

TEACHING PARENTS FUNCTIONAL BEHAVIOURAL ASSESSMENT SKILLS AND
HOW TO IMPLEMENT A FUNCTION-BASED INTERVENTION PLAN WITH THEIR
CHILD WHO ENGAGES IN CHALLENGING BEHAVIOUR DURING A FAMILY
ROUTINE

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Key Terms

The following key terms were used in this project:

Young children: Any typically developing child aged between 3 to 6 years (Smith & Fox, 2003)

Challenging behaviour: “Any repeated pattern of behaviour or perception of behaviour that interferes with or is at risk of interfering with optimal learning or engagement in prosocial interactions with peers and adults” (Smith & Fox, 2003, p.6).

Replacement behaviour: A preferred behaviour to the challenging behaviour (Smith & Fox, 2003).

Target behaviour: The behaviour which is considered problematic and is selected for the intervention (Umbreit, Ferro, Liaupsin & Lane, 2007).

Antecedent: Events or conditions (for example behaviours or the environment) which precede the target behaviour (Umbreit et al., 2007).

Consequence: Events or conditions that occur following the target behaviour and increase the chances that the behaviour will occur again (Umbreit et al., 2007).

Punishment: Events or conditions that occur following decrease the likelihood of the behaviour occurring again (Umbreit et al., 2007).

Reinforcer: Events or conditions that occur following increase the likelihood of the target behaviour occurring again (Umbreit et al., 2007).

Reinforcement: Events or conditions that occur following increase the likelihood the target behaviour will occur again. Positive reinforcement is something added to the

environment which increases the behaviour, whereas negative reinforcement is the removal/escape/avoidance of a stimulus which increases the preferred behaviour (Umbreit et al., 2007).

Intervention: The processes, strategies and/or methods that the parent uses to reduce their child's challenging behaviour (Dunlap et al., 2006a).

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Abstract

Most young children will present at some time with problematic or challenging behaviours. However, some challenging behaviours can exceed what is considered developmentally appropriate and become established in the child's behavioural repertoire. During a child's preschool years, challenging behaviour is the single best predictor for later delinquency in adolescence. Without intervention, young children with challenging behaviour are at an increased risk of experiencing isolation, peer exclusion, school failure and negative effects on family. The aim of this project was to investigate the effectiveness of teaching four parent-child dyads functional behavioural assessment skills and the implementation of a function-based assessment plan with their child who engaged in challenging behaviour during the family bed-time routine time. The present project used a non-concurrent single case design with four parent-child dyads. The two, 2 hour PEP workshops were conducted at the University of Canterbury. From the two workshops, parents identified the function of their child's challenging behaviour and identified and implemented function-based PBS strategies in the bed-time routine. Parents completed a 36 question Knowledge Quiz pre- and post-workshop. Video recordings and parent diary were used during baseline and post-intervention to determine the duration of the bed-time routine and the frequency of parent and child behaviours. Results showed all four parents increased their Knowledge Quiz scores by at least half of their baseline score. In terms of the duration of the bed-time routine, all four parent-child dyads decreased this routine time from a group mean of 84 to 44 minutes. The frequency of challenging behaviour also decreased from a group mean of nine to three occurrences. The parental use of positive behaviour support strategies increased for all four parents from a group mean of one to four occurrences. Results from the Social Validity Questionnaire suggest all four parents found the PEP socially acceptable and three of the four parents would recommend learning about FBA to other parents. Limitations of sample size

and data collection methods are discussed. These findings provide evidence for the effectiveness of the PEP with a small group of four parents with young children.

Chapter One

Introduction

The early years are crucial for a child's social, communication and language development (Barlow, Smailagic, Ferriter, Bennett & Jones 2010; Fox, Dunlap & Cushing, 2002). The ability to activate and regulate emotions is fundamental to psychological and physical development and also begins early in life (Keenan & Shaw, 2003). This is a period where parental responsiveness plays a key role in the development of their child's social emotional capabilities. Parents' responsive and sensitive interactions with their young child and where they accurately respond to their child's cues with warmth, are critical for promoting their young child's social and emotional competence (Powell & Dunlap, 2010). Pettit and Bates (1989) found that during infancy and early childhood, low rates of mother's positive involvement and family coercion both predicted challenging and disruptive behaviour in a child at aged 2 years. In support, Schuhmann et al. (1998) suggest infancy to early childhood is the time when young children develop problematic behaviour and this is the time when children are most susceptible to poor parenting practices. Schuhmann et al. (1998) also showed that children aged three years will continue to engage in problematic behaviours at aged 6 years, if no intervention is introduced. Therefore, infancy and early childhood appears to be an optimum time for assessment-based approaches to be used to reduce challenging behaviour (Fox et al., 2002).

Dunlap et al. (2006a) described challenging or problematic behaviour in a child's early preschool years as the single best predictor for later delinquency in adolescence. Without intervention, young children with challenging behaviour are at an increased risk of experiencing isolation, exclusion among peers, school failure and negative effects on the family (Dunlap et al., 2006a; Horner, Carr, Strain, Todd & Reed, 2002; Wood, Blair & Ferro,

2009). Powell and Dunlap (2010) have established that interventions that teach parents skills in responsiveness and sensitivity to their young child are effective and in turn, influence their child's emotional and behavioural development.

Research has consistently shown that interventions based on functional behavioural assessment (FBA) are effective in preventing problematic and challenging behaviour occurring (Chai & Lieberman-Betz, 2016; Harrower, Fox, Dunlap & Kincaid, 2000; LaRocque, Brown & Johnson, 2001; McNeill, Watson, Henington & Meeks, 2002; Shayne & Miltenberger, 2013).

Functional behavioural assessment is founded on applied behaviour analysis (ABA) which uses a range of techniques to ascertain the antecedents and consequences which reinforce the challenging behaviour (Frea & Hepburn, 1999). Functional behavioural assessment differs from other behavioural assessments derived from ABA because it includes procedures which identify the function of the child's challenging behaviour and then identify appropriate positive behaviour support (PBS) strategies that will increase desirable behaviour and/or decrease inappropriate behaviour (Blair, Umbreit & Bos, 1999; Lucyshyn et al., 2007). Wood et al. (2009) identified FBA as an effective assessment which focuses on addressing challenging behaviour in young children.

The importance of this project is highlighted through the use of parent implemented functional behavioural assessment and subsequent function-based intervention with their child with challenging behaviour in the home environment. Of which previously, this has been insufficiently researched in the literature.

Definition of Challenging Behaviour

Defining challenging behaviour can be problematic as there is no universal or widely accepted definition that fits every child and their challenging behaviour. The first problem of observing challenging behaviour is that it can be subjective. What one person deems as problematic may be different to someone else. Secondly, there are contextual factors which are dependent on the behaviour occurring which need to be considered. The last problem of defining challenging behaviour is that every child engaging in challenging behaviour will be unique and present differently compared to another child engaging in challenging behaviour. Challenging behaviour can include a variety of disruptive behaviours, such as aggression, destruction of property, whining, screaming, non-compliance and tantrums (Fettig & Ostrosky, 2011). For the purposes of this project, challenging behaviour in young children will be defined as “any repeated pattern of behaviour, or perception of behaviour, that interferes with or is at risk of interfering with optimal learning or engagement in prosocial interactions with peers and adults” (Smith & Fox, 2003, p.6). This definition was used because of the frequency of use in the child and family literature and to assist in making this research project comparable to this research.

Positive Behaviour Support

Positive behaviour support (PBS) is an applied science which has emerged as a multifaceted approach for effectively addressing challenging behaviours and includes interventions which improve the satisfaction and enhances the individuals' lifestyle (Dunlap et al. 2003; Dunlap, Sailor, Horner & Sugai, 2009; Harrower et al., 2000). Positive behaviour support is an expansive approach which encompasses organising social, physical, biomedical

and educational supports to achieve the desired lifestyle goals, as well as reducing the individuals' challenging behaviour (Dunlap et al., 2009; Fettig & Barton, 2014). Positive behaviour support aims to alter the environment to increase desired behaviours and decrease the development of challenging behaviours (Carr et al., 2002; Fettig & Barton, 2014). It focuses on supports which are delivered in natural contexts by parents and teachers (Carr et al., 2002; Fettig, Schultz & Sreckovic, 2015; Harrower et al., 2000). The core feature of PBS is to improve the quality of life of people receiving the supports of the intervention (Carr et al., 2002).

Through having a strong emphasis on functional based assessment and having strong commitments to technology and values, positive behaviour support (PBS) arose as a unique assessment based approach compared to other behaviour supports (Dunlap et al., 2009; Fettig et al., 2015). The technology of PBS is based on the assumption that human behaviour is affected by a number of factors such as learning, societal and biological factors. However, behaviour can be altered as a function through actions carried out by other people, and thereby this enables people to achieve the lifestyle defined by their choices (Dunlap et al., 2009).

One important feature of positive behaviour support is that key stakeholders (e.g. parents) are included with professionals to develop and implement the resulting intervention plan (Carr et al., 2002; Fettig et al., 2015; Vaughn, Wilson & Dunlap, 2002). This approach aligns with early childhood education and early intervention, where family members are encouraged to fully participate (Dunlap et al., 2009). A second important feature of PBS is ensuring that support plans and interventions are 'ecologically valid'. The term 'ecologically valid' means the interventions or supports should occur within a natural environment where the individual typically interacts (Carr et al., 2002; Fettig et al., 2015). Positive behaviour

support supports the use of natural settings in which the challenging behaviour occurs (Dunlap & Fox, 2011). The framework of PBS guides the development of a behaviour support plan which is contextually a good fit for the family (Fettig et al., 2015). Positive behaviour support also puts a strong emphasis on prevention, openness to multiple theoretical perspectives, individualised interventions and supports and lastly, its commitment to evidence based practice and empirical accuracy of interventions (Dunlap et al., 2009; Dunlap & Fox, 2011; Fettig et al., 2015). Evidence from Fettig and Barton (2014) suggest PBS has been effective in behaviour change for children across a range of ages and with or without disabilities.

Prevalence

Reported prevalence of young children's challenging behaviour varies significantly. The variability in estimates could be due to the different sample populations and different methods of assessment (Dunlap et al., 2006a). A national survey investigating the mental health and well-being of over 4000 young Australians found that the prevalence of externalising problems in children and teenagers was approximately 13% (Sawyer et al., 2001). A population estimate puts that at a concerning 470,000 children in the clinical range for externalising problems (Sawyer et al., 2001). Campbell (1995) has estimated the prevalence of behavioural, emotional and social problems in all young children as being between 10-25%. Vitaro, De Civita and Pagani (1995) have suggested that 3-15% of preschool aged children aged 3 years, will continue to have aggressive and problematic behaviour in later years. In New Zealand, a study by White, Moffitt, Earls, Robins and Silva (1990) indicated that the participants they recruited for the Dunedin Multidisciplinary-Health and Development study reported the prevalence of antisocial pervasive disorder in childhood at 5.4%. The prevalence of children that didn't meet the criteria but displayed some

uncontrolled symptoms was less than 2%. Fergusson, Horwood and Ridder (2005) found that in the Christchurch Health and Development study, children displaying conduct problems at age 7 years were significant by at risk for adverse outcomes in all areas of function.

Most young children will present at some time with problematic or challenging behaviour, but most young children will outgrow these challenging behaviours (Dunlap & Fox, 2011; Fettig & Ostrosky, 2014; Powell et al., 2006). However, some of the challenging behaviours that exceed what is considered developmentally appropriate and which become established in a child's behavioural repertoire are likely to persist, continue and sometimes intensify into serious behavioural problems in later life (Campbell & Ewing 1990; Fettig & Ostrosky, 2014; Fox et al., 2002; Horner, Carr, Strain, Todd & Reed, 2002; Powell et al., 2006; Smith & Fox, 2003; Smith et al., 2014; Tully & Hunt, 2016; Vitaro et al., 1995; Wood, Oakes, Fettig & Lane, 2015).

Aetiology

The onset of behavioural problems in children is related to multiple risk factors which have a cumulative effect (Fox et al., 2002). Parenting difficulties have been suggested by Campbell (1995) as a factor contributing to the onset and duration of the challenging behaviour. More specifically, difficulties in setting boundaries, responsiveness, and parental warmth were associated with young children's aggressive and defiant behaviours (Lytton, 1990; Schuhmann et al., 1998; Smith et al., 2014). In support, Fettig and Ostrosky (2011) suggest that families facing adversity and irregular and/or negative parenting behaviours were found to be related to the development of behavioural problems in early childhood and predicted continuing problems to school age. Children engaging in challenging behaviour in families that engage in coercive interactions are more likely to result in antisocial behaviour in later life (Dunlap et al., 2006a). Patterson's coercion theory describes " a process of mutual

reinforcement during which the caregivers inadvertently reinforce children's difficult behaviours, which in turn elicits caregivers negativity, and so on, until the interaction is discontinued when one of the participants 'wins'" as cited in Smith et al. (2014, p.917). Smith et al. (2014) suggests this is a learnt behaviour which is carried through to other relationships, such as peers and that disorganised family processes that elicit antisocial behaviour in the child may consequently lead to being involved with deviant peers (Patterson, DeBaryshe, Ramsey, 1989). Smith et al. (2014) finding is consistent with that of Patterson (1984, 1989, & 2002). Findings from Smith et al. (2014) demonstrated coercive parent-child interactions at aged 2 years were predictive of oppositional behaviour at school age. The largest effect was found for the trajectory between the ages of 2 to 5 years, which led to conduct problems at school age. This finding demonstrates that persistent high rates of coercion are a primary process for the development of conduct problems later on at school age (Smith et al., 2014). Like Smith et al. (2014), Powell et al. (2006) conveys the idea that in the early years of a child's life, relationships with parents and other supportive adults (e.g. teachers) and eventually peers form the foundation of future healthy relationships. This occurs through promotion on how to express positive emotions and empathy through modelling and interactions with the child (Powell et al., 2006). Families play a critical role in shaping and maintaining a child's behaviour (Fettig & Ostrosky, 2011; Fettig et al., 2015) which is why Smith and Fox (2003) emphasise that young children's challenging behaviour needs to be considered in terms of the context of the parent-child dyad. In turn, a child's challenging behaviour can contribute to a family's overall stress (Plant & Sanders, 2007). Higher levels of stress can influence the capacity to which the family parents efficiently (Meadan, Ayvazo & Ostrosky, 2016; Fox, et al., 2002). As a result, parents may also become unwilling to take their child to community activities (e.g. restaurants, church, and friends' homes) which results in vulnerability to isolation (Fettig & Ostrosky, 2014; Harrow et al.,

2000; Vaughn et al., 2002). Long, Gurka and Blackman (2008) indicate that parent's who report concerns about their child's behaviour, were also 13 times more likely to report difficulty coping, and experience higher levels of stress. In support, Jones, Putt, Rabinovitch, Hubbard and Snipes (2017) found parents that sought out services and were ready to engage with the services for their child(ren) were the ones experiencing the highest levels of stress, regardless of the extent of their child's challenging behaviour. These challenges are what make them suitable candidates for behavioural interventions (Fettig & Ostrosky, 2014).

Prognosis

The presence of challenging behaviour in a young child which continues as the child gets older, can result in adverse long term outcomes for them and their families (Buchanan, Flouri & Ten Brinke, 2002; Smith et al., 2014). As detailed by Barlow, Smailagic, Ferriter, Bennett and Jones (2010) and Meadan et al. (2016) the long term outcomes for children with serious problem behaviours are represented by problems at school, poor social skills, drug use and the increased likelihood of engaging in criminal activity. Similarly, Dunlap et al. (2006a) stated that behavioural problems at an early age are the single best predictor of later problematic adolescent behaviours including, leaving school early, gang affiliation and imprisonment. Dunlap et al. (2006a) also reported an increased likelihood of peer rejection, poor academic outcomes and adult mental health issues for children with challenging behaviour that was not addressed. In a New Zealand study, the findings from Caspi, Henry, McGee, Moffitt and Silva (1995) found that children in early childhood who exhibited a lack of self-control were more likely to experience externalising problems in adolescence. A study by White et al. (1990) indicated that the participants they recruited for the Dunedin Multidisciplinary Health and Development study reported behavioural problems in preschool and this was the best predictor of antisocial behaviour later in life. More specifically, their

results showed externalising behavioural problems at age three years and behavioural problems at aged 5 years predicted antisocial behaviour at 11 years and predicted conduct problems later in life.

Response - Early Intervention

Research has indicated that early intervention is very effective for families with children engaging in challenging behaviour (Blair et al., 1999; Dunlap & Fox, 1999; Dunlap & Fox, 2011; Fox et al., 2002; Ingram, Lewis-Palmer & Sugai, 2005; Powell & Dunlap, 2010; Tully & Hunt, 2016; Vaughn, Clarke & Dunlap, 1997). The longer a child engages in challenging behaviour, the more problematic the behaviour becomes thereby changing the behaviour becomes more difficult. Thus, early recognition of the challenging behaviour is the key to effective early intervention (Duda, Clarke, Fox & Dunlap, 2008; Fetting & Ostrosky, 2011; Long et al., 2008; Ramey & Ramey, 1998). One reason why young children engage in challenging or problematic behaviour is because they have not developed the necessary language skills or social skills to effectively communicate (Dunlap et al., 2006b). However, there still remains limited identification for young children engaging in challenging behaviour.

Fox et al. (2002) has proposed four vital features for an effective intervention. These features consist of: family centeredness, family-professional relationships, assessment-based PBS and successful participation in inclusive environments. This aim of this family centred approach is to encourage and enable families by providing them with the necessary support and guidance to improve the behavioural development of their child. Research has shown that interventions which are family focused and child centred were more effective than interventions which focused on the family only (Lucyshyn et al., 2007; Smith & Fox, 2003). Powell and Dunlap (2010) proposed that when interventions are family centred, it leads to

better outcomes for both the family and their child such as positive functioning from the child and enhanced parenting abilities. For these efforts to be achieved, parents and the professionals need to work as a partnership. Both parties bring unique knowledge to collaborate in the intervention plan. Parents bring intimate and specific knowledge about their child and professionals bring their training knowledge and experience (Fox et al., 2002). Harrower et al. (2000) showed that partnerships between families and professionals increase the chances of the behavioural intervention being unified, beneficial and coordinated. By also working towards a common goal, Harrower et al. (2000) advises this will increase the likelihood that parents will develop extensive and long lasting changes in their child's behaviour.

Interventions that aim to prevent challenging behaviour from occurring and replacing challenging behaviour with prosocial behaviours are essential (Fox et al., 2002). The inclusion of a behaviour support plan is also necessary because it focuses on altering the family's behaviour while supporting the child (Harrower et al., 2000). Children from an early age need to interact in a wide variety of social situations so family's need to obtain the skills to support their child in these situations (Fox et al., 2002). These skills are fundamental to reducing the families overall stress, which in turn can be an important element in reducing the child's challenging behaviour (Fox et al., 2002).

Parenting Programmes

Parenting programmes are an effective way for parents to gain the necessary skills to manage their child's challenging behaviour. Parents make ideal interventionists for their children because they have unique knowledge of their child and they have the most opportunities to interact with them; thereby parents are able to teach their children in a range of settings (Marcus, Swanson & Vollmer, 2001). Since families play a significant role in

shaping and maintaining their child's challenging behaviour, it seems sensible to assess the behaviour in the parent-child dyad (Fettig & Ostrosky, 2011).

There are a wide range of parenting programmes which address children's challenging behaviour. These include (but are not limited to) Parent Child Interaction Therapy (PCIT), Triple P-Positive Parenting Program (Triple P) and Incredible Years Parenting Programme (IYPP). Parenting programmes are derived from various theoretical foundations such as psychodynamic theory, family systems, behavioural theory all of which involve various techniques including discussion, watching vignettes, role-plays and homework (Barlow et al., 2010; Shayne & Miltenberger, 2013; Webster-Stratton, 2011). Generally, parenting programmes are short interventions which focus on developing the parent-child relationship, preventing challenging behaviour and increasing appropriate prosocial behaviour (Barlow et al., 2010; Marcus et al., 2001). A systematic review by Bennett, Barlow, Huband, Smailagic and Roloff (2013) also found that parenting programmes improved parent's psychosocial well-being in the short term.

Parent Child Interaction Therapy (PCIT). Parent Child Interaction Therapy is founded on a range of influential theories, such as social learning theory, applied behaviour analysis and attachment theory (Thomas & Zimmer-Gembeck, 2007). Parent Child Interaction Therapy is an individualised family focused dyadic intervention which was developed for children aged 2 to 7 years with conduct problems (Matos, Bauermeister & Bernal, 2009; Thomas & Zimmer-Gembeck, 2007). Parent Child Interaction Therapy aims to help parents create a warm, positive relationship with their child and also promote parenting skills that manage their child's challenging behaviour effectively.

There are two phases to PCIT, the first, child-directed interaction (CDI) and the second, parent directed interaction (PDI). Child directed interaction mainly works on altering

the quality of the dyadic relationship between parent and child where parents learn specific skills such as nondirective play skills. These skills are similar to those of traditional play therapies. Parent directed interaction focuses on coaching parents and highlights the importance of compliance from the child. Through coaching, parents are able to direct the child's challenging behaviour with guided, specific instructions and use of consequences appropriately and consistently (for example praise for compliance). The use of in-vivo coaching is a feature of PCIT which differentiates it from other behavioural interventions, such as Triple P. A recent meta-analysis and review conducted by Thomas and Zimmer-Gembeck (2007) evaluated the behavioural outcomes of 13 PCIT studies. They concluded that PCIT is an effective intervention for reducing challenging behaviour, improved parenting skills, parental confidence and self-efficacy. Effect sizes for PCIT were also calculated and found to be large. A study by Matos et al. (2009) evaluated the efficacy of PCIT with Puerto Rican children. Thirty-two families were assigned randomly to either a wait list condition or PCIT, with all participants completing both pre-treatment and post-treatment assessments. The results found there was a significant improvement in the children's behaviour as well as decreased parental stress and enhanced parenting skills. This gives tentative support for PCIT as an effective, culturally adaptable intervention.

Triple P Positive Parenting Programme (Triple P). Triple P is founded on social learning theory and applied behaviour analysis. Triple P is a tiered system that increases the level of support from brief support, to intense support, to individualised programmes. Triple P is a family focused intervention which promotes positive parenting and relationships between parents and children. It was developed for children aged between 2 and 16 years and aims to prevent a negative trajectory of developmental, emotional and behavioural problems in children, by improving parent's competence, knowledge and parenting skills (Sanders, 2008; Sanders, et al., 2003). Sanders et al. (2007) investigated three variations of the Triple P

programme, the self-directed, standard and enhanced, with 139 families with pre-schoolers at risk for conduct problems. At 3 years post-intervention, there were comparable maintenance effects for all three variations of Triple P. This finding suggests as a minimally sufficient intervention, Triple P can provide encouraging long-term results.

