceptability was measured and findings were not also reflective of consumer satisfaction, therefore creating an important confound. Future recruitment of study participants could target families at the point of referral, eliminating this limitation. Mothers of those children who went on to receive a diagnosis would then be considering treatment acceptability in the context of a lived experience, rather than a hypothetical scenario.

The tendency for individuals to respond to questions in a way that they believe portrays them favourably, rather than adhering to the truth, known as social desirability, is a well-established phenomenon when self-report measures are employed (Mick, 1996). This may

have had an impact upon participant's responses to a range of questions in the present study, affecting findings. The propensity to minimise negative qualities in oneself and enhance positive aspects (Paulhus, 2002) may be particularly relevant to the validity of the measures of parent-referent attributions. It is also unknown whether some mothers would have had difficulty reading and/or interpreting the written materials in the study. Further the familial and highly heritable nature of ADHD (E. Sonuga-Barke, 2010) suggests that some mothers may have experienced difficulty in completing the online survey rigorously in one sitting.

Findings in the present study may only be considered relevant to the biological mothers of children aged six to eleven with a diagnosis of ADHD. It is acknowledged that the focus on mothers herein means that a more complete picture of the relationship between parental attributions and treatment acceptability within a family group was precluded Subsequent research could draw upon a more diverse sample, including fathers and other primary caregivers such as foster carers and adoptive parents. Exploration of attributions for problem behaviour made by all caregivers in a family and how acceptable they find treatments would better reflect the complexity of family life and the role of individuals in decision making throughout the treatment process. It would be desirable for future studies to include a range of populations, including parents of children with ADHD, developmental disabilities and ODD/CD to explore any commonalities and differences in findings across such groups. Only two participants in the present study did not identify themselves as white British and the evidence for cultural variation in parental attributions points to the need to recruit ethnically diverse samples. Longitudinal work would also facilitate examination of how any relationship between attributions and treatment acceptability changes with time and establish causal pathways.

Implications for Educational Psychologists (EPs) and Contribution to Knowledge

The current study adds to the small body of research relating to treatment acceptability and parental attributions for problem behaviour. While no significant statistical relationships between parental attributions for their child's problem behaviour and treatment acceptability were found, a positive relationship between prior experience of medication and maternal acceptability of medication as a treatment for problem behaviour in children with ADHD has been highlighted. The adoption of Morrissey-Kane and Prinz's (1999) model of engagement in mental health services for children, also previously used by Choi and Kovshoff (2013) has proven to be a valuable theoretical underpinning, which speaks to both parent- and child-referent attributional pathways and acknowledges the important role of treatment acceptability in treatment engagement and outcomes. Future research in the area will benefit from seeking to overcome the limitations identified in this study. This study has not ruled out the possible

existence of the hypothesised relationship and therefore the area of treatment acceptability and parental attributions remains a valid target for further research.

Educational psychologists are frequently involved in jointly planning interventions for children with problem behaviour, working closely with parents, schools and medical professionals. Given the poor long-term outcomes for individuals who do not receive effective intervention for behavioural difficulties during childhood, optimising family engagement in treatment should be a key concern for all professionals. The current study demonstrated that mothers of children with ADHD vary greatly in the child-referent and parent-referent attributions they make for their child's problem behaviour and an awareness of this will be helpful to any practitioner espousing an interactionist approach to supporting children with ADHD and their families. EPs are well placed to sensitively explore such attributions and signpost to appropriate sources of support, in addition to providing psychoeducation to challenge unhelpful attributions.

While educational psychologists do not recommend or prescribe medication, they are sometimes involved in multi-disciplinary teams diagnosing and treating ADHD which do. They should therefore consider highlighting the importance of parents' attributions for their child's behaviour to colleagues from other disciplines who may be unaware of existing research. Furthermore, educational psychologists are well placed to conduct further research in this area, especially as one of the professional groups identified as key in the government-led drive towards increased early intervention and work with parents (Department for Education, 2011).

Should further research provide support for a link between parents' attributions for their child's challenging behaviour and treatment acceptability, then educational psychologists will be well-placed to share this and to draw upon those findings in their practice. A number of child and adolescent mental health service in the UK provide a diagnostic service for ADHD, but only offer intervention in the form of medication. In these circumstances, provision of advice, support and even delivery of psychosocial interventions in school and the community often fall to educational psychologists. Any further development in understanding of factors implicated in promoting successful interventions will therefore be of significant importance to the profession.

