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Group Triple P- Positive Parenting Program: Pre-Post Examination of Parent and Child Outcomes, Externalizing Behaviour as a Moderator, and Characteristics of Program Drop Outs

Jenna Brooke Jones
University of Windsor

Group Triple P- Positive Parenting Program: Pre-Post Examination of Parent and Child Outcomes, Externalizing Behaviour as a Moderator, and Characteristics of Program Drop Outs

By

Jenna B. Jones

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by

Jenna B. Jones

APPROVED BY:

_____

K. Calderwood

School of Social Work

_____

C. Saunders

Psychology

_____

S. Voelker, Advisor

Psychology

February 6, 2014

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ABSTRACT

Triple P (Positive Parenting Program) is an evidence-based parent management training program based on social learning theory principles (Sanders, 2012). Parents are taught parenting skills in eight weekly sessions with a trained facilitator. This study evaluated parent and child outcomes for level 4 Group and level 4 Group-Teen Triple P in community (n = 152) and clinic (n = 89) samples. Comparison of standard pre- and post-intervention measures revealed significant improvements in both child emotional and behavioural symptoms, and parenting skills and confidence. There was no differential treatment effect for children presenting with clinical levels of externalizing symptoms only (n = 19) compared to those presenting with comorbid internalizing and externalizing symptoms (n = 25). No significant differences were found in demographic variables or initial child behaviour ratings among parents who dropped out of the program prematurely compared to those who completed the program. Results are discussed in terms of implications for practice and theory.

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CHAPTER 1

Introduction

Child emotional instability and behaviour problems disrupt family harmony and place children at risk for negative long-term outcomes. There is a pressing need for interventions that are effective in helping families to manage current problems and to reduce long-term risks (Dozois, 2012). Children may experience a wide range of mental health problems, such as conduct problems, hyperactivity, anxiety, depression, and antisocial behaviour. A recent survey in Ontario found that up to 11% of children entering kindergarten have problems with aggression, anxiety, or hyperactivity (Raos & Janus, 2011). Similarly, Waddell, Offord, Shepherd, Hua, and McEwan (2002) report that in Canada, there is an overall prevalence rate of 14% of children up to the age of 18 who are experiencing a clinically significant mental disorder, and that this figure ranges from 10% to 20% for specific disorders. These statistics indicate that there are over one million children in Canada who may benefit from intervention for mental health concerns (Waddell et al., 2002). Similar prevalence rates are found in the United States, as one recent study identified that approximately one in every four to five adolescents meets criteria for a mental disorder across their lifetime (Merikangas et al., 2010). Unfortunately, in Canada, only approximately 16% of children who could benefit are receiving specialized mental health services (Waddell et al., 2002). Clearly there are many families in need of services they are not receiving.

One efficient and effective means of providing services to families is through offering training in parenting skills to groups of parents. Parenting strategies are closely tied to a child's behaviour and functioning. For example, effective parenting strategies

are associated with increased pro-social skills and reduced likelihood of conduct problems, and ineffective parenting strategies are related to increased delinquency in adolescence (Asmussen, 2011; Forgatch, Patterson, Degarmo & Beldavs, 2009). The majority of intervention programs that have been found to be effective in improving child behaviours include explicit training of the parents in strategies for reducing unacceptable child behaviour and increasing desired behaviour (Kazdin, 2003). One such program that has been demonstrated to be effective in many countries and contexts is the Positive Parenting Program (Triple P; Sanders, 1999). The purpose of the present study is to examine usefulness of this program as administered in clinic and community settings in Canada.

In order to provide a context for the present study, this document will begin with a brief overview of issues related to children's mental health, including the types of symptoms and problem behaviours with which children typically present and the potential influence of parenting techniques on child outcome. Social Learning Theory will be used to provide a context for this research by explaining the ways in which children can learn behaviour from their parents, and how maladaptive parenting techniques may relate to negative child behaviour outcomes. Next, evidence-based interventions (EBIs), which are interventions that meet stringent research criteria to show that they are effective, will be discussed. The effectiveness of interventions for children experiencing internalizing and externalizing problems, as well as characteristics of parents who drop out of intervention prematurely, will be reviewed.

Child Mental Health

It is important to address mental health problems in children and adolescents as there are potential negative long-term implications of untreated behavioural and emotional problems. Behavioural problems, such as hyperactivity, poor impulse control, noncompliance, and aggression that are evident at the preschool age can lead to externalizing problems and other adverse outcomes later in life (Campbell, Shaw, & Gilliom, 2000). For example, a longitudinal study found that adults with a history of conduct problems at age seven to age nine had higher rates of crime, substance use, mental health problems, and poor romantic relationships (Fergusson, Horwood, & Ridder, 2005).

Childhood mental health problems can be costly to the families affected, and to society in general (Asmussen, 2011). For example, one study estimated that the yearly cost of treating an adolescent with attention deficit/hyperactivity disorder (ADHD) is over £5000 (approximately $8000 Canadian) in the United Kingdom (Telford, Green, Logan, Langley, Thapar, & Ford, 2013). If we can address child mental health problems early on, by providing early intervention, then there will be a reduced need for further support as a child grows older. Providing early intervention is a cost-effective way to address these problems (Kazdin, 2003). Indeed, a study evaluating a parenting training program for children with conduct disorder concluded that it was a cost-effective form of intervention (Mihalopoulos, Sanders, Turner, Murphy-Brennan, & Carter, 2007).

Externalizing and Internalizing Behaviour

Many of the mental health problems children present can be broadly classified in two categories: internalizing and externalizing problems. Internalizing problems are

intrapersonal and typically involve negative emotions turned inward toward the self (Campbell, 1995; Fanti, 2007). Internalizing problems can take the form of anxiety, depression, social withdrawal, and fearfulness. Internalizing problems can be present as early as one year of age, and tend to gradually increase as the child gets older and enters into adolescence (Lee & Bukowski, 2012).