Sanders (2008) suggested the main goal of Triple P of enhancing parent's self-regulatory skills enables parents to choose culturally relevant goals for their family. Morawska et al. (2011) investigated the cultural acceptability of the Triple P and the results indicated that parents reported the materials used as culturally appropriate and rated the strategies used as acceptable, highly useful, likely to use the strategies. Sanders (2012) discussed and critically evaluated all aspects of the Triple P programme and reported that the strategies used have been well established as effective and acceptable in a large number of countries such as New Zealand, Japan, Belgium, USA, Turkey, South Africa and Germany. The findings from Sanders (2012) and Morawska et al. (2011) give tentative support that the Triple P programme is culturally robust. In addition, Triple P has also been found to be effective across a range of socio economic groups, including disadvantaged parents.

The Incredible Years Parenting Programme (IYPP). The Incredible Years Parenting Programme was created by Carolyn Webster-Stratton in the early 1980's and combines principles of attachment theory and social learning theory (Webster-Stratton, 2011). The aim of IYPP is to enhance parent-child interactions, to improve parenting skills and to prevent conduct problems and criminal activity. The programmes main focus is on participants that are of high risk which are identified by criminal activity, child welfare services being involved and low socio-economic status. Typically IYPP consists of up to 14, two hour sessions, which comprise vignettes, role-play, group discussion and practice to promote parenting skills. In addition, parents must complete weekly homework tasks. IYPP

has been consistently shown to be an effective and empirically robust programme for at-risk families. A study conducted by Barton and Lissman (2015) investigated group training combined with coaching for two mothers with children with developmental delays. Results showed an increase in positive parenting behaviours and a decline in children's challenging behaviours. A qualitative study conducted by Levac, McCay, Merka and Reddon-D'Arcy (2008) explored parents' perceptions of the effectiveness of IYPP. Results revealed that parents valued the group-based environment and reported to feel supported, less isolated and able to share their stories with other parents and facilitators without judgement. Parents also reported an increased awareness of their own parenting styles as a result of participating in the group. In a New Zealand study conducted by Sturrock and Grey (2013) the efficacy of IYPP was investigated on whether the outcomes for Māori were similar or dissimilar to a non-Māori population. The evidence showed children's behaviour, parenting skills and parent-children relationship all significantly improved. Median effect sizes for these improvements ranged from $d = 0.48$ (relationships), $d = 0.54$ (parenting skills) to $d = 0.65$ (child behaviour). However, the six month follow-up revealed that improvements in behaviour in Māori children and improvements in parenting competence were smaller when, compared to European/Pakeha. This finding suggests a difficulty in maintenance of the benefits of IYPP for Māori. As detailed by Dunn (2012), potential barriers Māori participants face include literacy problems, problems identifying with non-Māori facilitators of the programme, relating the programmes content to their own context and transportation issues.

Group-Based Setting

A review conducted by Ingoldsby (2010) reviewed a variety of interventions to improve the engagement from families. The overall successful methods of engagement compromised of programmes developed from a theoretical framework, engagement was

addressed throughout the intervention and the focus was on the needs of the family. Ingoldsby (2010) also suggested that to improve the rates of completion for families, parenting programmes need to be short in duration, which in turn, will maximise the effectiveness of the intervention. The group dynamics of Triple P and IYPP promotes cost efficiency, reduces the number of resources required, decreases the potential for isolation for participants and is a solution for parents who dislike individual therapy (Hurlburt, Nguyen, Reid, Webster-Stratton & Zhang, 2013).

The problems associated with group-based settings such as in Triple P and IYPP are they are conducted outside the home and this may affect parent engagement due to costs of travel and childcare. Duppong-Hurley, Hoffman, Barnes and Oats (2016) investigated participation barriers faced by families. They found the primary barrier for families participating in parenting programmes was scheduling difficulties. Other practical reasons included lack of transport, child care and high programme costs. Provider features such as communication and cultural competency were also found to affect engagement (Ingoldsby, 2010).

Parenting Programme Attrition Rates

Parent Child Interaction Therapy. Fernandez and Eyberg (2009) investigated the predictors for treatment attrition for the PCIT programme. Of the 99 families that participated in this study there was a 64% attendance rate. The primary reasons for not completing the programme were being too busy, family stressors, practical issues (e.g. transportation) and family disagreement with the programmes approach. The strongest predictor of attrition from the programme was lower SES. The 71% of parents who did not complete the programme were identified at pre-treatment as using more maternal negative language, lower maternal praise and they were of lower SES.

A dissertation by Zisser (2011) analysed parental perceptions of barriers to completing PCIT with 46 mother- child dyads participating in the study. Findings from the study showed when mothers reported increased levels of their child's challenging behaviour they also reported more perceived barriers to continue with the programme. Initial beliefs about the programme's effectiveness and the extent of the change of this view were related to mothers' perception of barriers to continue the programme. Therefore, mothers who reported initial lower expectations of the programme also reported more barriers to continue the programme. Interestingly, this study found perceived barriers and the change in perceived barriers during the programme were unrelated to SES. Harwood and Eyberg (2004) examined the verbal behaviour of the therapist in relation to completing the programme. They found that a brief interactive period with the therapist correctly predicted the outcome of the programme. When the therapist used facilitative and supportive statements with few questions this predicted parents completing the programme. This study highlights the importance of early rapport building between the therapist and parent, which may be critical to successful completion of the programme.

Positive Parenting Programme (Triple P). A review conducted by Nowak and Heinrichs (2008) examined 55 studies of the intensive levels of Triple P and found attrition rates varied from 0 to 60 %, with an average rate of 19%. This was a similar average to the finding of 16% by Tully and Hunt (2016). In support, Heinrichs, Bertram, Kuschel and Hahlweg (2005) presented recruitment and retention data for the Universal Triple P. Results showed the overall recruitment rate was 31% and the overall participation rate was 77%. The main reasons why parents felt they didn't want to participate were because they didn't want someone coming into their home and considered it an intrusion of privacy (e.g. video recorded). Interestingly, Heinrichs and colleagues found that single parent households were 1.5 times more likely to participate in the programme when controlling for other factors (e.g.

parents age, SES and number of people in household). Families of lower SES were one third less likely to participate in the programme compared to families of middle SES. Participation barriers consisted of time demands and scheduling conflicts. The most common reason was due to time constraints. This finding indicates that the programme delivery needs to be flexible to meet the needs of parents and aid their participation. Time constraints, location, other commitments and financial costs were also reported as the most common barriers to participating in the programme (Morawska et al., 2011). Since it has been shown that families of low SES and minorities are less likely to participate in the programme, a strong effort is required to engage these demographics. Participating in parenting programmes can be viewed as parents struggling to cope with difficult children, which can create a stigma in families. Therefore, effective strategies are required to increase engagement for all parents. A number of large scale Triple P programmes have adopted the “stay positive” communication strategy to normalise parenting programmes. This aims to improve receptivity of parenting programme and the process of seeking help for children with behavioural problems.

The Incredible Years Parenting Programme (IYPP). Baker, Arnold and Meagher (2011) investigated the patterns of enrolment and attendance of IYPP. Their results showed a strong relationship between SES and enrolment, high SES enrolment (83%) compared to low SES (38%) and a strong relationship between good social support and enrolment. Attendance results decreased steadily from 81% attendance in the first session dropping to 41% attendance of the seventh session. Given the steady decline in attendance it is unlikely a particular session or part of content was a result of the dropout rates. From the attendance rates, retention strategies were developed, including that facilitators and clinicians should actively reach out to parents (e.g. phone call) after parents have missed one session. Lavigne et al. (2010) examined the factors associated with attendance and non-completion, and barriers to consumer satisfaction and treatment of IYPP. Lavigne and colleagues altered the

length of treatments to either 12, one hour sessions or 6, two hour sessions. Results indicated that by families being able to choose which treatment length suited their needs, this did not differ the outcome in terms of treatment satisfaction or barriers to treatment in either group. Low SES and ethnic minorities were significant predictors of treatment non-completion, interestingly, the total barriers score (stressors, treatment demands/obstacles) did not correlate with number of sessions completed. This study suggests consistent attendance is less likely for people of low SES and that poor attendance cannot be explained purely by barriers to treatment.

Advantages to Parent-Professional Collaboration

The family is a fundamental resource that exerts a strong influence on the development of their child (Fettig & Ostrosky, 2011; Fettig & Ostrosky, 2014; Fettig et al., 2015; Moes & Frea, 2002). Working collaboratively alongside parents in the design of a family-based intervention plan, helps to ensure a contextual fit to the family and allows specific knowledge of the family's routines, resources, supports, goals and values to be shared and included. This also gives the family opportunities and choice for the design of the intervention (Fettig & Ostrosky, 2011; Fettig & Ostrosky, 2014; Fettig et al., 2015; Moes & Frea, 2000; Vaughn et al., 2002). Despite few studies involving parents in the design of the intervention, there are many advantages to collaborating with parents (Wood et al., 2009). Parents gain the skills of assessing the function of their child's challenging behaviour, teaching appropriate replacement behaviours, encourages generalisation and gives parents the necessary tools to continuously manage their child's behaviour and better manage future behavioural problems without relying on the 'experts' (Dunlap et al., 2006a; Frea & Hepburn, 1999; Woods et al., 2009). By increasing parent involvement in the intervention, it enhances collaboration and gives parents an opportunity to experience an effective

behavioural intervention (Wood et al., 2009). Thus, when working with young children with challenging behaviour it is important to emphasise family-based practices for assessment and intervention (Fettig et al., 2015). Functional behavioural assessment (FBA) is one such assessment to inform function-based interventions which has been found to be effective and emphasizes family-based practices.

Functional Behavioural Assessment

Functional behavioural assessment (FBA) is derived from the positive behaviour support (PBS) framework (Duda et al., 2008). Functional behavioural assessment involves using a range of techniques to ascertain the antecedents which are eliciting and consequences which are reinforcing the problem behaviour (Dunlap, Ester, Langhans & Fox, 2006b; Dunlap & Fox, 2011; Galensky, Miltenberger, Stricker & Garlinghouse, 2001). When the function of the behaviour is identified, an intervention can be developed based on the information provided from the assessment. An intervention for example, may alter the antecedent events (e.g. presence of parents or materials) or alter the consequences (e.g. parent attention) (Dunlap et al., 2006a). The function of the problem behaviour varies with each child and each environment. Typically, challenging behaviour is an act to obtain a certain tangible item (e.g. toy), gain attention or to avoid an interaction that is deemed undesirable to the individual (Dunlap et al., 2006b). Incorporating a FBA in the design of a parent intervention programme allows the function of the problem behaviour to be identified and addressed, thereby making the intervention effective in both the short and long term (Fettig & Ostrosky, 2014; Marcus et al., 2001; Shayne & Miltenberger, 2013) and also allows prosocial skills to be taught and built on (Fettig & Ostrosky, 2014; Fettig et al., 2015).

The design of function-based behaviour interventions has been consistently at the centre of PBS approaches (Dunlap & Fox, 2011). It has already been well established that

function-based interventions are effective in addressing challenging behaviour in children, with developmental delays, autism and behavioural disorders (Blair et al., 1999; Dunlap & Fox, 2011; Frea & Hepburn, 1999; Koegel, Stiebel & Koegel, 1998; Moes & Frea, 2000). Ingram et al. (2005) compared FBA interventions with non-FBA interventions and found that informed FBA interventions showed clear benefits in terms of reducing the child's challenging behaviour and teaching positive replacement behaviours.

Typically with FBA informed interventions, professionals conduct the FBA in a range of settings (e.g. home, clinic, preschool, and school) and parent's contribution is limited to supplying data to the clinician. More recently, it has been widely recognised that collaborating with the parent in the design of a function-based intervention, as well as the implementation is essential in developing positive behaviour in children. Therefore, it seems sensible to teach parents to implement function-based strategies when their child engages in persistent challenging behaviour (Frea & Hepburn, 1999). Studies that have evaluated the effectiveness of parent implemented FBA's have only focused on individual families. To date, there appears to be no published studies that have evaluated the effectiveness of group-based parenting programmes which teach FBA and then teach the strategies to inform the intervention plan and implement this plan.

Development of a positive behaviour support plan. To develop a function-based positive behaviour support plan, a FBA needs to be conducted to identify the reasons why the challenging behaviour is occurring (Chai & Lieberman-Betz, 2016). Information for a FBA is gathered through a range of means such as interviews with parents, teachers, peers, siblings (as applicable), checklists and behaviour scales are completed and then direct observations in a range of settings where the problem and adaptive behaviours occur. The problematic behaviour is identified and defined as well as replacement behaviours selected. Once this

information has been collected, direct observations will occur in natural settings. The direct observations occur to identify the antecedents and consequences reinforcing the problematic behaviour (Chai & Lieberman-Betz, 2016; Fettig & Ostrosky, 2011). After conducting the FBA, a function-based intervention plan will be established. This plan will identify preventive strategies to reduce the child engaging in the problematic behaviour and teach new replacement skills to the child which are an appropriate way to get their needs meet. The plan is created with the parents and when the intervention plan has a good contextual fit for the family, it has greater chance to be implemented and being accepted by the family (Chai & Lieberman-Betz, 2016; Fettig & Ostrosky, 2011; Fettig et al., 2015; Fox et al., 2002).

Function Based Assessment and Coaching Parents

The general aim of family coaching is to expand the family's ability to support their child's development (Fettig & Barton, 2014). There is very little research on FBA and coaching parents in this skill. Conversely, recently Fettig and Barton (2014) conducted a literature review on parent implemented FBA interventions. In the 13 studies cited, 11 studies included some form of coaching to support parents in the implementation of the intervention strategies. Coaching ranged from modelling, performance feedback and multiple opportunities for practice with support. This research suggests that coaching is an essential element to an effective assessment and intervention with Fettig and Barton (2014) advising that without follow-up coaching, the training is predominately ineffective.

Powell and Dunlap (2010) reviewed interventions that focused specifically on improving parenting skills and interactions with their young children. They highlighted key characteristics that were consistent across these interventions. These included the use of live or video modelling, activities and exercises which included homework and opportunities to practice with review skills and feedback. However, while Powell and Dunlap (2010)

identified important characteristics that assist in parent implemented interventions, they did not explore the support components of parent implemented FBA intervention literature.

Function Based Assessment and Generalisation

One main feature of a function-based intervention is to teach the child who is engaging in challenging behaviour, new replacement behaviours. Thus, it seems imperative to determine whether these new replacement behaviours can be generalised across settings and people (Fettig & Barton, 2014). However, in the functional behavioural assessment literature, few studies have all incorporated generalisation measures.

Conroy et al. (2005) conducted a review of positive behavioural research interventions of children engaging in problematic or challenging behaviour from 1984 to 2003, reviewing 23 journal articles in total. Conroy and colleagues reported that only 15% of studies reported generalisation measures and only 20% of studies reported on maintenance of the intervention. A more recent review conducted by Wood et al. (2009) investigated FBA and subsequent function-based interventions with young children engaging in challenging behaviour. Wood and colleagues (2009) used five intervention elements important for addressing challenging behaviour as described by Dunlap et al. (2006a) as a guide for their review. Of the 35 studies reviewed from 1990-2007, only 12 studies reported maintenance data and only five studies reported data on generalisation. A recent review conducted by Fettig and Barton (2014) analysed the literature on parent implemented function-based intervention to reduce children engaging in challenging behaviour. Their findings showed that none of the 13 studies cited reported generalisation measures.

The reviews mentioned above have highlighted an important shortfall of the FBA literature, the lack of studies reporting maintenance and generalisation of children's

behaviour or more importantly parental skills. Future research needs to include maintenance and generalisation measures of both parent implementation and child's behaviours.

Parent Empowerment Programme (PEP)

To my knowledge there is no published New Zealand specific group-based parent training where parents learn to identify the function of their child's challenging behaviour and learn to implement a PBS function-based intervention in their home environment. The Parent Empowerment Programme (PEP) was developed by a Master of Science (in Child and Family Psychology) thesis student, Ilia Lindsay (2016) and her supervisors Dr Gaye Tyler-Merrick and Mr Lawrence Walker. The purpose of the PEP was to develop parent's skills and knowledge on functional behavioural assessment (FBA) and implement positive behaviour support strategies and use these skills to implement a function-based intervention plan in the home setting where a child was engaging in challenging behaviour. For example, bed-time or getting ready for school. The two workshops were developed based on the work of Fettig and Barton (2014), Shayne and Miltenberger (2013), McNeill et al. (2002) and Phillips (2014). The programme's material and workshops have also been adapted for New Zealand families.

An initial meeting with the parents and the researcher occurred pre-baseline to identify demographic information such as the age of parent and the child. Specific information about the home routine of concern in which the challenging behaviour occurs in and parent's perspective on their child's challenging behaviour was also collected. This information was collected via a semi-structured interview conducted by the researcher.

Parents completed a Knowledge Quiz (KQ) pre- and post-workshops. The KQ was based on the Standard Triple P accreditation quiz (Sanders, 1999). The KQ was used to determine parents understanding of FBA and intervention strategies and whether the PEP was sufficient to increase and maintain the knowledge learned.

The two, 2 hour workshops developed parents' understanding of the function of their child's challenging behaviour, and their ability to identify and implement antecedent manipulations or consequence interventions from the function of their child's challenging behaviour. The first workshop begins by discussing the importance and advantages of daily routines for children as well as for parents. Following this, parents identify antecedents and consequences which could be influencing their child's challenging behaviour during the routine time of concern. Attention was referred to as "catch them when they're good" and explained in terms of shaping their child's appropriate behaviour. Positive reinforcement was referred to as "descriptive praise and encouragement" and explained in terms of increasing their child's appropriate behaviour. Extinction was presented as "planned ignoring" and inclusive time-out was presented as "sit, wait and show" to the parents in the programme. The "sit wait and show" strategy teaches parents to remove their child to the side of the activity, wait until the child is calm and then the parent models the behaviour they want to see and when the child is doing this, the parents then give the child descriptive praise.

The second workshop begins by discussing functions of challenging behaviour. Following this, parents learn the ABC observational format (antecedent, behaviour and consequence) which identifies the pattern of behaviour and the function of their child's challenging behaviour. From this, parents develop a PBS intervention framework in the context of the function of their child's challenging behaviour, antecedents, maintaining consequences. Parents then develop a behaviour support plan with emphasis on replacement behaviours, antecedent manipulations (this was presented to parents as "prevention strategies), and appropriate consequence strategies.

The workshop content was delivered verbally by the researcher and was supported by PowerPoint presentations, a parent handbook (Lindsay, Tyler-Merrick & Walker, 2016),

homework tasks and video vignettes thus, providing a variety of learning materials to keep parents engaged during the two, 2 hour workshops.

Video recordings and/or written parent diaries were completed by the parents at baseline, mid-workshop and post-intervention. The video recordings allow unbiased observations of the child and parent behaviours during the bed-time routine. The parent diary was used to support the findings from the video recordings and guard against data loss if any technical difficulties occurred with the video recordings. The parent diary consisted of an ABC format on the challenging behaviour during the bed-time routine. Video recording and parent diary logs were used to determine if parents could generalise the skills from the workshops to their home environment and whether this led to a decrease in their child's challenging behaviour during the bed-time routine.

Follow-up occurred one month after the last post-intervention recording and consisted of one video recording and/or parent diary. The purpose of follow-up was to determine whether parents could maintain the skills learned from the PEP, and were able to implement function-based PBS intervention plan which subsequently reduced their child's challenging behaviour over an extended period of time.

Chapter Two

Literature Review

There is a growing body of research which supports function-based assessment interventions to reduce children engaging in challenging behaviour (Crone & Mehta, 2016; Duda et al., 2008; Dunlap & Fox, 1999; Dunlap et al., 2006b; Fettig & Ostrosky, 2011; Fettig & Ostrosky, 2014; Fettig et al., 2015; Frea & Hepburn, 1999; Galensky et al., 2001; Harding et al., 2009; Koegel et al., 1998; Lindsay, 2016; Lucyshyn et al., 2007; Marcus et al., 2001; Moes & Frea, 2002; Shayne & Miltenberger, 2013; Vaughn et al., 1997; Vaughn et al., 2002). Parent implemented function-based interventions have only recently become the focus of researchers. Marcus et al. (2001) suggest that parents make ideal therapists because they typically have more opportunities to interact with, and influence, their child's behaviour. Research has shown that when parents are taught function-based strategies, they can implement these strategies effectively (Fettig et al., 2015; Lindsay, 2016; Marcus et al., 2001; Shayne & Miltenberger, 2013). While there is a body of research on function-based behavioural interventions implemented by parents of young children engaging in challenging behaviour (Crone & Mehta, 2016; Duda et al., 2008; Dunlap et al., 2006b; Fettig & Ostrosky, 2011; Fettig et al., 2015; Frea & Hepburn, 1999; Lucyshyn et al., 2007) this body of research has been based in training individual parents' at home rather than parents being taught these strategies in a small group-based setting.

Table 1, below indicates the characteristics of the studies in the last 20 years based on training parents in functional behaviour assessment and from this, training parents to implement home-based function-based behavioural interventions. Five criteria were used for selection of the articles. Selection included: (1) articles published from 1996 to 2017, (2) training parents in functional behavioural assessment to reduce their child's challenging

behaviour, (3) children aged eight years or younger, (4) typically developing children or children with a disability (5) articles using an experimental design.

Eighteen studies were sourced through the following databases: PsychINFO, Google scholar and Web of Science. Different combinations of the following key descriptors were used: functional assessment, parent training, functional behavior assessment, coaching, children's challenging behavior and problematic behavior. To extend the search, reference lists of identified articles were also investigated to source relevant articles. Online journals were also checked using the same key descriptors. These journals included Behavioural Interventions, Child Development Research Journal of Applied Behaviour Analysis, Journal of Autism and Developmental Disorders, Topics in Early Childhood Special Education, Journal of Persons with Severe Handicaps, Journal of Positive Behaviour Interventions and Journal of Early Intervention.