Appendix A. Search terms used in systematic literature search

Treatment Acceptability

EBSCO search terms

(treatment N1 acceptability) AND (parental attitudes OR parental role OR parental involvement OR mother child relations OR father child relations)

Limiters: Publication Year from 1980-2013; Peer reviewed; English; Birth to 12

Web of Knowledge search terms

(treatment NEAR acceptability) AND (behavi* NEAR problem*) AND (child*) AND (parent* OR mother* or father* OR maternal OR paternal OR care*)

Limiters: Publication Year from 1980-2013; Peer reviewed; English; Birth to 12

Parental Attributions

EBSCO search terms

(behavior OR behavior problems) AND (attribution OR parental attitudes)

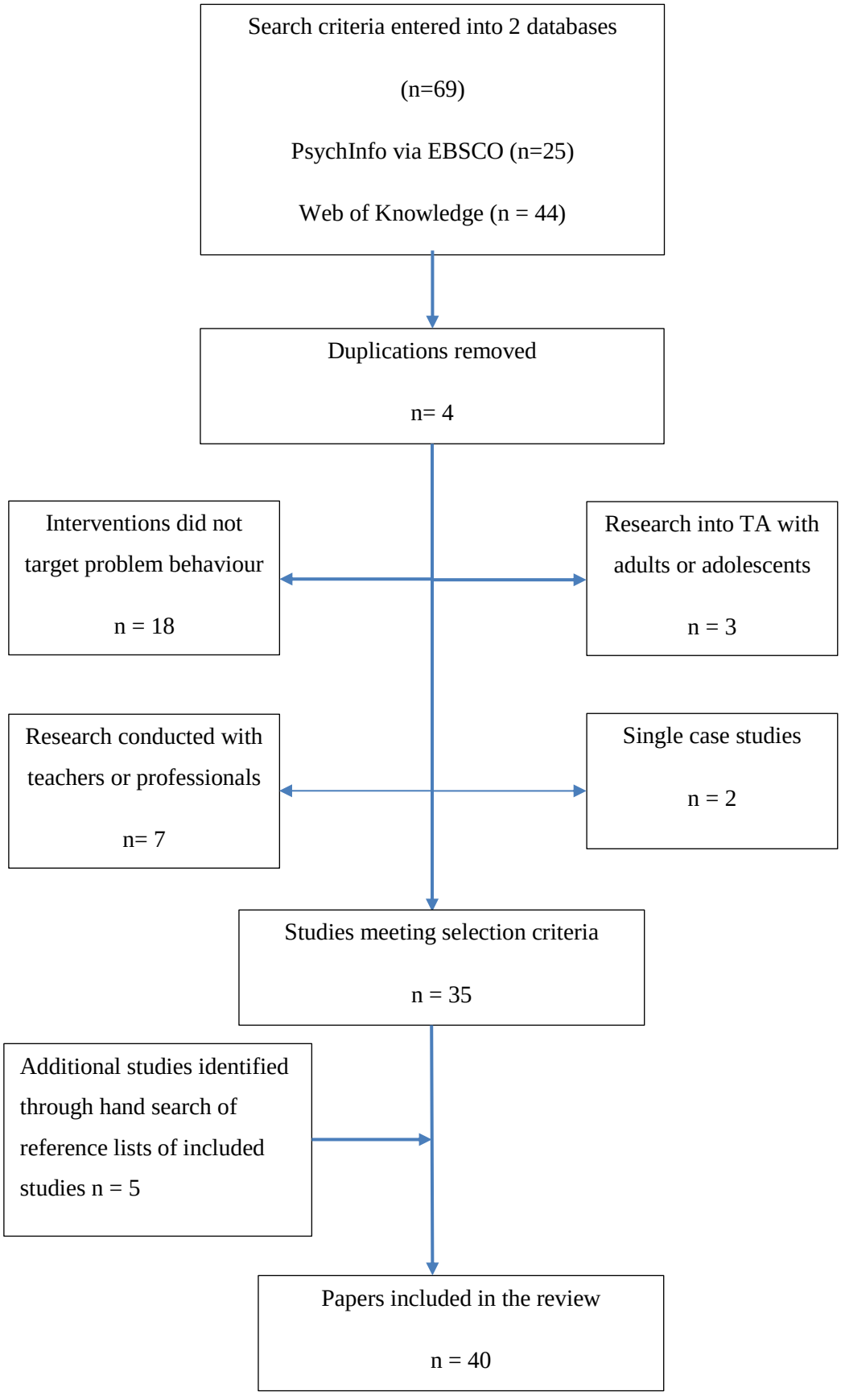
Limiters: Publication Year from 1979 -2013; Peer reviewed; English; Birth to 12