Externalizing problems typically involve negative behaviour directed outside the individual, and can take the form of aggression, noncompliance, hyperactivity, poor impulse control, destructive behaviour, and tantrums (Campbell, 1995; Fanti, 2007). Externalizing behaviour, such as tantrums and aggression are common among typically developing children in the preschool years, but tend to decrease as children grow older and develop better cognitive and verbal problem-solving skills (Fanti, 2007; Gilliom & Shaw, 2004; Lee & Bukowski, 2012). For some children, this undesirable behaviour does not diminish, and remains problematic as the child grows older (Fanti, 2007). Internalizing problems are more common in girls, externalizing problems are more common in boys, and there is no gender difference for children experiencing comorbid internalizing and externalizing problems (Fanti, 2007).

Many children who have high levels of externalizing behaviour also have high levels of internalizing behaviour (Gilliom & Shaw, 2004; McConaughy & Skiba, 1993). It may be the case that comorbidity is more common than cases of pure internalizing or externalizing problems (Fanti, 2007). High levels of comorbidity could be due to shared risk factors (e.g., difficult temperament, low socioeconomic status, parental violence, child maltreatment; Fanti, 2007; Lee & Bukowski, 2012). It is possible that each disorder is a risk factor for the development of the other as there is evidence that internalizing

problems antecede externalizing problems, and vice versa (Lee & Bukowski, 2012). The risk factors may be worse or more extreme for children with comorbid internalizing and externalizing problems compared to those with a pure form (Fanti, 2007).

Both internalizing and externalizing problems in childhood have been related to negative outcomes in adolescence and adulthood. Children with externalizing problems tend to be more involved in crime, have lower cognitive abilities, have fewer positive relationships, are more likely to associate with delinquent peers, and experience peer rejection (Fanti, 2007). There is evidence that children with externalizing problems are more likely to be referred for service, have more difficulty in school, and be rated as having more overall problems than are children with internalizing problems alone (McConaughy & Skiba, 1993). Children with internalizing problems tend to have poorer peer relationships, and tend to withdraw socially (Fanti, 2007). Comorbid internalizing and externalizing problems tend to be associated with the greatest impairment and worst outcomes in terms of peer relationships and rejection, risky behaviours, association with delinquent peers, more frequent involvement in treatment, and more physical health problems (Fanti, 2007).

Children with pure and those with comorbid internalizing and externalizing disorders respond to interventions differently (Connell, Bullock, Dishion, Shaw, Wilson, & Gardner, 2008). Although often excluded from efficacy studies, children with comorbid disorders tend to have the greatest therapeutic change in response to interventions such as parent management training, and inpatient treatment (Connell, et al., 2008). Although regression to the mean may explain at least part of this finding, it is also true that these children are more likely to experience an adverse family environment,

and so improvements in this domain may be the most beneficial for children with comorbid disorders (Connell et al., 2008). It is well-established that Parent Management Training is an effective intervention for addressing externalizing problems, but there is less support for its effectiveness for addressing internalizing problems (Connell et al., 2008).

Parenting styles and characteristics play an important role in the development and maintenance of internalizing and externalizing behaviour. Children who have externalizing problems are more likely to have parents who have lower socioeconomic status, use hostile parenting strategies, and have low warmth, low parental monitoring, problematic attachment, high psychological and behavioural control, lower perceived involvement, higher decisional autonomy granting, and poor communication (Fanti, 2007; Lee & Bukowski, 2012; Reitz, Dekovic, & Meijer, 2006). In addition, children with externalizing behaviour tend to elicit less effective parenting strategies from their parents (Galambos Barker, & Almeida, 2003; Reitz et al., 2006). Parenting a child with internalizing problems is related to having lower economic status and parental attachment problems, as well as to unsupportive caregiving and lack of communication (Fanti, 2007). Negative maternal control is associated with higher levels of both internalizing and externalizing behaviour in disadvantaged boys (Gilliom & Shaw, 2004).

There is a stronger relation between parenting and externalizing behaviour than there is for parenting and internalizing behaviour (Reitz et al., 2006). Positive parenting may not be adequate to prevent children from developing internalizing problems, as negative emotionality and fearfulness play a greater role in development of internalizing symptoms (Gilliom & Shaw, 2004). Children with high externalizing behaviour alone

have been found to be exposed to a more negative early familial environment compared to those with normative levels of externalizing behaviour, which may indicate that the family context plays a greater role in the development of externalizing problems than for internalizing problems (Fanti, 2007). In addition, parent management training programs are typically designed to address externalizing problems (Weisz, Hawley, & Doss, 2004).

Although research suggests that parenting is more strongly related to the development of externalizing problems, children with comorbid internalizing and externalizing problems tend to benefit more from interventions than children with either internalizing or externalizing symptoms alone (Connell et al., 2008). It is important for research to be conducted to determine what the best treatments are for children with different types of difficulties, and to use the treatments that have research supporting their effectiveness in similar contexts.

Evidence Based Interventions

There is a movement in psychology toward adopting evidence-based interventions (EBIs), as demonstrated by the adoption of a task force on the evidence-based practice of psychological treatments by both the American and Canadian Psychological Associations (Dozois, 2012). There are many different operational definitions of what constitutes an EBI, but generally an EBI is a psychological intervention that has a strong research background supporting its effectiveness in addressing a psychological disorder or problem. Common criteria for delineating an intervention as being evidence-based are random assignment to intervention condition, specified client populations, the use of treatment manuals, multiple outcome measures, and replication by a separate investigator (Kazdin, 2003). It is important for research and practice to be integrated in psychology,

and for clinicians to give preference to psychological interventions that have been empirically validated (Dozois, 2012). Family-focused interventions encompass a large proportion of EBIs for child mental health problems (Society of Clinical Child and Adolescent Psychology, 2012), which shows that providing intervention through parenting programs is an effective way to address child mental health problems (Hoagwood, Burns, Kiser, Ringeisen, & Schoenwald, 2001).