Experimental Studies in the Last 20 Years on Teaching Parent's Functional Behavioural Assessment and the Findings

Author & date	Age & No. & gender of participants	Diagnosis	Setting and intervention target	Duration of programme	Design	Parent training Identify function Identify strategies	Measured variables	Procedures	Results	Maintenance & generalization
Crone and Mehta (2016)	6-8 years, 4 M	ASD	Individual training in home or clinic setting Meal time	5x60 minute sessions over two weeks	Partial non-concurrent multiple baseline across parent-child dyads	Function not identified by parent Explanations of antecedent and consequence strategies to facilitate implementation of BIP	Parent implemented FS Child CB	Teaching parents to implement a function-based behaviour intervention plan, and implementation of antecedent and consequence strategies using modelling and feedback.	Visual analysis used parent implementation FS increased correlated with decrease in child CB Overall effect size for parent implementation FS was large	NR
Duda, Clarke, Fox and Dunlap (2008)	2-5 years 1 F, 2 M	NS	Individual training in home setting Play (R1 & R3) Transition (R2) Meal time (R4)	NR – 'brief coaching'	Multiple baseline, across four routines	Function not identified by parent Prevention strategies and reinforcement strategies collaboratively identified Functional based behaviour support plan described and modelled with coaching.	Parent FS implemented Child AB	Teaching parents function-based strategies to routines and to develop a PBS plan. Coaching 10 minutes before each intervention session and included modelling and feedback.	Child AB increased BL IV R1: 2.3 - 4.8 R2: 2.0 - 4.8 R3: 2.2 - 4.3 R4: 1.3 - 4.7 Parent FS implementation increased: BL IV R1: 2.7 - 4.8 R2: 2.5 - 4.3 R3: 3.3 - 4.3 R4: 1.7 - 4.7	NR
Dunlap and Fox (1999)	2-4 years 1 F, 5 M	Pervasive Developmental Disorder	Individual training in home or childcare setting Play time Meal time Transitions	20 minute sessions once or twice a week for five-six months	Multiple baseline across participants and settings	Function not identified by parent Antecedents and consequences not identified Taught how to implement ISP –change environment/interactions with child and teach child new skills	Child CB	Teaching parents to implement ISP including replacement and prevention strategies and coaching. Coaching: review of support plan, feedback and review progress	Visual analysis – please refer to the article.	NR
Dunlap Ester, Langhans and Fox (2006b)	2-3 years, 2 F	Expressive Language Delay	Individual training in home setting Play Transition	1 hour of parent training	Two multiple baselines across participants with three phases: Baseline, Parent Training, and Intervention	Function not identified by parent FCT: explanations of child AB, review researchers FBA, modelling and given a skill teaching script specific to their child	Parental functional communication strategies Child AB	Teaching parents strategies specific to routines using modelling and practice with researcher. Functional communication training and behaviour support plan implementation.	Incorrect parent attention to child CB decreased P1: 47.5%- 96.3% at BL to 0% - 33.3% PI P2:46.8% - 84.7% at BL to 0%- 13.1% PI Prompts for replacement behaviour increased P1: 0% to 25% -88.94% P2: 0% to 75% -100% Child AB increased P1: 0% to 56.5-100% P2: 0% to 85.7% -100%	NR
Fettig and Ostrosky (2014)	2-5 years, 3F, 5M	Soto's syndrome ASD Pervasive	Group-based setting Dinner Bedtime	4x 60 minute sessions over four weeks	AB design with maintenance (4 weeks post-intervention)	Function identified Collaboratively identified suitable strategies, developing behaviour plans based on Functional	Parent FS Child CB	Teaching parents function-based strategies including preventative and preventative strategies.	Child CB decreased Baseline mean:49.2% Post-intervention mean:12.8%	Child CB mean: 5.5% Parent FS

		developmental disorder	Transition			assessment indicated information		Teaching used observations, collaborative approach.	Parent FS implementation increased Baseline mean 12.1% Post-intervention mean 97.8%	mean: 88%
Fettig, Schultz and Sreckovic (2015)	2-5 years, 1 F, 2 M	ASD, sensory integration disorder	Individual training in a home setting Play	NR	Multiple baseline across participants	Function not identified by parent Collaboratively developed behaviour support plan with function-based strategies. Discussion on prevention and replacement behaviours and modelling.	Parent FS implementation Child CB	Teaching parents function-based strategies to implement BSP. After intervention phase delayed coaching was provided then withdrawn. Coaching :modelling and feedback	Child CB decreased 65.4% at baseline to 13.3% withdrawal of coaching Parent FS implementation increased 58.3% - 100%	NR
Freia and Hepburn (1999)	4 years, 2 M	ASD	Individual training in home setting Transition	Two meetings per week for a fortnight ranging from 16-38minutes.	Case studies with two or three phases: Baseline, Intervention and one family required additional instructional session.	Manual "Understanding why problem behaviours occur: A guide for assisting parents in assessing causes of behavior and designed treatment plans" that covered function of behaviour, how to record behaviours determine function of behaviour and replacement behaviours. Parent recorded functional assessment information Identified function and replacement behaviours with no guidance	Child CB	Teaching parents function-based strategies using a parent manual. Parents implement FBA, including replacement behaviours and prevention strategies.	Child CB: P1: (M = 8.8 per minute) in baseline decreased with extra session P2: (M = 3.4 per minute) decreased significantly	NR
Galensky, Miltenberger, Stricker, and Garlinghouse (2001)	2-7 years, 2 F, 1 M	Typically developing	Individual training in home setting Bed	NR	Multiple baseline across participants	Function not identified by parent Implemented function-based treatment components (guidance and feedback)	Child CB Refusal Inappropriate play Expulsions Elopement	Teaching parents function-based using a collaborative approach and performance feedback.	Child CB P1 B1 refusal: 16.4% from baseline mean to 7.9% treatment mean B2 inappropriate play: 25.6% - 10.6% B3 expulsions 1.3% - 1.8% B4 elopement: 10.7% - 10.1% P2: B1: 3.4% -3.6% B2: 17.9% - 6.4% B3: 2.4% -0.8% B4: 14.7% - 1.2% P3: B1: 22.9% -79.8% B2: 17.9% - 6.4% B3: 1.1% - 0.6%	NR
Harding, Wacker, Berg, Lee and Dolezal (2009)	2.5 years, 1 M	Developmental Delay and Peter's Anomaly	Individual training in home setting Play Social	Weekly one hour visits for 14 months.	Case study with four phases: Pre Baseline, Functional Assessment,	Conducted a functional analysis (cued to respond to CB, modelling prompts) FCT: provided step by step instructions, video modelling. Feedback and prompts	NR	Teaching parents function-based strategies specific to routines using, modelling and performance based feedback.	Results showed reduction in destructive behaviour and increase in on task behaviour.	NR

					Baseline, Parent intervention.					
Koegel, Stiebel and Koegel (1998)	4-6 years, 1 F, 2 M	ASD and Developmental Delay	Individual training in home Play Meal	NR	Multiple baseline across three families with 3 phases: Baseline, Intervention and follow up	Function not identified by parent Collaboratively develop intervention plan included changing environment, replacement behaviours using prompts (faded)	NR	Included functional communication training	Reductions in aggression, increase in parent and child happiness and increase in society interactions.	NR
Lindsay (2016)	10 years, 3 M	Typically developing	Group training in classroom Bedtime Transition	12 weeks, workshops 2 hours x2 days	Single case AB across participants	Function identified by parents Antecedent and consequence strategies identified Parent developed behaviour support plan	Parent implementation of FS Child CB	Teaching parents strategies on FBA and PBS	Parents FS increased scores on BS of M=12.3to M=27.4 PI	
Lucyshyn, Albin, Horner, Mann, Mann and Wadsworth (2007)	5 years, 1 F	ASD and Moderate to Severe ID	Individual training at home Meal Bed Social	10- 85 minutes, 1-3 times a week for 23 weeks	Longitudinal study, Multiple baseline across routines with four phases: Baseline, Functional assessment, Intervention and Follow up	Function not identified by parents Collaborative behaviour support plan, in vivo modelling, coaching, behaviour rehearsal and parental self –monitoring.	Child CB	Teaching parents strategies specific to routines to implement BSP using, modelling, collaborative problem solving and self-monitoring.	Intervention resulted in 75% reduction in Child CB.	NR
Marcus, Swanson and Vollmer (2001)	2-5 years, 1 F, 3 M	Developmental and Speech Delays	Individual training in classroom setting Social	7 weeks, 60 minute sessions 1-2 times per week	Multiple baseline across participants with 7-8 phases. Baseline, Intervention, role play, model, feedback, delayed feedback, observation and booster.	Function not identified Roleplay, modelling, feedback and booster session if needed.	Parent implementation of FS Parent appropriate response to child CB Parent appropriate response to child AB Child AB Child CB	Teaching parents strategies using, role plays, modelling, practice opportunities and performance based feedback.	Parent FS implementation P1: 87.5% at baseline to 96.7% post-intervention P2: 11.8% - 81.3% P3:24.5% - 90.5% Appropriate Parent response to Child CB P1:51% - 97.1% P2: 0% - 93.5% P3: 1.8% - 63.9% Appropriate Parent response to Child AB P1: 44.4% -97% P2: 0% - 94.7% P3: 0% - 67.4% Child CB/AB P1: CB:1.1% - 6.7% AB: 57.3% - 96.7% P2: CB: 13.3% - 15.1% AB: 16.4% - 66.1 P3: CB 1.4% - 0.4% AB: 45.8% - 90.4%	Parent FS implementation P1: 100% P2: 100% P3: 100% Appropriate Parent response to Child CB P1: 100% P2: 100% P3: 100% Appropriate Parent response to Child AB P1: 100% P2: 100% P3: 100% Child CB/AB P1: CB: 6.7% AB: 90% P2: CB: 0% AB: 100% P3: CB: 0% AB: 80%

Moes and Frea (2002)	3 years, 1 F, 2 M	ASD	Family training in home setting Play Meal Transition Social	1-2 sessions a week in phase 1, then 1 session every 2 months until 12 months	Multiple baseline across participants with four phases: Baseline, Intervention training, Contextualized Intervention and Follow-up.	Function not identified by parent FCT: teaching replacement behaviours included modelling, and direct feedback.	Parent implementation of FS Child CB	Teaching parents strategies based on FCT. Training included modelling, practice opportunities, collaborative problem solving, and performance feedback.	Family context consideration assists the stability and durability of reducing child CB.	NR
Shayne and Miltenberger (2013)	NR	NR	Group training in classroom Social	1 x 3hour class	Multiple baseline across participants across three phases: Baseline, Post treatment and Follow-up	Function identified ABC format Function-based treatment choice	Correct responses to ABC recording Summary statement Treatment choices	Teaching parents function-based strategies using observations, role play, PowerPoint, group discussion.	ABC recording: Participants combined: 84% at baseline to 95% at follow-up Summary Statement Participants combined: 35% - 98% Treatment Choice: Participants combined: 58% -99%	ABC recording: Participants combined: 92% Summary Statement Participants combine: 93% Treatment Choice: Participants combined: 86% NR
Vaughn, Clarke and Dunlap (1997)	8 years, 1 M	Agenesis of Corpus Callosum	Individual training in two settings: bathroom and restaurant Transition Social	Twice a week	Multiple baseline across two settings with three phases: Baseline, Intervention and Follow-up.	Researcher conducted FBA, parent did not identify function First few sessions researcher present to give suggestions and encouragement	Engagement Child CB	Teaching parents strategies specific to routines using, practice opportunities.	Child CB decreased Transition: 1.77 task performances at baseline to 2.9 follow up Social: 2.5 -2.9	NR
Vaugh, Wilson and Dunlap (2002)	7 years, 1 M	ASD, Severe ID	Individual training in home setting Social	NR	Multiple baseline across behaviours, baseline, intervention and follow-up	Function not identified by parent Collaboratively developed intervention plan	Child CB	Teaching parents PBS strategies specific to routines.	Child CB decreased B1: 69.3% at baseline to 15.3% at intervention B2:78.6% - 15.3% B3:53% -21.3%	NR

Note. ABC = antecedent behaviour consequence, AB = appropriate behaviour, ASD = autism spectrum disorder, B1 = behaviour, BL= baseline, BIP= behaviour intervention plan, CB = challenging behaviour, F = females, FCT = functional communication training, FS = function-based strategies, ISP= individual support plan, ID = intellectual disability, IV= intervention, , M = males, NS = not specified, NR= not recorded, R = routine, RB = replacement behaviours, P1= participant 1, PBS = positive behaviour support, PI= post-intervention.

Child Diagnosis

There was very limited literature on parent implemented function-based intervention strategies with children that were typically developing and/or had mild to moderate behavioural problems. Only two studies included children that were typically developing (Galensky et al., 2001; Lindsay, 2016). In contrast, there was a sizeable literature base for parents to implement function-based intervention strategies with children with developmental delays (Dunlap & Fox, 1999; Harding et al., 2009; Koegel et al., 1998; Marcus et al., 2001), children diagnosed with autism spectrum disorder (ASD) (Crone & Mehta, 2016; Fettig & Ostrosky, 2014; Fettig et al., 2015; Frea & Hepburn, 1999; Moes & Frea, 2002; Vaughn et al., 2002), and children with an intellectual disability (Lucyshyn et al., 2007; Vaughn et al., 2002).

Training Setting

Training settings varied in the 18 studies sourced, with the majority of studies using the participants home as the training setting (Duda et al., 2008; Dunlap et al., 2006b; Fettig & Ostrosky, 2011; Fettig et al., 2015; Frea & Hepburn, 1999; Galensky et al., 2001; Harding et al., 2009; Koegel et al., 1998; Lucyshyn et al., 2007; Moes & Frea, 2002; Vaughn et al., 1997; Vaughn et al., 2002) or classrooms (Dunlap & Fox, 1999; Lindsay, 2016; Marcus et al., 2001; Shayne & Miltenberger, 2013). Only Fettig and Ostrosky (2014), Lindsay (2016) and Shayne and Miltenberger (2013) trained parents in a group setting. Fettig and Ostrosky (2014) had a training group with eight participants, Lindsay (2016) had a training group of three participants and Shayne and Miltenberger (2013) did not specify the size of the training group.

Intervention target. Family routine times were the most frequently targeted function-based intervention time with four routine times emerging from the literature. The routines included meal time (Crone & Mehta, 2016; Fettig & Ostrosky, 2014; Galensky et al., 2001; Vaughn et al., 2002), bath time (Fettig et al., 2015; Vaughn et al., 1997), play time (Duda et al., 2008; Dunlap & Fox, 1999; Marcus et al., 2001) and bedtime (Fettig & Ostrosky, 2011).

Duration of training. The duration of parent FBA training varied among the studies, with six studies not reporting the length of training (Duda et al., 2008; Dunlap & Fox 1999; Fettig et al., 2015; Galensky et al., 2001; Koegel et al., 1998; Vaughn et al., 2002). The studies which did report the training duration indicated that the majority of training took less than seven hours. The training ranged, from Dunlap et al. (2006b) who used a one hour session, Shayne and Miltenberger (2013) one, 3 hour session, Lucyshyn et al. (2007) one - three sessions a week lasting 10-85 minutes, Frea and Hepburn (1999) two, 16 - 38 minute sessions, Lindsay (2016) two, 2 hour sessions, Fettig and Ostrosky (2014) four, 60 minute sessions, Crone and Mehta (2016) five, 60 minute sessions, Fettig and Ostrosky (2011) six, 30 minute sessions, and Marcus et al. (2001) seven, 60 minute sessions.

In contrast, Vaughn et al. (1997) provided parent training twice a week for 10 weeks, Harding et al. (2009) training was one hour weekly sessions over a period of 14 months. Moes and Frea (2002) training was one - two sessions a week for 2 months and then one session every 2 months for a year.

Duration of intervention. The duration of the intervention also varied across the 18 articles sourced, with only seven studies reporting duration of intervention. In the Crone and Mehta (2016), Frea and Hepburn (1999) and Lindsay (2016) studies, the duration of interventions were all two weeks, Fettig and Ostrosky (2014) duration of intervention was four weeks, Marcus et al. (2001) duration of intervention was 7 weeks, Lucyshyn et al.

(2007) duration of intervention was 23 weeks, Moes and Frea (2002) duration of intervention was 12 months and Harding et al. (2009) duration of intervention was 14 months.

Design

The 18 studies used single-case multiple baseline designs. Specifically, 10 studies used single case multiple baseline across participants designs (Crone & Mehta, 2016; Dunlap et al., 2006b; Fettig & Ostrosky, 2011; Fettig et al., 2015; Frea & Hepburn, 1999; Galensky et al., 2015; Koegel et al., 1998; Lindsay, 2016; Marcus et al., 2001; Moes & Frea, 2001; Shayne & Miltenberger, 2013). Six studies used multiple baseline across routines designs (Duda et al., 2008; Lucyshyn et al., 2007), across participants and settings (Dunlap & Fox, 1999) across settings (Vaughn et al., 1997) and across behaviours (Harding et al., 2009; Vaughn et al., 2002). Of the 16 studies that used a multiple baseline design, there was significant variation in terms of the length of baselines.

In contrast, Harding et al. (2009) used a case study, reversal design with their participants and Fettig et al. (2014) used an interrupted time series design.

Parent Training

There were some similarities noted across parent training. Twelve studies included a researcher-parent collaboratively developed intervention plan that was based on the researcher's functional behavioural assessment (Crone & Mehta, 2016; Duda et al., 2008; Dunlap & Fox, 1999; Dunlap et al., 2006b; Fettig & Ostrosky, 2011; Fettig et al., 2015; Galensky et al., 2015; Harding et al., 2009; Koegel et al., 1998; Lucyshyn et al., 2007; Moes & Frea, 2001; Vaughn et al., 2002). In contrast, participants from Marcus et al. (2001) and Vaughn et al. (1997) studies did not collaborate with the researcher to develop an

intervention plan, as the function of the child's challenging behaviour was based on the researcher's functional behavioural assessment.

The remaining four studies taught participants to independently create their own intervention plan (Fettig & Ostrosky 2014; Frea & Hepburn 1999; Lindsay, 2016). Similarly, Lindsay (2016) and Shayne and Miltenberger (2013) study taught participants to choose the appropriate treatment choice.

The level of support in implementing a function-based intervention plan varied among studies. All but Koegel et al. (1998) and Vaughn et al. (2002) reported the strategies or components of the parent training. The most common aspects of training were modelling/role-play (Crone & Mehta, 2016; Duda et al., 2008; Dunlap & Fox, 1999; Dunlap et al., 2006b; Fettig & Ostrosky, 2011; Fettig et al., 2015; Harding et al., 2009; Lucyshyn et al., 2007; Moes & Frea, 2001; Marcus et al., 2001; Shayne & Miltenberger, 2013) together with opportunities for practice (Crone & Mehta, 2016; Dunlap et al., 2006b; Fettig 2011; Galensky et al., 2001; Lucyshyn et al., 2007; Marcus et al., 2001; Moes & Frea, 2002; Shayne & Miltenberger, 2013; Vaughn et al., 1997). Eleven studies included performance-based feedback Crone and Mehta (2016), Duda et al. (2008), Dunlap and Fox (1999), Fettig and Ostrosky, (2011), Fettig et al. (2015), Galensky et al. (2001), Harding et al. (2009), Marcus et al. (2001), Moes and Frea (2002), Shayne and Miltenberger, (2013) and Vaughn et al. (1997). Three studies, Crone and Mehta (2016), Duda et al. (2008) and Fettig and Ostrosky (2011) included guided self-reflection. Fettig and Ostrosky (2014) and Moes and Frea (2002) included collaborative problem solving. Discussion with the researcher about appropriate behaviours and challenging behaviours occurred in four studies (Crone & Mehta, 2016; Fettig & Ostrosky, 2014; Moes & Frea, 2002; Shayne & Miltenberger, 2013). Three studies included video vignettes (Fettig & Ostrosky, 2014; Lindsay, 2016; Shayne &

Miltenberger, 2013) and three studies included manuals/handouts (Fettig & Ostrosky, 2014; Frea & Hepburn, 1999; Lindsay, 2016).

In the sourced literature of PBS function-based intervention plans, only five studies, Crone and Mehta (2016), Fettig and Ostrosky (2014), Frea and Hepburn (1999), Lindsay (2016) and Shayne and Miltenberger (2013) included parents identifying the antecedents of and the consequences that were reinforcing, the child's challenging behaviour. Participants from Crone and Mehta (2016) received descriptions of the antecedents and consequences strategies related to their child's challenging behaviour. Parent's behaviour was measured based on their correct or incorrect implementation of antecedents and consequences. Fettig and Ostrosky (2014) and Lindsay (2016) described the purpose of a FBA, whereby parents received collaborative opportunities to relate this back to their child's challenging behaviour and problem solve. Frea and Hepburn (1999) provided participants with a manual which included how to record behaviour and a checklist which included a range of options of antecedents and consequences which could be influencing their child's challenging behaviour. Participants from the Shayne and Miltenberger (2013) study received explanations of antecedents, behaviours and consequences which assisted in their defining and identifying of antecedents and consequences using an ABC format.

In addition, Fettig and Ostrosky (2014), Frea and Hepburn (1999), Lindsay (2016) and Shayne and Miltenberger (2013) taught parents to identify the function of their child's challenging behaviour. From the ABC observation format in the Shayne and Miltenberger (2013) study, participants were taught about the function of behaviour related to the antecedents and consequences and from this, participants formed a summary statement and chose an appropriate treatment choice related to the function of the challenging behaviour. Fettig and Ostrosky (2014) and Lindsay (2016) studies did this in a different manner where

they presented the different functions of behaviour and appropriate function-based treatment choice and then the parents related the information back to their own child's challenging behaviour and home routines. In this manner parents identified the function of their child's challenging behaviour. In contrast, parents in the Frea and Hepburn (1999) study independently chose the function of their child's challenging behaviour and chose appropriate communicative replacement behaviours without any guidance from the researcher.

Measured Variables

Dependant variable. In 15 studies the dependant variable was the child's behaviour. (Crone & Mehta, 2016; Dunlap & Fox, 1999; Fettig & Ostrosky, 2011; Fettig & Ostrosky, 2014; Fettig et al., 2015; Frea & Hepburn, 1999; Galensky et al., 2001; Harding et al., 2009; Koegel et al., 1998; Lindsay, 2016; Lucyshyn et al., 2007; Marcus et al., 2001; Moes & Frea, 2002; Vaughn et al., 1997; Vaugh et al., 2002). With the exception of Lindsay (2016), all the other above mentioned studies took their measures post-training and via direct observation. Post-training, Lindsay (2016) requested parents to complete written diaries or video recordings during the home routine time of concern. Two articles used the child's appropriate behaviour and child's engagement as the dependant variable (Duda et al., 2008; Dunlap et al., 2006b). Shayne and Miltenberger (2013) used parental correct responses to ABC recording, summary statement and treatment choice as the dependant variables.

Independent variable. The independent variable used across 16 of the studies was the parents implementation of function-based strategies (Crone & Mehta, 2016; Duda et al., 2008; Dunlap & Fox, 1999; Fettig & Ostrosky, 2011; Fettig & Ostrosky, 2014; Fettig et al., 2015; Frea and Hepburn, 1999; Galensky et al., 2015; Harding et al., 2009; Koegel et al., 1998; Lindsay, 2016; Lucyshyn et al., 2007; Marcus et al., 2001; Moes & Frea, 2001; Vaughn et al., 1997; Vaugh et al., 2002). Dunlap et al. (2006b) included parental attention to

child's challenging behaviour and parental use of prompts for replacement behaviour. Shayne and Miltenberger (2013) did not report an independent variable.

Intervention Development

With the exception of Marcus et al. (2001), Shayne and Miltenberger (2013) and Vaughn et al. (1997) collaboration between the researcher and the parents was a feature in 15 of the 18 sourced articles (Crone & Mehta, 2016; Duda et al., 2008; Dunlap & Fox, 1999; Dunlap et al., 2006b; Fettig & Ostrosky, 2011; Fettig et al., 2015; Galensky et al., 2015; Harding et al., 2009; Koegel et al., 1998; Lucyshyn et al., 2007; Moes & Frea, 2001; Vaughn et al., 2002). Collaboration consisted of discussion of the researcher's functional behavioural assessment information which may have included direct observations, ABC observation format and questionnaires which informed the subsequent parent implemented function-based strategies. Instead of the researcher completing the functional behavioural assessment, the remaining three articles, Fettig and Ostrosky (2014), Frea and Hepburn (1999) and Lindsay (2016) taught parents how to identify the function of their child's challenging behaviour, identify strategies to address the challenging behaviour, teach appropriate replacement behaviours and how to implement these strategies in their own home.

