Evaluation of a Brief Parent Group Intervention for Child Bedtime Problem Behaviours

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A thesis submitted in fulfilment of the requirements for the degree of Master of Science in Psychology, The University of Auckland, 2011

Abstract

Research indicates that behavioural parenting interventions are effective in the treatment of children with problem behaviours at bedtime and during the night (Seymour, Brock, During & Poole, 1989). However, studies on brief and group-based parenting interventions are lacking. Thus, this study evaluates the effectiveness of a 2-hour discussion group for 14 parents with normally developing children aged 3 to 5 who displayed difficult behaviours at bedtime and during the night. This modality of intervention is part of the Triple P - Positive Parenting Programme intervention model (Sanders, 2008) and has demonstrated effectiveness with other common childhood problem behaviours (Joachim, Sanders, & Turner, 2009). Parents completed questionnaire measures of child bedtime problems, general behaviour, parenting, and parental and relationship well-being at pre-intervention (T1) and post-intervention (T2). Parents also completed diary records of bedtime and other behaviour problems at both time points. After the intervention, parents participated in a telephone interview to assess their adherence to the treatment recommendations and their satisfaction with the parent training discussion group. Significant intervention effects ($p < .05$ and $p < .01$, large and medium effect sizes) were found for bedtime and daytime childhood behaviour in some of the scales, and for parenting confidence. No significant effects were found for parenting style and knowledge, parental depression, anxiety, and stress, or relationship functioning. Qualitative outcomes showed that most parents successfully implemented an action plan at home to address their child's bedtime problems and reported improved childhood bedtime and sleep behaviour, as well as other daytime behaviours. The clinical implications of these results are discussed, particularly in relation to the use of interventions for bedtime and sleep behaviour that are time- and cost-effective and accessible at a community level.

Acknowledgements

First and foremost, I would like to thank my supervisors Dr. Dennis Rose and Professor Fred Seymour, who made it possible for me to do my Masters in Psychology at the Faculty of Education as part of the Triple P Research group. This would have not been possible without your efforts.

Secondly, thanks to Dennis for your caring and experienced guidance and support and for the long hours spent over this year on my thesis project. Thanks to Fred for your opportune assistance in crucial times.

Also, I would like to thank Dr. Cassandra Dittman, as your regular and dedicated guidance and your endless patience were vital to complete each stage of my research project.

Thanks all of you for your understanding and support during my journey as a Masters student. Also, I would like to thank Cathy Qin for your friendly and helpful presence during this year.

Lastly, I thank my mother Maria Victoria, my husband Thomas and my baby daughter Emilia for their unique roles in my life and particularly during this year. Thanks to you three I had the energy, motivation, love and support to work on this project.

Thanks to my mother for your encouragement and for teaching me how to be a mum and a student simultaneously; thanks to my husband for looking after our family, for trusting me and teaching to remain calm; and thanks to my baby for making the topic of my thesis a lot more meaningful, for letting me do lots of work, but foremost for expanding my life in an indescribable and beautiful way.

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1. Introduction

1.1 Definition of Bedtime Problems

As infants grow their sleep patterns gradually change as they settle to sleep quicker, sleep for longer periods of time, and spend less time awake at night (Anders, 1979). Their sleep patterns become less demanding for their parents and they gradually adjust to their family sleeping practices and routines. In Western culture, this process of adaptation may include learning to go to bed earlier than other siblings and parents, being placed in bed by different caregivers, sleeping in their own bed and in a separate room from parents, sharing a room with siblings, and learning how to fall asleep using their own resources. Learning these sleep practices is a task that children need to acquire as part of their healthy development (Blampied & France, 1993; Sanders & Turner, 2010; Seymour, Bayfield, Brock, & During, 1983).

However, bedtime resistance and frequent night waking are regularly reported by parents of normally developing children and are probably the most common problems that parents encounter with their young children (Owens, France, & Wiggs, 1999; Seymour, Brock, During, & Poole, 1989). These problems are usually manifested as refusal to go to bed at a regular time or when instructed, sleep onset delay accompanied by demands (e.g., attention and specific rituals) and tantrums, repeated night waking accompanied by crying, calling out and getting out of bed; and co-sleeping, which involves the child sleeping in the parents' bed when this is not desired (Blampied & France, 1993; Sanders, Bor, & Dadds, 1984). Importantly, these problems do not meet criteria for classification as mental disorders listed in the *Diagnostic and Statistical Manual of Mental Disorders* (Blampied & France, 1993).

These difficulties are commonly referred to in the literature as *sleep disturbance*; however, in this study they will be referred to as *bedtime problems.* Since going-to-bed behaviour is the starting point of a chain that ends in a falling-asleep behaviour (Blampied & France, 1993), it is critical that assessment of and intervention with bedtime problems

encompass the very first steps of the chain to the last ones. The parenting programme evaluated in this study is presented to parents as *developing good bedtime routines.*

1.2 Prevalence and Consequences of Bedtime Problems

Bedtime problems affect between 15% to 40% of normally developing infants and preschool children, depending on the definitions and criteria used (France, Blampied, & Henderson, 2003; Johnson, 1991; Lozoff, Wolf, & Davis, 1985; Owens, Spirito, McGuinn, & Nobile, 2000; Zuckerman, Stevenson, & Bailey, 1987). In New Zealand, a survey for parents with children aged under 5 examined 20 common parenting tasks and childhood behaviours that parents may perceive as daily hassles. Of the 117 parents who completed the survey, 18.8% of parents rated bedtime problems as a highly frequent problem, while 17.9% rated them as a highly intense daily hassle (Lawrence & Smith, 2009).

A considerable amount of research has revealed that both parents and children experience negative side effects whether or not the parents identify issues at bedtime as a problem (Blampied & France, 1993). Considering that sleeping is vital for the child's normal growth and development, and the primary activity of the brain during early maturation (Dahl, 1996), it is not surprising that disruptive sleep deprivation in children is correlated with cognitive, emotional, behavioural and health problems (Jan et al., 2010; Kataria, Swanson, & Trevathan, 1987; Paavonen et al., 2002).

Not all bedtime problems lead to sleep deprivation, but regular sleep onset delay and frequent night waking reduces sleep quality and total sleep time (Ortiz & McCormick, 2007). Furthermore, research suggests that bedtime problems in young children can persist for years if they are left untreated (Kataria et al., 1987; Zuckerman et al., 1987). In a study by Kataria et al. (1987) parents' reports of bedtime problems with their 15- to 48-month-olds persisted for 84% of these children after 3 years. Such long-term bedtime difficulties are correlated with declines in a child's cognitive, behavioural and physical functioning (see Jan et al., 2010 for a review).

For parents, sleep deprivation caused by bedtime disruptions with their child has been associated with maternal depression, adult stress and irritability, family tension and low marital satisfaction (Durand & Mindell, 1990; Gelman & King, 2001; Kataria et al., 1987; Medina, Lederhos, & Lillis, 2009; Pritchard & Appleton, 1988; Quine, 1992; Richman, 1981; Seymour, 1987). Studies also indicate that persistent bedtime problems are correlated with poor-quality parent-child interactions, decreased feelings of affection for the child, and lower confidence in parenting skills (Minde, Faucon, & Falkner, 1994; Pritchard & Appleton, 1988; Quine, 1992).

1.3 Occurrence and Maintenance of Bedtime Problems: A Behavioural Perspective

The sleep pattern of infants and young children differ to that of an adult. The first two sleep more hours than adults and cycle between rapid eye movement (REM) and non-REM phases faster and more often. The REM phases are regularly followed by arousal periods in which total or partial waking is likely to occur (Anders, 1979; Carr, 1999). As a result, frequent arousals and a degree of awakening are common and developmentally appropriate among infants and young children.

Sleep initiation or re-initiation is associated with environmental and biological cues. Sleep may be understood as a bio-behavioural state, in which biological responses and learned behaviours are involved in the transition into sleep (Blampied & France, 1993) . In this regard, behavioural cues such as sleep preparation responses and behavioural quietness interact with the internal-biological cues that lead to sleep. Consequently, a repertoire of inappropriate behaviours at bedtime, such as crying, may block the internal cues for sleeping, delaying sleep initiation (Blampied & France, 1993).

In the first year of life, each waking is an opportunity for the infant to learn how to reinitiate sleep by him/herself, a skill that will prevent the child from developing sleep difficulties (France et al., 2003). When waking up becomes problematic, there is a problem of

sleep reinitiation, not of sleep continuance (Ferber, 1985), in which the child is unable to go back to sleep by him/herself (Carr, 1999; Scott & Richards, 1990; Seymour et al., 1983).

Parent responses during the child's attempts to reinitiate sleep play a critical role in maintaining sleep difficulties. According to the principles of learning, sleeping can be understood as an operant chain from bed-preparation behaviours (e.g., having a bath, putting pyjamas on, saying goodnight to family members) to behavioural quietude (falling-asleep behaviour), where learning the appropriate bedtime behaviours depends on the antecedent events (stimulus control) and on the consequences (contingencies of reinforcement) delivered by the parents at bedtime (Blampied & France, 1993).

Each response of the bedtime behaviour chain needs to be under a clear and consistent external cue (stimulus control) to prevent bedtime problems (Blampied & France, 1993). Parents provide the primary stimulus control by engaging their child in pre-bed activities and by exposing him/her to a bedtime environment. These are the cues that evoke going-to-bed and falling-asleep behaviours.

Parents of children displaying bedtime problems typically do not provide the appropriate stimulus control to develop in their child healthy bedtime behaviours. The child learns to associate bedtime behaviour with inappropriate cues, such as parents' presence and attention, instead of bedtime being associated with temporal and setting stimulus control such as a regular time and regular routine, the child's bed, bedroom, cuddly toys and blankets (Seymour et al., 1983).

The use of self-soothing objects such as toys and blankets, and sucking behaviour have the potential to become stimulus control for falling asleep, because they occur reliably before and temporally close to sleep onset (Blampied & France, 1993; Seymour et al., 1983). If parents are constantly involved in settling their child to sleep, the child does not have the chance to develop these self-comforting skills to fall sleep and to reinitiate sleep. Anders and colleagues (1992) showed how 3-month-old infants whose parents placed them in their cot

when still awake, were more likely to resume sleep by themselves after waking, compared to the ones who were put in their cot asleep; patterns that were maintained at the age of 8 months.

In addition, contingencies of reinforcement can strengthen and maintain bedtime behaviours as well as competing behaviours that are incompatible with going-to-bed and falling-asleep behaviours. This means that appropriate and inappropriate bedtime behaviours can be reinforced and maintained by their appealing immediate consequences. In the case of young children, the reinforcing consequences are greatly mediated and controlled by the parents' responses towards the child. Parents dealing with bedtime problems tend to stay with their child until s/he falls asleep, responding to crying and calling out by providing attention and company, feeding, rocking, cuddling, and talking to the child and/or allowing him/her to delay bedtime and to fall asleep somewhere else (e.g., parents' bedroom or lounge). These parental responses to the child's behaviour reinforce the child's disruptive bedtime behaviour (Anders et al., 1992; Sanders et al., 1984; Sanders & Christensen, 1985; Seymour et al., 1983).

However, this situation is even more complex, as usually there is in place a double reinforcement contingency, in which the child is negatively and positively reinforced by engaging in bedtime problem behaviours. In this way, the child gains parents' presence and attention (positive reinforcement) and simultaneously s/he escapes from the undesired situation of being alone in bed (negative reinforcement).

Parents are also under a double reinforcement contingency at bedtime, in which they are positively and negatively reinforced by engaging in behaviours that maintained the problem behaviour in the child (France et al., 2003). By giving attention, parents obtain a settled child (positive reinforcement) and they avoid the distress elicited by the child's response (negative reinforcement). Thus, both parent and child reinforce each other's behaviours, and despite these behaviours being incompatible with falling asleep, they receive greater immediate reinforcement than bedtime behaviours (Blampied & France, 1993).

These parent-child interactions reinforce and strengthen the bedtime problem, where

the parent responses to the child bedtime problem influence the severity of the difficult behaviour: since the more parents respond to the child's behaviour by giving attention, drinks, cuddles, and delaying bedtime, the more severe the problem becomes (Quine, 1992).

The child's bedtime behaviours are highly disruptive and demanding, and parents will occasionally attempt to escape from the child's demands by not attending to them (France et al., 2003). In return, the child will intensify his/her behaviour (e.g., crying, calling out, throwing a tantrum, getting out of bed) to re-obtain parental attention and to avoid being in bed alone. This increase in intensity of the child's behaviour typically results in parents attempting to escape from the distress by promptly attending to the child's demands again. In this way, parents intermittently reinforce the child's behaviour at a more intense level, strengthening what is commonly known as the coercion trap (France et al., 2003; Patterson, 1982).
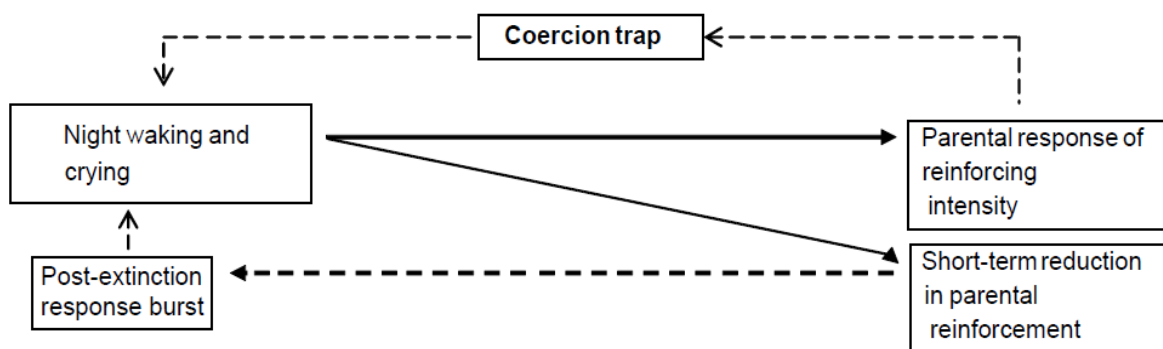
Figure 1. The Coercion Trap in Bedtime Problems. From "Infant Sleep Disturbance," by K. G. France, N. M. Blampied, and J. M. T. Henderson, 2003, *Current Paediatrics, 13,* p. 242. Copyright 2003 by Elsevier Science Ltd.

Conversely, appropriate bedtime behaviour is established when parents provide the child with pertinent stimuli control, such as regular time cues, a non-stimulating bedtime routine, quiet time for allowing sleep onset and exposure to the bed prior to falling asleep (France et al., 2003). The child is positively reinforced for behavioural quietude and self-soothing behaviours. Similarly parents are reinforced for providing the appropriate stimulus

control and responding with minimal efforts by just checking the child, but without feeding or removing him/her from the bed.

1.4 Behavioural Interventions for Bedtime Problems

Behavioural parent-mediated interventions are considered the approach of choice for improving childhood bedtime problems. In a review of 52 studies using behavioural interventions for bedtime problems, 94% of them were demonstrated to be significantly effective for treating bedtime behaviour (Mindell, Kuhn, Lewin, Meltzer, & Sadeh, 2006). These interventions involve components such as withdrawing positive reinforcement (e.g., extinction of parental attention), delivery of positive reinforcement (e.g., rewards and praise) for appropriate bedtime behaviour, manipulations of discriminative stimulus control (e.g., regular bedtime routine), and motivating operations (e.g., length and proximity between naps).

All studies combine the components mentioned above into intervention packages for the treatment of bedtime problems. In the following section, each component is described separately; however, a degree of overlapping is observed since the components are somewhat interconnected.

1.4.1 Use of withdrawal of positive reinforcement

A technique used frequently in bedtime problem interventions is removing the inappropriate parental attention (e.g., cuddling, feeding, giving company) that is positively reinforcing problematic bedtime behaviour (e.g., bedtime refusal, night waking). This is an operant technique called *extinction*, in which the elimination of the positive consequences associated with the problem behaviour decreases the frequency and intensity of the behaviour, because it no longer acts as a reinforcer (Cooper, Heron, & Heward, 2007; France et al., 2003; Owens et al., 1999).