The criteria that are used to define an intervention as being an EBI are quite stringent, and so these studies are often conducted in a well-controlled laboratory setting. For example, individuals with comorbid disorders, or those seeking intervention outside the study are often excluded from participating in these types of studies. However, when the intervention is practiced in a clinical setting outside of a laboratory, procedures are less explicitly described and followed. Interventions are more flexible, and clients in a typical clinic setting often present with comorbid disorders. Because of these differences, poorer outcomes are often found in research conducted in a clinical setting when compared to a laboratory setting (Weisz, Donenberg, Han, & Weiss, 1995). Although research conducted in laboratory settings is important, it is also necessary for research to be conducted that more closely approximates how an intervention is implemented in practice, therefore having higher external validity.

An important part of designating interventions as being evidence based is ongoing program evaluation to continually assess the effectiveness of the intervention in different contexts, times, and for different populations (Moscoso, Chaves, Vidal, & Argilaga, 2013). Program evaluation is research that is conducted to assess whether a particular intervention is meeting the needs of the clients, and the needs of the organization that is

providing the intervention (Moscoso et al., 2013). Program evaluation is different from effectiveness research because one of the goals of program evaluation is to present a judgement about the value of the intervention in question. There is the expectation that the results can inform decisions about the worth of the intervention in the specific context, such as whether to continue to support the intervention, or how improvements can be made to it (Gallagher, 2006). This method allows the organizations that are involved in program evaluation to tailor their intervention and adapt their services to best meet the needs of their clients.

Many EBIs that are designed to address children's mental health concerns are provided to the parents. One theory that can help explain why providing interventions indirectly through parents is effective for improving children's mental health issues is Social Learning Theory. In fact, many of these EBIs are based on Social Learning Theory. The operational definitions and explicit intervention manuals characteristic of interventions based on this theoretical framework make them particularly amenable to well-controlled intervention outcome research. Consequently, there is a solid foundation of empirical support for interventions based on Social Learning Theory.

Social Learning Theory

Although there are many different factors that influence the development of mental health problems in children, one theory that can provide some explanation of how children learn to behave is Social Learning Theory (Bandura, 1977). This theory builds on classic behavioural theories, which suggest that a behaviour increases when followed by consequences perceived as positive (i.e., is positively reinforced), and a behaviour decreases when followed by consequences perceived as negative. Social Learning Theory

suggests that a behaviour can increase without being directly reinforced, as long as the individual observes someone else being reinforced for the same behaviour (Bandura, 1977; Bandura & Walters, 1963). People learn to do things by watching models and copying what they do. In this way, if children see another child being reinforced for acting aggressively, then they too are likely to act aggressively in that situation. Bandura's work showed that imitation varies depending on perceived status of the model. One implication is that children are more likely to model parents than they are to model peers or other actors that they perceive as lower in status.

Patterson (1982) suggested that children can learn aggression or other inappropriate behaviour by being inadvertently reinforced by their parents. He describes coercive parenting exchanges, in which parents reinforce their child's aggressive behaviour by arguing with their child, or by giving in to their child's demands (Patterson, DeBaryshe, & Ramsey, 1989). For example, a child might throw a tantrum because he or she wants something. The parent may eventually give in to what the child wants in order to stop the tantrum, but the parent has unintentionally reinforced the tantrum behaviour, and now the child has learned that throwing a tantrum is a way that the child can get what he or she wants. The escalating negative behaviours are bi-directional with both parent and child responding to the other's negativity with a more intense negative response, resulting in an increasingly negative family context over time (Patterson, 1982).

Parents of aggressive children may not reward their child's positive behaviour frequently enough, and so the child does not have incentive to behave well, but will use undesirable strategies instead to get what he or she wants (Patterson et al., 1989). Indeed, this type of ineffective discipline has been linked to child misbehaviour and conduct

problems (Snyder, Cramer, Afrank, & Patterson, 2005). In addition, parents who use physical punishment are modeling to their children that aggressive behaviour is acceptable. According to Social Learning Theory, changing coercive parenting behaviour to more effective parenting strategies will decrease child aggression, and lead to decreases in conduct disorder and antisocial behaviour (Asmussen, 2011).

Parenting

As illustrated above, parents play an integral role in their child's development and behaviour. Parents can be described as a child's first teacher, since they are present early in life, and spend a great amount of time with their child (Sanders, 2012). Effective parenting strategies are associated with positive outcomes, such as prosocial skills and reduced likelihood of conduct problems, whereas ineffective parenting practices are associated with negative outcomes, such as delinquency in adolescence (Asmussen, 2011; Forgatch, Patterson, Degarmo, & Beldavs, 2009).

There has been extensive research examining which parenting strategies are more effective than others. Three parenting styles have been identified by Baumrind (1971), that vary along the dimensions of warmth and control. The first parenting style is authoritarian, in which parents have high levels of control and low levels of warmth. These parents value hard work, have high expectations for their children, and expect their children to obey them. Authoritarian parents may be more likely to use harsh discipline. The second style is authoritative, in which parents have high levels of both control and warmth. Authoritative parents use a democratic approach, respect their children, have high expectations, but are also warm and supportive of their children. The third style is permissive, in which parents have low control but high warmth. These parents take a

"laissez-faire" approach to parenting, and use very little punishment, and have few demands of their children (Baumrind, 1971). A fourth parenting style, neglectful parenting, was identified by Maccoby and Martin (1983). Parents who are neglectful are low on both control and warmth. They are emotionally unavailable, and may be abusive toward their children.