Web of Knowledge search terms

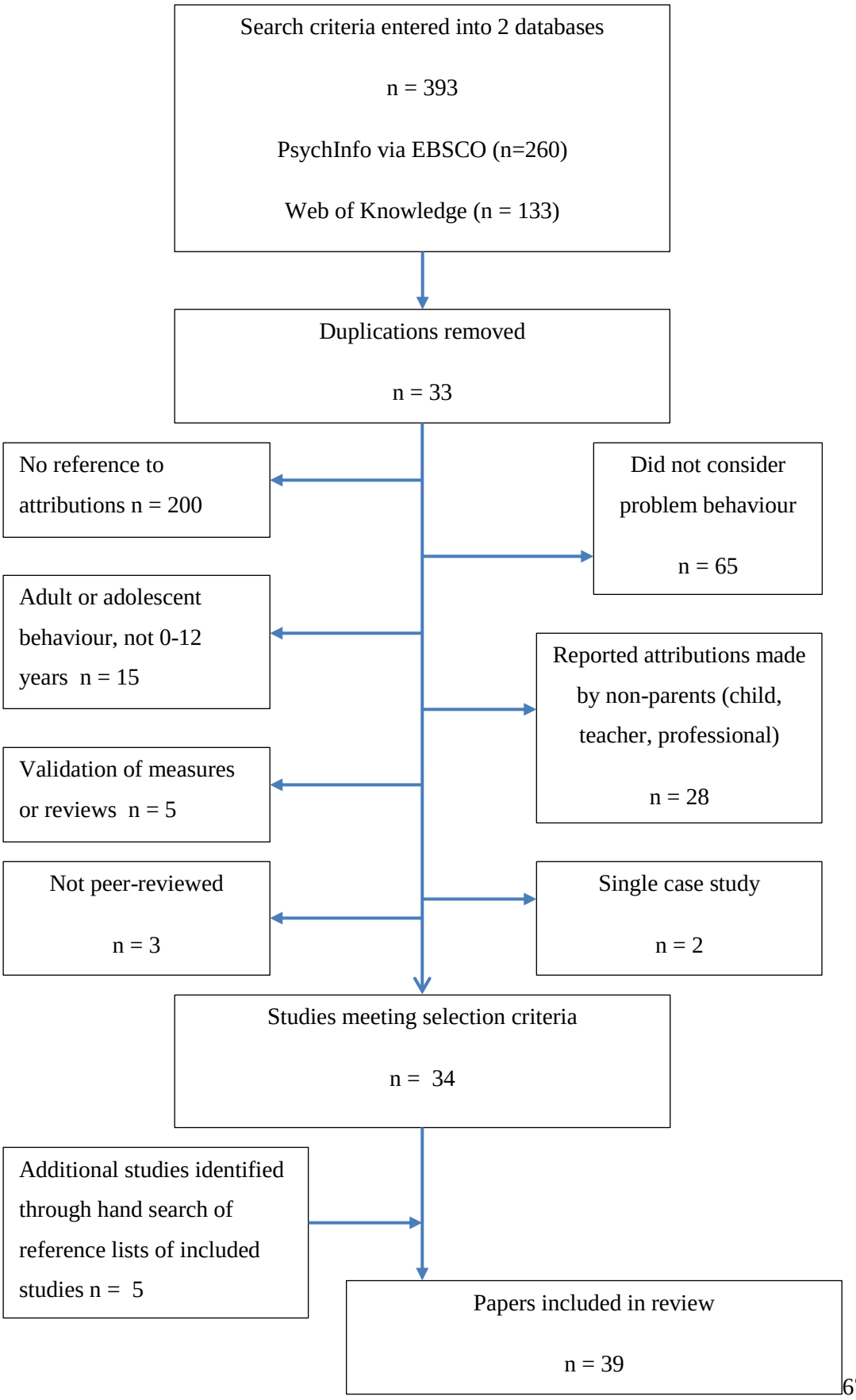
(attributions) AND (parent*) AND (problem behavio*)

Limiters: Publication Year from -2013; Peer reviewed; English; Birth to 1

Appendix B. Flowchart of systematic literature search: Treatment acceptability



Appendix C. Flowchart of systematic literature search: Parental attributions



Appendix D. Proof of Ethics Committee Approval

Your Ethics Submission (Ethics ID:3817) has been reviewed and approved

ERGO [DoNotReply@ERGO.soton.ac.uk]

Actions

To:Almond B.L.

Inbox

10 October 2012 14:01

Submission Number: 3817
Submission Name: Do mothers' attributions play a role in the acceptability of treatments for problem behaviour of their child with ADHD?
This is email is to let you know your submission was approved by the Ethics Committee.

Comments
None
Click here to view your submission

ERGO : Ethics and Research Governance Online
http://www.ergo.soton.ac.uk

DO NOT REPLY TO THIS EMAIL

Study Advert (Version 2, 30/09/12)

Are you the mother of a child aged between 6 and 11 years old who has a primary diagnosis of Attention Deficit Hyperactivity Disorder (ADHD)?

This is a unique opportunity to participate in a UK-wide research study to help identify way in which parents of children with ADHD can be better supported by professionals to plan interventions that are best suited to the needs of children and their parents.

I am Bryony Almond, a Trainee Educational Psychologist at the University of Southampton with a strong interest in supporting parents of children with ADHD. I hope that this research will help develop a better understanding of the links between mothers' views of their child's difficult behaviour and their preferences for three different interventions currently available for ADHD.

If you have a child who has been formally diagnosed with ADHD (hyperactive, inattentive, or combined-type) and is between 6 and 11 years old, I would like to invite you to take part in this research. Your participation would involve completing a questionnaire that should take you no longer than 35 minutes.

Everyone who takes part in the study will be given the chance to enter a prize draw to win one of 10 £25 shopping vouchers. You would be playing a vital role in contributing to psychological research in supporting children with ADHD and their parents.