When standard extinction is used, parents are instructed to follow a regular routine, put the child in bed awake, say goodnight and leave the room, and not respond to the child's problem behaviours, unless that the child is ill or in danger. These interventions produce

significant improvements in bedtime refusal and night waking within the first week, but are typically followed for about four weeks to ensure that appropriate bedtime behaviours is well established (France et al., 2003).

Seymour et al. (1983) used standard extinction as one of the components of an intervention to treat 208 children up to 6 years old with night waking problems. Parents were instructed to ignore any crying once the child was in bed. When the child got out of bed, parents had to return the child to bed without talking, cuddling or emotional displays. If the child got up again, the parent would close the door for 10 minutes or until the child was quiet. The same procedures were used for night waking. If the child persisted in coming to the parent's bed, they would shut the door.

In the study by Seymour et al. (1983), parents reported rapid reduction in night waking within the first week and these improvements were associated with positive changes in daytime behaviour. The improvements were maintained at 6 months follow-up and in general, parents reported high satisfaction with the intervention. Similarly, Sanders et al. (1984) found that standard extinction was effective as part of an intervention to treat bedtime refusal and night waking in four children aged 2 to 5. Extinction was combined with time-out for three minutes in the bathroom and paired with a loss of story privileges the next evening if the child left the bed. This intervention resulted in rapid decrease of bedtime problems within the first few days of intervention and maintained at 2 months follow-up.

However, extinction is reported to produce an increase in the frequency and variability of the problem behaviour when the reinforcement is initially removed, a phenomenon called e*xtinction burst.* Also, short reappearances of the problem behaviour (called *spontaneous recovery*) tend to occur after great or total improvement (Cooper et al., 2007). These effects of employing extinction are reported to distress both child and parents, often making parents unwilling to use it with their child (Freeman, 2006; Owens et al., 1999; Seymour, 1987).

On the other hand, of 23 studies reviewed by Mindell et al. (2006) using standard extinction, 21 reported to be effective in improving child bedtime problems. Also, standard extinction has been found to produce rapid results (France, 1992) and it is a procedure easily understood by parents (Ortiz & McCormick, 2007). In addition, studies have shown that children benefit from extinction-based interventions, improving bedtime behaviour (Minde et al., 1994; Reid, Walter, & O'Leary, 1999) and daytime behaviour (France, 1992). Parents also benefit from improving parent-child interactions, parental well-being and marital satisfaction (Durand & Mindell, 1990; Minde et al., 1994; Reid et al., 1999).

In response to parents' non-acceptance of leaving the distressed child alone, modifications of extinction have been used to treat bedtime problems. These variations aim to systematically reduce parental attention to progressively extinguish bedtime problems, while promoting independent sleep onset (Ortiz & McCormick, 2007). They consist of combining planned extinction with minimal or gradual check-ups on the child.

When using minimal check-ups, parents are instructed to follow the same procedure described above for standard extinction, but parents return to the room briefly at regular intervals (from five to 20 minutes) until the child is settled (Pritchard & Appleton, 1988; Sadeh, 1994). In gradual check-ups, parents increase systematically the time before returning to the room (from five to 15 minutes) and checks are between 30 seconds and two minutes. Parents are also instructed to return the child to bed when up, and close the door for a short interval if the child persists (Mindell & Durand, 1993; Reid et al., 1999).

1.4.2 Use of positive reinforcement

Positive reinforcement is commonly used in behavioural interventions to promote a wide range of childhood behaviours. However, this is not simple with young children displaying bedtime problems, because the ultimate target behaviour – falling asleep – cannot be immediately reinforced after its occurrence (Richman, Douglas, Hunt, Lansdown, & Levere, 1985). Nonetheless, positive reinforcement can be used successfully to improve

bedtime behaviours in children once they have the cognitive and verbal skills to associate particular behaviours with delayed rewards and praises (Owens et al., 1999; Richman et al., 1985).

Whenever possible, positive reinforcement is added to intervention programmes for bedtime problems. For example, in the study by Seymour et al. (1983) extinction procedures were combined with reinforcement for sleeping through the night, consisting of rewards such as coming to parents' bed in the morning once the parents were awake, a special breakfast, phoning a family member and particularly, praise from parents. Similarly, Sanders et al. (1984) used positive reinforcement for not waking up, consisting of a surprise treat under the pillow, a star on a behaviour chart displayed in the child's bedroom, and praise from parents in the morning.

1.4.3 Use of stimulus control

Many behavioural interventions are based on or include in their programmes a stimulus control component (Richman et al., 1985; Sanders et al., 1984; Seymour et al., 1983), usually referred to as a *positive bedtime routine*. In the intervention conducted by Pritchard and Appleton (1988) with 31 children aged under 4, the stimulus control component in their intervention included playtime in the bath, a warm drink before bed, a bedtime story and the ritual goodnight with the family members, and favourite toys. In this way, parents were encouraged to increase parent-child positive interactions during the routine, while gradually developing in the child bedtime behaviours, such as brushing teeth and putting pyjamas on.

As part of the stimulus control arrangements associated with going to bed, Sanders et al. (1984) asked parents to give the child a cue that in 30 minutes s/he would have to go to bed, arranging a quiet activity during those 30 minutes, and giving another cue 5 minutes before bedtime. Then, the child was instructed to go to bed. If the child went immediately to bed without problem behaviours, the child had one bedtime story. Following the story the

parent reviewed a list of possible excuses for calling out or getting out of bed and then the parent left.

The use of positive bedtime routines is particularly useful for families where extinction is unsuitable because siblings have to share the room and when parents do not agree on leaving the child to cry. Considerations when implementing this procedure are related to events that interrupt the regularity of the routine, and the need for additional support from the therapist with parents who lack the skills to develop a consistent routine (Ortiz & McCormick, 2007). There is no research that assess this procedure alone (Mindell et al., 2006).

1.4.4 Use of motivating operation

In the use of *bedtime motivating operation* external events are manipulated to temporarily alter the value of the reinforcers associated with going-to-bed and falling-asleep behaviours in order to alter the occurrence of these behaviours (Cooper et al., 2007). Bedtime motivating operation are bedtime hygiene practices, such as avoiding the consumption of caffeine late in the evening to increase the reinforcement effects associated with falling asleep (Meltzer & Mindell, 2004). Because they do not produce a permanent improvement in the behaviour, they are commonly used in association with stimulus control and consequence arrangements (Cooper et al., 2007).

In children, good bedtime hygiene depends mainly on the parents' own bedtime practices, parental supervision of the child's bedtime behaviours, and their knowledge of the importance and consequences associated with poor bedtime hygiene (Meltzer & Mindell, 2004). Motivating operation for appropriate bedtime hygiene include, (a) a sleep schedule where bedtime and wake up times are regular, (b) avoiding the consumption of products that contain caffeine close to bedtime, (c) providing a sleep-conducive environment that is quiet, cool, dark, and (d) encouraging naps according to the child's

needs, but long, too many, or late afternoon naps should be avoided (Meltzer & Mindell, 2004).

1.5 Group Delivery of Parenting Programme Interventions Using Behavioural Procedures for Child Bedtime Problems

The group modality has important advantages. First of all, it allows targeting several parents simultaneously, which is valuable feature for a community service approach, particularly when bedtime problems are frequent cases for community workers (Carpenter, 1990). For instance, Seymour et al. (1983) used small groups in the face of increasing demand for service; while individual sessions took about 60 minutes, group sessions for three to five families took about 30 additional minutes. Carpenter (1990) indicates that six weekly 2-hour group sessions took an average of 18 minutes per person. It has been reported that a group modality for training parents in behaviour procedures are as successful as individual interventions, but can be over six times more cost effective than individual training (Cunningham, Bremner, & Boyle, 1995).

Secondly, there is research suggesting that group parent training programmes delivered in a community setting are more likely to be accessed by minority populations (low income, recent migrants, non-English native language groups) than are individual interventions (Cunningham et al., 1995). This is supported by Wade, Ortiz and Gorman's (2007) study. These group programmes are more likely to be located in accessible and non-stigmatised community settings, rather than in mental health services, increasing the chances for parents to seek support (Szyndler & Bell, 1992).

Wade et al. (2007) conducted a group training intervention with parents from ethnic minorities and low socioeconomic backgrounds who had a child aged between 3 and 6. Wade et al. followed the treatment protocol detailed by Reid et al. (1999) for gradual extinction. After 2 weeks of collecting daily baseline data via telephone calls, five parents attended a two-session programme. They received information about gradual extinction and extinction

bursts, strategies to resist giving up and practice through role-play for a range of behaviours and scenarios. Participants were phoned after the first night of treatment to review the procedures and to provide them with advice and support. A second workshop was held 2 days after the first to clarify any implementation issues or difficulties. After this, parents received a daily call for 28 days to collect diary records. The study measured parental adherence, child's bedtime and daytime behaviour, parental well-being variables, as well as satisfaction with the programme.

The findings by Wade and colleagues (2007) are very promising. Bedtime behaviour and day behaviour in children improved significantly, as well as parental well-being. Participants reported a high level of satisfaction with the programme, and the improvements were maintained at 2 months follow-up. This study also shows that a two-session parent training programme can be successfully used with ethnic minorities and low socioeconomic groups, with no need of modifying the programme.

This intervention programme by Wade et al. (2007) is considerably shorter in length compared to the few previous studies in group modalities. Carpenter's (1990) programme involved six weekly 2-hour sessions, reduced to five weekly 1-hour sessions in Szyndler and Bell's (1992) study, whereas Wade et al.'s study consisted of 3 hours over the two sessions plus daily telephone calls for 28 days. The telephone calls were aimed to reduce the subjectivity of the parents' self-reports by nightly monitoring parents' compliance. However, it is possible that the telephone calls provided a degree of motivation, commitment and therapist's assistance. This is important since social support to parents from low socioeconomic background seems to be related to successful outcomes in childhood behavioural interventions (Wade et al., 2007; Wahler, 1980).

According to the literature review conducted for this dissertation, Wade et al.'s (2007) is the only study to address the question of how short and comparatively effective a group

parenting programme intervention for child bedtime problems can be. Thus, further research is needed, and the present study attempts to explore this question.

1.6 Parental Adherence to Recommendations

One of the fundamental challenges with parent training programmes is the achievement of parental adherence to recommendations (Ortiz & McCormick, 2007). A definition of parental adherence to treatment is "the extent to which the parent's behaviour coincides with the recommendations of the treating professional" (Allen & Warzak, 2000; p. 375). The success of an intervention will depend not only on the effectiveness of the procedures, but also the precise and consistent implementation of the procedures by both the therapists and the parents (Allen & Warzak, 2000; France et al., 2003).

As with any other behaviour, parental adherence is also subject to reinforcement contingencies. Improvement in the child's behaviour takes some days, and this delayed reinforcement for the parent can place the adherence behaviour in extinction (Allen & Warzak, 2000). In addition, if parents are requested to engage in a bigger response effort (e.g., tolerate the distress of long and intense crying) the adherence behaviour can be at risk of being replaced by competing behaviours that bring more immediate reinforcement (e.g., comforting and help the child settle). Parents, like anybody, prefer solutions that do not require considerable effort or change to their routines (Allen & Warzak, 2000). Finally, adherence behaviours usually compete with non-adherence behaviours that result in greater social reinforcement, while the adherence behaviour might be socially punished (Allen & Warzak, 2000). For instance, implementing extinction procedures for night waking is likely to be socially disapproved by close neighbours. Thus, stopping the crying in the middle of the night by attending to the child is socially validated.

Although studies sometimes indicate that parents' compliance to treatment has been high (e.g., Mindell & Durand, 1993; Seymour et al., 1983), measures of parental adherence to interventions are mostly absent (Owens et al., 1999). Some researchers point out that low

acceptance of standard extinction procedures can lead to non-compliance or drop-outs from treatment (Freeman, 2006; Rickert & Johnson, 1988; Seymour, 1987). However, other researchers indicate that parents continued the intervention and adhered to extinction procedures, even when this was not their initial preference (Reid et al., 1999; Seymour et al., 1983). Thus, research is needed on the links between treatment acceptance and treatment adherence (Allen & Warzak, 2000).

Reid et al. (1999) measured parental deviation from the treatment recommendations in 16 parents using standard extinction and 17 parents using gradual extinction to address their child's bedtime refusal and night waking. The variables measured were schedules of the check-ups, door closing and completion of the procedures until the child settled. Reid et al. (1999) found that parents who made more than three errors in one night eventually gave in and helped the child settle, but overall parents in both treatments were able to adhere to recommendations most nights. Specifically, parents using standard extinction did not adhere to recommendations on an average of 3.4 nights in 21-day treatment, while the parents using gradual extinction did not adhere to treatment in an average of 1.1 nights for the same length of intervention. The study reported that compliance with the procedures during the night was high for both groups; however the average of nights where parents did not follow the procedures is significantly higher for parents using standard extinction.

The findings of this study by Reid et al. (1999) included that both groups improved significantly and there was comparable child bed refusal and night waking, but parents using the gradual extinction reported less treatment-related stress. These findings provide preliminary evidence that standard extinction generates a greater level of parental distress, which may be associated with lower adherence to the procedure.

Seymour's (1987) study for children aged between 12 and 47 months displaying bed refusal and night waking revealed that three of four parents did not follow the intervention as instructed, despite receiving a verbal explanation and written manual detailing the procedures,

and daily therapist support by telephone. The three parents that did not adhere to the extinction component of the intervention adhered to other components (e.g., regular routine, praise and rewards). Despite these irregularities in the implementation of the treatment, parents reported improvements in the bedtime behaviour of their child, which were maintained at 3 months follow-up. Seymour argued that the low adherence to treatment may have had the effect of delaying the achievements of appropriate bedtime behaviour.

In addition, Freeman's (2006) study of four boys aged 3 years showing refusal to bed, encountered low parental adherence to extinction procedures in a intervention using a bed pass (a note-card exchangeable for one short trip out of bed). One of the parents failed to use extinction for about 10 nights during the second treatment phase in a reversal design, in spite of significant improvements in child bedtime behaviour during the first treatment phase of the study when the parent adhered to the procedure. Only when extinction was implemented again were positive outcomes obtained. There was no follow-up data for this study.

The studies by Seymour (1987) and Freeman (2006) suggest that parental adherence to treatment does not depend exclusively on delivering adequate information on how to proceed, or having regular therapist contact or having previous successful outcomes. In their study, Reid et al. (1999) associated the use of extinction with greater levels of parental stress, which could explain why parents may not adhere to treatment. Research is needed to clarify the association between parental adherence to treatment and intervention outcomes.

There are several strategies suggested by different authors to enhance adherence when training parents in the use of behavioural procedures to manage bedtime problems. Even though the procedures are behavioural, practitioners need to use cognitive components when training parents to modify the parents' expectations, beliefs and attitudes (Owens et al., 1999; Scott & Richards, 1990). When using extinction, it has been recommended to inform parents about extinction bursts and spontaneous recovery (France et al., 2003), and in particular to explain that the first two to three nights are likely to be the most stressful as the child is

learning the routine (Pritchard & Appleton, 1988; Seymour et al., 1983). Therapists can help to prevent parental non-compliance to extinction by reframing the initial increase of the problem behaviour as an indication of progress (Allen & Warzak, 2000), and by reassuring parents that extinction does not produce permanent negative effects (Reid et al., 1999). Also it is important to discuss the potential obstacles during the first few evenings, such as doubtfulness of continuing with the procedures (Eckerberg, 2002) and to give parents strategies to resist giving up (Wade et al., 2007).