Research has shown that these parenting styles are related to child behaviour. Authoritative parenting is associated with the best outcome, as children exposed to authoritative parenting tend to have a secure identity, higher self-esteem, autonomy, prosocial behaviour, achievement, and less risk of mental health problems compared to children exposed to other parenting styles (Asmussen, 2011). Children of authoritarian or permissive parents tend to lack independence and do not take responsibility for their own actions. Neglectful parenting is associated with the most adverse child outcomes (Asmussen, 2011). Overall, this research suggests that parental warmth and control are related to the best outcomes for the child, and that harsh discipline, inconsistent parenting, poor supervision, and lower warmth are related to negative child outcomes, such as poor mental health and poor behaviour (Asmussen, 2011). In Social Learning Theory terms, the most adaptive parenting skills for eliciting positive child outcomes is authoritarian because these parents model collaborative problem-solving and positive relationships, establish reasonable expectations for child behaviour, and are consistent in their disciplinary approach. Parents who use harsh discipline may communicate to their child that aggression is an appropriate way to interact with others. In addition, when parents are inconsistent in disciplinary practices, it is less clear to children what behaviour is expected of them.

Information from Social Learning Theory and the parenting style literature has been translated into practice, as there are many parenting programs that aim to teach parents to use strategies that are present in authoritative parents. These include having consistent discipline, warmth, democratic decision-making, and monitoring of the child, among other skills.

Parent Management Training

Many interventions that are designed to address a child's mental health or behavioural issues are delivered through the parents, because of the strong relationship between parenting and child behaviour (Asmussen, 2011). As illustrated above, specific parenting strategies are associated with a child's psychological functioning and outcome later in life. Parent Management Training (PMT) includes interventions that are delivered to parents with the goal of teaching them how to alter and control their child's behaviour in the home environment (Kazdin, 2003). PMT is based on both Social Learning Theory and behaviour modification strategies, such as monitoring antecedents and consequences of behaviour. There is a focus on promoting prosocial interactions among family members, rather than coercive interactions (Kazdin, 2003). Common strategies that are taught include establishing rules, positive reinforcement, mild punishment, and negotiating compromises. These programs can address a wide range of behavioural and emotional problems that children and adolescents may face, but they typically target externalizing problems. The reason for this focus is that externalizing problems are particularly amenable to behavioural interventions, and are greatly influenced by the child's environment. PMT is the most widely used and researched intervention for conduct problems (Kazdin, 2003; Weisz et al., 2004).

There is a large body of research supporting the effectiveness of PMT that can be seen in parent- and teacher-report of child behaviour, observations, and institutional records. PMT has been shown to reduce a child's problems from a clinical level to a normative level, and to maintain gains up to 14 years later (Kazdin, 2003). PMT has been shown to be effective for individuals and groups, community and clinical settings, and in almost all age groups (Kazdin, 2003). There is also evidence that PMT is effective in reducing child disruptive behaviours in "real world" practice settings (Michelson, Davenport, Dretzke, Barlow, & Day, 2013). A large number of EBIs for addressing child and adolescent mental health concerns rely on family involvement. According to Division 53 of the American Psychological Association (Society of Clinical Child and Adolescent Psychology, 2012), 42% of well-established, probably efficacious, and possibly efficacious interventions involve parent or family involvement in the intervention of the child. Behavioural Parent Training is listed as a well-established intervention for ADHD in children and adolescents. For conduct disorder and oppositional defiant disorder, Individual Parent Management Training is listed as a well-established intervention, and Group Parent Management Training is listed as a possibly efficacious intervention (Society of Clinical Child and Adolescent Psychology, 2012).

There are many different PMT programs that are available for parents. These programs share the common features of delivering a parenting skills-based intervention to parents, but certain features may differ. All PMT programs are delivered to a parent by a therapist, and could include skill instruction, role playing, discussion, homework, and sessions with child involvement (Kazdin, 2003). The programs may vary in intensity of the intervention, the number of sessions, the format of delivery, and may be held

individually or in groups. Positive Parenting Program (Triple P) is an example of a PMT program that is well-supported by research literature and readily available to parents.

Positive Parenting Program (Triple P)

Positive Parenting Program (Triple P) is a parent management training program designed to address behavioural, emotional, and developmental problems in children and adolescents up to 16 years of age (Sanders, 2012). The program originated in Australia in 1999, but is now offered around the world for a variety of different populations. Ideally, it is offered to a wide audience using a public health approach in which it is offered in communities as a preventive measure (Sanders, 2012).

Triple P is a behavioural family intervention that is primarily based on social learning principles. The parent-child relationship is understood as being bi-directional. The program addresses learning mechanisms that maintain coercive patterns of behaviour within the family by providing alternative parenting strategies (Sanders, 1999). Triple P is also based on behavioural theory, as it incorporates behaviour change strategies, such as identifying and addressing antecedents to behaviours, as well as the use of principles of reinforcement and punishment (Sanders, 1999).

There are five core principles of positive parenting in Triple P, which were chosen based on research in developmental psychopathology. Each principle is designed to address risk and protective factors that are related to mental health outcomes in children. Specific child management skills are taught to parents in the Triple P program that are related to these principles, such as monitoring child behaviour, using attention as a reinforcement, providing clear instructions, and using time outs (Sanders, 2012).