If you are willing to take part, please visit the online questionnaire via the secure University-based website at your convenience (www.isurvey.soton.ac.uk/**5679**). If you would prefer to complete a paper version of the questionnaire, please contact me via email (bla1g10@soton.ac.uk) and I will post the questionnaire pack to you with a stamped addressed envelope. You are welcome to request a summary of the research findings once the study is completed.

This research is supervised by Dr Hanna Kovshoff, Senior Teaching Fellow at the University of Southampton.

Your help with this research is greatly appreciated.

Many thanks in anticipation

Bryony Almond
Doctorate in Educational Psychology
University of Southampton

Paper Survey - Participant Information Sheet (Version 2, 30/09/12)

Study Title: Do mothers' attributions play a role in the acceptability of treatments for problem behaviour of their child with ADHD?

Researcher: Bryony Almond **Ethics number:** 3817

Please read this information carefully before deciding to take part in this research.

What is the research about?

This research is designed to gather information about attributions and treatment acceptability amongst mothers of children with a diagnosis of Attention Deficit Hyperactivity Disorder (ADHD). The study will explore relationships between mothers' views of their child's difficult behaviour and their preferences for three different types of treatment available for ADHD. It is hoped that this research will add to our understanding of the links between parents' thoughts about their child's behaviour and how acceptable they find currently available treatments. Through this we hope, in the longer term, to improve the ways in which professionals match interventions to the views and needs of parents of children with ADHD.

The research fulfils one of the requirements of my Doctorate in Educational Psychology qualification. It is supervised by Dr Hanna Kovshoff, senior teaching fellow at the University of Southampton.

Am I eligible to take part?

If you live in the UK and are the mother of a child aged between 6 and 11, who has a formal, primary diagnosis of Attention Deficit Hyperactivity Disorder (meaning ADHD is your child's *main* area of difficulty, though they may have other diagnoses), then you are invited to take part in the research by completing this survey pack and returning your responses and consent form in the stamped addressed envelope provided.

What will happen to me if I take part?

You will complete a set of questionnaires enclosed in this pack. These include questions that ask about you and your household, your child's ADHD symptoms, how your child behaves and your views on three different types of treatment that are available to support children with ADHD and their families. The survey will take no more than 35 minutes to complete. All your responses will be confidential and your data will be securely stored.

Are there any benefits to taking part?

You will play a vital role in contributing to psychological research into supporting children with ADHD and their families more effectively.

Additionally, everyone who takes part in the study will have the chance to enter a prize draw to win one of 10 £25 shopping vouchers. If you choose to enter the draw your personal details will not be linked in any way to your survey responses.

Are there any risks involved?

A risk assessment has been conducted to ensure that any potential risks are minimised. In the unlikely event that you find that the issues raised in the questionnaires have caused you any concern or upset, then you might wish to contact one of the following support services:

- Relate for Parents (for free parenting support, guidance and information): www.relateforparents.org.uk or 0300 100 1234
- Parentline Plus (confidential help and support on parenting issues 24/7) www.parentlineplus.org.uk or freephone 0808 800 2222

Is my participation confidential?

If you complete a paper survey, this will be stored securely and you responses will be entered manually onto the password protected computer. On completion of the study, the data will be stored in a secure location for ten years, before being destroyed, in compliance with the Data Protection Act 1998 and University of Southampton policy.

Your responses will only be used for this research and your name and any other identifying information will not be shared with anyone else.

What happens if I change my mind?

If you change your mind about participating you can simply choose not to return your questionnaires.

What if something goes wrong?

If you have questions about your rights as a participant in this research, or if you feel that you have been placed at risk, you may contact the Chair of the Ethics Committee, Psychology, University of Southampton, Southampton, SO17 1BJ. Phone: +44 (0)23 8059 4663, email slb1n10@soton.ac.uk

Where can I get more information?

Should you have any further questions regarding this research, please do not hesitate to contact me at the following email address; bla1g10@soton.ac.uk.

CONSENT FORM (Version 2, 30/09/12)

Study title: Do mothers' attributions play a role in the acceptability of treatments for problem behaviour of their child with ADHD?

Researcher name: Bryony Almond

ERGO Study ID number: 3817

RGO reference number:

Please initial the box(es) if you agree with the statement(s):

I have read and understood the participant information sheet (Version 2, 30/09/12)	☐
I am the mother of a child aged between 6 and 11 years with a formal, medical diagnosis of ADHD	☐
I agree to take part in this research project and agree for my data to be used for the purpose of this study	☐
I understand my participation is voluntary and I may withdraw by not returning the questionnaire and consent form	☐
I understand that the answers I give cannot be linked to my name and personal details	☐

Data Protection

I understand that information collected about me during my participation in this study will be stored on a password protected computer and that this information will only be used for the purpose of this study. All files containing any personal data will be made anonymous.

Name of participant (print name)……

Signature of participant……..

Date……

Demographic Questionnaire (Version 2, 30/09/12)

Please give us some background information about you and your family. Your responses will be kept confidential and will not be used to identify you as an individual.