It has also been recommended to reassure parents that the intervention will bring an increase in parental energy (as result of better sleep), improvement in the interaction with the child (Adair, Zuckerman, Bauchner, Philipp, & Levenson, 1992), and once the child learns the routine, parent and child enjoyment of the routine (Pritchard & Appleton, 1988). In addition, whenever possible, parents should be offered alternative procedures for them to choose how to manage the bedtime problems of their child (France & Hudson, 1993; Reid et al., 1999). Lastly, parents should be told that there is not one correct procedure to manage bedtime problems and the appropriate strategies depend upon a parent's particular circumstances (Scott & Richards, 1990).

1.7 Interventions for Bedtime Problems as Part of the Triple P Model

1.7.1 Description of the Triple P model

The Triple P - Positive Parenting Programme is based on a public health model (Sanders, 1999), and was developed by Sanders and colleagues at the University of Queensland, Australia. In its beginning, Triple P focused on home based individual face-to-face single-case behavioural interventions (Sanders & Glynn, 1981), evolving over 30 years into a series of randomised efficacy and effectiveness trials to assess different levels of interventions, and delivery modalities. Triple P is a comprehensive multilevel health model of evidence-based interventions (Sanders, 2008).

Triple P aims to prevent severe behavioural, emotional and developmental problems in children and adolescents by enhancing the knowledge, skills, and confidence of parents (Sanders, 1999). Triple P has programmes designed for all developmental periods from birth to 16 years of age. The programme is designed to target each of these developmental periods, ranging from media interventions with wide reach to the entire population to intensive family interventions with narrow reach to specific high-risk families. Also, Triple P has tailored interventions for specific populations, such as parents of children with special needs (Ireland, Sanders, & Markie-Dadds, 2003), parents at risk of maltreatment (Sanders et al., 2004), and parents from rural areas (Connell, Sanders, & Markie-Dadds, 1997).

The interventions are tiered on a continuum of increasing intensity from prevention to interventions for severe behaviour problems. In this way, parents can receive support throughout their different needs during the child-rearing years according to the type, intensity and modality of support required (see Table 1). This multi-level model is designed to maximise efficiency, to minimise costs and over-serving and to have a comprehensive reach of the entire population (Sanders, 2008).

The information provided to parents in Triple P interventions is based on strategies that have been assessed by empirical validation or are derived from the evidence-based principles that have been shown to be effective with similar problems (Sanders, 2008). When there is evidence for the effectiveness of different strategies, these alternatives are offered to parents. Triple P interventions are conducted only by trained and accredited Triple P facilitators, who follow a Triple P standard training process that has been assessed and well documented (Turner & Sanders, 2006a). In addition, Triple P facilitators use treatment manuals for the delivery of the interventions. These are some of the practices used to maintain high treatment fidelity (Sanders, 2008).

Triple P targets five core parenting principles: (a) creating a safe and engaging environment in which children can explore, experiment and play; (b) creating a positive

learning environment by involving parents as their child's first teacher, (c) using assertive discipline instead of coercive and ineffective practices, (d) having reasonable expectations that are developmentally appropriate and realistic for the child's capabilities; and e) looking after oneself as a parent by learning coping skills to manage emotional problems. These parenting principles translate into specific strategies and parenting skills, which are summarised in Table 2 (see Sanders, 1999, for a more complete overview).

1.7.2 Triple P programmes for bedtime problems

There are two single-case studies of Triple P interventions targeting bedtime problems with procedures that correspond to brief intervention in Primary Care (Sanders, Markie-Dadds, & Turner, 2003). The first study, by Sanders et al. (1984) has already been described in section 1.4 about behavioural intervention for bedtime problems.

The second study, by Christensen and Sanders (1985) was conducted with 20 children aged between 2 and 7 years displaying oppositional behaviours. Child behaviour and parental practices were measured in different community and home settings, one of these settings being at bedtime. As parents learned how to use planned activities and/or behaviour management strategies (e.g., gaining child's attention, praising correct behaviours, etc.), there were important improvements in the child's behaviour as well as in parental practices at bedtime. It was also observed that bedtime was a high-risk setting for all parents in the study, including those in the control group who did not report child general problem behaviour.

Despite the effectiveness of parenting programmes at a family level, the programmes make very little impact at a population level, reaching a small percentage of the parents who need support, with the consequence that many children develop preventable problems (Sanders, 2008). In order to achieve successful dissemination of parenting programmes, Triple P has actively developed research studies on a variety of brief and more cost effective interventions, such as group interventions (Zubrick et al., 2005), among others.

Table 1

Levels of Intervention in Triple P Model

Level of intervention	Target population	Intervention methods
Level 1: Universal Triple P Media-based parent information campaign	All parents interested in information about parenting and promoting their child's development.	Media and health promotion campaign raising awareness of parent issues and encouraging participation in parenting programs. May involve electronic and print media.
Level 2: Selected Triple P Health promotion strategy Brief selective intervention	Parents interested in parenting education or with specific concerns about their child's development or behaviour.	Promotion information or specific advice for a discrete developmental issue or minor child behaviour problem. May involve a group seminar process or brief (up to 20 min) telephone or face-to face clinician contact.
Level 3: Primary Care Triple P	Parents with specific concerns (as above) who require consultations or active skills training.	Narrow-focus and brief program (about 80 min over 4 sessions) combining advice, rehearsal, and self-evaluation to manage a discrete child problem behaviour. May involve telephone or face to- face clinician contact or group sessions.
Level 4: Standard Triple P, Group Triple P and Self-Directed Triple P	Parents who want intensive training in positive parenting skills. Typically, parents of children with behaviour problems, such as aggressive or oppositional behaviour.	Broad-focus program (about 10 hr over 8–10 sessions) focusing on parent–child interaction and the application of parenting skills to a range of behaviours. Includes generalization enhancement strategies. May be self-directed or involve telephone or face-to-face clinician contact or group sessions.
Level 5: Enhanced Triple P Intensive family intervention modules	Parents of children with behaviour problems and concurrent family dysfunction or conflicts between partners.	Intensive individually tailored program with modules (sessions last 60–90 min) including practice sessions to enhance parenting skills, mood management and stress coping skills, and partner support skills.

Note. Adapted from "Triple P-Positive Parenting Program as a Public Health Approach to Strengthening Parenting," by M. Sanders, 2008, *Journal of Family Psychology, 22,* p. 508. Copyright 2008 by the American Psychological Association.

Table 2

Core Parenting Skills

Observation Skills	Parent-child relationship enhancement skills	Encouraging desirable behaviour	Teaching new skills and behaviours	Managing misbehaviour	Preventing problems in high-risk situations	Self-regulation skills	Mood management and coping skills	Partner support and communication skills
Monitoring children's behaviour	Spending quality time	Giving descriptive praise	Setting developmentally appropriate goals	Establishing ground rules	Planning and advanced preparation	Setting practice tasks	Catching unhelpful thoughts	Improving personal communication habits
Monitoring own behaviour	Talking with Children	Giving nonverbal Attention	Setting a good example	Using directed discussion	Discussing ground rules for specific situations	Self-evaluation Of strengths and weaknesses	Relaxation and stress management	Giving and receiving constructive feedback
	Showing affection	Providing engaging activities	Using incidental Teaching	Using planned ignoring		Setting personal goals for change	Developing personal coping statements	
			Using Ask, Say, Do	Giving clear, calm instructions	Selecting engaging Activities			Having casual conversations
			Using behaviour charts	Using logical Consequences	Providing incentives		Challenging unhelpful thoughts	Supporting each other when problem behaviour occurs
				Using quiet Time	Providing consequences		Developing coping plans for high risk situations	
				Using timeout	Holding follow-up discussions			Problem solving
								Improving relationship happiness

Adapted from "Triple P-Positive Parenting Program: Towards an Empirically Validated Multilevel Parenting and Family Support Strategy for the Prevention of Behavior and Emotional Problems in Children," by M. Sanders, 1999, *Clinical Child and Family Psychology Review, 2,* p. 77. Copyright 1999 by Plenum Publishing Corporation.

1.7.3 Group delivery of Triple P bedtime interventions

Sanders (1980; 1982) conducted two home-based single-case studies with participants who were attending a group parenting programme facilitated by the researcher. The findings of the two studies showed that the group parenting programmes were effective in improving child behaviour and parental skills, but the improvements were greater when parents received additional therapist support at home and learned self-monitoring skills. The group programmes in these two studies were 2-hour weekly sessions, with groups of about 12 parents of children with general problem behaviour. Parents received lectures and written material, and participated in discussions of behavioural techniques for child rearing (positive reinforcement, extinction and punishment). Parents were instructed in the use of contingent praise and attention to promote appropriate behaviours, planned ignoring, response cost, time-out and start charts. This information was translated into action plans individually tailored to target specific problem behaviours at home. This initial intervention package is the basis of the current Group Triple P programme.

Group Triple P consists of four weekly 2-hour training session in groups of about 10 parents, followed by four weekly 15-minute phone calls. The sessions include didactic presentations with video demonstrations of desired parenting practices, rehearsal of parenting skills for a wide range of problem behaviours, feedback, role playing, group discussion, peer support and peer modelling, and individually tailored activities to complete between sessions (Sanders, 1999). The resources parents take home are a workbook and video that serve as a self-directed package, from which parents learn how to set and monitor parental goals and how to develop skills to observe their child's behaviour and their own.

Group Triple P has been assessed recently at a population level in large-scale population trials. Zubrick et al. (2005) conducted the first longitudinal study, in East Perth, Western Australia. A total of 1673 families with children aged 3 and 4 participated in one of the 101 groups conducted over 18 months. The results indicated that the percentage of parents

reporting disruptive behaviour in their child decreased from 42% to 20% after the intervention. Parents also reported significant improvements in parenting practices and well-being. Follow-ups at 12 and 24 months indicated maintained improvements. This study was replicated in South East Sydney, Australia (Dean, Myors, & Evans, 2003), with parents of children aged 2 to 10 years. About 1000 parents participated in the 122 groups. The results are very similar to the study by Zubrick, showing significant improvements in the child behaviour and parenting and parental variables.

1.7.4 Brief Triple P interventions

In relation to briefer group programmes, a study by independent researchers (Gallart & Matthey, 2005) compared the effectiveness between the standard Group Triple P programme (four sessions followed by four weekly telephone calls) and a shorter treatment modality where the group sessions were delivered, but no telephone calls were made. Outcomes were equivalent across conditions for both parental and child's behaviours, leading to the conclusion that the telephone calls were not essential for the success of the basic programme.

This study is particularly important within the Triple P principle of efficiency that argues that the least intensive intervention is preferred over more intensive as long as the former demonstrates comparable outcomes. The goal is to deliver clear, understandable, and reasonable detailed information for parents to evaluate the procedures as acceptable, and to follow them through to the point of achieving generalisation (Sanders, 2008).

The study by Joachim et al. (2009) is the first to target a much briefer Group Triple P intervention for parents of young children with a specific and common problem behaviour. Forty-six parents of children with disruptive behaviour on shopping trips participated in a 2-hour discussion group to address this particular problem. Parents were randomly allocated to the intervention or waitlist condition, and measures were collected at baseline, post-intervention and follow-up. After attending the discussion group, parents were contacted briefly in regards to the completion of assessments.

The discussion group included components of the more intense levels of Triple P interventions. These components were: peer discussion and peer support, video modelling, problem solving exercises, tailored action plans and planned activity routines for high-risk situations. The discussion group mainly targeted shopping behaviour, but a wide range of behaviours were used to promote generalisation. Joachim et al. (2009) demonstrated that this brief parenting programme was effective in training parents to manage common and specific child problem behaviour. Significant improvements were found for child behaviour in shopping trips, child general behaviour, parenting styles and parenting confidence. However, no differences were found for parenting and parental adjustment compared to the control group. The improvements were maintained at 6 months follow-up.

Based on Joachim et al.'s (2009) research, the present study evaluates the effectiveness of a Triple P brief group parenting for parents of children with bedtime problems.

1.8 Aims and Hypotheses

The present study aimed to assess the effectiveness of a brief 2-hour discussion group under the Triple P model for parents managing bedtime problems in their preschool child. It was hypothesised that after attending the parent training programme, participants would report significant improvements in: a) bedtime child behaviour, b) general child behaviour, c) parenting style, knowledge and confidence, and d) parental and inter-parental well-being. Also, it was hypothesised that the discussion group would produce high parent satisfaction and acceptance of the programme.

In addition, this study aimed to explore parents' adherence to recommendations of the discussion group, their preferred procedures, frequency of use, and correlations with outcomes.

<center>**2. Method**</center>

2.1 Participants

The participants who volunteered for this study were 14 families dealing with bedtime problems in their 3- to 5-year-old child. The study was advertised in a number of kindergartens, early childhood centres, play centres and primary schools around Auckland, New Zealand. For example, about 60 primary schools in Auckland agreed on adding a piece of information in their newsletter, and approximately 7,000 flyers were sent to kindergartens to be sending to parents.

The study was also advertised in the media, including free local newspapers, parent magazines, and educational and parenting websites, including The University of Auckland website. The study was advertised concurrently with another separate project targeting similar population, but with child daytime behaviour. The advertising and recruitment period took 3 months. Recruitment materials directed parents to contact the researchers by telephone or email.

Interested parents participated in a 15-minute screening interview over the telephone (see Appendix A for the written protocol), which aimed (a) to provide detailed information about the study and the discussion group, (b) to verify parent's further interest in participating, and (c) to assess parent's eligibility for enrolment. Parents were eligible if they (a) were concerned about the bedtime behaviour of their child, (b) their child was aged between 3 and 5 years, and (c) they were able to attend the 2-hour discussion group at the research clinic. Parents were not eligible if they or their child was currently receiving any type of treatment, including medication, for their child's bedtime and sleep problems and/or if either parent was receiving formal assistance for their own emotional or psychological difficulties (e.g., depression or anxiety).

Of the 20 parents who participated in the screening interview, 19 were eligible to take part in the study. A total of 14 families completed the T1 assessment and entered the study.

Both the mother and father completed the assessment in six of these families. Table 3 summarises the demographic variables for all the participants.

Of the 14 mothers who participated in the study, half identified the ethnicity of their child as New Zealander. There were more boys than girls in the sample and the majority lived with both parents in their original families. Most of the mothers had undergraduate or postgraduate university qualifications, and half of the fathers had an undergraduate university qualification as the highest educational level. All fathers and over half of the mothers were employed. Half of the sample had a combined annual income of $ 75,001 or above.

Table 3

Demographic Characteristics of the Sample

Variable	*M*	*SD*
Child age (years)	3.57	0.85
Mother age (years)	35.79	5.79
Father age (years)	39.00	5.13
No. of siblings	1.64	1.82
Mother working hours/ week	29.22	12.64
Father working hours/ week	40.91	3.61
	N	*%*
Child gender		
Female	8	40.0
Male	12	60.0
Family type		
Original family	11	78.6
Sole parent family	3	21.4
Marital status		
Married/ Defacto	11	78.6
Separated	3	21.4
Ethnic identity		
New Zealander	7	50.0

	N	%
Maori	2	14.3

	N	*%*
Asian	2	14.3
Other	3	21.4
Mother education		
Year 10 to 12	2	14.3
Technical college certificate	1	7.1
Trade/apprenticeship	1	7.1
University degree (undergraduate/postgraduate)	10	71.4
Father education		
Year 13	1	16.7
Trade/apprenticeship	2	33.3
University degree (undergraduate)	3	50.0
Mother in paid employment		
Yes	9	64.3
No	5	35.7
Father in paid employment		
Yes	6	100.0
Annual household income		
Did not know	1	7.1
$0 to $30,000	1	7.1
$30,001 to $50,000	2	14.3
$50,001 to $75,000	3	21.4
$75,001 to $100,000	5	35.7
$100,001 and above	2	14.3

2.2 Measures

Tables 4, 5 and 6 summarise the key characteristics of the measures.

2.2.1 Demographic information

Family Background Questionnaire. This demographic questionnaire is an adaptation

of the Western Australia Child Health Survey (Zubrick et al., 1995). In the first section, the

survey gathers information about the target child's sex, age, and ethnicity, and information on

the participant's relationship with the child, age, marital status, and family composition, level of education, employment, and income. In the second section, the survey includes questions about the receipt of professional assistance for emotional and behavioural problems, and presence of physical or developmental problems in the child.