The first principle is a safe and engaging environment. Children should be provided with an environment in which they are able to explore in a context that is safe. Parental monitoring and supervision is a key aspect of this principle. This monitoring promotes healthy development, and can help prevent injuries (Peterson & Saldana, 1996; Sanders, 2012).

The second principle is a positive learning environment, meaning that parents should respond positively to child-initiated interactions. From a social learning perspective, the parent models calm and pleasant interactions in the home. In addition, children are provided attention when they initiate interactions in an appropriate manner, and so have a reduced need to use maladaptive strategies to get attention. Parental responsiveness is important because children who experience a stable and positive home environment have increased cognitive development (Lucas, 1998; Sanders, 2012).

The third principle is assertive discipline, which presents alternatives to coercive and ineffective discipline practices. Parents are discouraged from shouting, threatening, and using physical punishment. Some of the alternative strategies encouraged are discussing rules, using time outs, and planned ignoring, all of which have been shown to be more effective as parenting strategies than are coercive practices (Baumrind, 1991; Sanders, 2012).

The fourth principle is realistic expectations, which encourages parents to have developmentally appropriate expectations for their children. This principle is important because it is more common for parents who are at risk for abusing their child to have unrealistic expectations of their child's abilities (Azar & Rohrbeck, 1986; Sanders, 2012).

The fifth principle is parental self-care, which encourages parents to tend to their own well-being so they can be better parents. They are taught to see parenting as part of a larger context in which their own well-being is important. Parents' own mental health, including their personal experience of stress, anxiety, depression, and romantic relationship quality, can have a negative effect on the quality of their parenting skills, and on their child's adjustment (Leinonen, Solantaus, & Punamaki, 2003; Sanders, 1999; 2012). More specifically, mothers who have high levels of depression are likely to be less authoritative, and fathers who have high levels of depression are likely to be more punitive (Leinonen et al., 2003). In addition, parental depression, anxiety, and social dysfunction are related to poor child outcomes, such as poor peer relations, increased internalizing symptoms, depression, substance use, and poor school performance (Leinonen et al., 2003).

Triple P is a multimodal program, with five different levels of intensity (see Table 1 for more details). Within each level, there are different delivery formats. This program aims to match a family's need to the appropriate level to ensure efficiency and cost-effectiveness (Sanders, 2012). Level 1 Universal Triple P focuses on providing information and creating awareness to the general public about parenting resources and strategies. This dissemination of information is generally accomplished through the media, including print and online methods to deliver information to a broad audience. Level 2 Selective Triple P is a one or two session intervention for parents of children with mild behaviour difficulties. Level 3 Primary Care Triple P is a four session intervention

Table 1

Levels of Triple P

Level	Modalities	Delivery Format
1	Stay Positive	Media Communication
2	Selected Seminars, Selected Seminars Teen, Selected Seminars Stepping Stones	3 seminars, 1 ½ - 2 hours, 20+ parents
	Brief Primary Care, Brief Primary Care Teen	One brief individual consultation
3	Primary Care, Primary Care Teen, Primary Care Stepping Stones	Several (~4) 20-30 min. individual consultations (telephone or in person)
	Triple P Discussion Groups	One 2 hour group discussion
4	Group, Group Teen, Group Stepping Stones	Five 2 hour group sessions + three 20 min. phone consultations, up to 12 families
	Standard, Standard Teen, Standard Stepping Stones	Ten one-on-one 1 hour sessions
	Self-Directed , Self-Directed Teen, Self-Directed Stepping Stones	Ten self-directed workbook modules
	Online	Eight interactive online modules
5	Enhanced	Up to eight 1 hour individual sessions
	Pathways (risk of maltreatment)	Three 1 hour individual sessions, or 2 hour group sessions
	Lifestyle (obesity)	Ten 1 ½ hour group sessions + four 20 min. phone consultations, up to 10 families

Family Transitions (divorce)	Five 2 hour individual or group sessions, in addition to level 4

Note. Adapted from Sanders, 2012.

for parents of children with mild to moderate behavioural difficulties. Active skill training is provided to parents during the intervention sessions. Level 4 Triple P involves eight to ten parent training sessions for parents of children with more severe behavioural difficulties. Parents in this program are provided with information, and engage in active skill training. Level 5 Enhanced Triple P is a behavioural family intervention designed for parents who are dealing with additional stressors such as marital conflict or depression. This level of the intervention may include home visits in addition to parent training sessions (Sanders, 1999). These levels of intervention can be presented in different modalities as well, such as through groups, individual counselling, telephone, or online (Sanders, 2012). There are also adaptations of the Triple P program for specific populations, such as parents of a child with a disability (Stepping Stones), parents at risk of maltreatment (Pathways), families with obesity (Lifestyle), and families experiencing divorce (Family Transitions).

Within Level 4 Triple P, there are four different delivery formats. Level 4 Standard Triple P involves ten individual sessions with a trained facilitator. Level 4 Self-Directed Triple P involves ten self-directed workbook modules for parents to follow. These modules can also be completed online. Level 4 Group Triple P involves five two hour group sessions, and three 20 minute one-on-one telephone consultations with the facilitator. There are also specialized versions of Level 4 Group Triple P, which are Group Teen Triple P for parents of adolescents, and Group Stepping Stones Triple P for parents of a child with a disability (Sanders, 2012). These two variations of Group Triple P follow the same format, but have slightly different information that is relevant to the parents in that population.