1.What is your age group?
□ Under 25
□ 25–34
□ 35–44
□ 45–54
□ 55–64
□ 65–74
□ 75–84

2.How would you describe your ethnicity?

a) Black or Black British
- Caribbean
- African
- Any other Black background within (a)

b) White
- British
- Irish
- Any other White background

c) Asian or Asian British
- Indian
- Pakistani
- Bangladeshi
- Any other Asian background within (c)

d) Mixed
- White & Black Caribbean
- White & Black African
- White & Asian
- White & Hispanic
- Any other mixed background

e) Other ethnic groups
- Chinese
- Japanese
- Hispanic
- Any other ethnic group
- Do not state

3. How would you describe your household?

□ Single-parent household

□ Two-parent household

□ Other (please specify).....

4. Which region of the UK are you living in?
□ South East England □ South West England □ London □ East of England
□ East Midland □ West Midland □ Yorkshire and the Humber
□ North West England □ North East England
□ Wales

□ Scotland
□ Northern Ireland

5. What is the highest level of education you have completed?
□ Pre-primary education
□ Primary Education
□ Secondary Education (GCSE/O-levels)
□ Post-secondary Education (College, A-levels, NVQ3 or similar)
□ Undergraduate Degree (BA, BSc, BEd etc)
□ Postgraduate Degree (PGDip, MA, MSc, PhD etc.)

6. What is your current employment status? (please tick all that apply)
□ Full-time employment
□ Part-time employment
□ Not in paid employment
□ Full-time student
□ Part-time student
□ Other (please specify).....

7. What is your annual household income?
□ Less than £10,000
□ £10,000 - £19,999
□ £20,000 - £29,999
□ £30,000 - £49,999
□ £50,000 – £74,999
□ More than £75,000
□ Prefer not to say

8. How many children do you have?
□ 1
□ 2
□ 3
□ 4
□ 5 or more

Diagnosis and Treatment History Questionnaire (Version 2, 30/09/12)

Please answer the following questions about your child aged 6-11 with a diagnosis of ADHD (*If you have more than one child with ADHD aged 6-11 years, please base you answer on the child whose behaviour causes you the greatest concern):*

1. What is your relationship to the child?
□ Biological mother
□ Step-mother
□ Adoptive mother
□ Parent's partner
□ Foster carer
□ Other (please specify).....

2. What is your child's current age (e.g. 4 years, 3 months): .....years.....month(s)

3. What is your child's gender?
□ Male
□ Female

4. What was the job title of registered healthcare professional who gave your child a diagnosis of ADHD? (e.g. paediatrician/psychologist/psychiatrist)?

.....

5. How old was your child when the diagnosis was made?.....years.....months

6. What was the exact diagnosis?
□ Attention Deficit Hyperactivity Disorder - combined type (ADHD)
□ Attention Deficit Hyperactivity Disorder – inattentive type (ADHD-I)
□ Attention Deficit Hyperactivity Disorder – hyperactive type (ADHD-H)

7. Has your child ever taken medication for ADHD, prescribed by a doctor?
□ Yes, at the moment.
□ Not now, but they have in the past
□ No, never

8. If yes at the moment, or in the past, please tell us the name and dosage of the medication if you know it (e.g., Concerta 56mg):

.....

9. Have you ever participated in a parenting course to help you manage the behaviour of your child with ADHD?
□ Yes, at the moment.
□ Not now, but I have in the past
□ No, never

10. If yes, at the moment, or in the past, please tell us the name of that course, if you know it (e.g. Triple P, Stepping Stones etc.)

.....

11. Has your child ever attended a group or course (e.g. social skills training) to help them manage their ADHD-related problem behaviour?

□ Yes, at the moment.
□ Not now, but they have in the past
□ No, never

12. If yes, at the moment, or in the past, please tell us where this course was offered:

.....

13. Have you ever tried anything else to help with your child's ADHD and difficult behaviours? (e.g. family therapy, diet, cognitive behavioural therapy).

□ Yes.
□ No

14. If yes, please tell us about that:

.....
.....
.....
.....

16. Has your child been diagnosed with any other condition or learning difficulty?

□ Yes
□ No

17. What was the job title of the registered healthcare professional who gave your child that diagnosis? (e.g. paediatrician/psychologist/psychiatrist)?

.....

18. What was wording of the diagnosis your child was given?

.....

19. How old was your child when that diagnosis was made?.....years.....months

Appendix J. VADPRS

Vanderbilt ADHD Diagnostic Parent Rating Scale (Version 1, 30/09/12)

About Your Child's ADHD Symptoms

Please read the following statements carefully. Circle the number on the scale that corresponds to how you would rate your child's behaviour.