2.2.2 Child behaviour measures

Parent Daily Report (PDR; Chamberlain & Reid, 1987). This is a 34-item checklist designed to measure daily observations of behaviour problems. Parents are instructed to report the occurrence and non-occurrence of each behaviour listed during the past 24 hours. The PDR allows repeated measures over several days. In this study, parents were instructed to select 1 weekday and 1 weekend day to record the occurrence and non-occurrence of the listed behaviours. An additional set of bedtime problem behaviour items were added to enable a finer-grained analysis of this primary outcome. These six items were drawn from the content covered in the discussion group, including "throwing a tantrum when told to go to bed", "dawdling to get ready to bed", "getting out of bed before falling asleep", among others (see Appendix B for complete PDR scale).

Two scores were calculated from the PDR: a Total Behaviours score, which was the sum of all occurrences on each day, and a Target Behaviour score, which was the sum of occurrences of all problematic bedtime behaviours. The weekend and weekday recordings were averaged to obtain these two scores. The Target Behaviour score has shown good inter-parent reliability (Chamberlain & Reid, 1987).

Eyberg Child Behaviour Inventory (ECBI; Eyberg & Pincus, 1999).The ECBI is a 36-item scale designed to assess disruptive child behaviour. For each item, parents are instructed to answer how often the behaviour occurs and whether it is a problem for them. The ECBI produces two subscale scores: the Problem score (number of behaviours rated as a problem) and the Intensity score (sum of ratings of the frequency of each problem behaviour). Both have good internal consistency and the Total score has good high test-retest reliability.

Table 4

Scales Information Child Behaviour Measures

Scale	Subscales (no. items)	Cut-offs	α	r	Anchors of the Scale	Examples
PDR	- Total Behaviours (31)	≥8.43			yes (*occurrence*)- no (*non-*	- "Crying"
	- Target Behaviours (6)			.89 [a]	*occurrence*)	- "Lying"
						- "Teasing others"
ECBI	- Problem score (36).	≥ 15	.94	.86 [a]	yes (*problem*)- no (*not a problem*)	- "Has poor table manners"
	- Intensity score (36)	≥ 131	.95		7-point scale:	- "Refuses to go to bed on time"
					1 (*never*) to 7 (*always*)	- "Has temper tantrums"
SDQ	- Difficulty score (25)		.76	.85	3-point scale:	- "Has at least one good friend"
	- Conduct (5)	≥ 4	.54	.74	0 (*not true*) to 2 (*certainly true*)	- "Often loses temper"
	- Hyperactivity (5)	≥ 7	.75	.75	4-point scale:	- "Kind to younger children"
	- Impact score (8)				0 (*not at all*) to 3 (*a great deal*)	

PDR= Parent Daily Report; ECBI= Eyberg Child Behaviour Inventory; SDQ = Strengths and Difficulties Questionnaire. [a]Total score.

Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997). The first section of the SDQ is the Total Difficulties scale, which comprises 25 items designed to assess parents' perception of their child's appropriate and inappropriate behaviours over the past 6 months. The Total Difficulties scale yields five subscales: Conduct Problems, Hyperactivity, Emotional Symptoms, Peer Problems, and Prosocial Behaviour scores, as well as a Total Difficulties score. Only two subscales, Conduct Problems and Hyperactivity, were examined in this study.

In the second section, parents are asked whether they think their child has difficulties in the areas of emotions, cognitive (concentration), behaviour, and social functioning. Parents who answer *yes* are prompted to indicate the length, impact of the difficulty, and areas affected (e.g., home life, friendships, schooling, and leisure activities). The sum of parents' responses on these items produces the Impact score. The SDQ Total Difficulties scale has acceptable internal consistency (Smedje, Broman, Hetta, & von Knorring, 1999) and good test-retest reliability (Goodman & Scott, 1999).

Sleep Diary (SD; Sanders & Turner, 2010; Seymour, 1987). The SD is a daily report measure designed to assess bedtime and sleep behaviour difficulties in young children. Parents are usually instructed to complete the SD for 1 week, including day and night sleep. In this study, parents were asked to record only night sleep, tracking (a) the time the participant put their child to bed, (b) problem behaviours displayed during bedtime, and (c) the time the child settled down and fell asleep. Also, parents were asked to record (d) every time the child woke up in the middle of the night, (e) the problem behaviours at waking, (f) the time the child went back to sleep, and (g) the time the child woke up in the morning.

2.2.3 Parenting and parental adjustment measures

Parenting Scale (PS; Arnold, O'Leary, Wolff, & Acker, 1993) The PS is a 30-item scale designed to assess dysfunctional parenting styles. For each item, parents are instructed to select a number that best describes their parenting style when dealing with some common

childhood difficult behaviour. Parents are asked to frame their answers in reference to the past 8 weeks. The PS comprises three subscales: Laxness (permissive and inconsistent discipline), Over-activity (harsh, emotional, authoritarian discipline and irritability) and Verbosity (reliance on talking and long reprimands). The Total score of the PS has shown good internal consistency and good test-retest reliability (Arnold et al., 1993).

Parenting Tasks Checklist (PTC; Sanders & Woolley, 2005). This is a 28-item parenting adjustment checklist in which parents rate their confidence to effectively manage common child problem behaviours (e.g. yelling, answering back, interrupting) as well as their confidence to deal effectively with problematic settings in which difficult behaviour is likely to occur (e.g., shopping, in the car, on the telephone). These scales are referred to as Behavioural Self-efficacy and Setting Self-efficacy respectively. Both subscales have good internal consistency.

Parent Knowledge Scale (PKS; Morawska, Sanders, & Winter, 2005). This 15-item scale assesses parenting knowledge regarding effective parenting strategies and concepts (encouraging development, assertive discipline, principles of parenting, and causes of problem behaviour). The PKS is a multi-choice assessment with four response choices, one of which is correct. For each item, parents are instructed to select what they consider the most effective parenting action. A high score indicates greater parenting knowledge.The PKS has been shown to have acceptable internal consistency and good test-retest reliability (Morawska et al., 2005).

Parent Problem Checklist (PPC; Dadds & Powell, 1991). The PPC is a 16-item scale to be completed by parents who are sharing parenthood with a partner. The scale assesses inter-parental conflict during the past 4 weeks over child-rearing issues (six items), disagreements over discipline and rules (six items), and the extent to which each parent undermines the relationship of their partner with the child (four items). For each item, parents

are instructed to answer whether the issue has been a problem for them, and to what extent. The PPC has two subscales: Problem score (number of problems behaviours) and Extent score (severity of problem behaviours). The PPC has acceptable internal consistency and good test-retest reliability (Dadds & Powell, 1991).

Depression Anxiety Stress Scale-21 (DASS-21; Lovibond & Lovibond, 1995). The DASS-21 was adapted from the original longer form of the DASS (42 items), and is a 21-item scale designed to measure adult symptoms of depression, anxiety and stress. Parents are instructed to indicate the extent to which each item applies to them, framing their answers in reference to the previous week. The DASS-21 has good internal consistency for each scale (Lovibond & Lovibond, 1995)

Relationship Quality **Index** (RQI; Heyman, Sayers, & Bellack, 1994). This is a six-item scale to be completed by parents who have a partner. This scale assesses relationship quality and satisfaction. The RQI has been shown to have adequate internal consistency (Heyman et al., 1994).

2.2.4 Parent satisfaction and acceptance of programme

Client Satisfaction Questionnaire (CSQ). The CSQ is an adaptation of the Therapy Attitude Inventory by Eyberg (1993) The CSQ is a 16-item questionnaire that assesses participants' satisfaction with the discussion group. The CSQ measures parents' perception of (a) how well the programme met the child's and the parents' needs, (b) level of improvement in child behaviour and parenting skills, (c) overall quality of the services, (d) likelihood of recommending the programme to others, and (e) likelihood to come back to Triple P for further assistance. The CSQ has been shown to have high internal consistency and an item-total correlation of .66 and inter-item correlations of .30 to .87. (Sanders, Markie-Dadds, Tully, & Bor, 2000).

Table 5

Scales Information Parenting Measures

Scale	Subscales (no. items)	Cut-offs	α	r	Anchors of the Scale	Examples
PS	- Laxness (11) - Over-reactivity (10) - Verbosity (7)	>3.27[a]	.84 [a]	.84 [a]	7-point scale: 1 (effective parenting style) to 7 (ineffective parenting style)	-"When I tell my child not to do something… I say very little. 1 2 3 4 5 6 7 I say a lot".
PTC	- Behavioural (14) - Setting (14)	≤ 61.22 ≤ 79.19	.97 .91		100-point scale: 0 (*certain I cannot do it*) to 100 (*certain I can do it*)	- "Going to the doctor" - "You are on the phone" - "You are preparing meals"
PKS	(15)		.68	.87	Multi-choice: 1 correct answer out of 4	- "A father wants his child to come to the dinner table. What should he say? a. 'Your dinner's ready'; b. 'It's time for dinner. Go and wash your hands please. Then come up to the table'; c. 'Stop playing with your toys. It's dinner time'; d. 'Why are you going so slowly? I said your dinner's ready'."

Note. PKS= Parent Knowledge Scale; PTC= Parenting Task Checklist, PS = Parenting Scale. [a]Total score.

Table 6

Scales Information Parent Adjustment Measures and Parent Satisfaction and Acceptance of Programme Measures

Scale	Subscales (no. items)	Cut-offs	α	r	Anchors of the Scale	Examples
PPC	- Problem score (16)	>5	.70 [a]	.90 [a]	*yes-no*	- "Fighting in front of the children"
	- Extent score (16)				7-point scale: 1 (*not at all*) to 7 (*very much*)	- "Disagreement about what is naughty behaviour"
DASS -21	- Depression (7)	≥ 14	.97		4-point scale:	- "I found it difficult to relax"
	- Anxiety (7)	≥ 10	.92		0 (*did not apply to me at all*) to 3 (a*pplied to me very much)*	- "I felt sad and depressed"
	- Stress (7)	≥ 19	.95			
RQI	(6)	≤ 29	.68 to .86		7- and 10 point-scale: 1 (*very strongly disagree*) to 7 (*very strongly agree*); and 1 (*unhappy*) to 10 (*perfectly happy*)	"- We have a good relationship" - "I really feel part of a team with my partner"
CSQ	(16)		.96		7-point scale from 1 (*very poor/definitively no/very dissatisfied*) to 7 (*excellent/definitively yes/ very satisfied*)	"To what extent has the programme met your child's needs?"

Note. PPC= Parent Problem Checklist; DASS-21 Depression Anxiety Stress Scales 21; RQI= Relationship Quality Index. [a]Total score.

2.2.5 T2 interview

A telephone interview was designed specifically for this project for the purpose of collecting information regarding the social validity of the discussion group. The interview lasted for 20 minutes and gathered quantitative and qualitative information on primary (bedtime behaviour) and secondary outcomes (parents' use of an action plan) of the discussion group as well as on parents' adherence to recommendations.

The interview protocol is available in Appendix C. The first section contained 11 questions, five of which were taken from an interview protocol described by Seymour et al. (1983). As the discussion group offered parents a range of strategies to improve their child's bedtime routine, such as preventive and management strategies, use of rewards and praise, and bedtime gradual or direct approach, the first section of the interview asked parents which strategies they chose to use. Parents also rated their perception of how acceptable, difficult and practical the strategies were, and whether the strategies facilitated behavioural change in their child, and the impact on daytime behaviours.

In the second part of the interview, parents were taken through a checklist of the 23 strategies presented in the discussion group and were asked to rate how frequently they used each strategy on a scale from 1(*always*) to 4 (*never*).

2.3 Design

This study was originally designed as a 2 (group: intervention, waitlist) X 2 (time: T1, T2) randomised controlled trial. However, due to a poor recruitment response (see section 2.1) and the attrition rate (see section 3.1) there were not enough participants to be randomised to two conditions. The limited time available to conduct this project meant that it was not possible to proceed with a Randomised Controlled Trial. Thus, despite the problems associated with uncontrolled trials, it was necessary to eliminate both the random allocation and the control group aspects of the design. Thus, all parents who completed T1 assessment

began the intervention immediately and completed the assessments listed in section 2.2 before starting the intervention and 6 weeks after the discussion group.

2.4 Procedure

Ethical clearance was obtained for this study from The University of Auckland Human Participants Ethics Committee (reference number 2009/286).

With the exception of the PDR and the SD, all parents completed all the measures online. The PDR and SD were posted or emailed to participants as they involved monitoring of behaviours for 2 and 7 days, respectively; and the internet survey system did not allow parents to log on to the survey on multiple occasions. Both mothers and fathers were encouraged to complete all assessments.

Parents completed all of the child behaviour and parenting assessments before attending the discussion group (T1) and again 6 weeks after the discussion group (T2). Single parents did not complete the PPC and the RQI. The programme acceptance and adherence measures were completed only at T2 (i.e., CSQ and interview).

Once their eligibility for the study was ascertained, parents were sent an email with a link to a secure online system to provide informed consent and to complete their assessment. Parents were provided with a unique code number that they were required to enter when logging on to the system. Once logged in, an information letter about the project was displayed and parents indicated their consent for participation. The first questionnaire was then displayed.

Parents were asked to complete the assessments within 2 weeks. Parents were first reminded about the completion of the assessments by email, 1 week later by telephone, and after that by follow-up emails and telephone calls on a predetermined schedule. Upon completion of their initial assessment, parents were contacted by telephone and informed of the time and location of the discussion group. At T2, parents received the assessment 4 weeks

after attending the discussion group to be completed within 2 weeks. Parents were reminded on the same schedule as per T1.

2.4.1 Intervention: Developing good bedtime routines discussion group

The discussion group was 2 hours in length and was held on a weekday evening at the Triple P research clinic at The University of Auckland. The structure of the discussion group was modelled on the individual consultations in Primary Care Triple P (Sanders, Murphy-Brennan, & McAuliffe, 2003; Turner & Sanders, 2006b). The facilitator delivered the information with the support of a Powerpoint presentation and video clips that were complemented by her explanations. Parents received the same information in a workbook to take home. During the session, the facilitator encouraged parents to discuss and share their experiences with the group, as well as to participate in practical exercises. These exercises contributed to parents' formulation of an action plan to manage the bedtime problems of their child.

The discussion group covered the following content (Sanders & Turner, 2010): (a) common causes of bedtime problems with focus placed on the parent's role in the development and maintenance of these difficulties, (b) monitoring of bedtime behaviours, (c) strategies for preventing bedtime problems and developing appropriate bedtime routines, and (c) strategies for managing problems at bedtime and during the night (see Table 7 for a summary of the strategies presented in the discussion group).

Table 7

Summary of Triple P Strategies for Developing Good Bedtime Routines

Summary of Strategies	
Prevent problems at bedtime	• Set a regular bedtime and start a bedtime routine
	• Involve your child in quiet activities 30 minutes before bedtime.
	• Help your child complete the steps of the bedtime routine.
	• Take your child to bed, check your list. Say goodnight and leave.
	• Praise/reward your child in the morning if they follow the routine.

Summary of Strategies	
Teach your child to stay quietly in bed	• Tell your child that you will check on them if they stay quietly in bed.
	• Praise your child for staying quietly in bed.
	• Gradually increase the amount of time between check-ups.
	• Continue checking until your child falls asleep.
Deal with bedtime problems consistently	*Direct approach*:
	• Completely ignore your child's calls and crying; don't talk to them or return to their room.
	Gradual approach
	• Delay responding to your child if they cry.
	• Gradually increase the amount of time between check-ups.
	• Leave your child after 1 minute, even if they are still crying.
	Gentle approach
	• Lie down in another bed near your child and pretend to be asleep until your child falls asleep.
	• Don't attend to your child unless they are ill or in danger.
Other tips	• Return your child to their bed if they come out or get into your bed.
	• Give little attention to crying or calling out during the night.
	• Keep a sleep diary to track progress.