Despite the importance of collaborating with parents, only eight studies reported parent involvement in the development of the positive behaviour support intervention plan. Vaughn et al. (2002) developed the intervention plan with the mother and ensured it fitted within her abilities to manage her children and the intervention. Duda et al. (2008), Dunlap and Fox (1999), Fettig and Ostrosky (2011), Koegel et al., (1998) and Lindsay (2016) worked with families to develop an intervention plan that aligned with each family's lifestyles and values. Fettig and Ostrosky (2014) taught parents function-based intervention strategies that fitted the needs and strengths of the family. This training was collaborative and ensured the

intervention plan, including the supports and strategies were functionally related to the child's challenging behaviour. Extending their (2011) study, Fettig et al. (2015) individualised the sessions for the parents, the parents were encouraged to share their parenting values whereby the researcher and parents collaboratively developed the PBS intervention plan to suit their family's values.

The strategies used in the interventions can be divided into three main groups. The three groups included prevention strategies, replacement behaviours and new responses to behaviours. Only seven studies included all three groups of strategies (Dunlap & Fox, 1999; Fettig et al., 2015; Harding et al., 2009; Koegel et al., 1998; Lindsay, 2016; Lucyshyn et al., 2007; Shayne & Miltenberger, 2013). Four studies, Crone and Mehta, (2016); Fettig and Ostrosky, 2014; Fettig et al., (2011), Vaughn et al. (1997) and Vaughn et al. (2002) included prevention strategies and new responses to behaviour. The remaining studies, Duda et al. (2008), Frea and Hepburn, (1999) Galensky et al. (2001) Marcus et al. (2001) and Moes and Frea (2002) only used one of the three groups of strategies.

Results

The general findings across all the 18 studies in this review indicated that parents could successfully identify the function of their child's challenging behaviour, identify appropriate PBS strategies and then implement these strategies in the home setting with some success. Despite these results, none of these studies measured generalization and only four studies, Fettig and Ostrosky (2011), Fettig and Ostrosky (2014), Marcus et al. (2001) and Shayne and Miltenberger (2013) reported maintenance measures. Fettig and Ostrosky (2011), Fettig and Ostrosky (2014) measured maintenance 4 weeks post-intervention by the percentage of function-based strategies correctly implemented by the parents. The results from the Fettig and Ostrosky (2011) and (2014) studies indicated the parents were able to

maintain the use of function-based strategies at high rates, almost eliminating their child's challenging behaviour. Similarly, Marcus et al. (2001) also measured maintenance up to 8 weeks post-intervention and their results showed the parents sustained the function-based strategies 100% of the time. Lastly, Shayne and Miltenberger (2013) completed maintenance measures up to 2 weeks post-training and found the majority of the parents (six out of eight) maintained high scores on each dependent variable. In summary, these four studies suggest parent implemented function-based interventions strategies can be maintained over time to high levels.

Social Validity

Positive behaviour support places a strong emphasis on social validity (Carr, 2002) but in the sourced literature, only 12 studies reported social validity. Nine studies reported social validity using a scale or questionnaire that was completed by the parents (Fettig & Ostrosky, 2014; Fettig et al., 2015; Galensky, 2001; Harding et al., 2009; Koegel et al., 1998; Lindsay 2016; Lucyshyn et al., 2007; Moes & Frea, 2002; Shayne & Miltenberger, 2013). Duda et al. (2008) measured social validity by non-treatment parents rating the intervention procedures and the parent and child behaviours. Dunlap et al. (2006b) measured social validity by treatment parents rating the contextual fit of the intervention procedures and non-treatment parents rating parent and child behaviours. Only two studies, Crone and Mehta (2016) and Fettig and Ostrosky (2011) conducted an interview with the participating parents to measure social validity. Crone and Mehta (2016) gave parents an option of completing a questionnaire or a participating in interview, with all four parents choosing the interview. The interview included questions regarding the parent's ability to identify antecedents and consequences, the applicability of the strategies and whether further training was required. During the last session of the maintenance phase, Fettig and Ostrosky (2011) interviewed

their participants on their perceptions of the intervention and were requested to provide feedback. Future research should address the social validity of their projects as this appears to be a neglected aspect of the programmes.

Fidelity of Intervention Strategies

Seven of the 18 sourced studies reported parent intervention fidelity (Duda et al., 2008; Dunlap et al., 2006b; Fettig & Ostrosky, 2011; Fettig et al., 2015; Galensky et al., 2001; Marcus et al., 2001; Vaughn et al., 2002). Of this sample, Fettig et al. (2015) created a checklist of the training steps to determine if the intervention was conducted as planned in the home setting. The percentage of PBS strategies used by parents and percentage of intervals of the child's problematic behaviour were calculated and reported. In Duda et al. (2008) intervention implementation varied when twin play at 86%, clean up session intervention only 49% and all play session interventions with 79% fidelity.

Summary

In summary, the findings of the 18 reviewed articles suggest parents with researcher assistance, can learn the skills of FBA, correctly identify the function of their child's challenging behaviour, accurately identify appropriate PBS strategies and implement function-based intervention plans in their home setting. These findings suggest parents can learn and implement a function-based intervention which subsequently reduces their child's challenging behaviour. The literature from the last 20 years suggest there are some similarities in the setting, the design of the intervention, the variables measured, the intervention target and the results of parents successfully implementing function-based strategies to reduce or eliminate their child's challenging behaviour. There is some incongruence in the duration of training, the duration of intervention, the reporting of

maintenance/generalization, the reporting of social validity and the reporting of intervention fidelity, but overall a collaborative researcher-parent partnership was evident across all sourced studies.

Rationale

Families play a critical role in shaping and maintaining a child's behaviour (Fettig & Ostrosky, 2011). Given the long term outcomes for children with serious behavioural problems, it appears sensible for interventions to be early (Duda et al., 2008). Functional behavioural assessment skills and strategies gives parents the skills to identify the function of their child's challenging behaviour and from this, identify appropriate function-based replacement skills and then implement these skills in the family setting at a time they are required the most. By fully involving parents in the full FBA and implementation process, parents are more likely to implement the intervention with greater accuracy (Clarke & Dunlap, 2008; Wood et al., 2009).

The literature also indicates that parenting programmes have been effective for parents to learn FBA skills. Group-based settings also have the advantage of reducing isolation for the parents and reducing costs for the implementation of the parenting programme.

The following research questions were addressed in this project

Research Question 1: Using the Parent Empowerment Programme (PEP) (Lindsay et al., 2016) can parental knowledge of functional behaviour assessment and function-based intervention strategies increase and be maintained over two group workshops?

Research Question 2: Can parents of young children with challenging behaviour generalise

the knowledge from the PEP workshops to their home environment and conduct a function-based positive behaviour support intervention plan based on the content of the PEP?

Chapter Three

Methods

Research Design

The research design used in this project was a single case, multiple baseline across participants. A multiple baseline design allows the researcher to draw strong conclusions to the findings, as the single transition from baseline to treatment (AB) occurred at different times across the participants (Morgan & Morgan, 2008; Watson & Workman, 1981). Single case research design uses rigorous experimental conditions which allows for causal inferences to be made, replication to support justification and visual analysis as the main analysis technique (Blampied, 2014). Lane and Gast (2014) state that single case designs allow the researcher to individually evaluate each participant's performance on each recording through continually collecting data.

A non-concurrent design was chosen for this project because this aligns with everyday practicalities such as families in the project having different work commitments, schedules and separate lives (Morgan & Morgan, 2008). A non-concurrent multiple baseline is when measurement for all participants does not occur simultaneously. The primary advantage to using a non-concurrent design was that it enables flexibility in applied settings while also maintaining the necessary design structure for ruling out any possible extraneous variables such as history as a threat to internal validity (Watson & Workman, 1981).

Participants were randomly assigned to one of the three predetermined baseline lengths (three, four or five video recordings) with the intervention (workshops) occurring at the same time for all participants. The combination of random assignment and ensuring the

baseline lengths were predetermined strengthened the project's capability of experimental control (Christ, 2007). The purpose of collecting baseline data was to obtain a stable and substantial trend of the child engaging in challenging behaviour and to record the types of responses parents used to address the challenging behaviour pre-parent workshops. The description of baseline should be sufficient enough for replication by other researchers as providing sufficient trends during baseline allows comparisons to be made against the intervention condition (Horner et al. 2005).

Dependant and independent variables. The dependant variable was the child's challenging behaviour and parental knowledge of functional behavioural assessment, while the independent variable was the two parent training workshops.

Ethical Approval

Ethical approval was obtained by the University of Canterbury Human Ethics Committee. All parents and children were provided with an information form and a consent form with clear descriptions of the outline and requirements for the project. Please refer to Appendix A for a copy of the participant information form and Appendix B for a copy of the participant consent form. Participants volunteered and were able to withdraw from the project at any given time and did not require a reason for withdrawal. The consent form outlined the commitments and potential risks that were identified in the project and were completed by parents and their child. Participants and children were also able to contact the researcher or her supervisor regarding any further questions they may have had about the project. For a copy of the child's information form please refer to Appendix C and refer to Appendix D for the child's consent form.

One potential risk with this project was the possible emotional distress the in-home video recordings may cause for the family. To mitigate this risk, the researcher and her

supervisor were available to be contacted if the participants felt they required any assistance. To minimize any emotional distress, participants also were able to also call, Skype or FaceTime the researcher or her supervisor so they could assist and help during the home intervention stage. For a copy of the letter of ethical approval, please refer to Appendix E. For the purposes of data analysis and coding, a Child and Family Psychology post-graduate student agreed to provide inter-rater reliability. A researcher information form was supplied to the postgraduate student so she understood the purpose of the project. A researcher consent form was also filled out to maintain confidentiality. Please refer to Appendix F and Appendix G for a copy of the researcher information form and researcher consent form.

Recruitment

Recruitment criteria. As outlined in the parent information form, the recruitment criteria sought children aged between 3 to 6 years residing with their parent(s), and consistently engaged in challenging or disruptive behaviour during a daily home routine time, such as dinner, bath, meal-time or bed-time. The children needed to be “typically developing” without any medical, physical or psychological diagnosis. Families were required to communicate in English. These criteria aligned with previous research conducted by Fettig and Barton (2014) and Lindsay (2016).

Participants were recruited through the advertisement being “shared” on social media sites such as Facebook. For a copy of the advertisement please refer to Appendix H. The advertisement briefly outlined the aim of the research and the researcher as the contact person. Interested parents contacted the researcher and she emailed or posted (preference of the potential participant) a copy of the parent information form, parent consent form, child information form and child consent form. The information forms included selection criteria so the parents knew if they were eligible to participate. The information forms explained the

aim and purpose of the project, commitment requirements, confidentiality, participant profile requirements and the safety measurements that were undertaken. The information form also contained information on how to withdraw from the project without any difficulty, stress or embarrassment and how to personally contact the researcher and her supervisors.

In terms of follow-up for potential parent participants, the researcher either phoned or emailed these parents to see if they were interested in participating. If recruitment was too successful in that more participants than necessary wanted to participate then the selection was on first come, first entry basis. Potential participants who had not responded to the researcher were informed when all places in the project were filled.

Participants

Typically participant size for single case parent-child dyads studies range from 4 to 10 participants (Duda et al., 2008; Fettig et al., 2015; Marcus et al., 2001). The sample size of four families was selected. This number was based on previous research which used similar methods with one to three participants, however, all of these studies had issues with participant withdrawal. Given that this project proposed a single case design, a large participant group was not required to obtain significant results (Blampied, 2014).

Participants for this project were four families with young children aged between 2 and 6 years where their child was experiencing mild to moderate behavioural difficulties during a nominated home routine time. This age range was chosen because when an intervention is implemented at a young age, the results can be effective and sustained long term (Smith & Fox, 2003). In support, Schuhmann et al. (1998) suggested infancy to early childhood is an important age of developing problematic behaviour and is a time when children are most susceptible to poor parenting practices. Schuhmann et al. (1998) showed

that children at aged 3 years will continue to have problematic behaviours at aged 6 years, if no intervention is introduced.

Table 2 outlines the parent's and children's demographic information. To ensure the participants' confidentiality and anonymity, all participants were given pseudonyms. Two participants were mothers with a preschool aged child and their family make-up of Mum, Dad, and one child. One participant was a father with school-aged children and their family make-up comprised of Mum, Dad and two children. The fourth participant, Sarah was a single mother with one child.

Table 2

Parent and Child Participant Profiles

	Participant pseudonym	Gender	Ethnicity	No. of Children in Family	Highest qualification gained	Target Routine	Target Behaviour
Parent	Julia	Female	NZ/European	1	Graduate diploma	Bed-time	Defiance- persistent coming out of the bedroom
	Alice	Female	NZ/European	1 (+ expecting)	Bachelor degree	Bed-time	Disruptive - tantrums
	Sarah	Female	English	1	School certificate	Bed-time	Defiance and non-compliance
	John	Male	Asian	2	Bachelor degree	Bedtime	Non-compliance
Child	Liam	Female	NZ/Fijian				
	Olivia	Female	NZ/European				
	Aiden	Male	NZ/European				
	Ella	Female	Asian				

Julia and Liam. Julia was a 25 year old, full-time working parent, with a partner and one son. Julia reported Liam's challenging behaviour occurred during the bed-time routine. Liam was 2 years and 2 months at the beginning of the project and was a typically developing child. Julia described Liam's challenging behaviour as defiance and persistently coming out of his bedroom multiple times throughout the evening. Liam's challenging behaviour had begun over the last two months and often resulted in him waking in the night and resuming sleep in his mum's bed. Liam's challenging behaviour consisted of inappropriate vocalisations, non-compliance and being out of his bedroom.

Alice and Olivia. Alice was a 31 year old, married, mother of one child and was expecting another child. Olivia was two years and 11 months at the start of the project and was a typically developing child. Alice reported Olivia's challenging behaviour occurred during the lead-in to bed-time. Alice described this behaviour as defiance and also included tantrums, with Olivia wanting to do things "her way and wanting to be in control." This behaviour had begun recently and had resulted in the bed-time routine becoming very long and time consuming. Olivia's challenging behaviour consisted of non-compliance, inappropriate vocalisations and being out of her bedroom.

Sarah and Aiden. Sarah was a 46 year old, full-time working, solo mum with one son. Aiden was 6 years old at the beginning of the project and was a typically developing child. Sarah reported Aiden's challenging behaviour occurred during the bed-time routine and had occurred since he was an infant. Sarah described Aiden's challenging behaviour as disruptive, defiant and unresponsive. This behaviour typically resulted in Aiden calling out and sleeping in his mother's bed, leaving both Sarah and Aiden feeling angry and frustrated. Aiden's challenging behaviour consisted of inappropriate vocalisations and being out of his bedroom (5am waking).

John and Ella. John was a 36 year old, married father of two primary school aged children. He had a bachelor's degree qualification and was currently completing postgraduate studies. Ella was 6 years old at the beginning of the project and was a typically developing child. John reported Ella's challenging behaviour occurred during bed-time routine and began when she was four years of age. Ella's challenging behaviour consisted of non-compliance and inappropriate vocalisations. Most nights resulted in Ella going to bed late around 10.30 pm and sleeping in her parent's bed with her mother.

Setting

This project was undertaken in two settings. The first setting was at the University of Canterbury Pukemanu/Dovedale Centre. This was where two of the initial parent meetings were conducted and where the two parent training workshops took place. The Pukemanu/Dovedale Centre is the clinic connected to the Child and Family Psychology Programme and provides a range of short term assessment and interventions for families. The second setting was in the participant's home for two of the initial parent meetings and for baseline, mid-intervention and post-intervention recordings.

Measures

During the initial meeting and from the three selections, (1) a parent diary, (2) audio recordings or (3) video recordings, the parent(s) were asked which mode of home recordings they would use. All parents opted for video recordings with the parent diary as a backup. Baseline recordings were then organised for an agreed day and training was provided for the video and parent diary measures.

During the project, three measures were completed. These included:

1. The Demographic Information and Functional Assessment Checklist of Teachers (FACTS) Questionnaire. The Demographic and FACTS form was adapted from March et al. (2000) and the Parent Questionnaire was adapted from Li (2011). At the initial interview, demographic information was also collected during this time such as age of the parents and the child. For a copy of the questionnaire please refer to Appendix I.

The Demographic and FACTS questionnaire comprised of 25 questions with 15 closed questions and 10 open questions. The aim of this questionnaire was to provide information about the family and specific information about their child's routine in which the challenging behaviour occurred. These questions focused on identifying the challenging behaviour, the antecedents and consequences which might be reinforcing the challenging behaviour; identify the routine of concern and the parents' perceived function of the challenging behaviour. Among the set of questions, there were sub-questions that were only asked depending on the responses to the initial questions of the parent. These questions included:

- Please describe your family relationships, such as parent-child, parent-parent and siblings relationships.
- Potential stressors within the family system?
- What parents hoped to get out of this research?
- Other topics participants want to be further explained

2. Knowledge Quiz (adapted from Lindsay et al. 2016). The Knowledge Quiz was administered at the initial interview and at the end of the second workshop. Please refer to Appendix J for a copy of the Knowledge Quiz. The Knowledge Quiz contained 21 questions which were based on behavioural principles, the function of behaviour (FBA), reinforcement and antecedent changes. The questions consisted of 17 multiple choice, five closed questions,

five short answer and one case study question. The first Knowledge Quiz was given at the initial parent meeting to identify parents' existing knowledge about FBA and intervention strategies. After the second workshop, parents completed a second Knowledge Quiz. The difference in scores between the two quizzes indicated if the parents had increased their knowledge of FBA and intervention skills.

3. Parent Empowerment Programme parent diary log. The diary logs were completed alongside the video recordings to support/verify the information gathered at baseline, between workshops, and post-intervention. The diary log contained an ABC format to identify the behaviour of concern and columns for the antecedents and consequences, along with time, date and notes. The frequency and duration of the challenging behaviour were also recorded. The diary recordings occurred during baseline (three to five recordings), one recording during the week between the two workshops, and a minimum of three recordings post-intervention, with one follow-up recording. For a copy of the parent diary log please refer to Appendix L.

4. Video direct observations.

All participants had a child(ren) that engaged in challenging behaviour during a home routine that was of concern to the parent. Direct observations occurred through an in-home video recorder. The video recorder was the size of a USB and was provided by the researcher. These recordings allowed the parent behaviours and their child's challenging and prosocial behaviours to be measured and coded. In this manner, the presence of the researcher was mitigated and thus a 'real' natural context could be viewed (coded and analysed).

Video recordings occurred up to nine times during the project but, parents were not restricted to completing only nine video recordings. These recordings were of the child's behaviour during the bed-time routine. The first group of predetermined in-home recordings

were used for baseline data (three, four or five recordings). After the first workshop, parents were requested to complete one mid-workshop diary recording. Two weeks after the last workshop, parents were then requested to complete three more additional recordings. All recordings were requested to be at least 20-minute in duration. The final recording occurred one month after the last post-intervention recording.

The goal of in-home recording was to determine whether parents used and applied the skills learned from the two workshops, and as a result, reduce their child's challenging behaviours during the bed-time routine.

Parents were requested to complete the written parent diary on the nominated routine time. They were requested to provide a brief description of the antecedents, the disruptive or challenging behaviour and/or the prosocial behaviour and the consequences. This measure also could determine whether parents gained FBA and function-based intervention skills from the two workshops. The diary was used to support findings from the video recordings or if any technical difficulties occurred with the recordings.

Advantages of using direct observation in the natural setting (in-home video recordings) is, it is one of the best methods to observe the behaviour, consequences and environmental predictors of the behaviour (McIntosh, Brown & Borgmeier, 2008). Another advantage was direct observation has low inference and reduces subjectivity compared to other data collection methods such as rating scales and interviews (McIntosh et al., 2008). It has also been shown that direct observation combined with altering antecedent events results in higher intervention validity compared to other techniques, for example experimental functional analysis (McIntosh et al., 2008).

Direct observations were also used to support the findings and the information from the interviews, to increase the accuracy of the FBA and reduce the chance of incorrectly identifying the function of the challenging behaviour (McIntosh et al., 2008).

Baseline. Two baseline measures were completed. Firstly, parents undertook a pre-workshop functional behavioural assessment Knowledge Quiz. The second baseline measure was direct observation of their home routine via a choice of video and/or written diary to record their child's challenging behaviour and prosocial behaviour. Parents were requested to record three to five recordings and the allocation of the number of baseline recordings was chosen randomly for participants.

Parent empowerment programme handbook. The handbook used in the two workshops and was adapted from the Lindsay et al. (2016) version. Changes mainly included the wording within the handbook and not the content. The content consisted of the defining and measuring behaviour, identified relevant antecedent manipulations and consequence interventions, identified the function of their child's challenging behaviour, how to conduct a functional behavioural assessment and created and implemented a function-based PBS intervention plan for their home bed-time routine.

Post first workshop tasks. Parents were provided with in-home tasks to complete before the commencement of the second workshop. Parents were requested to complete a frequency count of the positive and negative statements they made to their child during the bed-time routine, one mid-workshop parent diary log and identified antecedent and consequence strategies that worked well with their family. The inclusion of home tasks was to strengthen and reinforce the knowledge learned from the workshops.

Behavioural Definitions

Behavioural definitions were developed from the baseline video recordings. Definitions are provided below.

Challenging behaviour was defined as any occurrence of one or more of the following inappropriate behaviours; tantrums, physical aggression towards self or others, inappropriate vocalisations, non-compliance, being out of an area, and inappropriate use of materials (Duda et al., 2008; Fettig et al., 2015).

Tantrums were defined as physically resisting, behaviour that disrupts the continuation of home routine time, and/or high intensity screaming and crying that lasts for at least ten seconds.

Physical aggression was defined as any behaviour that could physically hurt themselves or somebody else such as hitting, kicking, or biting.

Inappropriate vocalisations included whining, yelling, and screaming as well as hurtful comments (e.g. “You hate me”).

Non-compliance was defined as not following an adult instruction within five seconds.

Being out of an area was defined as the child not remaining or entering the area where they have been instructed to be by an adult (e.g., bedroom at bedtime, or dinner table for meals).

Inappropriate use of materials included not using the material in the way it was intended for, such as slamming doors or spitting out food.

Parents use of positive behaviour strategies (PBS). Parents use of positive behaviour strategies is a discrete categorisation (Kazdin, 1982) which was defined as the use of clear, concise instructions, clear transition times, giving positive attention, planned ignoring, follow through with requests, and use of the Sit, Wait, and Show strategy.

Clear, concise instructions included gaining the child's attention before giving the instruction, giving instructions that were developmentally age appropriate for the child and explained the behaviour that the adult would like to see.

Clear transition times were defined as making the child aware that a transition time is coming up with a five-minute warning and sticking to the transition time.

Positive attention strategies include using contingent praise and encouragement, positive body language when the child is showing desirable behaviour, and descriptive praise when they are behaving appropriately or have completed a required instruction. Positive attention must be given within five seconds of the desirable behaviour.

Planned ignoring, or extinction, is a strategy which is used when there is no risk of harm to the child, property, or others. It involves ignoring minor challenging behaviour by not giving eye contact, maintaining a neutral expression, and continuing with a task which does not involve the child.

Following through with requests requires the adult to expect the child to comply when given a clear and concise instruction. If the child does not comply within five-seconds, then the parent should restate the request. For example, the adult uses a clear and concise instruction for the child to put their toys in the toy box and the child ignores the adult, the adult should get down to the child's level, make eye contact, and then restate the request. If this occurs, they will be marked as using follows through with requests.