0 = Never 1 = Occasionally 2 = Often 3 = Very Often

1.	Does not pay attention to details or makes careless mistakes, for example homework.	0	1	2	3
2.	Has difficulty attending to what needs to be done.	0	1	2	3
3.	Does not seem to listen when spoken to directly.	0	1	2	3
4.	Does not follow through when given directions and fails to finish things.	0	1	2	3
5.	Has difficulty organising tasks and activities.	0	1	2	3
6.	Avoids, dislikes, or does not want to start tasks that require ongoing mental effort.	0	1	2	3
7.	Loses things needed for tasks or activities (assignments, pencils, books).	0	1	2	3
8.	Is easily distracted by noises or other things.	0	1	2	3
9.	Is forgetful in daily activities.	0	1	2	3

10.	Fidgets with hands or feet or squirms in seat.	0	1	2	3
11.	Leaves seat when he/she is supposed to stay in seat.	0	1	2	3
12.	Runs about or climbs too much when he is supposed to stay seated.	0	1	2	3
13.	Has difficulty playing or starting quiet games.	0	1	2	3
14.	Is “on the go” or often acts as if “driven by a motor”.	0	1	2	3
15.	Talks too much	0	1	2	3
16.	Blurts out answers before questions have been completed.	0	1	2	3
17.	Has difficulty waiting his/her turn.	0	1	2	3
18.	Interrupts or bothers others when they are talking or playing games.	0	1	2	3

Please Turn Over

Now please tell us how you think your child is getting on in the following areas by circling the appropriate number for each question.

1 = this area is serious problem for my child 2 = this area is somewhat of a problem for my child 3 = my child is about average in this area 4 = my child is somewhat above average in this area 5 = my child is well above average in this area.

	Serious problem	Something of a problem	Average	Above average	Well above average
1. How is your child doing in school overall?	1	2	3	4	5
2. How is your child doing in reading?	1	2	3	4	5
3. How is your child doing in writing?	1	2	3	4	5
4. How is your child doing in maths?	1	2	3	4	5
5. How does your child get along with you?	1	2	3	4	5
6. How does your child get along with brothers and	1	2	3	4	5

	sisters?				
7.	How does your child get along with others his/her own age?	1	2	3	4	5
8.	How does your child do in activities such as games or team sports?	1	2	3	4	5

Appendix K. SDQ ADHD

SDQ ADHD Subscale (Version 1, 10/09/12)

For each item below, please circle one of Not True, Somewhat True or Certainly True. It would help us if you answered all the items as best you can even if you are not absolutely certain. Please give you answer on the basis of **your child's behaviour over the last six months.**

Restless, overactive, cannot stay sill for long.	Not True	Somewhat True	Certainly True
Constantly fidgeting or squirming.	Not True	Somewhat True	Certainly True
Easily distracted, concentration wanders.	Not True	Somewhat True	Certainly True
Thinks things out before acting.	Not True	Somewhat True	Certainly True
Sees tasks through to the end, good attention span.	Not True	Somewhat True	Certainly True

Appendix L. SDQ Conduct

SDQ Conduct Subscale (Version 1, 10/09/12)

About Your Child's Problem Behaviour

For each item below, please circle one of Not True, Somewhat True or Certainly True. It would help us if you answered all the items as best you can even if you are not absolutely certain. Please give you answer on the basis of your child's behaviour over the last six months.

Often has temper tantrums or hot tempers.	Not True	Somewhat True	Certainly True
Generally obedient, usually does what he/she is told.	Not True	Somewhat True	Certainly True
Often fights with other children or bullies them.	Not True	Somewhat True	Certainly True
Often lies or cheats.	Not True	Somewhat True	Certainly True
Steals from home, school or elsewhere.	Not True	Somewhat True	Certainly True

Appendix M. PAQ

Parental Attribution Questionnaire (Version 1, 10/09/12)

In the following questionnaire we are interested in ***your opinion*** about the causes of your child's behaviour. Simply give your own opinion to the best of your ability.

Scenario

Remember a recent incident in which your child did something you consider naughty or bad behaviour, including one or more of the following behaviours:

having a tantrum	***hitting someone***	***getting angry easily***	***running away***
threatening people	***being cruel to others***	***getting in physical fights***	***having to do things own way***
not feeling guilty after misbehaving	***challenging adult authority***	***destroying property***	***violating rules***

Please briefly describe the time/situation you are thinking about: _____

_____

_____

_____

Firstly, consider the following question. What were the **MAIN** causes of your child's naughty behaviour?

_____

_____

Then, with the **MAIN** causes in mind, please circle the appropriate response for each of the following statements. **There are no right or wrong answers.** Remember, we are interested in ***your opinion***, if you are unsure simply make the best response possible.

In my opinion the causes are mostly characteristics of my child (for example, ability, intelligence, personality etc.).

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

In my opinion, the causes are mostly characteristics of that particular situation. That is, my child would not behave like that in other situations.

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

In my opinion, the causes are mostly permanent and will continue to exist in the future (for example, a permanent personality characteristic).

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

In my opinion, the causes are mostly temporary and will pass with time (for example, it is a stage).

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

In my opinion, my child could control this behaviour if s/he wanted to.

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

In my opinion, my child has no control over this behaviour.