Note. Adapted from *"Every Parent's Discussion Group Workbook: Developing Good Bedtime Routines,"* by K. M. T. Turner and M. R. Sanders, 2010. Copyright 2010 by the University of Queensland.

2.4.2 Intervention integrity

The intervention was facilitated by a registered psychologist trained and accredited in Triple P, who delivered the discussion group by following the structure and contents of the workbook. This information was transported into a Powerpoint presentation and into video clips for the purpose of the discussion group. A checklist of the manualised programme contents was completed by the facilitator at the conclusion of the group. The researcher participated as observer.

3. Results

This chapter is divided into four sections: (a) attrition, (b) quantitative measures: statistical analysis, (c) SD: individual case analysis, and (d) interviews: qualitative and quantitative analysis. Due to the small number of fathers completing the assessments, only mother's data was used in the data analyses.

3.1 Attrition

Of the 14 families enrolled in the study, nine families failed to complete all or most of the T2 assessments, an attrition rate of 63% (see Table 8 for number of participants who remained at each stage of the study).

Table 8

Number of Participants in Each Stage of the Intervention

		T1			Intervention			T2	
	OA	PDR	SD		DG	I	OA	PDR	SD
No. Participants	14	13	8		8	7	5	5	5[a]

Note. T1= time 1, T2= time 2; OA= online assessments; PDR= Parent Daily Report, SD= sleep diary, DG= discussion group, I= interview. 5[a] Five participants returned the SD but only four of these assessments were analysed, as the fifth one was missing a considerable amount of data (e.g., data on only four non-consecutive days).

The reasons for withdrawal at T1 stage included participants considering the programme unsuitable (two families) or being unable to attend the discussion group on the appointed date due to child care difficulties, trips or illness (four families). After the discussion group, one family considered the programme unsuitable. In addition, two families did not withdraw but completed only the interview component of the T2 assessments.

A series of independent-samples *t*-tests were conducted to compare the completers and drop-outs on the demographic and questionnaire measures. No statistically significant

differences were found between completers and dropouts on the socio-demographic variables, while the only statistically significant difference on the questionnaire measures was in the RQI, in which completers scored higher ($M= 42.20$, $SD = 3.89$) than non-completers ($M = 31.00$, $SD = 8.$); $t(9) = 2.71$, $p= .024$.

3.2 Quantitative Measures: Statistical analysis

To evaluate the short-term effects of the intervention, differences between the participants' scores at T1 and T2 were analysed using a series of paired-samples *t*-tests. Effect sizes (Cohen's *d*) were calculated for all significant effects and an alpha level of .05 was used for all statistical tests. Table 9 shows the means and standard deviations for each dependent variable at T1 and T2, along with the results of the *t*-tests.

3.2.1 Bedtime child behaviour measures

A significant intervention effect was found on the PDR Bedtime scale (with a large effect size), as parents reported considerably fewer problem behaviours at bedtime and during the night at T2. However, no significant differences were found on any aspect of the SD.

3.2.2 General child behaviour measures

A significant intervention effect was found on PDR Total scores (with a medium effect size), as parents reported less problem child behaviour at T2 in comparison to T1. Parents also reported significantly fewer problem behaviours on the ECBI Problem scale from T1 to T2 (large effect size). No significant differences were found on the ECBI Intensity and SDQ scales.

3.2.3 Parenting and parental adjustment measures

At T2, parents reported a significant increase in confidence in managing difficult childhood behaviours as measured by the PTC Behavioural scale (large effect size). However, no significant differences were found in PTC Setting, PS and PKS scales, respectively. Finally, no significant differences were found on the DASS-21, PPC or RQI scales.

Table 9

Short-term Intervention Effects

Measure	T1		T2		*t (df)*	*p*	*d*
	M	*SD*	*M*	*SD*			
SD Time to settle	26.60	11.89	19.65	11.43			
SD Night sleep	10.19	0.59	10.19	0.82			
SD Problem evening	0.95	0.10	0.40	0.46			
SD Problem night	0.35	0.34	0.15	0.19			
PDR Total	0.40	0.16	0.28	0.10	3.47 (4)	.025*	0.54
PDR Bedtime	0.63	0.24	0.15	0.16	5.43 (4)	.006**	2.25
ECBI Intensity	93.50	28.20	90.75	15.79			
ECBI Problem	7.50	4.04	2.00	2.30	4.62 (3)	.019*	1.23
SDQ Conduct	1.00	0.81	1.00	0.81			
SDQ Hyperactivity	3.00	1.82	3.75	2.36			
PS Laxness	2.90	1.09	2.94	0.34			
PS Over reactivity	3.26	0.35	2.96	0.32			
PS Verbosity	3.88	0.27	3.91	0.23			
PTC Setting	88.85	6.01	95.92	2.91			
PTC Behavioural	68.64	16.78	86.14	6.49	-3.218 (4)	.032*	0.89
PKS Total	10.58	1.11	11.60	1.34			
DASS-21 Depression	3.50	7.00	3.00	6.00			
DASS-21 Anxiety	2.00	2.82	2.00	2.82			
DASS-21 Stress	8.50	6.40	6.00	5.41			
PPC Extent	27.33	14.46	19.33	3.51			
PPC Problem	4.33	5.13	2.66	3.78			
RQI Total	42.33	4.61	39.00	0.00			

Note. T1= time one; T2= time two, SD= sleep diary; PDR= Parent Daily Report; ECBI= Eyberg Child Behaviour Inventory; SDQ = Strengths and Difficulties Questionnaire; PS= Parenting Scale; PTC= Parenting Task Checklist; PKS= Parent Knowledge Scale; DASS-21 Depression Anxiety Stress Scales 21; PPC= Parent Problem Checklist; RQI= Relationship Quality Index. *t*, *p* and *d* values only reported for significant scores.

*p< .05, two-tailed. **p< .01, two-tailed.

3.2.4 Intent-to-treat analyses

Intent-to-treat analyses were conducted to check the consistency in the significant results between the dataset with only participants who completed T1 and T2 assessments (five participants) and a dataset comprising the entire sample (14 participants). Paired-samples *t*-tests were run using the last-observation-carried-forward method for missing data on those scales where significant results were found. The intent-to-treat-analyses indicate that the significant effects for PDR Bedtime scale and PDR Total scores were maintained, while the ECBI Problem and PTC Behavioural scales were just above the alpha value .05 (see Table 10).

Table 10

Intent-to-treat Analyses

Measure	T1		T2		t (df)	p	d
	M	*SD*	*M*	*SD*			
PDR total	0.36	0.15	0.31	0.12	2.23(11)	.047*	0.36
PDR bedtime	0.56	0.24	0.36	0.28	2.52 (11)	.028*	0.76
ECBI problem	10.10	5.01	8.53	6.16	2.08 (13)	.057	0.26
PTC behavioural	64.15	24.34	70.40	25.59	-2.12 (13)	.053	-0.25

Note. T1= time one; T2= time two, Parent Daily Report; ECBI= Eyberg Child Behaviour Inventory; PTC= Parent Task Checklist. *t*= pared-samples *t*-test (*df*).

*p< .05, two-tailed.

3.2.5 Client satisfaction and acceptance of programme

Five participants completed the CSQ measure after attending the discussion group. These participants reported a moderate to high level of satisfaction with the group ($M = 68.15$, $SD = 10.06$). This score is comparable to the CSQ scores and slightly lower than the average reported by Boyle et al. (2010) ($M = 71.4$, $SD = 9.99$), and Turner and Sanders (2006b) ($M = 72.89$, $SD = 11.48$) in Primary Care interventions with parents of preschool children displaying disruptive behaviours.

Four participants rated the quality of the discussion group as good or very good, and they were satisfied with the amount of help they received, reporting that the programme helped at least somewhat to manage more effectively their child's behaviour, as well as problems arising in their family. Overall, all participants reported to be satisfied with the programme they received, and indicated that they would come back to Triple P if they were to seek help again. Moreover, all participants indicated that the programme helped to develop skills that could be applied to other family members.

During the 6 weeks following their attendance at the group, none of the parents sought further assistance for their child's behaviour or had other problems thought to be related to the original bedtime difficulty. Finally, four of the five participants indicated that their child's behaviour improved and they were satisfied with their child's progress.

3.3 SD: Individual Case Analysis

The SD were analysed statistically in the section above; however, due to the very small sample, the dataset from the SD lacks of statistical power to conduct an adequate analysis (Cohen, 1992). In this section the SD are under visual inspection for further examinations of why significant interventions effects were not found in the statistical analysis. In addition, a visual analysis of each case allows observing in detail the differences between the four participants who completed the SD at both T1 and T2 (see Tables 11 and 12).

Over the week-long recording, participant 1 initially used a combination of direct approach with preventive strategies; fading the direct approach and maintaining the preventive at 6 weeks after the intervention (see Table 7 for a summary of strategies). The SD showed an important reduction from T1 to T2 in the average time the child took to settle, in the percentage of evenings with bedtime problems and variety of bedtime problem behaviour (down to zero); in the percentage of nights with middle of the night issues and variety of problem behaviour. There was also an increment of 37 minutes in the average of hours slept per night. However, there were no changes in the average time the child spent awake during the night.

Table 11

SD Data for Participants 1 and 2

Variable	Participant 1		Participant 2	
	T1	T2	T1	T2
M time to settle	28 min.	11 min.	42 min.	32 min.
% eve with issues	100%	0%	80%	80%
Problems at bedtime	- Tantrums - Refusing - Requests - Excuses	- None	- Refusing	- Calling out - Requests
% nights with issues	83%	14%	40%	0%
Problems at waking	- Cosleeping - Wanting TV - Toilet	- Cosleeping	- Toilet - Requests	- None
M time awake/night	16 min.	20 min.	20 min.	0 min.
M hours sleep/night	10 hr. 57 min.	11 hr. 34 min.	9 hr. 30 min.	9 hr. 15 min.

Participant 2 used mainly preventive strategies in her action plan, maintained at 6 weeks after the intervention. The recordings showed a somewhat different pattern of results to the first participant. Although no negative changes were displayed, most variables did not show any notable improvements. An important improvement was noted, however, in the percentage of nights with issues in the middle of the night, which reduced to zero. Thus, there was no time awake in the middle of the night.

Participant 3 used only the gradual approach, which had not been faded out at 6 weeks after the intervention. The data showed improvements in the variety of problem behaviours at bedtime, but there were no other notable changes in any of the other variables. In addition, the percentage of nights with problem behaviours in the middle of the night increased.

Participant 4 used the gradual approach combined with preventive strategies. The action planned was faded out after 2 weeks. The SD showed a slight improvement in the average time to settle, and a decrease in the percentage of evenings with problem behaviours. There was also a reduction in the variety of problem behaviours at bedtime and an increase of 31 minutes in the average of hours slept per night. There were no changes in the percentage of nights with middle of the night issues or in the average of time awake.

The SD of these four participants showed improvements from T1 to T2 in at least one of the variables; however, the data showed a large variation in the child responses at bedtime. The SD of two participants indicated an overall improvement in bedtime behaviour by displaying positives changes in most of the variables, both presenting improvements in the average time to settle and time slept per night, and in the percentage of evenings with problem behaviours. These two participants reported that they used the direct approach or gradual approach combined with preventive strategies, whereas the participants showing little improvements based their action plans on one component only; gradual approach or preventive strategies.

Table 12

SD Data for Participants 3 and 4

Variable	Participant 3		Participant 4	
	T1	T2	T1	T2
M time to settle	20 min.	24 min.	17 min.	12 min.
% eve with issues	80%	71%	100%	14%
Problems at bedtime	- Refusing - Requests - Crying - Getting up	- Dawdling	- Dawdling - Getting up - Excuses - Crying - Refusing	- Whining
% nights with issues	0%	29%	29%	29%
Problems at waking	- None	- Requests	- Cosleeping	- Waking up
M time awake/night	5 min.	5 min.	10 min	8 min.
M hours sleep/night	10 hr. 10 min.	9 hr. 53 min.	10 hr.	10 hr. 31 min.

3.4 Interviews: Qualitative and Quantitative Analysis

These data are organised under three subsections. First, parental adherence to
recommendations are examined, particularly, (a) whether parents set and used an action plan
at home, and (b) how often the strategies in their action plan were used. Then, (c) there is an
analysis of the primary outcomes perceived by the parents after attending the discussion group.

3.4.1 Adherence to recommendations: Did parents set and use an action plan?

Setting an initial action plan. Six out of seven participants interviewed set an action
plan after attending the discussion group. There was only one participant who just read the
booklet after attending the session and used, unsystematically, some of the strategies. This last

participant said that despite finding the discussion group good, helpful and informative, she needed a follow-up session to discuss the results after few weeks and to adjust the programme based on her individual needs (see Table 13).

Choosing strategies to use. When parents were asked what strategies they included in their initial action plan, all participants mentioned the gradual or direct approach, and the use of some preventive strategies (e.g., regular bedtime, quiet activities before bedtime, checklist of possible excuses; see Table 7 for summary of strategies). Five out of six participants chose the gradual approach for their initial action plan. One of these participants used the gradual approach alone and the other four participants combined it with other strategies. Three participants used a reward chart and another parent used a bedtime diary prior to designing her action plan.

The most successful action plan was reported by one parent who combined the gradual approach with an explanation of the bedtime routine. At the start of the action plan, the participant explained to their child that after story time they would leave the room and do check-ups every few minutes. By the time of the interview, this parent did not need to do check-ups anymore as her child was happily falling asleep on her own.

Two of the six participants chose the direct approach for their initial action plan in combination with preventive strategies. However, one of these parents changed to the gradual approach after a couple of days, after finding it ineffective. The other participant faded the direct approach out by the time of the interview, as her child no longer displayed challenging bedtime behaviours.

Five out of the six participants chose to use preventive strategies for their initial action plan. All parents combined the preventive strategies with the gradual or direct approach.

Most participants reported that they had already had a regular bedtime routine prior to attending the discussion group, and the main change within the action plan was to clarify the routine with the child. As one participant said, she explained to her child what was allowed,

not allowed and what was expected at bedtime. Another parent said that the main modification was to extend the bedtime routine to what comes after saying goodnight. This participant explained to her child that she would leave the room, let her fall asleep alone and do check-ups every few minutes.

Table 13

Frequency of each Strategy when Parents Talked about their Action Plan

Question	Strategy					
	G	D	PS	BC	SD	None
What actions did you include in your initial action plan?[a]	5	1	5	2	1	1
Which ones are you still using?[a]	3		3			1
Are there any actions that you gave up for finding them too difficult, inappropriate or not suitable?	1	1	1			3

Note. G= gradual approach; D= direct approach; PS= preventive strategies; BC= behaviour chart; SD= sleep diary. [a]The total number of the row differs from the total number of participants as participants mentioned more than one strategy.

Strategies still in use. As 6 weeks had passed from the discussion group to the interviews, some of the initial action plans suffered modifications over the weeks. These changes were due to difficulties using a certain strategy or due to the improvements in the bedtime behaviour. By the time the parents were interviewed, two participants had reduced their action plan to only using preventive strategies, while another participant had reduced her initial action plan to only the gradual approach.

There were two participants still carrying on their initial action plan: one parent was checking on her child every 10 minutes and the other one was using a combination of the

gradual approach with preventive strategies. Finally, only one participant had successfully faded out her action plan completely.

Difficult, inappropriate or unsuitable strategies. Three participants revealed that they had encountered difficulties with some of the strategies. One of the two parents who initially chose to use the direct approach reported that she discontinued using it because she would inevitably return to the child's room because of the child's problem behaviours, which she found difficult to ignore. Moreover, one out of five participants who used the gradual approach said it was ineffective, because her child would not stop calling out. Finally, one of the five parents using preventive strategies thought it was difficult to keep the timing of the routine consistent. Despite having a fairly regular bedtime routine, it was not possible for her to do the steps every day at a regular time.