Sit, Wait, and Show, or inclusive time out, is a strategy which is only used when the child is engaging in dangerous behaviour which may cause harm to self, property, or others. It involves stating the behaviour that is required, removing the child to the side of the activity if they do not comply, state that they will sit and wait with the adult until they have calmed down. Once the child is calm, the adult then re-engages with them by explaining what they did wrong and then clearly explaining the desired behaviour. The child then has the opportunity to return to the activity to show the desired behaviour and the adult has the chance to provide descriptive praise of the desirable behaviour.

5. Social Validity Questionnaire (adapted from Li, 2011). The Social Validity Questionnaire contained 17 questions about the content of the workshops and parents rating their overall satisfaction on the workshop materials. Responses were made on a five point Likert-scale (1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree and 5 = strongly agree). The questionnaire covered questions related to the workshops, FBA, intervention content and delivery and the parents overall satisfaction from these. The questionnaire was adapted from Lindsay et al. (2016) where two questions were added to improve the relevancy to younger children aged 2 to 6 years. The two additional questions consisted of “the components were relevant to the age group” and “the video resources were relevant to the age group.” For a copy of the questionnaire, please refer to Appendix K.

Procedures

Initial meeting. During the initial meeting, the researcher went through the information form and consent forms with the parent so they could ask any questions regarding the project. They then signed the consent forms. After this, the parents were requested to complete two measures;

The Demographic and FACTS Questionnaire. The Demographic Information and FACTS Questionnaire was administered by the researcher at the initial meeting with each individual family/parent. Each interview took approximately 45 minutes to an hour for each parent.

Knowledge Quiz. The Knowledge Quiz was completed by each individual family/parent and it was emphasised by the researcher to the parent to do their best. There were no time constraints on completing the Knowledge Quiz. The first Knowledge Quiz took approximately 20 minutes for each parent to complete.

Baseline. Parents were requested to complete direct observations via video or parent diary. Parents were given a small recorder to place discreetly in their home but also in a position where the researcher could view the child's behaviours. All recordings (video and/or diary) were completed and given to the researcher prior to the first workshop.

Workshops. After the three, four or five in-home direct observation recordings, parents attended two, 2 hour Parent Empowering Programme (PEP) (Lindsay et al. 2016) workshops at the Pukemanu/Dovedale Centre at the University of Canterbury, one week apart. Mid-workshop, parents were requested to complete one parent diary log prior to the second workshop. At the end of the last workshop parents completed the second Knowledge Quiz and approximately took 10 minutes to complete.

The first workshop began by parents setting goals about what they wanted out of the PEP. Parents then learned about what challenging behaviour was, how to measure and identify it. Relevant antecedents and consequences were described and identified in terms of their child's challenging behaviour. This then led to discussion on intervention strategies to reduce their child's challenging behaviour and increase their child's prosocial behaviour. A range of teaching materials were provided such as, parents completed written tasks in the

handbook, video vignettes and group activities and discussions. A summary of the workshop and a discussion of the homework tasks completed the first workshop. The second workshop began by a recap of the first workshop and introducing the functions of challenging behaviour. Following this, parents then learned about functional behavioural assessment and this informed their function-based behaviour support plan which they developed to implement during the bed-time routine. A second Knowledge Quiz was completed by parents at the end of the second workshop.

Follow-up. Follow-up occurred 1 month after the second workshop was completed. Follow-up required parents to complete one home based video and/or written parent diary recording of the bed-time routine. When the recordings were complete, parents completed the Social Validity Questionnaire.

Reliability

The researcher was the main data collector during the project. Inter-rater reliability and inter-observer reliability (IOA) consisted of the researcher and another Child and Family postgraduate student simultaneously but independently, coding the direct observation video and/or diaries by counting the duration and frequency of parent and child behaviour.

Interrater reliability. Inter-rater reliability was completed by marking the Knowledge Quiz scores. A training session was completed by the researcher and another Child and Family post-graduate student on three sample questionnaires. A minimum criterion of agreement of 85% was used as suggested by McNeill et al. (2002). Inter-rater reliability was calculated by dividing the number of agreements by the total number of agreements plus disagreements. The mean agreement reliability for all three sample questionnaires was 90% or higher.

Fifty percent of the pre- and post-Knowledge Quizzes were randomly selected and scored by a secondary rater. The mean agreement reliability for the Knowledge Quiz scores was 96% (range = 94 - 100).

Inter-observer agreement (IOA). The researcher coded the recordings as the primary source for IOA. Fifty percent of the recordings/diaries were randomly selected and coded by a secondary rater. Agreement was calculated by dividing the number of agreements by the total number of agreements plus disagreements. The mean for agreement reliability for child's challenging behaviour was 96% (range = 90 - 100). The mean for agreement reliability for parental response to behaviour was 91%, (range = 85 - 100).

Data analysis

Four data analyses were taken, these included the Demographic and FACTS Questionnaire, the Knowledge Quiz, video/diary recordings and the Social Validity Questionnaire.

Demographic and FACTS questionnaire. The information from this questionnaire was collated and presented in Table 2.

Knowledge Quiz. The Knowledge Quiz was examined by the correct and incorrect responses made by the participants. Once the responses were collected, they were collated and tabled to establish whether the two training workshops had increased the participant's knowledge of FBA and function-based intervention strategies.

Video and diary recordings. Behaviours from the video and diary recordings were coded using the behavioural definitions as previously mentioned. A frequency count and duration of the bed-time routine were recorded. Results were presented in a line graph and

features in the data such as trend and changes in mean were used to conclude whether the intervention changes were reliable.

Diary entries were analysed by the correctly or incorrectly identifying the responses of the antecedents and consequences of the behaviour and by recording the number of behavioural incidences and their duration. Where videos were made, a match was then applied to the video and parent diary recordings to confirm reliability and accuracy of the recordings. Once collected, responses were collated and presented in a line graph to confirm the new skills learned from the two workshops.

Social Validity Questionnaire. This questionnaire was analysed by recording the individual scores and collated means of the participant's scores in a table format.

Chapter Four

Results

To ascertain the effectiveness of the Parent Empowerment Programme (PEP) with four parent-child dyads, the following data was collected via the Demographic and FACTS questionnaire, the in-home parent diary recordings and/or video recordings and the Social Validity Questionnaire. The order of findings reported in this chapter include the group findings of the Knowledge Quiz, duration of routine times, frequency of challenging behaviour, parental use of positive behaviour support (PBS) strategies and the number of child's challenging behaviours and then presented are the individual parent-child dyad findings and finally social validity findings.

The collection of data included, the type and number of recordings and these are presented in Table 3. This data was collected over an 8 week period. Three parents, Sarah, Julia and John all experienced difficulties with the video recording during the baseline and post-intervention phases and so recorded their data via the parent diary. As can be seen in Table 3, all parents completed the pre- and post-Knowledge Quiz, completed the baseline recordings, post-intervention recordings and the Social Validity Questionnaire. Only Julia and John completed the mid-intervention recording. Please note Alice and Richard (parents) attended both workshops and both provided data for the Knowledge Quiz but Alice completed all the video/diary recordings.

Table 3

Data Collection from Participants

Participant	Pre Knowledge Quiz completed	Post Knowledge Quiz completed	Number of baseline recordings	Number of mid Workshop recordings	Number of post-intervention recordings	Social Validity completed
Julia	Yes	Yes	3	1	3	Yes
Alice and Richard	Yes	Yes	3	0	3	Yes
Sarah	Yes	Yes	3	0	3	Yes
John	Yes	Yes	5	1	3	Yes

Knowledge Quiz

Figure 1 shows the overall results of the Knowledge Quiz for all five parents (four participants and one spouse). From a possible 36 points, all parents doubled their initial scores. The pre-test scores ranged from 6 to 16 and the post-test scores ranged from 12 to 33 points. Julia made the largest increase of 17 points, followed by Alice and Sarah increasing their scores by 15 points. John and Richard (Alice's partner) also made modest improvements of 11 and 6 points respectively.

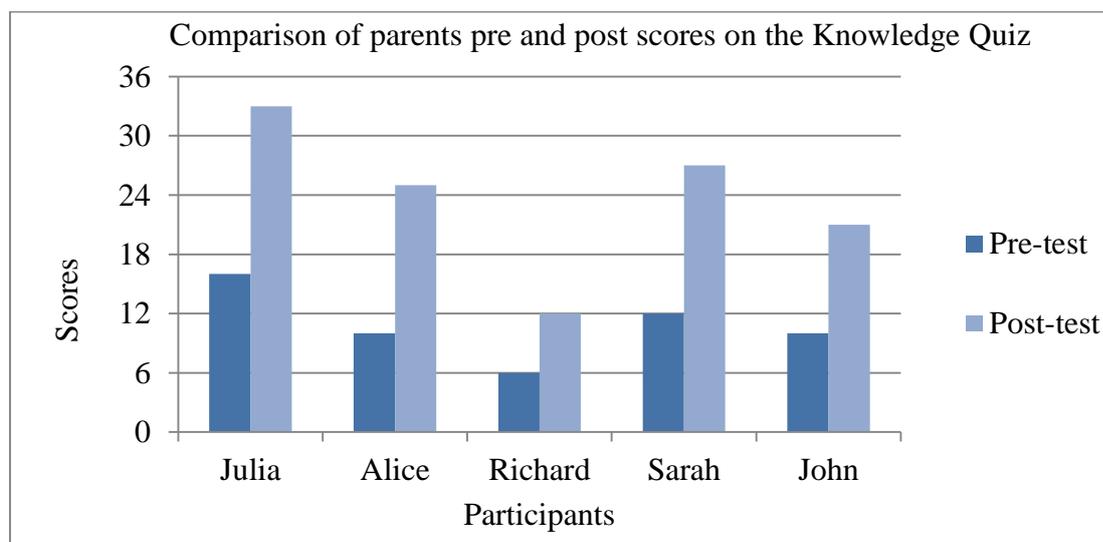


Figure 1. Participant Knowledge Quiz pre-test and post-test scores.

In-Home Recordings

All four participants consented to home video recordings however, there were some difficulties with these recordings. John's video recordings were spoken in his home language so the researcher was not able to code the videos accurately, so a written diary was requested and this was written in English. Julia encountered technical difficulties as the video recorder as it would turn off after a minute of recording. The researcher then suggested she use the parent diary. Sarah noted that on the first baseline recording, her son was on his best behaviour and when she asked why, he said "the recorder is on." Sarah then used the parent diary.

Parent Identification of the Function of Their Child's Challenging Behaviour

By the end of the first workshop, both Alice and Julia identified the function of Olivia's and Liam's challenging behaviour as *attention and/or access to a tangible*. Sarah identified the function of Aiden's challenging behaviour as *attention* and John identified the function of Ella's challenging behaviour as *attention and/or avoidance*.

Parent Identified Home Routine: Bed-time Routines

During the initial interview with the parents, all parents identified the bed-time routine as the home routine of concern. As a result, during the two subsequent workshops the function of all the children's challenging behaviour was discussed in light of bed-time routines.

Figure 2 indicates that over the course of this project for all four parent-child dyads, there was a reduction in the time taken to start and complete the bed-time routine. The duration of the routine varied across baseline with group mean of 85 minutes (range = 17 - 173 minutes).

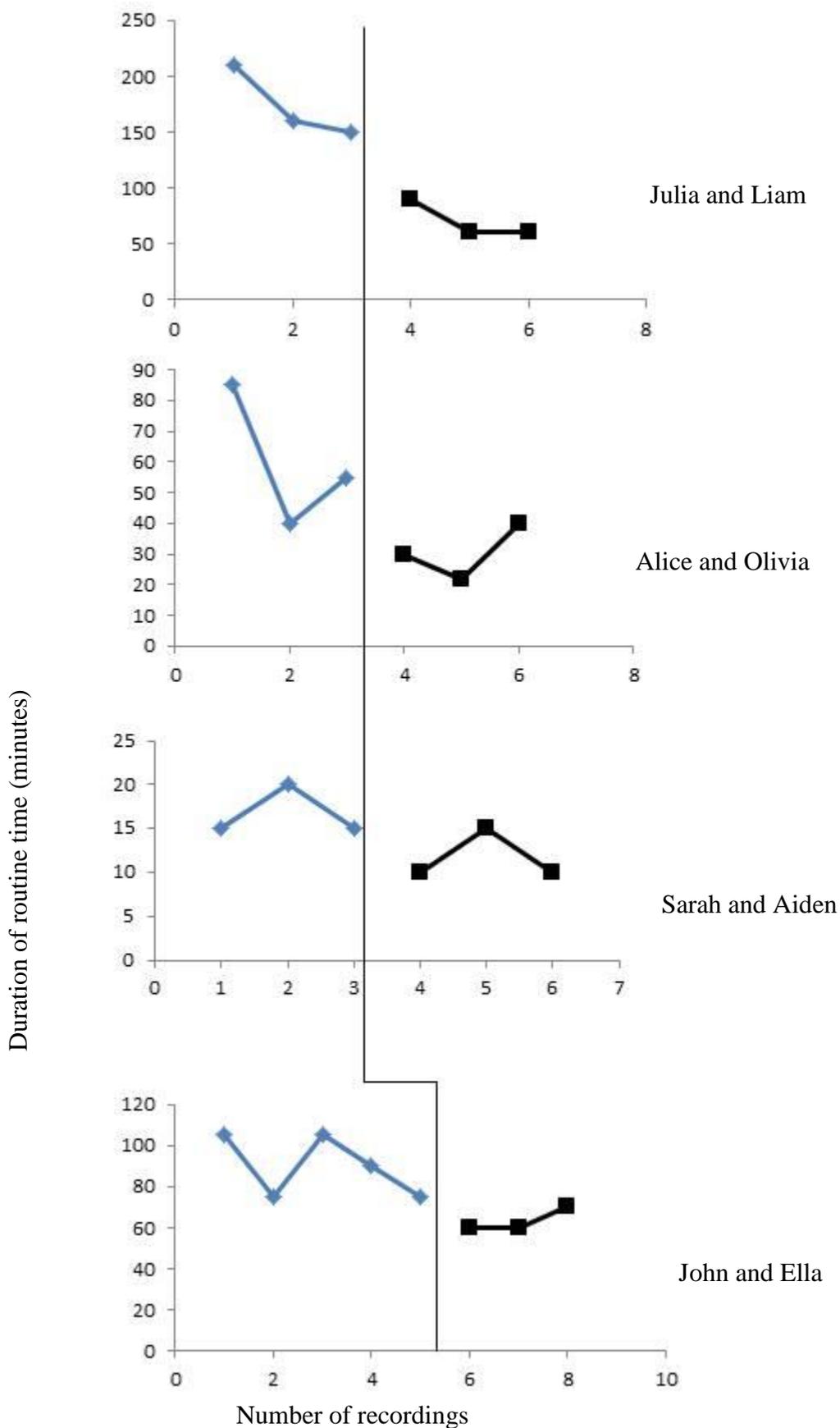


Figure 2. The duration of bed-time routine time during baseline and post-intervention phases.

Two weeks post-intervention, the bed-time routine decreased across the group from a group mean of 85 minutes during baseline to 44 minutes post-intervention (range = 12 - 70 minutes). Post-intervention data indicated no family experienced their child going to bed at the stipulated time, with two parent-child dyads indicating an increasing trend, but this did not return to baseline levels.

For all four parent-child dyads, Figure 3 shows there was a reduction in the frequency in all the children's challenging behaviour from baseline to post-intervention. Baseline data indicates a consistent trend for the frequency of challenging behaviour for the two parent-child dyads of Julia and Liam and John and Ella. There was a potential outlier in the baseline data for Alice and Olivia (recording one) which was considerably lower compared to the two other baseline points. Similarly, the first recording for Sarah and Aiden's baseline could also be considered an outlier as zero challenging behaviour occurred with Aiden.

The frequency of challenging behaviour varied across children during the baseline phase, with a group mean of nine occurrences (range = 4 - 14). Two weeks post-intervention, the frequency of challenging behaviour decreased for all children during the bed-time routine. The group mean decreased from nine occurrences of challenging behaviour at baseline to three instances of challenging behaviour post-intervention (range = one - five).

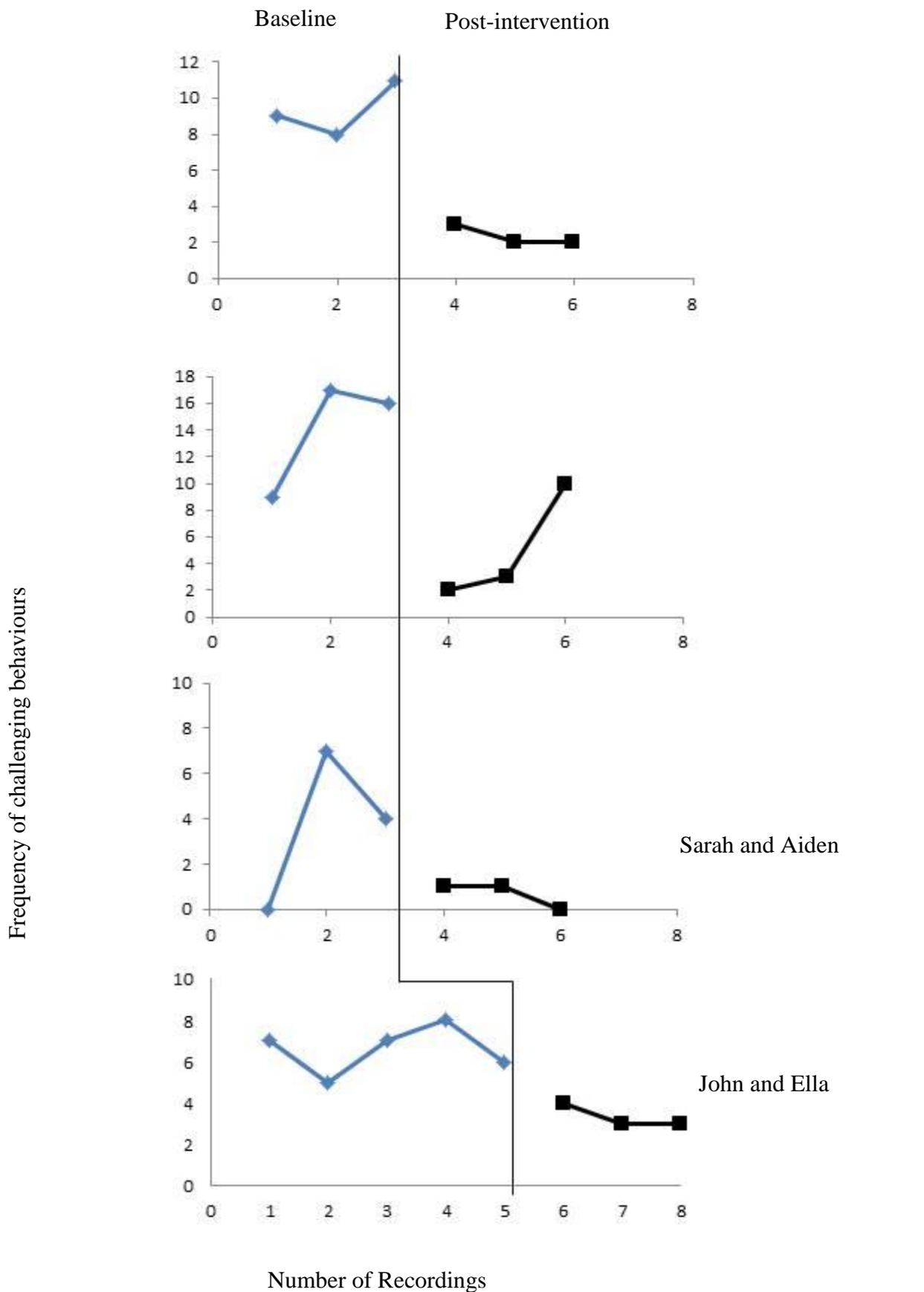


Figure 3. The frequency of child challenging behaviours (CB) during baseline and post-intervention

Child Challenging Behaviour and Parental use of PBS Strategies

All four parents increased their use of PBS strategies from baseline to post-intervention phases. Figure 4 indicates although the frequency of parental use of the PBS strategies varied across baseline and post-intervention phases, three parents showed a decreasing trend in use but this did not return to baseline levels. The group mean of parental use of PBS strategies was one instance during baseline (range = zero - two). Two weeks post-intervention, all four parents increased their use of PBS strategies from the baseline group mean of one strategy to four post-intervention (range = three - five).

A pattern emerged when Alice's use of PBS strategies was low (five occurrences) post-intervention, Olivia's challenging behaviour was high (10 occurrences). This finding was also consistent with Sarah and Aiden. When Sarah's use of PBS strategies was high (five occurrences) post-intervention, Liam's challenging behaviour was at its lowest (no occurrences). Post-intervention data showed all parent-child dyads decreased the frequency of their child's challenging behaviour and increased their use of PBS strategies to levels above their baseline recordings.

Interestingly, the largest decrease in the time taken to start and complete the bed-time routine matched with the largest decrease in a child's challenging behaviour. For example, Julia and Liam reduced their bedtime routine from 173 minutes to 70 minutes. Liam reduced his challenging behaviour from nine occurrences to three. In comparison, Sarah and Aiden had the smallest difference in their bed-time routine from 17 to 12 minutes and reduced the frequency of Aiden's challenging behaviour from four occurrences to one.