There is a large evidence base supporting the overall effectiveness of Triple P. It has been designated as an EBI by the National Institute of Clinical Excellence, the World Health Organization, and the United Nation's Task force on family based intervention for the prevention of substance abuse, among others (Sanders, 2012). When specifically looking at level 4 Triple P, studies comparing pre-intervention and post-intervention measures have found improvements in child behaviour, parenting skills, parental stress, parental self-efficacy, and parental relationship satisfaction (Cann, Rogers, & Matthews, 2003; Crisante & Ng, 2003; De Graaf, Speetjens, Smit, de Wolff & Tavecchio, 2008; Dean, Myors, & Evans., 2003; Markie-Dadds, & Sanders, 2006a; Nowak & Heinrichs, 2008; Ralph & Sanders, 2003). Outcome is typically assessed using parental self-report measures, but comparable results have been found using observational measures and teacher-report, which suggests that parental self-report is a reliable measure of change (Hahlweg, Heinrichs, Kuschel, Bertram, & Naumann, 2010; Sanders, Pidgeon, Gravestock, & Connors, 2004).

Positive outcomes have also been shown after participation in a Triple P program for various populations, such as Cantonese-speaking Australians (Crisante & Ng, 2003), parents of preschool children with conduct problems (Markie-Dadds & Sanders, 2006b), and parents of teenagers entering high school (Ralph & Sanders, 2003). To control for maturation, studies comparing Triple P to a waitlist control group found that this program is superior in improving child and parent outcomes (Fujiwara, Kato, & Sanders, 2011; Hahlweg et al., 2010; Leung, Sanders, Leung, Mak, & Lau, 2003; Martin & Sanders, 2003; Matsumoto, Sofronoff, & Sanders, 2007; Matsumoto, Sofronoff, & Sanders, 2010). Triple P has also been shown to be superior to care as usual (Prinz, Sanders, Shapiro,

Whitaker & Lutzker, 2009; Sanders, Ralph, Sofronoff, Gardiner, Thomspon, Dwyer, & Bidwell, 2008). Large effect sizes have been reported for the overall effectiveness of Level 4 Triple P (d = 0.88, de Graaf et al., 2008; d = 0.77, Fletcher, Freeman, & Mathey, 2011).

When compared to other interventions, Triple P has been found to be superior to a marital distress program (Bodenmann, Cina, Ledermann, & Sanders, 2008), and a meta-analysis of Triple P compared to parent-child interaction therapy found moderate to large effects (Thomas & Zimmer-Gembeck, 2007). Parents with anger management issues who participated in Triple P combined with attributional retraining and an anger management program had better results than parents who only participated in Triple P (Sanders et al., 2004). There are generally very few differences between the different levels of Triple P, as all five levels tend to show improvement in child and parent outcomes (Ireland, Sanders, & Markie-Dadds, 2003; Sanders, Bor, & Morawska, 2007). However, one study found that levels 4 and 5 showed more reliable improvements at 1 year follow-up than did level 3 (a less intensive intervention than levels 4 and 5) for parents of preschoolers with conduct problems (Sanders, Markie-Dadds, Tully, & Bor, 2000).

Triple P is generally offered to a wide audience of parents experiencing a variety of issues, and has been shown to be effective for addressing different kinds of mental health problems. The efficacy of Triple P has been supported for children with elevated levels of behavioural and emotional problems (Markie-Dadds, & Sanders, 2006b; Martin & Sanders, 2003; Sanders et al., 2000), parents of children with ADHD symptoms (Bor, Sanders, & Markie-Dadds, 2002; Hoath & Sanders, 2002; Rogers, Cann, Cameron, Littlefield, & Lagioia, 2003), parents with relationship disturbances (Wiggins, Sofronoff,

& Sanders, 2009), and parents with anger management concerns (Sanders et al., 2004). However, there is little research that examines a broader spectrum of child mental health problems. More information is needed about the specific circumstances in which Triple P is the most effective.

Moderators

There is evidence that there may be differential gains for parents who are involved with a parenting program, as some individuals may benefit more than others from this type of intervention. Children with more severe levels of externalizing behaviour were found to have greater improvement in attention problems and disruptive behaviour problems following a parent management training intervention. In addition, older children, and children with younger mothers had slower gains (Hautmann et al., 2011). Another study found that mothers experiencing mental health risk factors (i.e., depression, anger, history of abuse as a child, and substance abuse) had higher levels of ineffective parenting skills, but that they benefited as much, if not more than mothers without these mental health risk factors (Baydar, Reid, & Webster-Stratton, 2003).

There has been preliminary research conducted that examines factors that may moderate the effectiveness of Triple P specifically. A meta-analysis found that studies with fewer boys and with initial child behaviour scores in the clinical range had larger long-term effects. Age of the child and modality (self-directed vs. guided) did not make a difference in the effectiveness of the program (De Graaf et al., 2008). Parent gender is a moderator of the overall effectiveness of Triple P, as larger effects are found for mothers than for fathers (Fletcher et al., 2011). In addition, more improvement was found in a meta-analysis for families with higher levels of initial distress (Nowak & Heinrichs,

2008). However, these results could be related to the statistical phenomenon of regression to the mean, as it is not probable that extreme scores will remain extreme upon retesting. It could be that families with higher levels of distress have more room for improvement. In addition, mothers tend to report initially more severe problems in their child than do fathers, which could influence the results (Fletcher et al., 2011).

Program Adherence and Dropouts

An issue related to any intervention program is dropout rate and failure to complete the standard treatment protocol. Of course, parents cannot learn as much from the program if they do not attend the weekly sessions. Indeed, program engagement and program benefits were found to be related in a dose-response manner for a PMT program that is similar in format to level 4 Group Triple P (Baydar et al., 2003). In addition, participation and active engagement in a PMT program were related to positive changes in parent outcomes (Nix, Bierman, & McMahon, 2009).