3.4.2 Adherence to recommendations: How often were the strategies used?

The strategies covered in the discussion group were categorised as preventive, praises and rewards, behaviour management, and visual/written material. This categorisation was based on the components typically used on bedtime behavioural intervention packages (see section 1.4 for a review) and aimed to examine each component in term of parents' preferences and use. Preventive strategies involved actions towards establishing an environment that promoted good bedtime habits and a clear routine. Praise and rewards involved the use of positive reinforcement contingent on appropriate behaviour and aimed to increase the likelihood that these behaviours would occur again in the future. Behaviour management strategies were actions to deal with challenging bedtime behaviours. They focused on decreasing the likelihood that these problem behaviours would occur again in the future. Finally, visual/written materials aimed to support the strategies above by using a graphic display of the action plan, problem behaviour, target behaviours and/or reinforcers.

Table 14

Frequency of Parents' Use of Preventive Strategies

Question	A	M	S	N
Before Bed Strategies				
Did you involve your child in quiet activities (30 minutes) before bedtime?	3	4		
Did you take your child to bed at a regular time?	3	4		
Did you set a bedtime routine?	4	3		
Did you explain/ remind your child about the bedtime routine to your child before you started the programme?	6			1
Did you help your child complete the steps of the bedtime routine?	6	1		
In Bed Strategies				
Once in bed and before leaving the room, did you check aloud the list of possible excuses?	3		4	
Before leaving the room, did you remind your child to be quiet in bed and staying until next day?	1	3	3	
Before leaving the room, did you remind your child you will not answer if they call out and you will take them back to bed if they get up?	1	3	2	1
Before leaving the room, did you tell your child that you will check on them if they stay quietly in bed?	4	1		2

Note. A= always; M= most of the time; S= sometimes, N= never.

Frequency of use of preventive strategies. All the participants reported that they *always* or *most of the time* used the *before bed strategies* (see Table 14). Overall, half of the participants *always* or *most of the time* used the in bed strategies before leaving the child's

room. Furthermore, all parents using the gradual approach *always* or *most of the time* used the reminder that the parent would check on them if they stayed quietly in bed.

Frequency of use of praise and rewards. Most participants *always* or *most of the time* praised and rewarded their child during check-ups when they found them staying quietly in bed, and in the morning for following the bedtime routine the night before (see Table 15).

Table 15

Frequency of Parents' Use of Praise and Rewards

Question	A	M	S	N
In the morning, did you praise and reward your child when s/he followed the bedtime routine the night before?	4	2	1	
When doing check-ups, did you praise your child for staying quietly in bed?	3	1	1	2

Note. A= always; M= most of the time; S= sometimes, N= never.

Frequency of use of behaviour management strategies. The strategy that the parents used most consistently was returning the child to bed immediately when s/he got up, with five participants out of six indicating that they *always* used that strategy (see Table 16). A second strategy used often by the participants was staying less than one minute in the room when the child was crying during the check-ups, as four participants said that they *never* stayed more than one minute. The third strategy used the most was returning the child back to bed as many times as necessary, since two of three participants who needed to use it did so *always*.

The strategy used least by parents was extinction, as most participants *always* or *most of the time* returned to the bedroom and talked to their child when they started to display problem behaviours in bed. Similarly, only one participant would *sometimes* close the door when the child got up of bed repeatedly, and the other participants did not use this strategy.

Table 16

Frequency of Parents' Use of Behaviour Management Strategies

Question	A	M	S	N	n/a
Once your child was put in bed and after saying goodnight, did you talk to your child when s/he started to complain, call out, cry or request?	1	3	2	1	
Once your child was put in bed and after saying goodnight, did you return to the room when your child started to complain, call out, cry or request?	2	1	4		
When your child was crying during the check-ups, did you stay more than 1 minute in the room?			3	4	
When your child got up of bed, did you return him/her immediately to their bed?	5	1			1
Did you stay with your child when retuning them back more than 30 seconds?			5	1	1
When your child got up again and again, did you return your child back to bed as many times as necessary?	2		1		4
When your child got up again and again, did you close door?			1	2	4

Note. A= always; M= most of the time; S= sometimes, N= never; n/a= not applicable.

Use of written or visual material. Regarding the visual resources to enhance childhood good bedtime behaviours, reward charts were the resource that parents used the most (see Table 17). The material parents used the least were visual posters for the bedtime routine. Parents tended not to use any of the written material to support their own action plan,

as most participants answered *never* or *sometimes* to the use of a bedtime diary, a written action plan, or the Triple P workbook.

Table 17

Frequency of Parents' Use of Written/Visual Material

Question	A	M	S	N
Did you use behaviour charts for reward system?	3	1	1	2
Did you use a visual poster to remind your child steps of bedtime routine?			1	6
Did you use a written action plan to remind yourself?	1		3	3
Did you use a bedtime diary to track progress?			1	3	3
Did you use the workbook to revise strategies/plan?			1	2	4

Note. A= always; M= most of the time; S= sometimes, N= never.

3.4.3 Primary outcomes: Did participants perceive improvements in their child's behaviour by following the recommendations of the discussion group?

All participants observed several positives changes in their child's bedtime behaviour once the action plan began (see Table 18) and most participants (four out of six) noticed positive changes in their child's daytime behaviour once they got him/her to follow the bedtime routine and to sleep through the night. None of the participants observed a negative change in their child's behaviour at the time the bedtime behaviour began to improve. Finally, most participants (four out of six) acknowledged that their child reverted to old bedtime habits after their initial improvements, and all participants believed they were able to put their child back on the action plan. In addition, two participants mentioned that there might be one night per week in which their child still displayed bedtime problem behaviour.

All participants were happy with the sleep pattern of their child after setting an action plan. Some of the participants were particularly enthusiastic and reported that they were very happy with the outcome of the discussion group, while two parents commented that the only problem was that their child wakes up too early (about 6.00 a.m.). Conversely, the only participant who did not set an action plan said that some steps of the bedtime routine were still "a nightmare".

Table 18

Parents' Perceived Changes in Bedtime and Daytime Behaviour

Positives changes	
Bedtime	Daytime
- Child follows the routine collaboratively and independently (1)	- Child is generally happy in the mornings (1)
- Child stays in bed all night and cosleeping stopped (3)	- Child is in a better mood after day-care (1)
- Child settles to sleep easier and quicker (3)	- Child gets up easily in the mornings (1)
- Child goes to bed earlier (2)	- Child is less tired (2)
- Compliance at bedtime is better (1)	- Child is more compliant (1)
- Child does not scream once in bed (2)	
- Child does not call out or very little (3)	
- Child sleeps better through the night (3)	

Note. The brackets indicate the number of participants mentioning each behavioural change.

4. Discussion

This chapter comprises (a) a general summary of the results, (b) detailed discussion of results, (c) limitations, (d) strengths and contribution of the project, (e) future research direction, and finally, (e) conclusions.

4.1 General Summary of the Results

This study aimed to evaluate the effectiveness of training parents in a 2-hour discussion group to improve bedtime problem behaviour in preschool children. The findings of this study provided preliminary evidence for the success of a brief intervention administered in a group setting. Attendance at the parent discussion group was associated with significantly lower frequency of parent-observed bedtime difficult behaviour and problem behaviours in general, as well as greater parental confidence in managing child's problem behaviours. However, no significant intervention effects were found for parenting style and knowledge, or for parental and relationship well-being.

The finer-grained analysis of the SD and the interviews for the most part complemented the statistical analyses and provided additional support for the effectiveness of the discussion group. For the SD, all participants showed an improvement in at least one of the variables, but only half of the parents obtained an overall improvement by showing positive changes in several variables. Although the poor response rate on the SD prevented meaningful statistical analyses to be conducted, responses on the SD revealed some promising outcomes.

Finally, the interviews demonstrated that participants were satisfied with the recommendation of using an action plan to manage their child's difficult bedtime and sleep behaviour. They reported improvements in bedtime and sleep behaviour, as well as in daytime behaviours, and an absence of negative intervention effects.

4.2 Detailed Discussion of the Results

4.2.1 Bedtime child behaviour measures

There is evidence supporting the hypothesis that the discussion group would produce improvements in preschoolers' bedtime difficulties. In the PDR Bedtime scale, parents reported significantly fewer bedtime problem behaviours after the intervention, with a large effect size. These positive outcomes for the effectiveness of a brief parent training intervention were previously demonstrated in the 2-hour group discussion by Joachim et al. (2009) for children with disruptive behaviour in shopping trips.

However, none of the items on the SD revealed statistically significant intervention effects, which was likely to be due to the small number of participants completing this measure (four participants). Previous research has typically used diary records demonstrating important improvements in bedtime behaviour (Adams & Rickert, 1989; Eckerberg, 2002; Seymour, 1987; Szyndler & Bell, 1992). These studies commonly used the diary records for several weeks (e.g., 1 week baseline, throughout the intervention and 1 week follow-up), whereas this study collected 1-week SD at two time points. Thus, it is likely that the small sample in combination with a small dataset did not allow an adequate statistical analysis. This is why the data from the SD were also submitted to a visual examination.

Interestingly, the use of measures formatted as a checklist for recording the occurrence and non-occurrence of target behaviours, such as the PDR scale, seems to be more suitable than the SD for statistical analysis of small datasets. The study by Joachim et al. (2009) used a checklist to measure the target behaviours in two consecutive shopping trips for each intervention stage. Joachim et al.'s study had a much bigger sample (46 parents) than the present study, but despite differences in the sample size, both studies reported significant outcomes with similar measures.

The visual examination of the SD data at T1 and T2, revealed positive changes in most variables for two out of four participants, both showing noticeable improvements in the

average time spent to settle, percentage of evenings with bedtime problems, and average time slept per night. However, the data for the other two participants showed improvements in one and three variables out of seven. Thus, these outcomes were inconclusive, but revealed to be promising.

The large variation in the child responses in the SD could be explained by the action plan parents decided to use. Both participants showing greater improvements used at least two main components in their action plan (one approach combined with preventive strategies), while the two participants presenting little improvement focused on one strategy (gradual approach or preventive strategies). This situation may indicate that the combination of procedures is important for successful outcomes, as previously suggested by Freeman (2006). Research is typically conducted with intervention packages, so it is unknown what key components are responsible for producing the behavioural change (Ortiz & McCormick, 2007; Owens et al., 1999).

Also, it is unknown how accurate the data from the SD are. Other studies have compared the data obtained by recording devices with parent reports (Durand & Mindell, 1990; Mindell & Durand, 1993; Sadeh, 1994). In Sadeh's (1994) study the reliability between parents' daily records and the data from an activity monitor was 60%, and in Duran and Mindell's (1990) study parents consistently reported their child's bedtime behaviours occurring later than what the videotapes showed. In contrast, Blampied and France (1993) in their review of bedtime studies found that inter-observer agreements between trained observer and parents ranged between 70% and 90%. It might be that parents are capable of recording data accurately in a contrived setting, but in natural setting they fail to apply these skills, for instance, by not recording immediately when they observe the behaviour and recording it later based on what they remember.

Regarding the findings from the interviews, the data revealed that all participants observed several positive changes in their child's bedtime behaviours after they began their

action plan. As an example of this, one parent reported that when cosleeping stopped, her child started to have better sleep through the night, shorter naps during the day and earlier bedtime in the evenings. Another parent indicated that her child was settling easier and quicker without displaying problem behaviours and sleeping through the night.

4.2.2 General child behaviour measures

Consistent with the second hypothesis related to improvements in general child behaviour, participants reported significant improvements in the general behaviour of their child in the ECBI Problem and the PDR Total scales, after they attended the parent training programme, with large and medium effect sizes, respectively. Previous studies have also reported that improvements in bedtime behaviour are associated with positive changes in daytime behaviour (France, 1992; Minde et al., 1994; Reid et al., 1999; Wade et al., 2007). Since bedtime problems have been associated with deterioration of emotion, cognitive functions and behaviour (Jan et al., 2010; Kataria et al., 1987; Paavonen et al., 2002), the overall improvement in daytime behaviour could be due to the child receiving enough sleep with the new bedtime routine. This general improvement can also be explained by the parents' generalisation of the learning in the discussion group to other problematic situations and other behaviours in their child.

This hypothesis was not supported by all the measures, because intervention effects were not found on the ECBI Intensity and SDQ scales. However, these results need to be interpreted with caution because the initial scores for both scales were quite low and far from the clinical range. The ECBI Intensity scores in this study are much lower than in previous bedtime studies that reported significant intervention effects in this scale (Joachim et al., 2009; Wade et al., 2007). In the study by Joachim et al. (2009), the scores of ECBI Intensity scale were higher at T2 ($M = 109.41$, $SD = 27.36$) than in the present study at T1 ($M = 93.50$, $SD = 28.20$). This is also the case for the ECBI Intensity scores in the study by Wade et al. (2007) with five parents who attended a two-session group intervention for bedtime problems (T2, M

= 106.8, $SD = 25.17$). Thus, it is not surprising that the scores for child behaviour measures in the present study did not show significant changes due to floor effects, as there was not much room for important improvements.

However, the data from the interviews indicated that parents identified positive changes in daytime behaviour once they started the action plan, perceiving their child to be less tired in the mornings, in a better mood and/or more compliant. Importantly, participants did not associate the programme with the occurrence of any negative daytime behaviour. This was consistent with the information from the CSQ, in which none of the parents reported they had sought further assistance for their child's behaviour or had other problems thought to be related to the original bedtime difficulty.

4.2.3 Parenting and parental adjustment measures

The third hypothesis predicted that the discussion group would produce significant improvements in parenting skills. The outcomes indicated a significant increase in PTC Behavioural scores, with a large effect size, meaning an increase in parents' confidence to manage their child's problem behaviours, but there were no significant improvements in the scales measuring parenting style (PS), parenting knowledge (PKS), and confidence managing problematic settings (PTC Setting). These outcomes were dissimilar to the results from the study by Joachim et al. (2009). Both studies reported significant improvements in parenting confidence managing problems behaviours, but in Joachim et al.'s study all measures improved significantly.

The different outcomes between these two studies could be due to two reasons: first, the difference in initial scores for the PTC Setting scale is noticeable between the two studies. In the present study PTC Setting scores are better at T1 ($M = 88.85$, $SD = 6.01$) than in Joachim et al.'s study at T2 ($M = 74$, $SD = 16.68$), indicating that parents in the bedtime study were feeling more confident in managing problematic settings prior to the intervention than parents in Joachim et al.'s study after the intervention. Thus, the PTC Setting scores in this

study were far from the clinical range, leaving not much room for improvement due to floor effects, which is also observed in PKS scale.

Second, even though the PS scores in this study were high enough to produce significant improvements, and higher than in Joachim et al.'s (2009), the null findings in this scale can be explained by the nature of the problem behaviour targeted by the discussion groups. Comparing the present study with Joachim et al.'s, the management of disruptive behaviour in public required delivering to parents a different and more varied set of strategies more easily applied to other parenting challenges and problem behaviours, whereas the strategies taught in the bedtime discussion group were very specifically targeted at managing problematic bedtime behaviour.

The fourth hypothesis, related to improvements in parental and inter-parental well-being, was not confirmed. This study did not demonstrate significant improvements in parent-reported symptoms of depression, anxiety and stress, or in inter-parental conflict and relationship quality. These results were similar to the findings by Joachim et al. (2009), and they are somewhat expected since this is a brief intervention focused on a specific behavioural issue, which decreases the likelihood of impact on other related variables. The null findings on these variables are also likely to be due to floor effects, because the scores on these measures were not clinically elevated at T1, leaving not much room for significant improvements.

4.2.4 Client satisfaction and acceptance of the discussion group

The information gathered by the CSQ and the T2 interviews indicated that the discussion group was an effective and acceptable intervention programme for childhood bedtime behaviour. On the CSQ, most parents were satisfied with the programme and the amount of support they received to manage their child's behaviour and problems arising in their family. Moreover, all participants reported that the programme helped to develop skills that can be applied with other family members. This was reiterated in the interviews when

participants reported that they were generalising the bedtime strategies to other children and other daytime situations in their families.