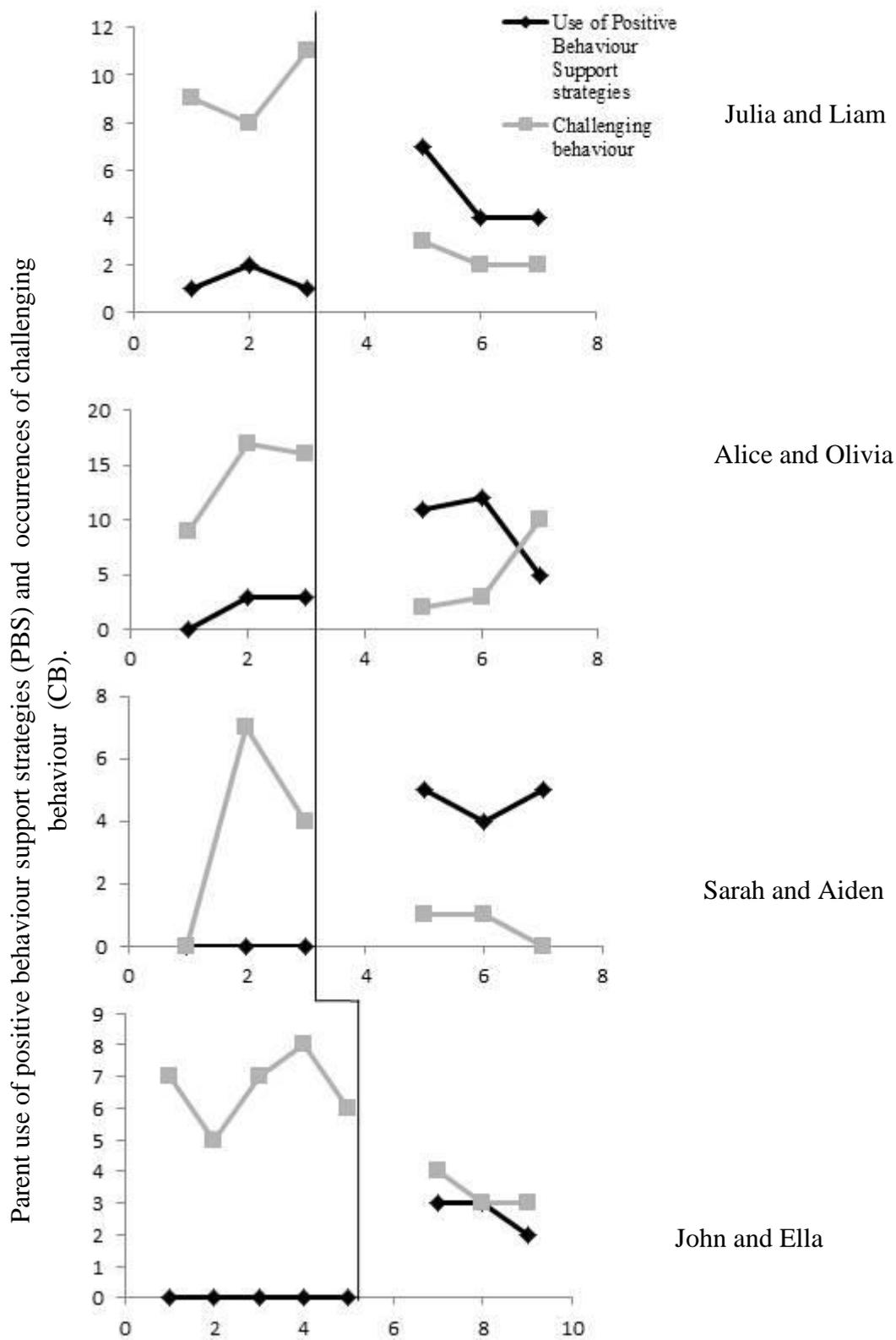


Figure 4. Parent use of positive behaviour support strategies (PBS) and occurrences of challenging behaviour (CB) over baseline and intervention phases

Overall, post-intervention all four parent-child dyads showed a decrease in challenging behaviour during the bed-time routine, when compared to baseline levels. However, one parent-child dyad experienced an increase in challenging behaviour on recording six but this did not return to baseline levels. Only one parent-child dyad recorded no challenging behaviour and this was their last recorded session.

Individual Parent-Child Dyad Findings

Julia and Liam. At the end of the second workshop, Julia correctly identified the function of Liam's challenging behaviour as attention and/or access to tangible. From the Parent Empowerment Programme behaviour plan Julia developed, her strategies were to have a clear transition to bed and a consistent bed-time routine for Liam of 7.30 p.m. each night, with descriptive praise for following instructions, but if he got up, then planned ignoring was used and Liam was placed back in bed.

Figure 2 indicates the duration of Liam's bed-time routine which included the lead up to bed such as, teeth brushing, shower and story time to the onset of sleep. Baseline data indicated a somewhat variable trend, taking Julia and Liam an average of 173 minutes to complete the bed-time routine (range = 150 - 210). Julia was one of two parents of who completed the mid-intervention diary (post workshop one) and interestingly, the bed-time routine increased in duration at this point and took 195 minutes to complete. Post-intervention data indicated a more consistent decreasing trend, with the bed-time routine now taking on average 70 minutes to complete (range = 60 - 90).

The frequency of Liam's challenging behaviour was consistent during baseline, with an average of nine occurrences (range = 8 - 11) which consisted of non-compliance, inappropriate vocalisation and out of his bedroom. The frequency of Liam's challenging behaviour began to decline from mid-intervention as he engaged in five occurrences and this

decreased again to an average of three occurrences of challenging behaviour post-intervention (range = four - seven). Challenging behaviour post-intervention consisted of him coming out of his bedroom.

As Liam's challenging behaviour decreased, the use of Julia's positive behaviour support strategies increased. Her use of descriptive praise increased from one occurrence at baseline to three at mid-intervention to five post-intervention (range = four - seven). An example of praise was "good boy for helping mamma." During the second workshop, Julia described an evening when she used planned ignoring when Liam woke in the early hours of the morning and yelled for 45 minutes for her attention. Julia was aware this was for attention purposes, as it was not a distressed cry so she used planned ignoring. Liam stopped screaming and went back to sleep. Julia anecdotally reported the bed-time routine was more relaxed now.

Alice and Olivia. At the end of the second workshop, Alice accurately identified the function of Olivia's behaviour as attention. From Alice's Parent Empowerment Programme behaviour plan her identified strategies included, reducing distractions such as turning the T.V off before giving Olivia an instruction, providing transition to bed-time and providing clear instructions. For example "Daddy is going to brush your teeth first and then Olivia can have a turn." Alice also mentioned she made every day normal activities fun, for example the transition to moving from the lounge to the bathroom was made more interesting for Olivia by "being a certain animal and acting as that animal to the bathroom." Consequence strategies identified in the home consisted of descriptive praise for following instructions and planned ignoring for getting out of bed. Alice reported that she struggled with planned ignoring but realised that it worked and gave attention to Olivia's appropriate behaviour.

Figure 2 indicates the duration of the bed-time routine which consisted of the lead up to bed from brushing teeth to the onset of sleep. Baseline data was variable, taking Olivia, an average, 60 minutes to complete the bed-time routine (range = 40 - 85). Post-intervention data indicated a reduction in the duration of the bed-time routine, taking Olivia on average of 31 minutes to complete the bed-time routine (range = 22 - 40). This time was half that of baseline measures.

The frequency of Olivia's challenging behaviour increased during baseline and ranged from 9 to 17 occurrences (mean = 14) and consisted of non-compliance, inappropriate vocalisations and getting out of her bedroom. At post-intervention there was a reduction in challenging behaviour to a mean of five occurrences (range = 2 - 10) (refer to Figure 3).

Alice's use of positive behaviour support strategies during baseline phase averaged two occurrences which consisted of giving positive attention and praise to Olivia (range = zero - three). Post-intervention data indicated, although variable, an increase in the use of positive behaviour support strategies and these averaged nine occurrences during the bed-time routine (range = 5 - 12). Alice's use of positive behaviour support strategies post-intervention included the use of clear transitions, clear concise instructions and positive attention to Olivia contingent on following parental instructions. Alice also used more descriptive praise, for example "good girl" shifted to "good girl, that is really good teeth brushing."

Sarah and Aiden. At the end of the second workshop, Sarah accurately identified the function Aiden's challenging behaviour as attention and/or access to a tangible. From Sarah's Parent Empowerment Programme behaviour plan she identified reducing distractions, setting bed-time expectations and making goals for the week as her antecedent strategies. Consequence strategies included ticks/crosses on the blackboard for appropriate/inappropriate

behaviour, praise for sleeping through the night, planned ignoring of the non-compliance and the giving of rewards for following bed-time instructions. Anecdotally Sarah reported post-intervention she was using planned ignoring in other situations and incorporated daily verbal recap of things Aiden did well and could work on. Sarah also incorporated quality time once a week where Aiden could choose a special event to do together.

Aiden took an average of 17 minutes to fall asleep (range = 15 - 20). However, this did not include whether Aiden had woken early in the morning and subsequently woke Sarah up. Sarah reported that after the first workshop this behaviour reduced significantly. Sarah reported she replaced Aiden's clock with a digital one and then provided a time (6 a.m.) when he could then wake her up. This change improved Aiden's early waking behaviour so now he is no longer waking up at 5 a.m., he is now getting up with Sarah at 6 a.m. The duration of the bed-time routine post-intervention was reduced to a mean of 12 minutes to fall asleep (range = 10 - 15).

In terms of Aiden's frequency of challenging behaviour, on average there were four occurrences of challenging behaviour (range = zero - seven) and this consisted of inappropriate vocalisations and getting out of his bedroom. Aiden's challenging behaviour decreased post-intervention to zero occurrences (range = zero - one) (see Figure 3).

Sarah's use of PBS strategies increased from baseline to post-intervention. During baseline there was no parent reported use of positive behaviour support strategies. Post-intervention data indicated Sarah's use of PBS strategies improved to an average of five occurrences (range = four - five). This increase in positive behaviour support strategies and subsequent decrease in Aiden's challenging behaviour cannot draw causal inferences from the two PEP workshops because there was not enough data to draw firm conclusions.

John and Ella. At the end of the second workshop, John correctly identified the function of Ella's behaviour as attention or avoidance. From John's Parent Empowerment Programme behaviour plan he identified that a clear transition such as "bed-time in 5 minutes" to bed-time was needed and descriptive praise was needed for Ella. For example "what a great job you did Ella."

Figure 2 indicates the duration of Ella's bed-time routine which included the lead up to bed by packing away toys, brushing teeth to the onset of sleep. On average, it took John and Ella 90 minutes to complete her bed-time routine (range = 75 - 105). John was the second parent that completed the mid-intervention parent diary and this recording showed the bed-time routine decreased to 60 minutes. This remained stable post-intervention, taking Ella, 63 minutes on average to complete the bed-time routine (range = 60 - 70).

In terms of Ella's challenging behaviour these were seven occurrences at baseline (range = five - eight) and this consisted of non-compliance and inappropriate vocalisations. Mid-intervention data indicated a slight decrease to five occurrences while at post-intervention a consistent and further decrease in challenging behaviour occurred with an average of three occurrences during the bed-time routine (range = three - four).

John's use of PBS strategies was limited. During baseline there were no parent reported PBS strategies used and the mid-intervention diary showed that John used three PBS strategies and he maintained this during post-intervention recordings (range = two - three).

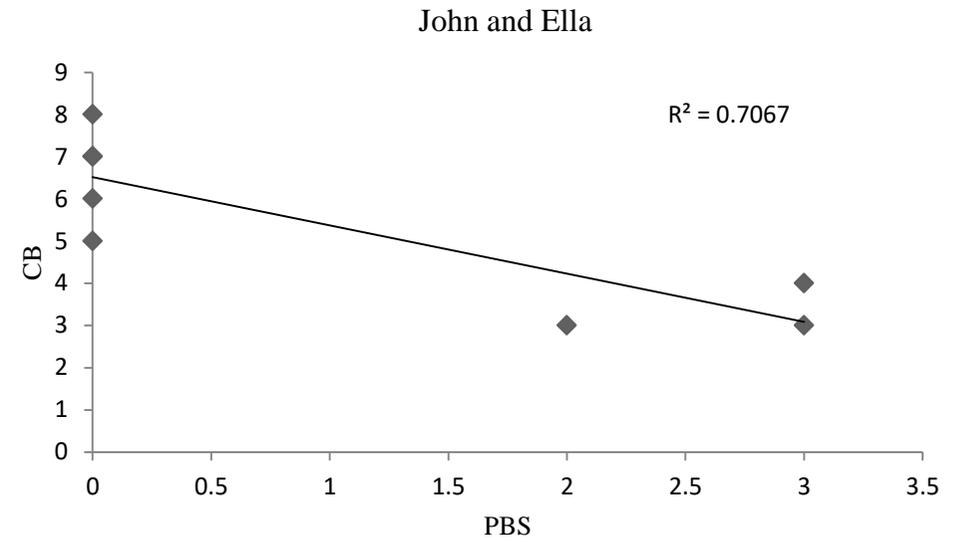
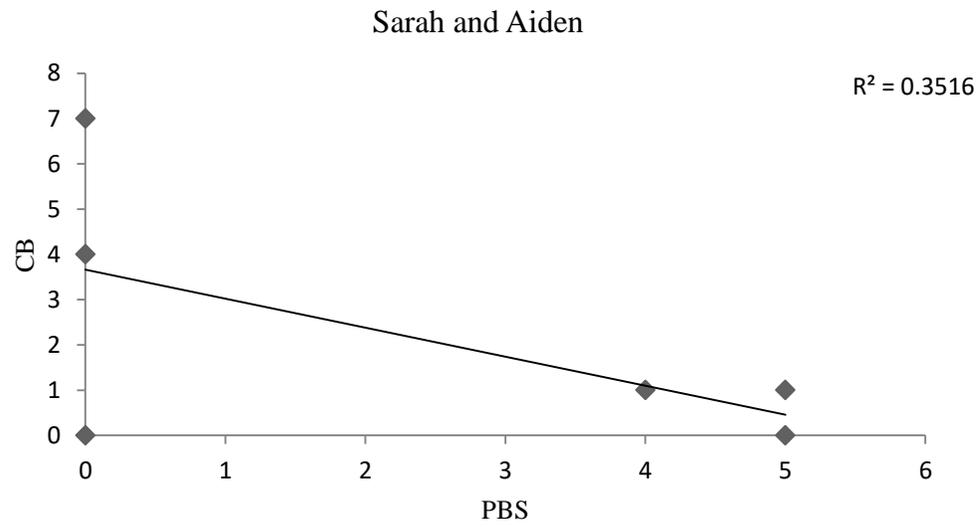
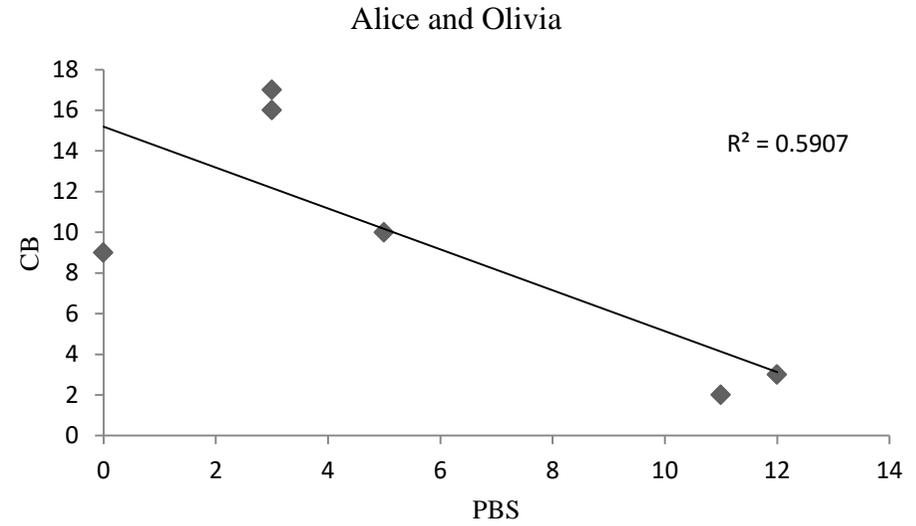
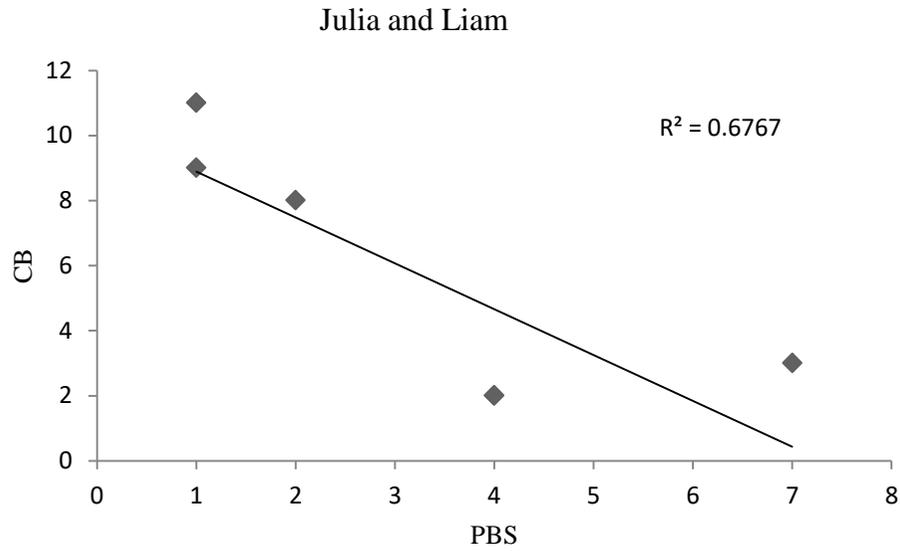


Figure 5. The correlation between parental use of positive support strategies (PBS) and challenging behaviour (CB).

Correlations. Figure 5 indicates the correlation between each parent-child dyad on the parental use of PBS strategies and their child's challenging behaviour. Sarah and Aiden showed a weak inverse correlation ($r^2 = 0.35$), this shows that 35% of the total variation in Aiden's challenging behaviour can be explained by Sarah's use of PBS strategies. Both Alice and Olivia's and Julia and Liam's correlations showed a moderate inverse correlation ($r^2 = 0.59$, $r^2 = 0.67$), while John and Ella's correlation showed a strong inverse correlation ($r^2 = 0.71$).

Social Validity Questionnaire

Group findings. Overall, the parent group reported they enjoyed the workshops and found the subsequent function-based intervention strategies appropriate to meet their needs for a relaxed bed-time routine. The results for the majority of the Social Validity Questionnaire were consistent across all four parents. On a 5-point Likert scale, parents rated 12 of the 17 items with a 4 or 5 (agree or strongly agree). These scores indicate the parents agreed or strongly agreed with items which covered the group workshop, overall satisfaction within the programme and relevancy to the age group. Item eight "the teaching of functional behavioural assessment was understandable and helpful" scored an average of 4 (agree) however, this was only completed by three of the four parents. Items 10 and 11 were the only two items that scored below an average of 4 (agree). Item 10 "I have the confidence in my ability to perform functional behavioural assessment and intervention plans" scored on average 3.5 and item 11 "Overall training time was neither too short or too long" scored on average 3.8.

Individual findings. Individual findings for each of the four parents are listed below.

Table 4

Individual Findings and Group mean of the Social Validity Questionnaire

Social Validity Questionnaire	Participants				Group mean
	Julia	Alice	Sarah	John	
The group workshop					
1. The components were well organised	4	4	4	5	4.3
2. The examples and video resources were easy to relate to	4	4	4	5	4.3
3. The mixture of written, visual and physical learning activities were beneficial for my learning	5	4	4	5	4.5
4. The information provided was thorough	4	4	4	5	4.3
5. The instructor showed knowledge and professionalism when providing training and feedback	5	4	4	5	4.5
6. The workshop was interactive and enjoyable	5	4	4	5	4.5
7. The group setting encouraged relationships between parents	5	4	4	5	4.5
Functional behavioural assessment strategies					
8. The teaching of Functional behavioural assessment was understandable and helpful	5	2	n/c	5	4
9. functional behavioural assessment strategies were relatable to my family situation	5	4	4	5	4.5
10. I have the confidence in my ability to perform functional behavioural assessments and intervention plans	4	2	3*	5	3.5
Overall satisfaction					
11. Overall training time was neither too short or too long	4	2	4	5	3.8
12. I would use the skills learned again with my child if necessary	5	4	5	5	4.8
13. The information gained through this training helped me to better understand my child	5	4	5	5	4.8
14. I would recommend learning about functional behavioural assessment and Interventions to other parents	5	4 *	5	5	4.8
15. I am satisfied with the training programme	5	3	5	5	4.5
16. The components of the workshop were relevant to the age group	5	4	5	5	4.8
17. The video resources were relevant to the age group	4	4	4	5	4.3

Julia. Julia scored 6 of the 17 items as agreed and scored the remaining 11 items as strongly agreed. These scores indicate Julia found the two workshops socially acceptable in terms of the workshops content, the delivery, the functional behavioural aspect, materials used and relevancy to the age of her child. At the end of the questionnaire Julia commented “the workshops have helped in many areas with our child.”

Alice. Alice agreed with 13 of the 17 items, indicating she found most aspects of the workshops socially acceptable. The remaining items she scored a 2 (disagree). Alice gave detailed feedback and commented that she found “the underlying concepts of the programme great but would not recommended the programme as the terminology and content is too jargonistic.”

Sarah. Sarah agreed or strongly agreed with 15 of the 17 items, indicating she found the majority of the aspects of the workshops socially acceptable. The remaining two items, she scored one item with a 3 (neutral) and did not answer the second item. The item 10 “I have the confidence in my ability to perform functional behavioural assessments and intervention plans” on which Sarah scored a 3 (neutral). She also wrote “not the plan itself but key skills learnt from the plan.” At the end of the questionnaire Sarah commented “the workshops have improved things significantly in my household.”

John. John strongly agreed with all the 17 items indicating that he found the two workshops very socially acceptable and commented that he “found the workshops very enjoyable.”

Summary

Overall all five parents (four participants and one spouse) increased their scores on the Knowledge Quiz. All four parents correctly identified the function of their child’s challenging behaviour, but this was in a supported environment where the researcher and

supervisor were present. When compared to baseline recordings, all four parent-child dyads showed a decrease in the duration of the bed-time routines, a decrease in the frequency of their child's challenging behaviour and an increase in their use of positive behaviour support strategies. Correlations between parental use of PBS strategies and their child's challenging behaviour varied for each parent-child dyad from strong to weak. All of the parents learned a range of PBS strategies, the most common were clear concise instructions, clear transitions to bed-time, praise and planned ignoring. The implementation of these strategies varied with each parent but overall, each parent increased their use of PBS strategies during the bed-time routine. Overall, the parents found the workshops to be socially satisfactory, in particular, the parents stated they would use the skills learned from the workshops again, they found the FBA strategies were relatable to their parenting and the workshops helped them better understand their child. Three of the four parents would recommend the Parent Empowerment Programme to other parents.

Chapter Five

Discussion

The aim of this project was to investigate the effectiveness of teaching four parent-child dyads functional behavioural assessment skills and the implementation of a function-based assessment plan with their child who engaged in challenging behaviour during the bed-time routine. The following two research questions were addressed in this project.

Research Question 1: Using the Parent Empowerment Programme (PEP) (Lindsay et al., 2016) can parental knowledge of functional behaviour assessment and function-based intervention strategies increase and be maintained over two group workshops?

Research Question 2: Can parents of young children with challenging behaviour generalise the knowledge from the PEP workshops to their home environment and conduct a function-based positive behaviour support intervention plan based on the content of the PEP?

To answer the first research question, the results from the Knowledge Quiz showed all five parents (four participants and one spouse) increased their scores on content on functional behavioural assessment and positive behaviour support strategies. This finding suggests that the duration of the workshops was sufficient for parents to learn these skills and aligns with previous research which also found participants increased their knowledge on function-based interventions (Duda et al., 2008; Dunlap et al., 2006b; Fettig et al., 2015; Lindsay, 2016; Shayne & Miltenberger, 2013).

The second Knowledge Quiz (KQ) was completed at the conclusion of the second workshop, which occurred at approximately at 10 p.m. at night. This time of night may have affected the parent's concentration and ability to answer the KQ. Despite most of the parents

reporting poor concentration and tiredness, they managed to increase their scores from the first KQ. This finding demonstrates that parent's knowledge on functional behavioural assessment and subsequent function-based positive behaviour intervention strategies can increase from only two, 2 hour workshops. Thus, confirming research question one that using the Parent Empowerment Programme (PEP) (Lindsay et al., 2016) parental knowledge of functional behaviour assessment and function-based intervention strategies can increase and be maintained over two group workshops (Crone & Mehta, 2016; Duda et al., 2008; Dunlap et al., 2006b; Fettig & Ostrosky, 2011; Fettig & Ostrosky, 2014; Fettig et al., 2015; Lindsay, 2016; Marcus et al., 2001; Shayne & Miltenberger, 2013).