Strongly				Strongly
Disagree	Disagree	Undecided	Agree	Agree

Now, remember the time/situation again and this time focus not on your child, but on ***you***.

In my opinion, I have caused or encouraged this behaviour in my child (whether deliberately or accidentally).

Strongly				Strongly
Disagree	Disagree	Undecided	Agree	Agree

In my opinion the causes of my child behaving in this way are nothing to do with me.

Strongly				Strongly
Disagree	Disagree	Undecided	Agree	Agree

In my opinion, the causes are mostly permanent and will continue to exist in the future. *(If you agreed that you caused/encouraged this behaviour in your child consider whether that will be permanent. If not, do not be concerned if the answer is the same as above)*

Strongly				Strongly
Disagree	Disagree	Undecided	Agree	Agree

In my opinion, the causes are mostly temporary and will pass with time. *(If you agreed that you caused/encouraged this behaviour in your child consider whether that will be temporary. If not, do not be concerned if the answer is the same as above)*

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

In my opinion, if I wanted to, I could control this behaviour in my child.

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

In my opinion, I cannot control this behaviour in my child.

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

Reference:

Whittingham, K., Sofronoff, K., Sheffield, J., & Sanders, M. R. (2008). An exploration of parental attributions within the autism spectrum disorders population. *Behaviour Change, 25*(4), 201-214. doi: 10.1375/bech.25.4.201

Treatment Acceptability Questionnaire (Version 1, 10/09/12)

Your Views About Available Treatments

Please read the description of Johnny's behaviour below carefully.

Johnny is 8 years old. He has recently been diagnosed with ADHD, but his parents and doctor have not decided on an intervention for his problem behaviour yet. He always wants to have things his own way and will not do what his parents or teachers ask him. For example, he refuses to line up with the other children at school or sit at the table to eat at mealtimes and will not get ready for bed when asked to do so. Johnny often threatens, hits out, or pushes other children and adults to get something he wants and can be quite cruel to others. He breaks rules at home and at school and does not apologise or seem to feel guilty after misbehaving. He becomes angry very easily when he is frustrated or does not get his own way and this can lead to tantrums where he shouts and cries until he is exhausted. He often tries to run off, both at school and when with his parents.

Three types of treatment/intervention that can be offered to help children with ADHD and their families are described below. Please read each description carefully before answering some questions about what you think about each treatment.

Intervention A

This intervention is a group course for parents to help them learn to be more confident about parenting in a positive way. It is run by a parenting expert who can support each parent to learn what they need to deal with their child's particular difficult behaviour and find ways to stop the behaviour happening in the first place. Ways of managing behaviour include being clear with the child about what sort of good behaviour parents expect, using praise and rewards for good behaviour and choosing and using fair consequences for bad behaviour. They will also find out how to teach their child new skills such as explaining their feelings and what they want and need in a positive way. The course uses DVDs, audiotapes, role-play exercises and play activities to help parents learn. Parents who use the new skills they learn may help reduce their child's problem behaviour and notice they feel more confident parenting their child.

Parents need to be willing to go to all the classes, lasting 3 hours each week, for 10 weeks. They need to be happy to talk honestly about their child and their own parenting experiences in front of other people. Parents also need to be willing to practise the new skills they learn at home with their child and talk about how it goes with the rest of the group.

Please read each statement below and tell us how much you agree with each statement by putting a tick in one of the boxes. Please read the items very carefully because an accidental tick against the wrong option might not represent the meaning you intended.

Bearing in mind your experiences with your own child, make the following ratings about your view of **Intervention A** as an intervention for Johnny's difficult behaviour as described in the scenario you read a few minutes ago.

Although you may already have experience of using similar types of intervention, please make your ratings based only on the information you have been given in the written description of **Intervention A.**

	Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Agree Strongly**
I find this treatment to be an acceptable way of dealing with the child's problem behaviour.					
I would be willing to use this procedure if I had to change the child's problem behaviour.					
I believe that it would be acceptable to use this treatment without children's consent.					
I like the procedures used in this treatment.					

I believe this treatment is likely to be effective					
I believe the child will experience discomfort during the treatment.					
I believe this treatment is likely to result in permanent improvement.					
I believe it would be acceptable to use this treatment with individuals who cannot choose treatments for themselves.					
Overall, I have a positive reaction to this treatment.					

Intervention B

The child is prescribed medication by a doctor. This is not a permanent cure for difficult behaviour, but can help the child to feel calmer, concentrate better and be less impulsive, giving them chance to learn and practise new skills and get on better with others. They can find it easier to listen to their parents and teachers when they ask them to do things and easier to think about what they do *before* they do it which can help them to make better choices about how they behave. They can also become less aggressive towards other people and things.

Parents need to make sure their child takes the right amount of medication (based on what the doctor tells them) every day and this could be up to three times a day. They will also need to take their child to the doctor regularly to check the medication is working well and discuss any side-effects. Not all children experience side-effects, but these can include one or more of tummy-ache, headache, problems with sleeping, mood swings, feeling less hungry, dizziness or a small increase in blood pressure and their heart rate.