The scores obtained in the CSQ ($M = 68.15$, $SD = 10.06$) cannot be compared with Joachim et al.'s study because they used a different scoring for the same scale, but it is comparable to the CSQ scores reported in Primary Care Triple P research by Boyle et al. (2010) ($M = 71.4$, $SD = 9.99$), and Turner and Sanders (2006b) ($M = 72.89$, $SD = 11.48$). The CSQ scores of these two studies are slightly higher than in the present study, which can be explained by the greater intensity of Primary Care Triple P interventions (about 80 minutes over four sessions), where greater involvement and support of the therapists might produce higher client satisfaction (Morawska & Sanders, 2006).

In a study comparing three variations of Triple P interventions (Sanders et al., 2000), the CSQ score increased with more intense modalities of intervention. The lowest CSQ score corresponded to the self-directed programme ($M = 57.65$, $SD = 12.68$), followed by the standard programme ($M = 74.58$, $SD = 10.16$), and at last by the enhanced programme ($M = 77.48$, $SD = 11.67$) (see Table 1 for a description of the Triple P interventions). In the same direction, Morawska and Sanders (2006) reported in their research on self-directed programmes a mean CSQ of 63.66 ($SD = 12.61$), but they observed that parents who completed more telephone consultations and spent more time with counsellors were more satisfied with the intervention. Considering the low intensity and therapist involvement in a 2-hour intervention, the CSQ score of the present study is quite favourable, indicating that this brief parenting programme is perceived as sufficient to meet parents' needs.

The collection of interview data was an extension of the methodology typically used in research on Triple P interventions, as this type of data had not been previously collected. According to the interviews, all parents but one were able to design a successful bedtime action plan after attending the intervention. All parents who set an action plan reported they were happy with their child's bedtime behaviour, which was consistent with the CSQ, as most

participants indicated that their child's behaviour had improved and they were satisfied with their child's progress. conversely, the only participant who did not set an action plan reported that the bedtime behaviour of her child was still a problem. These findings support the hypothesis about the effectiveness and parents' acceptance of the bedtime discussion group.

4.2.5 Adherence to the discussion group recommendations

All but one participant set an action plan based on the information provided in the discussion group, and nearly all parents chose to use the gradual approach over the direct approach. This preference towards the gradual approach is likely to be related to parents' difficulties accepting procedures in which the child is left alone and not attended to when distressed, as reported in previous studies (Ortiz & McCormick, 2007; Owens et al., 1999). The gradual approach has been used as an alternative to standard extinction due to parental disapproval and doubts of its use. As Pritchard and Appleton (1988) indicate, checking the child has the function of reassuring parents that the child is well and not of comforting the child. Giving parents a choice of bedtime procedures is not commonly seen in previous research, and the findings of this study indicated that parents choose gentler strategies when available.

For the most part, parents adhered to the steps involved in the gradual approach, including immediately taking their child back to bed when the child got up and giving reminders about consequences for inappropriate behaviours. However, parents tended not to use extinction, as they reported returning to the room and talking to their child when they cried or called out.

The direct or gradual approach was accompanied in all instances by before-bed and in-bed preventive strategies. Importantly, participants continued to use the preventive strategies to maintain positive bedtime behaviours once the other components of their action plan were faded out. Most parents adhered consistently to the actions involved in setting up a good bedtime routine, such as explaining the routine to the child and having quiet activities before

bedtime. In contrast, only half of the participants used the preventive strategies once the child was in bed, such as checking aloud possible excuses for calling out and reminding their child of the consequences for appropriate and difficult behaviours. Among the preventive strategies, parents stated that explaining the steps of the bedtime routine and its consequences made a noticeable positive change in their child's behaviour.

From above, it seems that parents are more inclined to use strategies that enhance an easy and immediate positive interaction with the child, where talking to the child is valued, and extinction procedures avoided. This is particularly relevant because bedtime interventions are conducted by parents and the success of the intervention depends greatly on their adherence to treatment, which cannot be expected when they disapprove the procedures (see section 1.6 for a discussion on parental adherence).

The interviews revealed that praising and rewarding the child for good bedtime behaviour was a strategy that parents commonly used but did not explicitly mention as part of their action plan. In addition, only three parents used a behaviour chart in the first 2 to 4 days, whereas another two participants mentioned that previous attempts to use it were unsuccessful, so they decided not to include it as part of their action plan. This information gives some indication that parents are not fully aware of the potential value of positive reinforcement procedures. Despite reporting the use of praising and rewarding, parents do not perceive it as a strategy worthwhile to mention or explicitly add as part of their plan.

In addition, unsuccessful experiences using a behaviour chart may be due to parents not finding the appropriate reinforcement to encourage the occurrence of the desired behaviour. This could be explained by the transitory nature of preferences, where the reinforcement value of preferred stimuli varies depending on several factors, such as satiation or deprivation (Cooper et al., 2007).

Regarding limitations in using the action plan, two parents indicated that they encountered difficulties with the strategies. Specifically these parents implemented one of the

approaches for a couple of nights and then discontinued it because the problem behaviours did not stop. This situation showed the importance of emphasising to parents the progression of behaviour change, in which extinction bursts are expected but short-lived, and even though unpleasant, a sign of progress (Allen & Warzak, 2000; Cooper et al., 2007). Another participant encountered difficulties establishing a regular timing for the bedtime routine, because family dinner twice a week was at a later time, altering the time to go to bed and the sequence of the routine. It may be useful for facilitators to clarify in this case that a regular routine should not be confused with a rigid routine, as a certain amount of variation is inevitable and healthy.

Some of the parents mentioned that there might be a night per week in which problem behaviours reoccur, which has been reported in previous bedtime interventions (e.g., Seymour et al., 1983). However, reverting to behaviour problems may be due to the partial or inconsistent application of the strategies, and parents should be encouraged by facilitators to track the behaviour in a bedtime diary, revise the strategies, and implement their action plan completely and consistently (Sanders & Turner, 2010).

4.3 Limitations

This study had several limitations. Because of significant recruitment difficulties, it was not possible to carry out a Randomised Controlled Trial as was initially planned. Thus, this study did not have a control condition meaning that alternative explanations for the positive effects on bedtime and daytime child behaviour and parenting confidence, such as the effects of time, cannot be ruled out. Furthermore, the small number of participants is likely to have severely limited the potential for detecting significant intervention effects.

Due to the small sample, the parents enrolled in the study were not reflective of the general population in terms of ethnic, socio-demographic and cultural diversity, limiting the generalisability of the findings from this study. Moreover, long-term follow-up evaluations were not conducted because the study was delayed several months due to recruitment

difficulties, and it was not possible to obtain these measures within the timeframe of this dissertation. Consequently, it is not known whether the treatment effects were maintained over time.

All measures employed in this study were parent-reported. Thus, any identified improvements reflect parents' perceptions of their child's behaviour rather than actual behaviour change in the child. Also, this study lacks reliability measures for the parent observation data (SD and PDR).

Finally, according to applied behaviour analysis approaches to research, this study is limited by the use of group comparison statistical inference design. Cooper et al.(2007) argue that group data may not accurately represent the performance of individual subjects, because it is possible that the average performance of the group has improved, while the performance of some participants have remained the same or even deteriorated. To address the above limitation, Cooper et al. (2007) recommend using individual results. In studies in which group performance is socially significant (e.g., recycling behaviour of the staff members of an institution), but the group results do not represent individual performance, each case should be reported as well. This study partially managed this limitation by reporting the individual data on the SD to complement the group level analyses; however, this individual report was not done with all measures.

4.4 Strengths and Contributions of the Project

One of the important strengths of this study is the use of multi-method assessments to measure the primary and secondary outcomes. Both quantitative and qualitative data were collected via standardised questionnaires, parent-observations and interviews to assess the effectiveness of the discussion group, as well as parents' satisfaction with and adherence to the discussion group content. In addition, the intent-to-treat analyses were consistent with the intervention effects related to bedtime behaviour of this study, supporting the hypothesis

about the effectiveness of the programme for training parents on how to manage bedtime child problem behaviour.

This study expands previous research on bedtime interventions, since it is the first one to assess the effectiveness of a brief group parenting programme for child bedtime problems. It is also the first study that examines parents' preferences when designing an intervention plan and that explores parents' adherence to the recommendations.

Another advantage of this study is that the discussion group is a manual-based parent training programme, which ensures that the intervention can be accurately implemented by other qualified facilitators, allowing further replication of this study and standardised use in the community. In addition, the discussion group used evidence-based procedures that have been previously shown to be effective.

This study was conducted with a general community sample, with parents who were seeking support to deal with childhood bedtime problems. In this way, this study transports the intervention to the community instead of limiting it to individual intervention practices.

Finally, and very importantly, the intervention presented in this study was greatly accepted by the participants who reported levels of satisfaction comparable with more intense modalities of interventions.

4.5 Future Research Directions

A significant proportion of parents do not access preventive or treatment services for their child with behavioural problems (Burns, Hoagwood, & Mrazek, 1999; Heinrich, Bertrum, Kuschel, & Hahlweg, 2005; Zubrick et al., 1995) and this situation was observed in the present study. Despite the high prevalence of parents reporting bedtime difficulties in their child (Lawrence & Smith, 2009) the efforts to engage a considerable number of parents in this study were not successful. Thus, there is a need to investigate how to increase the visibility of evidence-based intervention services to the community so parents can regularly and easily access them.

Future research might consider advertising the study on its own, ensuring there are no other studies in the community targeting a similar population of parents. When possible, advertising through word of mouth from parents who have enjoyed the benefits of other Triple P programmes could be an effective strategy, as well as advertising through primary health care practitioners, as parents might feel more comfortable receiving an intervention in a familiar community setting from someone they already have a professional relationship with.

Regarding how to increase the completion of assessments in future studies, it may be useful to reduce the number of measures to complete, as a 2-hour intervention may not generate enough commitment from participants to spend equivalent time on the completion of assessments. As completion of assessments was a particular problem at T2, it could be beneficial to compensate parents for their time with vouchers or access to other parenting resources. It may also be worth considering charging a small fee at the start of the programme, which can be refunded after completion of the assessments (Gallart & Matthey, 2005), or paying participants for the completion of the assessments (Wade et al., 2007).

In relation to methodological considerations, future studies should consider measures of parents' accuracy in the implementation of intervention procedures. Currently, not many studies have attempted to measure parental adherence and the few attempts that exist have been done with parent-report data (Reid et al., 1999; Wade et al., 2007). It is desirable to investigate further ways to obtain objective data about parental adherence (Allen & Warzak, 2000).

In addition, future studies should include measures from independent observers in order to obtain objective data, since outcomes of most interventions are purely based on parent reports. A good example of direct observation measures is found in the study by Sanders et al. (1984) where independent observers were used to measure bedtime child behaviour. Also there are a few studies that used recording devices to measure bedtime behaviours, such as video recordings at bedtime (Mindell & Durand, 1993), an activity

monitor to measure sleep variables such as number of night wakings, sleep onset time and sleep duration (Sadeh, 1994), and switch-mat to detect movement from parents and child at the side of the bed (France & Hudson, 1990). As technology develops research should make an effort to use innovative, unobtrusive and inexpensive in-home record methods (Blampied & France, 1993).

Also, future studies should attempt to obtain reliability measures of the observation data, which can be done by calculating inter-observer agreement between the parent and an independent observer, a partner or a close friend, as done in a few previous studies (Adams & Rickert, 1989; Freeman, 2006; Friman et al., 1999).

Finally, future studies should aim to obtain follow-up data, because the effectiveness of the intervention can only be truly demonstrated when the positives changes are maintained over time. The strategies suggested above for encouraging the completion of assessments can be particularly useful in this stage, since other interventions encounter poor response rates at follow-up (Gallart & Matthey, 2005).

Regarding behavioural procedures for bedtime interventions, the findings of this study indicate that parent training programmes need to work on producing a greater range of strategies that are friendly to implement, effective and validated by the parents. As part of this effort, facilitators may need to explore with parents a wider variety of procedures based on positive reinforcement, such as reward charts, token economy, contingency contracting and bedtime passes. There is evidence that the bedtime pass can produce important improvements in bedtime refusal, free of extinction bursts and with high parent acceptance of treatment (Freeman, 2006; Friman et al., 1999); however, this procedure has been studied very little and there is no follow-up data available. A bedtime pass consists of a note-card exchangeable for one trip out of bed for a short specific action (e.g., getting a drink, going to the bathroom, getting a hug) and once the action is completed, the child returns the pass to the parents and goes back to bed.

Similarly, there is no research on the use of contingency contracting for bedtime problems, despite having been shown to be effective, economical, time-efficient, and easy to use in natural settings with other child problem behaviour. Most importantly, contingency contracting has been demonstrated to have social acceptability by the two parties involved in the contract (Cantrell, Cantrell, Huddleston, & Wooldridge, 1969; Kelley & Stokes, 1982; Miller & Kelley, 1994; Wilkinson, 2003). Future research might consider investigating the effectiveness of this procedure for bedtime problems.

In order to enhance the successful use of behaviour charts, future parenting programmes may consider training parents in how to conduct brief preference assessments for regular identification of preferred stimuli. In addition, parents could be trained in how to fade out reinforcement schedules, so the target behaviour continues in the long run with less reinforcement. The study by Sanders et al. (1984) added this component in their intervention package for bedtime problems, where after 10 days of intervention for bedtime problems, parents were told how to proceed from a daily treat under the pillow to occasional and unpredictable treats and praise.

Finally, despite being satisfied with the child's sleep pattern after the intervention, several participants considered it a problem at the time of the interview that their child was waking up too early (between 5 a.m. and 6 a.m.). Thus, parents could benefit by learning about how to extend the bedtime routine to early morning, in which the child discriminates when it is the appropriate time to get out of bed as well as learning a repertoire of quiet activities to engage with in bed before getting up. Since these children were going to bed at an early time and were sleeping much better through the night, it is not surprising they were waking early in the morning. It could be helpful in future intervention programmes to educate parents about the number of hours that children of different ages normally sleep per night (Herbert, 1997), so parents can have realistic expectations about how much sleep their child should be getting.

4.6 Conclusion

Behavioural intervention is the approach of choice for child bedtime problem behaviour (Mindell et al., 2006), and research has been conducted mostly with individual parent training programmes that include daily or regular involvement of the therapist by telephone calls and weekly meetings (France & Hudson, 1990; Sanders et al., 1984; Seymour, 1987). Some few studies have evaluated the effectiveness of written manuals with and without therapist support: both modalities demonstrated to be successful (Eckerberg, 2002; Pritchard & Appleton, 1988; Weymouth, Hudson, & King, 1987).

However, there is very little research on group parenting programmes, despite evidence indicating that group modalities have several advantages, such as being relatively unobtrusive, cost- and time-effective and easily accessible for parents from different socioeconomic backgrounds (Carpenter, 1990; Szyndler & Bell, 1992; Wade et al., 2007). Importantly, parents who participated in group parenting programmes reported that meeting other parents with similar problems was one of the most useful aspects of the programme, and being part of the group was engaging, motivating and helped them to be committed (Carpenter, 1990; Szyndler & Bell, 1992; Wade et al., 2007). These group parent training programmes have in common an emphasis on the emotional aspects associated with bedtime problems, such as parental feelings of guilt, anger or resentment towards their child.

In addition, there is no research on both brief and group parenting programmes. Based on the principle of minimal sufficiency, where the least effective intensive intervention is preferred over more intensive treatments (Sanders, 2008), the present study outcomes support the effectiveness of a 2-hour group discussion for bedtime child problem behaviour. The findings of this study builds on previous research on similar interventions that have been shown to be effective in managing other specific childhood behaviours, such as disruptive behaviour in shopping trips (Joachim et al., 2009).

The programme presented in this study integrates as part of Triple P intervention model, a comprehensive approach that offer to parents interventions in different levels of intensity according to the parents' specific needs (Sanders, 2008). The features of the parenting programme presented in this study, such as requiring minimal therapeutic involvement and minimal time and costs, make this intervention easy to be implemented in community settings so as be widely accessible to all parents. Since participants reported using the discussion group strategies with other family members and for other problem behaviours, this intervention may also work as a general preventive programme.