There is a body of research that has examined dropouts in relation to other PMT programs that suggests that parents who drop out of parent training programs are more likely to be teenaged parents, African-American, have a poor home environment, lower education level, low income, a greater number of negative life events, single-parent status, and have time constraints (Cunningham, et al., 2000; Danoff, Kemper, & Sherry, 1994; Dumas, Nisley-Tsiopinis, & Moreland, 2007; Winslow, Bonds, Wolchik, Sandler, & Braver, 2009). There is less support for the role of marital status, parental stress, and parental depression in predicting dropouts (Cunningham et al., 2000; Danoff et al., 1994; Winslow et al., 2009). Socioeconomic status, and greater mental health problems or family dysfunction could be general factors underlying overall rates of dropouts in PMT.

These studies have been conducted in both Canada and the United States, but the impact of having low socioeconomic status may be more detrimental in the US because of differences in social systems. Lacking insurance coverage for mental health intervention is a predictor of dropouts in the United States but is not as relevant in Canada (Edlund, Wang, Berglund, Katz, Lin, & Kessler, 2002). However, an epidemiological survey found that there were no differences between the United States and Ontario in the rates of dropouts or the effects of predictors on dropouts for those seeking mental health intervention (Edlund et al., 2002).

A few studies have compared parents who completed the Triple P intervention to those who dropped out. Mixed results have been reported, as some studies have found no significant differences in these two groups on variables such as demographics, risk factors, child behaviour ratings, and parenting skills (Bor et al., 2002; Markie-Dadds & Sanders, 2006b), whereas Sanders et al. (2000) reported that parents who drop out are more likely to have lower negative affect, and lower child behaviour problems. There has not been enough research conducted examining this issue specific to Triple P. It is important to know more about who is dropping out and why because then efforts can be made to improve attendance, and therefore the effectiveness, of the program.

Canadian Context

As discussed above, the Triple P program was developed in Australia and much of the supportive research has been conducted in Australia and the United States with little research conducted in Canada, which is the context for the present study. Although Canada is culturally similar to Australia and the United States, there are some key differences in Canadian families that could impact the effectiveness of Triple P. For

example, there are differences in family structure between Canada and the United States. More specifically, Canadians tend to have fewer children, are less likely to get married, and are less likely to get divorced than Americans (Central Intelligence Agency, 2013; Centers for Disease Control and Prevention, 2013; Statistics Canada, 2013). Characteristics, beliefs, and behaviours of parents can be culturally shaped, and can vary between countries and subcultures. Culture plays an important role in parents' use of disciplinary strategies and corporal punishment (Giles-Sims & Lockhart, 2005). Indeed, rates of physical punishment are lower in Canada than in the United States (Durrant, Rose-Krasnor, & Broberg, 2003). There are also many differences between these two countries in access and use of health care services. There are higher rates of utilization of health care services among people from a lower socioeconomic status in Canada compared to the United States (Pylypchuck & Sarpong, 2013). Therefore, it should not be assumed that evidence for the effectiveness of Triple P in other cultures and countries can be generalized to Canadian families.

Triple P has been implemented widely around the world, including in Canada, yet there is very little research supporting its effectiveness in a Canadian context. One study compared level 2 (one to two sessions, or a seminar series) and level 3 (four sessions) Triple P to care as usual (a different group-based parent education program) and found promising results (McConnell, Breitkruez, & Savage, 2011). A second study by Houlding, Schmidt, Stern, Jamieson, and Borg (2012) used semi-structured interviews to evaluate the feasibility of implementing Triple P for Aboriginal parents in Canada, who perceived the program to be a good fit. More research is needed to examine the usefulness of Triple P in Canada.

Statement of the Problem

There are many children who are experiencing mental health problems, which may persist into adulthood if not addressed in a timely manner (Campbell et al., 2000). Parenting styles and practices are closely related to children's behaviour, and so parent management training programs are typically used as an intervention for child mental health problems (Asmussen, 2011; Kazdin, 2003). There is considerable research supporting the effectiveness of PMTs for improving child outcome (Kazdin, 2003), and Triple P is an excellent example of a well-supported PMT (Sanders, 1999; 2012). There has been little research evaluating the effectiveness of Triple P in a Canadian context, which may differ from Australia and the United States where much of the research supporting Triple P has taken place (Durrant et al., 2003).

Children with comorbid internalizing and externalizing difficulties typically have the highest degree of impairment, but also tend to have the greatest therapeutic changes in response to parent-based interventions (Fanti, 2007; Connell et al., 2008). Parent Management Training programs, such as Triple P, are typically designed to address externalizing difficulties among children (Sanders, 1999). One goal of the present study is to explore the relative effectiveness of Triple P for children with comorbid difficulties or externalizing problems alone.

High levels of dropout rates are common among parent training programs (Cunningham et al., 2000; Danoff et al., 1994; Dumas et al., 2007; Edlund et al., 2002; Winslow et al., 2009), and research examining this issue for other PMTs has found that there are differences between parents who dropped out and those who did not on demographic variables such as education level, marital status, race, and income, and

environmental factors such as negative life events, home environment, and time constraints (Cunningham et al., 2000; Danoff et al., 1994; Dumas et al., 2007; Winslow et al., 2009). This issue has not yet been examined specific to the Triple P program. In summary, there are three main goals that will be addressed by the present study. The first is to examine parent and child outcomes after participation in Triple P in local clinical settings. The second goal is to compare outcomes for children with pure externalizing problems or comorbid externalizing and internalizing problems after participation in Triple P. The third goal is to investigate whether demographic characteristics of parents are related to program completion.

Hypothesis 1: Pre-Post Comparison

1a. It was anticipated that comparison of pre- and post-intervention parent-reported measures related to child outcome would show a significant improvement in child behaviour (i.e., reduction in emotional symptoms, conduct problems, hyperactivity, peer problems, and increase in prosocial behaviour).