Please turn over.

Please read each statement below and tell us how much you agree with each statement by putting a tick in one of the boxes. Please read the items very carefully because an accidental tick against the wrong option may not represent the meaning you intended.

Bearing in mind your experiences with your own child, make the following ratings about your view of **Intervention B** as an intervention for Johnny's difficult behaviour as described in the scenario you read a few minutes ago.

Although you may already have experience of using similar types of intervention, please make your ratings based only on the information you have been given in the written description of **Intervention B**.

	Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Agree Strongly**
I find this treatment to be an acceptable way of dealing with the child's problem behaviour.					
I would be willing to use this procedure if I had to change the child's problem behaviour.					
I believe that it would be acceptable to use this treatment without children's consent.					
I like the procedures used in this treatment.					
I believe this treatment is likely to be effective					

I believe the child will experience discomfort during the treatment.					
I believe this treatment is likely to result in permanent improvement.					
I believe it would be acceptable to use this treatment with individuals who cannot choose treatments for themselves.					
Overall, I have a positive reaction to this treatment.					

Intervention C

The child goes to a social skills group with a few other children of a similar age. The aim is to help the child manage their problem behaviour, be less aggressive, impulsive and bad-tempered and be more likely to listen to parents and teachers. A qualified adult teaches the children a different skill each week, including getting on well with friends, accepting consequences, saying what they want and need politely but firmly, not reacting badly when provoked, solving problems and understanding and coping with their feelings. New skills are taught through demonstrations by the group leader, role-play and the use of puppets.

This intervention makes the child responsible for making changes. The child needs to go to sessions lasting about 1 ½ hours weekly for eight weeks. If they go to the group during the school day they will miss some teaching. Outside school hours the classes might take up family time or leisure time. The child will probably also have some 'homework' each week, which will be to practise some of the new skills they have learned.

Please turn over.

Please read each statement below and tell us how much you agree with each statement by putting a tick in one of the boxes. Please read the items very carefully because an accidental tick against the wrong option might not represent the meaning you intended.

Bearing in mind your experiences with your own child, make the following ratings about your view of **Intervention C** as an intervention for Johnny's difficult behaviour as described in the scenario you read a few minutes ago.

Although you may already have experience of using similar types of intervention, please make your ratings based only on the information you have been given in the written description of **Intervention C.**

	Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Agree Strongly**
I find this treatment to be an acceptable way of dealing with the child's problem behaviour.					

I would be willing to use this procedure if I had to change the child's problem behaviour.					
I believe that it would be acceptable to use this treatment without children's consent.					
I like the procedures used in this treatment.					
I believe this treatment is likely to be effective					
I believe the child will experience discomfort during the treatment.					
I believe this treatment is likely to result in permanent improvement.					
I believe it would be acceptable to use this treatment with individuals who cannot choose treatments for themselves.					
Overall, I have a positive reaction to this treatment.					

Please turn over.

Please imagine that you have to choose just one of the three treatment/intervention options described here for Johnny, based on which seems the **most** acceptable to you. Tick the one option that you prefer.

Intervention A – Parenting Programme	
Intervention B – Medication for the Child	
Intervention C – Social Skills Training for the Child	

Appendix O. Debriefing Statement

Paper Version Debriefing Statement (Version 2, 30/09/12)

Study Title: Do mothers' attributions play a role in the acceptability of treatments for problem behaviour of their child with ADHD?

Researcher: Bryony Almond Ethics number: 3817

The aim of this survey was to gather information from you to help us learn more about the relationship between how mothers of children with ADHD view their child's behaviour and how acceptable they find three different types of treatment available for ADHD. It is hoped that, in the longer term, this research will contribute to improving the match between the views and experiences of parents of children who have a diagnosis of ADHD and the interventions they are offered to help with their child's problem behaviour.

Your name and other identifying information will not be used in any output from this research and cannot be linked back to your responses.

A summary of the research findings will be available to you once the study is completed. If you would like a copy of the research findings or have any questions, please let me know via email at bla1g10@soton.ac.uk.

Signature _____Name_____

Date_____

If you have questions about your rights as a participant in this research, or if you feel that you have been placed at risk, you may contact the Chair of the Ethics Committee, Psychology, University of Southampton, Southampton, SO17 1BJ. Phone: +44 (0)23 8059 4663, email slb1n10@soton.ac.uk.

Additional contact details

- Relate for Parents (for free parenting support, guidance and information): www.relateforparents.org.uk or 0300 100 1234
- Parentline Plus (confidential help and support on parenting issues 24/7) www.parentlineplus.org.uk or freephone 0808 800 2222

Paper Version Prize Draw Entry (Version 1, 10/09/12)

Thank you for completing this survey. If you would like to be entered into the prize draw to win one of 10 £25 Tesco vouchers, please give your contact details below and return this form with you consent form and survey responses in the stamped addressed envelope. Your personal information will not be linked back to your survey responses.

Name.....

Email address.....

Contact telephone number.....

Postal Address.....
.....
.....
.....
.....

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