Appendix A

Triple P Research Group
Screening Interview: Bedtime Discussion Group

Introduce your-self and thank the person for calling.

Triple P Research Group, this is Marcela speaking. Thank you for calling.

If I call the parent:

This is Marcela speaking from the Triple P Research Group at The University of Auckland. Can I please speak with…? I'm just returning your call/responding to the email that you sent. You were hoping to find out some more information about our discussion group for dealing with bedtime problems. Is that right?

IF they have had difficulty getting through or have been waiting for our return call, explain that we have received many calls from interested families and it has taken us time to get back to everyone.

We have received many calls from interested families and it has taken us time to get back to everyone, so my apologies for that.

Tell them that today's call involves telling them more about the program and answering any specific questions they may have. It also involves asking them a few questions to ensure the program is going to be suitable for their needs.

What we're doing with parents is giving them more detailed information about the study. If they are then still interested in participating in the project, we take you through some questions to ensure that what we are offering is going to be helpful for your family.

Explain that the call may take around 5-10 minutes. Check that the parent has time to do this now. If not, organise a more appropriate time.
This call may take around 10 minutes. Do you have time to do this now, or shall I call you back at a better time?

Not: *Ok, that is no problem at all. When is the best time to call you back?*

Yes: *Ok, great. Let's start by giving you some more information about the project.*

If you don't know the parent's name at this point, first ask their name & record it in the screening spreadsheet.

PART 1: INFORMATION ABOUT THE STUDY
Provide information about the study and Triple P. Check parent understanding throughout.

The aim of our study is to evaluate the effectiveness of a Triple P discussion group for parents who are having difficulties dealing with bedtime problems in their 3- to 5-year-old child.

The discussion group will teach you about positive parenting and positive strategies for managing bedtime issues and developing an appropriate bedtime routine. You will have the chance to practice strategies in session, and to develop an implementation plan tailored for your family.

Participants in the project will be randomly allocated to one of two groups: the start-now group or the start-later group. Parents in the start-now group will attend the discussion group immediately after they have completed the first assessment. The start-later group will be asked to wait six weeks after the initial assessment before they attend the discussion group. Unfortunately due to research requirements, parents are not able to choose which group they would like to be allocated to.

To help us assess whether the programme is helpful for families, we ask all parents to complete a number of questionnaires. These questionnaires are completed online and ask about a range of parenting and child behaviour issues, as well as about parents' own adjustment and relationships. We will also get parents to complete a behaviour checklist that we will post to you – this one can't be completed online.

So that we can assess the immediate and long-term effects of the group, participants in the start-now group will be asked to complete the assessment before the discussion group, 6 weeks after completing the discussion group, and again 6 months later.

Parents in the start-later group will complete the assessment at the start of the study and again 6 weeks later, just before they attend the discussion group. The questionnaires take approximately 45 minutes to complete at each time point.

You'll be notified about whether you have been allocated to the start-now group or the start-later group once you have completed the first set of questionnaires.

Do you have any questions so far?

There are just a few more things I need to tell you. The group sessions may be video-recorded. These recordings are only made for the purpose of ensuring that the therapists have delivered the programme according to the research protocol. Your responses will not be evaluated in any way.

There is no charge for parents who participate in the project, and families receive all program materials for free. All information provided is strictly confidential and accessed only by research staff. If you wish, you can withdraw from the project at anytime.

Are you interested in participating in the project?   YES   NO

Reason if no _____

Now, I need to ask you some questions to see if the program will meet your needs and that your family is eligible to participate. Is that ok? If you aren't eligible for the project, but feel you would like some assistance with your child or with parenting, I can give you some details for services that might be able to help.

PART 2: DETERMINE ELIGIBILITY
Complete screening spreadsheet.

Where did you hear about the project?

Are you concerned about the bedtime behaviour of your child?   YES   NO

→ *EXCLUDE IF PARENT NOT CONCERNED*

How old is your child?   _____

→ *EXCLUDE IF NOT BETWEEN 3-5 YEARS*

If not eligible say *unfortunately because the groups are being offered as part of a research project, we need to be quite strict in the age of the children participating. Also the parenting discussion group is designed for children of 3 to 5 years old and it may not be suitable for younger/ older children.*

Does your child have a developmental or intellectual disability?   YES   NO

→ *EXCLUDE IF CHILD HAS DISABILITY*

Unfortunately the groups are not designed for families of children with developmental or intellectual disorders since these parents face their own set of special and unique challenges. For that reason there is in fact a whole separate Triple P programme designed for parents of children with disabilities called 'Stepping Stones Triple P'. If you're interested, I can give you the contact details of the Triple P Centre in Ellerslie who will be able to tell you more about that programme.

Is your child receiving any treatment including medication, from a counsellor, psychologist or psychiatrist for behaviour problems?

YES   NO

If Yes: Say *without giving me details, can you tell me the nature of the intervention you child is receiving?*

The family is not eligible if the child is receiving any type of intervention that targets their behaviour problems. This includes medication. If they are receiving intervention for other developmental problems (e.g., speech therapy, physiotherapy etc) continue the screening process.

If not eligible: *Unfortunately, because the groups are being offered as part of a research project, we are not able to include families or children who are currently receiving any sort of formal support for your child's behaviour problems. This is because we cannot conclude that the positive changes your child may show are **only** due to the parenting program, because they could also be due to the assistance you or your child is currently receiving.*

Are you currently receiving any assistance for your child's behaviour problems?   YES   NO

If not eligible: *Unfortunately, because the groups are being offered as part of a research project, we are not able to include families or children who are currently receiving any sort of formal support for your child's behaviour problems. This is because we cannot conclude that the positive changes your child may show are **only** due to the parenting program, because they could also be due to the assistance you are currently receiving.*

Are you currently receiving any assistance for your own psychological or emotional problems?   YES
NO

For both above
If Yes: Say *without giving me details, can you tell me the nature of the intervention you are receiving?*

Parents are not eligible if they are receiving formal support for depression, anxiety, or stress. If they are under medication that is being managed on an ongoing basis by their doctor or psychiatrist they are eligible. They are also eligible if they are receiving any other intervention such us marital therapy, work-related or career counselling, acupuncture, massages, etc.

If not eligible: *Unfortunately, because the groups are being offered as part of a research project, we are not able to include families or children who are currently receiving any sort of formal support for your child's behaviour problems. This is because we cannot conclude that the positive changes your child may show are **only** due to the parenting program, because they could also be due to the assistance you or your child is currently receiving.*

Are you able to attend the discussion group at our clinic in Epsom?

YES   NO

→ *EXCLUDE IF NO*

IF PARENT WAS EXCLUDED AT ANY POINT SAY:

I'm afraid that our project isn't suitable for your family's needs right now. However, we really appreciate your interest and your time today. Would you like some contact details of alternative sources of support for you and your child?

IF YES, say: *the best person to contact if you are experiencing problems with the behaviour of your child is your family doctor. So, I would recommend talking to him or her about that.*

There are also a couple of other options that I can give you numbers for, if you're interested.
Provide phone number of the **Barnardos Parentline (0800 4727 368),** and tell parents that some of their telephone counsellors are trained in Triple P. You can also tell them about **TPNZ centre in Ellerslie (579 1794)** and the **UoA Psychology Clinic at Tamaki (373 7559 ext. 86535).**

Also mention that there will be some other research projects in the future and we can register their details in our database to be contacted if something arises in the future that may be appropriate.

IF PARENT IS ELIGIBLE FOR THE STUDY SAY:
Okay, based on those questions, it does seem like our program will be useful for your family's needs – so we'd love to get you involved, if you're happy to proceed.

What I'd like to do now is get some names and contact information from you to complete the registration for the project, and then I'll explain the next steps.
COMPLETE FAMILY CONTACT SHEET.

PARTNER SECTION
Does the father/mother of your child live at home with you?

YES: *It would be wonderful if you both can come along to the discussion group. If your partner is not available for the discussion group, it would be great if he/she can at least complete the questionnaires.* **(Record partner's contact details)**

NO: *Is there another adult at home that is involved in parenting your child?*
       No: That is not a problem at all, then you just complete the assessments and participate in the discussion group.
       Yes*: It would be wonderful if you could both attend the discussion group. If you both are not available to attend the discussion groups, it would be great if he/she could at least complete the questionnaires.*

AVAILABILITY SECTION
The discussion groups for the start-now group will be held either at the end of April or the beginning of May and the start-later group will be held around 6 weeks later. We are hoping to set the time and dates of the groups to suit as many parents as possible. So, during a typical week are there any evenings that you absolutely won't be able to make it? What about the weekends – any day that you can't make it?

Put a cross for any days the parent CAN'T attend

	Mon	Tues	Wed	Thu	Fri
Evening 6.30 pm					

Once Family Contact Sheet is completed, say: *Thank you for all of that information. The last thing we need to do today is explain what happens next.*

ONLINE QUESTIONNAIRES SECTION
Ask if they have broadband internet at home to complete the questionnaires.

Firstly, can I check if you have internet access at home or somewhere that is easy to get to   so that you can complete the online questionnaires?

IF YES: *I'll send you an email today that will have the information and the links for the first set of assessments.*

[IF PARTNER applicable] *There will be two separate links – one for yourself and one for your partner.*
[IF PARTNER applicable] *Obviously, this will be good for [partner's name] to read so that he/she is up to speed.*

When you click on your link, it will take you to an information page that goes through the information I've gone through today on the phone.

Clicking on the 'Next' button at the bottom of this page will take you to the consent page, which has a series of bullet points that you need to read through. Then, if you're happy to participate, then simply click on the 'I agree to participate' button. When you click on that button, it will take you to the first set of questionnaires.

In the email I will send you, there will also be a participant access number. You'll be prompted to enter this number at the start of the first questionnaire.

One thing I need to warn you about is that there is no capacity to do half the questionnaires, save your responses and come back later and do the rest. So, you need to do the questionnaires in one sitting. They do take around 45 minutes, so you'll need to try your best to find a time that you will be free of interruptions for about that length of time.

We will also post you one questionnaire that is not suitable to be completed online. This is a behaviour checklist. You'll need to choose one week day and one weekend day to fill this out, and it is just a matter of ticking the box if a particular behaviour occurred at any time during that day. Please, put it up on your fridge or somewhere else that is handy. We need to get you to post this back to us as soon as you can, and we'll give you an envelope to do so.

Does that all make sense?

IF NO INTERNET ACCESS: *That's not a problem – we do have the option of completing a paper and pencil version. So, what we'll do is post you an information sheet about the study, a consent form and the first set of questionnaires. You just need to know that within the booklet is a behaviour checklist that requires you to choose one week day and one weekend day to fill this out. It is very straightforward - it is just a matter of ticking the box if a particular behaviour occurred at any time during that day.*

FOR BOTH ASSESSMENT METHODS: *It is very important for the timing of the groups that we have these questionnaires completed quite quickly. So, we are asking parents to complete the questionnaires as soon as they can, preferably within the next week or two.*

Once we've received your [and your partner's] questionnaires and the behaviour checklist (s), we will give you another call. The purpose of this call will be to tell you whether you have been allocated to the start-now or the start-later group and to talk to you about the details of the time and date of the group.

Okay, that's everything! Do you have any questions before we finish?

Answer any questions that the participant has, and be willing to go over any aspect of the study again. Finally, thank the parent for their time and for their interest in the study.

Like I said, I'll send you [the link to access] the questionnaires today. I'll get in contact with you once we get the questionnaires back to let you know which group you have been allocated to, and to confirm the date and time of the groups.

Thank you again and enjoy the rest of your day.

Parent Daily Report   **Participant #: _____**

	Weekday ____/_____/____		Weekend day _____/_____/_____	
Behaviour	NO	YES	NO	YES
1. Being considerate, helpful, sharing, getting along cooperatively.				
2. Being respectful and polite, using a pleasant voice.				
3. Being cheerful, showing contentment and self-confidence.				
4. Playing independently, doing things for himself/ herself.				
5. Minding, listening, following directions.				
6. Managing difficult feelings well, showing self-control.				
7. Solving a problem well.				
8. Being aggressive, fighting, hitting, biting, kicking others.				
9. Arguing, talking back to or sassing an adult.				
10. Complaining, negativism, pouting, whining.				
11. Crying.				
12. Not minding, say 'no', being disobedient or defiant.				
13. Being destructive, throwing things.				
14. Fighting with siblings.				
15. Hyperactivity.				
16. Irritability, fussiness.				
17. Lying.				
18. Making excessive noise, noisiness.				
19. Not eating meals, mealtime battles.				
20. Misbehaviour while shopping.				
21. Teasing others.				
22. Temper tantrum.				
23. Yelling, screaming at someone.				
24. Making messes.				
25. Stealing.				
26. Dawdling to get ready to bed.				
27. Refusing to go to bed (e.g. verbal protesting, ignoring, negotiating, etc).				
28. Throwing a tantrum when told to go to bed.				
29. Getting out of bed before falling asleep.				
30. Crying, screaming or calling out after being put in bed.				
31. Middle of the night issues (e.g. getting up, calling out, crying, refusing to go back to bed).				

Appendix C

T2 Interview

Part 1: Qualitative

- Did you set up at home a bedtime action plan after attending the discussion group? If not, why?

- Did you and your partner talk about the plan and agree on what the strategies would be?

- What actions did you include in your initial action plan?

- Which ones are you still using?

- Are there any actions that you started using and then you gave up for finding them too difficult, inappropriate or not suitable? If yes, which one(s)?

- Have you noticed any positive changes in your child during the bedtime?

- Did you child revert at any stage to old bedtime habits after the initial improvements? (Seymour, Bayfield, Brock and During, 1983)

- If your child reverted to old bedtime problems, did you successfully put your child back on the action plan? (Seymour et al. 1983)

- Did you notice any positive changes in your child's daytime behaviour at the time you first got your child to follow the bedtime routine and to sleep through the night? (Seymour et al. 1983)

- Did you notice any negative changes? (Seymour et al. 1983)

- Are you happy now with your child sleep pattern? (Seymour et al. 1983)

Part 2: Quantitative

- Please write down the following scale: *Always- Most of the time- Sometimes- Never*

- Answer each question using the scale

- Select the option from the scale that best describes what you did.

Preventive strategies

1. Did you involve your child in quiet activities (30 minutes) before bedtime?

2. Did you take your child to bed at a regular time?

3. Did you set a bedtime routine?

4. Did you explain/ remind the bedtime routine to your child before you started the programme?

5. Did you help your child complete the steps of the bedtime routine?

6. Once in bed and before leaving the room, did you check aloud the list of possible excuses?

7. Before leaving the room, did you remind your child to be quiet in bed and staying until next day?

8. Before leaving the room, did you remind your child you will not answer if they call out and you will take them back to bed if they get up?

9. Before leaving the room, did you tell your child that you will check on them if they stay quietly in bed?

Praises and Rewards

10. In the morning, did you praise and reward your child when s/he followed the bedtime routine the night before?

11. When doing check-ups, did you praise your child for staying quietly in bed?

Behaviour management strategies

12. Once your child was put in bed and after saying goodnight, did you talk to your child when s/he started to complain, call out, cry or request? (unless they are ill or in danger)

13. Once your child was put in bed and after saying goodnight, did you return to the room when your child started to complain, call out, cry or request? (unless they are ill or in danger)

14. When your child was crying during the check-ups, did you stay more than 1 minute in the room?

15. When your child got up of bed, did you return him/her immediately to their bed?

16. Did you stay with your child when retuning them back more than 30 seconds?

17. When your child got up again and again, did you return your child back to bed as many times as necessary?

18. When your child got up again and again, did you close door.

Use of written/ visual material

Did you use any of the following?

19. Behaviour charts for reward system

20. Bedtime diary to track progress

21. Workbook to revise strategies and plan

22. Visual poster to remind your child steps of bedtime routine

23. Written action plan to remind your-self.

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