The average length of time it took most parents to complete the first KQ was 20-30 minutes and interestingly, in comparison, the second KQ took parents only 10 minutes to complete. This could be due to practice effects or that they were more familiar with the specific vocabulary by the end of the second workshop (McCabe, Langer, Borod & Bender, 2011).

To answer the second research question, the overall group findings indicate that after a brief intervention (two, 2 hour workshops) all four participants were able to transfer these skills and implement a small intervention in their own home. This finding is consistent with the previous literature of Crone and Mehta (2016), Duda et al. (2008), Dunlap et al. (2006b), Fettig and Ostrosky (2011), Fettig et al. (2015) and Lindsay (2016) all of which show the parent's ability to implement a function-based intervention after a brief training period.

Video recordings in the home proved to be problematic. All four parents consented to use a small USB size recording device to record their bed-time routine. Some advantages of using direct observation (i.e. video recordings) in the home include the low inference and reduced subjectivity compared to other data collection methods such as rating scales and

interviews (McIntosh et al., 2008). As mentioned previously, due to miscommunication and technical difficulties, Alice was the only parent that completed both video and parent diary recordings, with the remaining three parents completing only the parent diaries. Similar problems have occurred in previous studies. Lindsay (2016) also experienced technical difficulties and only obtained one video recording from one parent out of a potential seven recordings from each of her four parent participants. Reasons included forgetting to turn on the camera or the parent did not want to be videoed when she was angry with her child. Interestingly, Lindsay (2016) found that the one video recording completed alongside a parent diary showed an accurate description of the routine and the child and parent behaviours. This finding is also consistent with Barr, Kramer, Boisjoly, McVey-White and Pless (1988) as they found mothers were able to accurately report their child's behaviours using a diary format.

Parent Empowerment Programme Workshops

Duration. The length of the two, 2 hour workshops was based on previous research which suggested that parents can learn functional behaviour assessment and function-based PBS strategies in brief training sessions (Dunlap et al., 2006b; Lindsay, 2016; Shayne & Miltenberger, 2013) and brief training sessions help with parent engagement rates (Ingoldsby, 2010; Tully & Hunt, 2016). Therefore, based on this research the PEP workshops were two, 2 hours in duration. However, the first workshop for this project took over 2 hours but the extension was a result of discussion occurring within the group and questions from parents relating to their own family situation. The same occurred again at the second workshop (2.5 hours) where all the parents spent time sharing their own experiences and the researcher took the opportunity to use this as a teaching opportunity to place their child's behaviour in the context to using PBS strategies in their home situation. Lindsay (2016) also found the duration of her workshops exceeded 2 hours, nearing on 3 hours due to similar

reasons. However, as stated above, this was a useful discussion time from the parents' perspective and allowed for feedback on skills used and the consolidation of skills learned. The overall teaching time for the intervention was five hours. This time is significantly less time compared to other parent programmes such as Triple P that require 8-10 sessions (Sanders, 2008) and the Incredible Years which requires 10 -12 sessions (Webster-Stratton, 2011). In comparison to these well-established parenting programmes, the PEP teaches similar content in a shorter time frame with the notable difference of identification of the function of behaviour included in the programme.

Group-based setting

The group-based setting was chosen as previous literature supported this style of engagement with parents. Group-based sessions have the additional advantage of reducing isolation for the parents and allowed for discussion and the sharing of experiences and ideas. It also enabled a social support network to form among the six parents. This social support was apparent during the first 30 minutes of the second workshop when each parent took turns to discuss how their week had gone, what strategies they had used, what had worked and didn't. All parents were comfortable telling their experiences and supported each other with affirmations and empathy. Alice commented after the second workshop that the first 30 minutes "was like we were in a support group." All four parents either strongly agreed or agreed with item seven on the Social Validity Questionnaire that stated "the group-based setting encouraged relationships between parents." Studies by Lindsay (2016) and Pisterman et al. (1992) align with these findings in that, group-based parent training provides additional gains beyond changes in behaviour.

Engagement

The engagement of the parents in the PEP for both workshops was high. This finding is similar to that of Fettig and Ostrosky (2014), Lindsay (2016), Moes and Frea (2002) and Shayne and Miltenberger (2013) who also reported high engagement rates. In comparison, the rate of engagement for this project was higher than a meta-analysis on brief parenting interventions conducted by Tully and Hunt (2010) where they report an average engagement rate of 84%. Duppong-Hurley et al. (2016) found the primary barrier for families participating in parenting programmes was scheduling difficulties. Parents in the current project were no less susceptible to these barriers, as evident by only three parents attending the first workshop with the fourth parent, Julia having childcare problems. Interestingly, Harwood and Eyberg (2004) found that when the therapist used facilitative and supportive statements and few questions, this predicted parent's completing the programme. This finding aligns with this project's high rate of engagement and is supported by Item five on the Social Validity Questionnaire "the instructor showed knowledge and professionalism when providing training and feedback" where all four parents agreed or strongly agreed to this statement.

The addition of two spouses being present at both workshops was an advantage because both parents were learning the same content and skills and this may have led to more consistent use of PBS strategies being used in the home by these parents. Similarly, Fettig and Ostrosky (2011) found this with three mother-father dyads in their study of seven parents. Fathers' involvement in their child's parenting provides many benefits to the child however, it is more common for mothers to participate in parenting programmes. It has been found that it is more difficult to recruit fathers (Bayley, Wallace, & Choudhry, 2009).

McBride and Darragh (1995) suggest there needs to be more opportunities for fathers to participate in parenting programmes, but nonetheless, the addition of having two fathers in this programme was a unique aspect of this project and their contributions added to the discussions and examples of behaviour provided.

Individual Findings

Julia and Liam. Julia attended the second group workshop but due to childcare constraints was unable to attend the first workshop. This meant Julia had a one-to-one session in her home with the researcher prior to the second workshop. This lasted for 45 minutes. At the second workshop, Julia actively participated in group discussions and engaged well with the content and with the other parents. Julia rated every item with a 4 or 5 (agree or strongly agree) on the Social Validity Questionnaire. This suggests that she found the workshops socially acceptable and was satisfied overall with the Parent Empowerment Programme.

Julia consented to video recordings, however, due to technical difficulties during baseline the researcher requested Julia to complete the parent diary. Video recordings were attempted again post-intervention, but again due to technical difficulties, the parent diary was used. Post-intervention Julia mentioned she was using the strategies from the programme in other routines and daily activities with Liam. In particular, she described using the strategy “sit, wait and show” when she was at a friend’s house and Liam had made a mess. Julia gave Liam instructions to stop and clean up the mess but when Liam did not comply with Julia’s instruction, she sat him to the side and “waited” until he had calmed down. Once he was calm she then “showed” him how to clean up, which he subsequently did. This was followed by Julia giving descriptive praise and positive attention to Liam for following instructions. Practices in other areas outside of the training area (i.e. the home at

bed-time) increase the generalisation of skills as been suggested by Chandler, Lubeck and Fowler (1992) and Matson, Mahan and LoVullo (2009). Julia's results add to the limited literature in generalisation of skills post-initial teaching.

Alice and Olivia. Alice and her husband Richard attended the two Parent Empowerment Programme workshops and actively participated in all discussion. Alice in particular, appeared to understand, engage in the content and was able to relate this to her home situation. However, on receiving her Social Validity Questionnaire, Alice provided very detailed feedback on the workshop and the "jargon" in the workshop booklet. She felt "as a tired parent I am never going to be doing ABC exercises in my head while dealing with problematic behaviour." Nonetheless, the findings indicate that Alice could do this as she increased her use of PBS strategies and the frequency of Olivia's challenging behaviour decreased. Her results indicate the PEP provided adequate training for her and Richard to make modest changes in the bedtime routine for Olivia but insufficient for Alice to be confident in her use of these strategies. Thus, it is unlikely she will continue to use them in the future. This finding is similar to the Fernandez and Eyberg (2009) study that found a primary reason for attrition rates was due to family disagreement with the programmes approach.

Alice provided both video recordings and parent diary recordings for analysis. From the video recordings, the researcher was more accurate in identifying the frequency of Olivia's challenging behaviour than Alice was in the diary recordings, indicating the video was a more accurate measure of the child and parent behaviours. The final post-intervention recording showed a sharp increase in Olivia's challenging behaviour which Alice attributed to Olivia not being very tired as she had an afternoon nap. This increase could also be

associated with a post-extinction response burst, which is usually associated with extinction techniques (i.e. planned ignoring) (France, Henderson & Hudson, 1996).

Sarah and Aiden. Sarah attended the two PEP workshops, actively participated in group discussion and asked relevant questions during the workshops. Sarah scored the majority of the items on the Social Validity Questionnaire as agree or strongly agree. The section on the Social Validity Questionnaire which pertains to functional behavioural assessment strategies includes three items. Item eight “the teaching of functional behavioural assessment was understandable and helpful” was not completed. Item nine scored a 4 (agree) “functional behavioural assessment strategies were relatable to my family situation.” Sarah annotated item 10 “I have the confidence in my ability to perform functional behavioural assessment and intervention plans” with “not for the functional behavioural assessment itself but the key skills within it”. This provides an incomplete view on Sarah’s thoughts on the functional behavioural aspect. From these findings it could be surmised that the PEP workshops were adequate training as Sarah and Aiden’s bed-time routine was greatly improved, but insufficient for Sarah to learn and implement the underlying concepts of an FBA to everyday routines and behaviours.

Sarah wanted to undertake the video recordings but she experienced some issues. When it came to the first recording she sought assent from Aiden, which he agreed to. However, because Aiden was informed of the routine in focus, this led to changes in his behaviour. This resulted in the first night of baseline with zero challenging behaviour (i.e. there were no inappropriate vocalizations or getting out of bed that night). The purpose of acquiring assent from a child is to respect their growing autonomy (Rossi, Reynolds & Nelson, 2003). Rossi et al. (2003) argue instead of child’s assent being determined by their comprehension of the features of informed consent, child assent should be considered in

terms of a continuum on their cognitive ability. Clearly Aiden was capable of working out that if the video recorder was on, he did as his mother requested and when it was not on he could engage in his call outs and get out of bed. The problem of participants being aware they are being videoed has been acknowledged in the literature particularly with Church, Tyler-Merrick and Hayward (2006) finding similar results. What Aiden did shows was that his call outs and getting out of bed were for his mother's attention and not for other reasons, thus confirming the function of his behaviour was for attention.

Sarah's use of PBS strategies increased from baseline to post-intervention, alongside a decrease in Aiden's challenging behaviour. Sarah noted before she tried planned ignoring there would be an escalation of yelling from both herself and Aiden, but once implemented she noticed changes in both their behaviours. She was now focused on staying calm at this routine and Aiden's behaviour reflects this also. The positive changes in behaviour and demeanour could be attributed to Patterson's coercion theory. Patterson's coercion theory describes "a process of mutual reinforcement during which the caregivers inadvertently reinforce children difficult behaviours, which in turn elicits caregivers negativity, and so on, until the interaction is discontinued when one of the participants 'wins'" as cited in Smith et al. (2014, p.917). By giving Aiden descriptive praise for following the bedtime time structure, teeth, pyjamas and bed, Sarah was reinforcing the behaviour she wanted to see and prevented the previous coercive interactions by focusing on Aiden's appropriate behaviour. Sarah also reported she used planned ignoring in other situations such as when she was speaking to another adult. Previously Aiden would become physically clingy in an attempt to gain his mother's attention. But now when she used planned ignoring, he waited until she was finished before attending to him. Fettig and Barton (2014) highlighted shortfall in FBA research and concluded future research needs to include generalisation measures of

both parent implementation and child behaviours thus, this finding provides small support for generalizing the PEP strategies to other situations.

John and Ella. Both John and his wife attended the two Parent Empowerment Programme workshops however, his wife left halfway through the first workshop to attend to their children. John was engaged in both workshops but, due to language barriers John often needed clarification about content. For example, there was confusion over the term “escape/avoid a demand” where, John interpreted “demand” as an instruction as opposed to escaping a requirement/request. However, the language barrier also proved to be a strength of the programme as John often asked for clarification of the terms, thus providing opportunities for all parents to have a repeated chance to understand the key points. As often at times, the other parents would also ask questions or clarification and seek examples of the concept in “real life”. John consented to video recordings however, the researcher was not able to use the baseline recordings for two reasons. Firstly, the recordings were too short (two-three minutes); whether the researcher was not clear about the length of recordings required or if this was due to technical difficulties remains unclear. Secondly, John was requested on entry that all recordings were to be completed in English, however, the bedtime video recordings were in his native language. As a result, the researcher then requested John to complete his recordings in diary format, which he did do in English. Leung, Tsang, Heung and Yiu (2009) outlined potential cultural issues for Asian families including the use of descriptive praise as a strategy. Leung et al. (2009) found some Asian parents feel praise might spoil their children and other parents feel that praise is not needed and that children should be respectful towards their parents. John appeared happy to try descriptive praise and said he would continue to use it as his children responded so well to it.

At the feedback time in the second workshop, John reported how he used descriptive praise the previous week and was surprised how well his children responded to it. This finding is in line with a study conducted by Owen, Slep and Heyman (2012) who found that the combination of positive praise and attention resulted in improved compliance. A participant from the Lindsay (2016) study also reported how valuable positive attention and praise was for improving her child's behaviour.

Following the two workshops and before data analysis, John and the researcher met to clarify some of the parent diary entries. During this meeting John reported the family's goals for Ella had changed. Originally the main goal for Ella was to sleep in her own bed, but now this was not possible due to extended family staying. Despite this change, John scored all items on the Social Validity Questionnaire as "strongly agree" and mentioned "how helpful the workshops were for resolving his daughters' problem behaviours" (i.e. non-compliance and inappropriate vocalisations.) John's scoring suggests he found the PEP workshops socially acceptable and was satisfied overall with the programme.

The overall individual and group parent-child dyad results suggest, from the PEP, parents were able to identify the function of their child's challenging behaviour and implement strategies learned from the workshops to their home bed-time routine. Parents noted positive changes in their home environment as they used these strategies. These findings add to the small body of literature that parents can be taught FBA and PBS function-based intervention strategies in a brief two, 2 hour parenting programme.

Positive Behaviour Support

Positive behaviour support places a strong emphasis on key stakeholders playing an active role in the process and there is ecological and social validity (Fox et al., 2002). This project included all these elements, particularly the key stakeholders being actively involved

and implementation of their own intervention programme and finally, including social validity for the PEP.

The Parent Empowerment Programme also met Fox et al. (2002) four features of an effective early intervention programme where the PEP focused on family centeredness, family-professional relationships, assessment-based positive behaviour support and successful participation in inclusive environments. Both two-parent families in this project attended the two workshops, thereby enabling all four families to be fully empowered as family units. By all four participants actively developing their own “PEP family behaviour plan” alongside the researcher and her supervisor, family-professional relationships were developed. During both workshops, there was also sharing of knowledge and skills from both the parents and the researcher, thus working towards a common goal and inclusive of the families and “their way of doing things.” Harrower et al. (2000) found that partnerships between the professionals and the parents increase the chances that the subsequent intervention will be unified, beneficial and coordinated. By working towards a common goal Harrower et al. (2000) also suggest this increases the likelihood parents will develop extensive and long lasting changes in their own behaviour and that of their child(ren). The PEP taught parents how to develop and implement a function-based positive behaviour support intervention plan with the support of the researcher by the end of the second workshop. Often families with a child engaging in challenging behaviour contributes to the family’s overall stress levels (Plant & Sanders, 2007) and the higher levels of stress influences the capacity to which the family parents efficiently (Fox et al., 2002). So by working with families using the PEP although not measured, appeared to help the four families reduce their overall stress levels and manage their child’s challenging behaviour more effectively.

All the parents identified PBS strategies to suit their family situation. All selected using *descriptive praise* so they could focus on the positive behaviour their child showed and acknowledge when their child followed their requests. Three parents used *planned ignoring* with success, indicating that they understood the function of their child's challenging behaviour and once understood, these parents learned not to attend to their child's challenging behaviour but focused on their positive behaviour instead. The parents also looked at what they could change in their environment and skills such as, giving *transition time to bed* for their child. The parents also realised they could make changes for the better in their bed-time routine. Interestingly, two parents indicated they struggled with the "jargon" of the FBA and PBS and because of this, they would not recommend the programme because they did not like the behavioural terminology. Interestingly, even though they did not like the terminology, their results indicate they used the skills of the programme. There appears to be a "disconnect" between the behavioural principles of the PEP and these parents practices whereby, these parents appeared not to attribute the skills they learned and practiced to FBA or PBS or to the PEP.

Social Validity

All four parents completed the Social Validity Questionnaire. The mean score rating for each participant's answer was 4.4 on a 5-point Likert scale. This finding was consistent with that of Lindsay (2016) and Fettig et al. (2015). This finding suggests parents who have participated in function-based interventions find them socially acceptable and were satisfied overall with the intervention. These findings are also in line with Strain et al. (2012) where they investigated the link between social validity and evidence-based practice. They concluded that social validity can change an individual's ideas about the intervention itself.

Limitations

All studies have limitations. This project has identified six limitations. Firstly, the sample size of four families means their results cannot be generalised to other populations or ethnicities. A larger sample size would enable a stronger inference. Secondly, two parents identified themselves as New Zealand European, one parent identified herself as English and the fourth parent identified himself as Asian. Including a greater diversity of participants may result in greater generalisability (Fettig & Ostrosky, 2011). Reporting ethnicities may also assist to validate the strategies used across a range of populations with different cultural factors (Conroy et al., 2005). Third, the multi-components aspect of the PEP means it cannot be discerned which particular strategy/strategies were involved in the behaviour change for the child or parent. Video footage would have mitigated this limitation. Fourthly, despite all four parents consenting to video recordings, only one parent managed to record baseline and post-intervention observations. The remaining three parents used the parent diary recordings. Because parents cannot write as a behavioural episode occurs, parental recall limits the validity and reliability of their reports because of memory bias and exaggeration (Windle, 1993). When recruiting, parents were encouraged to complete two forms of observation recordings but as mentioned earlier this did not occur. The reason for parents to complete the two forms of observation was to assist in the reliability of the self-report parent diary with direct observation (i.e. recordings). Fifth, the project had a criterion of English being first or second language, because of the recording issues with one parent, future participant criteria could be altered to English as the first language. Lastly, despite the importance of fidelity, this project did not include measures to record fidelity. Incorporating fidelity measures would have strengthened the inferences made between the parental use of PBS strategies and the decrease in their child's challenging behaviour. It was hoped that the video recordings would indicate implementation fidelity, but as reported this was not successful.

Future directions

Outlined below are several suggestions for future research to expand and strengthen the Parent Empowerment Programme.

This project, alongside the findings from Landon-Lane (2017) and Lindsay (2016) provides a small but promising foundation for future research projects to validate the PEP. To further extend the findings, other projects could adapt the PEP for teachers, thereby improving their knowledge on functional behavioural assessment and subsequent function-based interventions. The PEP video vignettes could also be adapted to the relevant target populations (e.g. ethnicity, parents with young children, early childhood teachers) and this may increase the applicability of the PEP to different populations and settings.

Conducting several follow-up phases over extended periods of time would yield information on whether parents continued to use their PEP knowledge to implement function-based changes in their home and to determine to what extent their child engaged in more prosocial behaviour. This would also contribute to the research literature as follow-up is often not recorded, as in this project because of time restraints on the part of the researcher.

One or two booster sessions could be considered for future projects. This would reinforce the content learned from the PEP and help maintain the knowledge and skills overtime. Lindsay et al. (2016) also suggested the addition of a booster session may be beneficial for parents to recap aspects of the workshops and strengthen the implementation of their interventions. Shayne and Miltenberger (2013) also suggested refresher sessions would be beneficial for the parents to strengthen the skills learned and maintain them over an extended period of time. Some parents had difficulty with the terminology “jargon” of the FBA and PBS. Future research could revise the PEP manual to give more “parent talk”

to the behavioural language. This action could assist parents to relate more easily to the content presented.

Conclusions

The Parent Empowerment Programme (PEP) consisted of two, 2 hour workshops that taught parents how to identify the function of their child's challenging behaviour, identify PBS strategies that matched to the function of their child's behaviour and then implement a function-based intervention in their home environment at a time where the challenging behaviour occurred. The duration of the PEP was markedly less than other well established parenting programmes with similar objectives. After completing the PEP there was a decrease in challenging behaviours for all four children and an increase in parental use of PBS strategies during the bed-time routine. Three of the four parents would recommend the PEP to others, and the other parent recommended some terminology change to the PEP manual. Overall, this project adds to the small body of literature which indicates parents can learn functional behavioural assessment skills and implement a function-based intervention plan in their home environment with success.

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Appendices

Appendix A: Participant Information Form

Department of Health Sciences
katelyn.monk@pg.canterbury.ac.nz

Information Form for Parents/Caregivers

Kia Ora,

My name is Katelyn Monk and I am currently working towards my Child and Family Psychology Master's Thesis. The purpose of my study is to look at the effects of training parents to identify the reason why their child engages in challenging behaviour during a typical family routine such as bed or bath time. My project also teaches parents skills on how to identify and use positive behaviour strategies to replace their child's challenging behaviour. This is done via a process called a Functional Behaviour Assessment (FBA).

What I am interested to see, in my project, is if the FBA training and the teaching of prosocial strategies has any effect on the child's challenging behaviour.

Recruitment: I am wanting six parents to participate in my project. If you have a child between the ages of 3- 6 years that engages in challenging behaviour during a family routine time such as bed/bath/dinner/breakfast time you will be suitable. If you and your child fit this profile I would like to invite you to join my parent group.

My project involves two parts:

1. Workshops

The two, 2 hour workshops are designed to be interactive teaching experiences to teach parents how to identify the *reason* why their child engages in challenging behaviour during a family routine. Parents will be taught positive behaviour strategies, to change the child's challenging behaviour to prosocial skills. The two workshops will use a range of materials and teaching methods such as, New Zealand specific videos, work books, PowerPoints and role plays.

2. In-home recording component

The home component involves a video, audio and/or written parent diary recording of you and your child's interactions during a family routine time where your child engages in challenging behaviour. The recordings will occur up to 15 times at designated points of the study; at the beginning for three to five recordings, after the workshops for seven sessions

and later at follow up for one recording. You will be asked to set up these recordings as I will not be coming into your home. Once you have completed the recordings for each phase of the study you will be asked to send the recordings to me via email or USB. You will be supplied with a recording device.

If you feel uncomfortable with video recordings, there is the option of audio recordings and/or written parent diary.

The process:

Being involved in this project will require you to complete activities in the workshops and small tasks in your home.

These tasks and activities include:

- An initial meeting at the Pukemanu/Dovedale Centre to gather information about your family and your family's needs.
- Participation in the two group workshops which will run for no more than 2 hours each. These will be held 1 week apart (day and time TBC) at the Dovedale Centre, University of Canterbury.
- Completing a quiz at the initial meeting and at the end of the second workshop.
- Complete small in-home tasks after each workshop such as- watching a 10min DVD or completing a small checklist.
- Completing an approximately 17 question questionnaire on the effectiveness of the parent workshops
- Being willing to be observed and set up a recording device or written diary in order to record your interaction with your child during the daily routine of concern.

As my project is focusing on developing your knowledge of disruptive and prosocial behaviour I will request your permission to allow you and your child to be recorded as a part of my project. If you require any assistance during the in-home components of my project you will be able to either phone, Facetime or Skype me or my senior supervisor and she or I will help you through your situation. In addition should I identify that you are having difficulty implementing the strategies in your home I will speak to my supervisors and with their help we will provide additional coaching to assist you.

Any data recorded in the workshops or interviews and recordings will be kept secure with my senior supervisor for the five years as stated by the Ethics Committee guidelines. The information collected will be kept in locked filing cabinets in my senior supervisor's office, or on password protected servers and will be destroyed after five years. Names and any identifying details will be changed to maintain confidentiality of both you and your child(ren) throughout the project. At the end of the project, I will give you a summary of the study.

The results of the project may be published in an academic journal or presented at conferences or used to develop more research but be assured that complete confidentiality of data gathered will be maintained. To ensure anonymity and

confidentiality your name and any identifiers will be coded. This thesis will be a public document and will be available through the University of Canterbury Library.

Please remember that your participation is voluntary and you have the right to withdraw at any stage without penalty or explanation. You can withdraw easily and without embarrassment by emailing me at katelyn.monk@pg.canterbury.ac.nz or texting me on 0276958935. If you choose to withdraw, I will do my best to remove any information relating to you, provided this is practically achievable.

The project is being carried out as a requirement for a Master of Science in Child and Family Psychology degree, under the supervision of Dr. Gaye Tyler-Merrick (senior supervisor) who can be contacted at gaye.tyler-merrick@canterbury.ac.nz. She will be pleased to discuss any concerns you may have about participation in my project. If you have any questions during any stage of the research project you are most welcome to contact me at the details below or, either of my senior supervisor.

This project has been reviewed and approved by the University of Canterbury Human Ethics Committee, and participants should address any complaints to The Chair, Human Ethics Committee, University of Canterbury, Private Bag 4800, Christchurch (human-ethics@canterbury.ac.nz).

As my project is limited to a maximum of six families please contact me promptly if you wish to join me as participant positions are filled on a first come, first entry criteria. If all participant positions are filled I will contact you to let you know.

If you understand and agree to take part in this study please complete the attached consent form and I will collect this from you at the beginning of our first meeting.

Many thanks,

Katelyn Monk

Email: katelyn.monk@pg.canterbury.ac.nz Phone:0276958935

Senior Supervisor

Gaye Tyler-Merrick

Email: gaye.tyler-merrick@canterbury.ac.nz Phone: (03) 345-8380

Secondary Supervisor

Lawrence Walker

Email: lawrence.walker@canterbury.ac.nz

Appendix B: Participant Consent Form

Department of Health Sciences, University of Canterbury

katelyn.monk@canterbury.ac.nz

Consent Form for Parents/Caregivers

Please tick the following boxes to give your consent.

- I consent to participating in the project 'Teaching parents Functional Behaviour Assessment skills and how to implement a functional based assessment with their child who engages in challenging behaviour during a family routine time.'
- I have read and understood the information given to me about the research project and what will be required of me throughout the research.
- I have also been given the opportunity to ask any questions.
- I have read the child information sheet to my child.
- I understand that I will need to ask for assent from my child for each recording
- I understand that throughout the project my name and my child's(ren) name or any other identifiers will be coded (pseudonyms used) to protect and maintain confidentiality and anonymity. Only pseudonyms will be used in any report, conference or publication.
- I understand that up to twelve home video, audio or parent diary observations will be made by Katelyn. These will be only viewed by Katelyn, her supervisors and a post graduate student who will assist with coding these and providing reliability checks.
- I understand that should I feel distressed during any part of the in-home components of the project I have the option to phone, Facetime or Skype Katelyn and Katelyn will help me through the situation.
- I understand that any information and data collected will be kept in the strictest confidence and will be stored in locked filing cabinets in my senior supervisor's office and will be destroyed after five years in alignment with the Human Ethics Committee guidelines.
- I understand that Katelyn's thesis is a public document and will be available through the UC Library. I understand that this project may be used in subsequent research and Katelyn or her supervisors may undertake conference presentations or write journal articles about this project- however, only pseudonyms will be used and no identifying data will be used.

- I understand that participation in this project is voluntary and that I can withdraw from the project without having to give a reason by contacting the researcher via email or phone call.
- I understand that I am able to receive a report on the findings of the study by contacting the researcher at the conclusion of the project.
- I understand that I can contact the researcher Katelyn Monk (katelyn.monk@pg.canterbury.ac.nz) or her supervisor Dr. Gaye Tyler-Merrick (gaye.tyler-merrick@canterbury.ac.nz) for further information. If I have any complaints, I can contact the Chair of the University of Canterbury Human Ethics Committee, Private Bag 4800, Christchurch (humanethics@canterbury.ac.nz)
- I would like to receive a copy of the research results on completion of the Thesis project.
- I understand that in signing this consent form I am providing assent for my child - _____ to be recorded in the home video component of this research.

By signing below, I agree to participate in this research project

Name: _____

Signature: _____

Date: ____/____/____

Email address to send final report:

Please bring this completed consent form with you to your first meeting with Katelyn.

Kind regards

Katelyn Monk

Appendix C: Child Information Form



Department of Health Sciences, University of Canterbury
Katelyn.monk@pg.canterbury.ac.nz

Katelyn is doing a project at the University. She is going to work with us to see how and what we do during our bed/dressing/breakfast/dinner time (as applicable) through a video, audio and/or written diary (as applicable) set up in the room. She will watch us all and record what we do and how we do it.

Katelyn will then work with Mummy and Daddy (as applicable) to help us make these times more enjoyable and less stressful than they are now. Mummy and Daddy (as applicable) will record these times and give the video to Katelyn and her teachers to watch and record what happens.

When Katelyn writes about us, we will be given a code name so that no-one will know our names or where we live and any information Katelyn takes about my family will be kept in a safe secured place.

This project is being carried out as a requirement for Katelyn's university degree and she has her teacher Gaye helping her.

If you have any questions you can talk to us, Katelyn or Gaye. If you change your mind about being in the project, that's fine, too. All you have to do is to tell us or Katelyn. Do you have any questions?

So do you want to be a part of Katelyn's project?

Thank you for helping with the project.

Katelyn Monk

Appendix D: Child Consent Form

Department of Health Sciences, University of Canterbury
katelyn.monk@pg.canterbury.ac.nz

Oral Consent

Parents please read the Child information sheet to your child.

By signing below, I declare that I have read through both the information and assent/consent form with my child and he/she has given oral consent.

Signed parent/caregiver: _____ Date: ____/____/____

Please bring this completed assent/consent form with you to your first meeting with Katelyn.

Thank You,

Katelyn Monk

Appendix E: Human Ethics Approval

HUMAN ETHICS COMMITTEE

Secretary, Rebecca Robinson
Telephone: +64 03 364 2987, Extn 45588
Email: human-ethics@canterbury.ac.nz

Ref: HEC 2016/77

16 September 2016

Katelyn Monk
School of Health Sciences
UNIVERSITY OF CANTERBURY

Dear Katelyn

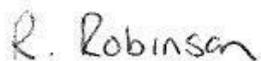
The Human Ethics Committee advises that your research proposal “Teaching Parents Functional Behavioural Assessment Skills and how to Implement a Functional Based Assessment with their Child who Engages in Challenging Behaviour During a Family Routine Time.” has been considered and approved.

Please note that this approval is subject to the incorporation of the amendments you have provided in your emails of 30th August and 12th September 2016.

Best wishes for your project.

Yours sincerely

pp.



Kelly

Dombroski
Deputy Chair
University of Canterbury Human Ethics Committee

Appendix F: Research Assistant Information Form

Department of Health Sciences, University of Canterbury

katelyn.monk@pg.canterbury.ac.nz

Information Form for Research Assistant

Kia Ora,

My name is Katelyn Monk and I am currently undertaking my Masters of Science thesis in Child and Family Psychology at the University of Canterbury. My project involves adapting a parent education programme to suit parents with preschool aged children. The project is outlined below:

Parent participants: I am seeking parents who have difficulty with their child's(ren) behaviour during normal routines at home such as at dinner, bath, bed time, getting to kindergarten on time. They only need to have a child of kindergarten age (3-6 years) and can have younger or older children as well.

My thesis project: My project involves teaching parents the skills to identify the reason why their child misbehaves during family routine times and then teaches parents some positive behaviour support strategies to put in place to change this challenging time.

My project involves two parts.

Workshops

The two workshops are designed to teach a small group of up to 6 parents to perform FBA and learn appropriate prosocial intervention skills depending on the function of their child's behaviour. The workshops are split into learning FBA and learning appropriate prosocial intervention strategies. To provide optimal learning opportunities, these workshops will use a range of materials and teaching methods such as, New Zealand specific videos, work books, PowerPoints and role plays.

In-home video component

The video component involves a video recording of parent and child's interactions during a normal home routine where the child engages in disruptive behaviour. The video recordings will occur up to 12 times at designated points of the study; at the beginning for three recordings, after the workshops for seven sessions and later at follow up for one recording. Parents will be required to set up these videos I will not be present in the home. Once parents have completed the recordings for each phase of the study they will be asked to send the recordings to me via email or USB.

Being involved in this project will require you to complete number of tasks which you will be trained in.

These tasks and activities include:

- Coding participants data
- Data collection
- Workshop preparation
- Data analysis.

Any data recorded in workshops or interviews and home video recordings will be kept secure in locked storage facilities or electronically on password protected servers. Any data information collected must be kept in the strictest confidence and participants identify anonymous.

Any work that you perform within this role will be returned to Katelyn Monk or her supervisors at the end of your work session. You are not to withhold any data or personally store the data.

The project is being carried out as a requirement for a Master of Science in Child and Family Psychology degree, under the supervision of Dr. Gaye Tyler-Merrick (senior supervisor) who can be contacted at gaye.tylermerrick@canterbury.ac.nz. She will be pleased to discuss any concerns you may have about participation in the project.

This project has been reviewed and approved by the University of Canterbury Human Ethics Committee, and participants should address any complaints to The Chair, Human Ethics Committee, University of Canterbury, Private Bag 4800, Christchurch (human-ethics@canterbury.ac.nz).

Many thanks,

Katelyn Monk

Email: katelyn.monk@pg.canterbury.ac.nz

Phone: 0273063100

Senior Supervisor

Gaye Tyler-Merrick

Email: gaye.tylermerrick@canterbury.ac.nz Phone: (03) 345-8380

Secondary Supervisor

Lawrence Walker

Email: lawrence.walker@canterbury.ac.nz

Appendix G: Research Assistant Consent Form

Department of Health Sciences, University of Canterbury

katelyn.monk@pg.canterbury.ac.nz

Consent Form for Research Assistant

Please tick the following boxes to give your consent.

- I am willing to act as the research assistant in the research study titled 'Teaching parents Functional Behaviour Assessment skills and how to implement a functional based assessment with their child who engages in challenging behaviour during a family routine time.'
- I understand what the aim and purpose of the study is.
- I understand that I will be trained in the skills necessary to before I begin this.
- I understand that all data within the study is confidential and participants shall remain anonymous.
- I understand that any information I work with will be returned to Katelyn Monk and she will store this in a secured storage facility.
- I understand that any work I do regarding this study will be completed on a password protected server and will be saved as directed by Katelyn Monk.
- I understand that I can contact Katelyn (katelyn.monk@pg.canterbury.ac.nz) or her supervisor Dr. Gaye Tyler-Merrick (gaye.tylermerrick@canterbury.ac.nz) if I want to know anything else about the project

By signing below, I agree to act as the research assistant in this project.

Signed: _____ Date: ____/____/____

Thank You,

Katelyn Monk.

Appendix H: Advertisement

Ki Ora,

My name is Katelyn Monk and I am currently working towards my Masters in Child and Family Psychology at the University of Canterbury. My project involves adapting a programme for parents to use with preschool aged children.

Parent Participants: I am seeking parents who are currently experiencing difficulty with their child's) behaviour during normal routine time at home such as at dinner, bath, bed time or getting their child to kindergarten on time. They only need to have a child of kindergarten age (3-6 years) and can have older or younger children as well. All families that wish to participate must be able to communicate in English.

My thesis project: My project involves teaching parents the skills to identify the reason why their child engages in challenging behaviour during family routine time. My project also teaches some positive behaviour support strategies to manage their child's challenging behaviour.

If you have any questions, my contact details are below
Kam199@uclive.ac.nz or 0276958935

Appendix I: Demographic FACTS Questionnaire



Demographic and FACTS Questionnaire adapted from of March et al. (2000) and Li,
(2011).

Date:

Interviewer Name: _____

Parent Name: _____ Age: _____

Occupation: _____ Ethnicity: -

Highest Qualification Gained: _____ -

Child Name: _____ Age: _____

School: _____ Ethnicity: _____

Family Make-up:

<input type="checkbox"/> Single parent	<input type="checkbox"/> Step parents	<input type="checkbox"/> Partner
<input type="checkbox"/> Extended Family	<input type="checkbox"/> Siblings (please state age, gender, status =step/half)	
<input type="checkbox"/> Married Parents		
<input type="checkbox"/> Other		

Problem Routine: _____ Daily Frequency: 1 2 3 4 5 6

+

<input type="checkbox"/> Tardy	<input type="checkbox"/> Fight/Physical Aggression	<input type="checkbox"/> Disruptive
<input type="checkbox"/> Self-Injury	<input type="checkbox"/> Inappropriate Language	<input type="checkbox"/> Verbal Outburst
<input type="checkbox"/> Escape	<input type="checkbox"/> Tantrum	<input type="checkbox"/> Vandalism of Property

Problem Behaviour(s): Identify the problem behaviours.

Target Behaviour(s): Prioritize these behaviours (which is most important to be addressed).

- 1.
- 2.
- 3.

Provide more detail about the problem routine (s):

What does the disruptive routine look like? (what, who, when, duration, daily/weekly occurrence).

What procedures have you followed when the behaviour occur that have not worked?

What procedures have you followed when the behaviour occur that have worked?

What are the events that predict when the problem behaviour(s) will occur?

Related Issues (settings events)	Environmental Features
<input type="checkbox"/> illness <input type="checkbox"/> tiredness <input type="checkbox"/> hunger <input type="checkbox"/> timing conflicts <input type="checkbox"/> family conflict	<input type="checkbox"/> reprimand/correction <input type="checkbox"/> physical demands <input type="checkbox"/> socially isolated <input type="checkbox"/> shared parental attention <input type="checkbox"/> with other people (state who)

<input type="checkbox"/> school conflict (peer or academic) <input type="checkbox"/> other:	<input type="checkbox"/> task is too boring <input type="checkbox"/> task is too hard <input type="checkbox"/> task is too easy <input type="checkbox"/> routine is too long <input type="checkbox"/> other
--	---

Perceived Function: What do you think causes or motivates the misbehaviour?

Things that are obtained	Things that are avoided or escaped from
<input type="checkbox"/> parent attention <input type="checkbox"/> sibling attention <input type="checkbox"/> preferred activity <input type="checkbox"/> tangible (money, toys, lollies) <input type="checkbox"/> other:	<input type="checkbox"/> hard tasks <input type="checkbox"/> boring tasks <input type="checkbox"/> reprimands <input type="checkbox"/> social isolation <input type="checkbox"/> shared parental attention <input type="checkbox"/> attention of another person (state who) <input type="checkbox"/> physical effort <input type="checkbox"/> other

Is there any circumstances under which the behaviour will always occur?

Is there any circumstances under which the behaviour will not occur?

What are some things your child likes and are reinforcing for him/her?

What are some things your child dislikes and he/she considers as a negative

consequence?

How do you feel during the routine of concern? (what emotions do you experience)

How do you think your child feels during the routine of concern (what emotions do they show during and after the routine)



Other Comments and Additional Questions (as applicable)

Consent forms collected: __Parent __Child

Baseline recording date:

Signed (parent) _____
(researcher) _____

Signed

Appendix J: Knowledge Quiz

Name: _____ Date: ____/____/____

Please indicate which assessment you are completing: **Baseline** **Final**

1. Behaviour is defined as something which is *(please circle as many answers you think correct)* (2 marks)

Observable Emotional Outbursts Measureable Social

2. Which of the options below are behaviours you can observe and record *(please circle any answers you think are correct)* (3 marks)

Crying Frustration Tired Laughing Concentrating Tantrum

3. Antecedents occur _____ behaviour (fill the gap). (1 mark)
(A=before)

4. _____ occur after the behaviour. (fill in the gap). (1 mark)

(A = consequences)

5. Praise and encouragement can have a much greater effect on child behaviour when it is _____ and includes _____ *(fill the gaps with options below)*. (2 marks)

Descriptive/Parents Positive/Guidance Descriptive/Physical Warmth
Spoken/Interaction

6. When using planned ignoring/extinction, extinction bursts can occur. What happens in these bursts? *(please circle the answer you think is correct)* (1 mark).

- A) Increase in problem behaviour either in frequency or intensity.
B) Increase in good behaviour either in frequency or intensity.
C) Increase of new behaviours either in frequency or intensity.

7. When children are well behaved it is important to give them _____ (fill the gap with options below). (1 mark)

Positive Attention Opportunity to play by themselves Support

8. A) Look away

B) Try to maintain neutral facial expression and body language

C) Continue to carry on with your activity

These are three essential components in the strategy _____ (please circle the answer you think is correct) (1 mark).

Timeout Planned Ignoring/Extinction Negative Attention Negative Praise

9. Hana is yelling to her parents from her bedroom after being put to bed. Her yelling is getting louder and more frequent. What would be an appropriate response to use? (please circle the response you think is correct) (1 mark).

Timeout Planned Ignoring/Extinction Negative Attention
Punishment

10. Niko arrives at the dinner table after washing his hands without having to be told to do so. What would be an appropriate response to use? (please circle the answer you think is correct) (1 mark).

Descriptive Praise Support Extinction Positive Punishment

11. If a child is at risk of harming themselves, others, you, or property what is an appropriate response to use? (please circle the answer you think is correct) (1 mark).

Sit, and Wait Exclusive timeout Individual timeout
Punishment

12. Three main functions of child behaviour are: (please circle your answer) (1 mark).

A) Attention, Escape/Demand, Tangible

B) Escape/Demand, Anger, Pleasure

C) Attention, Tangible, Support

13. Functional behaviour assessment allows us to see the pattern of behaviours and make an educated guess of the _____ of behaviour (*fill in the gap*) (1 mark). (A= function or reason)

14. The functional behaviour assessment process of A-B-C stands for: (*fill the gaps*) (3 marks)

A _____

B _____

C _____

(A = antecedent, behaviour, consequence)

15. When 4-year old Tia has missed her afternoon nap she often cries and tantrums when she has to share her toys. When Tia's 2-year old brother tries to take one of Tia's blocks she throws a block him. When Tia's father asks her not to do that again, she ignores him and picks up another block and throws it towards her brother. Tia's father explains what she has done is not acceptable and she needs to share with her brother or take turns. She is removed to the side of the activity for a short period of time (1-2 minutes). After this time her father explains again what she did wrong and what she should do instead.

Please list any behaviours or events that fit into the A-B-C process: (*fill the gaps*) (4 marks)

A _____

B _____

C _____

Function: _____

A= missed nap

B = cries and tantrums - throws blocks at brother

C= sit and wait/inclusive time out

Function = biological with tiredness and escape/demanding situation sharing with brother

16. Ben throws his toys at his father and then runs away to another room when he is asked to come to the dinner table. The function of Ben's behaviour is likely to be: (*please circle the answer you think is correct*) (1 mark).

Attention

Escape/Demand

Tangible

Support

Anger

17. Tane tugs at his mother's leg while she feeds his younger sibling. When Tane's mother continues to look after the younger sibling Tane begins to cry and tugs more intensely at his mother's leg. The function of Tane's behaviour is likely to be: *(please circle the answer you think is correct)* (1 mark).

Attention Escape/Demand Tangible Support Anger

18. A behaviour support plan uses information from functional behaviour assessment process to change problem behaviour through: *(please circle any answers you think are correct)* (4 marks).

Match function and appropriate Consequences Teach Alternative Replacement Behaviours

Reinforce and Encourage Appropriate Behaviours Prevent Predictors or Triggers

19. Reducing distractions and giving warnings are types of _____ (fill the gap) (1 mark). (A=prevention strategies)

20. Modelling is a _____ (please circle the answer you think is correct). (1 mark).

Replacement Behaviour Prevention Strategies Consequences
Punishment

21. To change and manage problem behaviour we use _____ which allows us to create a _____ which may include _____, _____ and _____ depending on the behaviour *(fill the gaps with options below)*. (4 marks)

- A) Functional Behaviour Assessment, A-B-C plan, Consequences, Punishments, Strategies that match function
- B) A-B-C plan, Behaviour support plan, Prevention strategies, Consequences, Punishments
- C) Functional Behaviour Assessment, Behaviour support plan, Prevention strategies, Replacement behaviours, Consequences that match function.

Thank you, please make sure your name is on the front of this sheet and you have circled the appropriate test.

Appendix K: Social Validity Questionnaire

Department of Health Sciences

katelyn.monk@pg.canterbury.ac.nz

Social Validity Questionnaire Adapted from Li, (2011).

1 = Strongly Disagree; 2 = Disagree, 3= Neutral, 4 = Agree, 5 = Strongly Agree

The Group Workshop

1. The components of the workshop were well organised

1 2 3 4 5

2. The examples and video resources were easy to relate to

1 2 3 4 5

3. The mixture of written, visual and physical learning activities was beneficial for my learning

1 2 3 4 5

4. The information provided was thorough

1 2 3 4 5

5. The instructor showed knowledge and professionalism when providing training and feedback

1 2 3 4 5

6. The workshop was interactive and enjoyable

1 2 3 4 5

7. The group setting encouraged relationships between parents

1 2 3 4 5

Functional Behaviour Assessment Strategies

1. The teaching of Functional Behaviour Assessment strategies was understandable and helpful

1 2 3 4 5

2. Functional Behaviour Assessment strategies were relatable to my family situation

1 2 3 4 5

3. I have confidence in my ability to perform Functional Behaviour assessments and intervention plans

1 2 3 4 5

Overall Satisfaction

1. Overall training time was appropriate

1 2 3 4 5

2. I would use the skills learned again with my child if necessary

1 2 3 4 5

3. The information gained through this training helped me to better understand my child

1 2 3 4 5

4. I would recommend learning about Functional Behaviour Assessment and Interventions to other parents

1 2 3 4 5

5. I am satisfied with the training programme

1 2 3 4 5

6. The components of the workshop were relevant to the age group

1 2 3 4 5

7. The video resources were relevant to the age group

1 2 3 4 5

Further Comments or Suggestions

Appendix L: Parent Diary

BASELINE: 2			Name:		
Routine:			Date:		
Time start:			Time finished:		
Frequency: Number of behaviours	Antecedent (what happened before the behaviour)	Behaviour (what was the behaviour you see)	Consequence (what happened after the behaviour)	Duration: How long was the incident	Notes