1b. It was anticipated that comparison of pre- and post-intervention parent-reported measures related to parent outcome would show a significant improvement in parenting skills (i.e., increase in consistency, appropriate discipline, and confidence in parenting skills).

Hypothesis 2: Comparison of Pre-Post Externalizing Only and Comorbid Symptoms

It was anticipated that children with comorbid internalizing and externalizing problems would show greater improvement on child- and parent-related outcomes after participation in the Triple P program when compared to children with externalizing problems only.

Hypothesis 3: Comparison of Dropouts and Program Completers

It was anticipated that parents who did not complete the program would be more likely to have a lower socioeconomic status, have younger children, be single parents, have higher initial depression, anxiety and stress levels, and have children with more severe behavioural problems, when compared to parents who did complete the program.

CHAPTER 2

Method

Participants

This secondary data analysis study utilized archival data collected during the administration of level 4 Triple P between 2006 and 2013. Data were collected from two sources: the Windsor Regional Children's Centre (n = 89, 74% male), and other community organizations in the Windsor-Essex region (n = 152, 51% male). The participants in this study were Canadian parents whose children were experiencing a variety of mental health or behavioural concerns.

Demographic information was collected for all participants, and is reported overall, and for each sample in Table 2 (categorical information). Chi square analyses were run to compare the children's centre and community samples on categorical demographic variables (see Table 3). The only variable that showed a significant difference (after a Bonferroni correction with a new alpha level of .006) was child gender. There was a greater proportion of boys in the clinic sample than in the community sample. There were no significant differences between the two samples on any of the other categorical variables.

Child age and number of children in the home were the only continuous demographic variables collected. In the sample from the children's centre, the age of the children ranged from four to 16 years (M = 9.75, SD = 2.36). In the community sample, the age of the children ranged from zero to 18 years (M = 8.20, SD = 4.22). Children in the clinic sample were significantly older than those in the community sample (t (229.89) = 3.77, $p < .001$).

Table 2

Demographic Information

	Total Sample *n* (%)	Clinic Sample *n* (%)	Community Sample *n* (%)
Child Gender	241	89	152
Male	143 (59%)	66 (74%)	77 (51%)
Female	98 (41%)	23 (26%)	75 (49%)
Marital Status	189	43	146
Married	82 (43%)	17 (40%)	65 (45%)
Divorced/Separated	44 (23%)	8 (19%)	36 (25%)
Single	56 (30%	15 (35%)	41 (28%)
Common Law	7 (4%)	3 (6%)	4 (2%)
Relationship to Child	240	88	152
Mother	171 (71%)	64 (73%)	107 (71%)
Father	42 (18%)	13 (15%)	29 (19%)
Step-Mother	4 (2%)	0 (0%)	4 (3%)
Step-Father	12 (6%)	7 (8%)	5 (3%)
Foster Mother	1 (0%)	1 (1%)	0 (0%)
Other	9 (3%)	3 (3%)	6 (4%)
Family Structure	164	17	147
Original Family	63 (38%)	4 (24%)	59 (40%)
Step-Family	21 (13%)	5 (29%)	16 (11%)
Sole Parent Family	48 (29%)	6 (35%)	42 (29%)
Other	32 (20%)	2 (12%)	30 (20%)
Mother's Education	205	63	142
Did not complete high school	34 (17%)	13 (21%)	21 (15%)
Completed high school	68 (33%)	28 (44%)	40 (28%)
Completed community college	69 (33%)	15 (24%)	54 (38%)
Completed university	34 (17%)	7 (11%)	27 (19%)
Father's Education	167	52	115
Did not complete high school	22 (13%)	13 (25%)	9 (8%)
Completed high school	66 (40%)	19 (36%)	47 (41%)
Completed community college	56 (34%)	13 (25%)	43 (37%)
Completed university	23 (14%)	7 (14%)	16 (14%)

Mother's Employment Status	153	13	140
Employed	63 (41%)	4 (31%)	59 (43%)
Not Employed	90 (59%)	9 (69%)	81 (57%)
Father's Employment Status	131	11	120
Employed	83 (63%)	7 (64%)	76 (63%)
Not Employed	48 (37%)	4 (36%)	44 (37%)

Note. Demographic information is presented for complete cases only

Table 3

Results for Chi Square Tests for Demographic Variables Comparing Clinic and Community Samples

	Chi Square Value	*p*
Child Gender	11.64	.001
Marital Status	2.41	.492
Relationship to Child	6.92	.328
Family Structure	3.53	.317
Mother's Education	10.11	.018
Father's Education	7.99	.046
Mother's Employment Status	.277	.599
Father's Employment Status	.007	.932

In the clinic sample, the number of children in the home ranged from one to six (M = 2.52, SD = 1.23). In the community sample, the number of children in the home ranged from one to seven (M = 2.06, SD = 1.00). Participants from the clinic sample had significantly more children in the home (t (98.23) = 2.72, p = .008).

Measures

The measures used in this study were taken from a set of eight questionnaires that are standard within the Triple P program. Only the five measures that address the hypotheses will be described in this section: the Strengths and Difficulties Questionnaire, Parenting Scale, Parenting Scale-Adolescent, Being a Parent Scale, and Depression Anxiety Stress Scales.

Strengths and Difficulties Questionnaire.

The Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997) is a 25-item behavioural screening measure of positive and negative attributes in children aged four to 16 years. Parents were asked to provide ratings of their child's behaviour over the previous six months by indicating whether certain characteristics were not true, somewhat true, or certainly true of their child. The SDQ was developed based on, and validated against, the Rutter questionnaires (Rutter, 1967), and the factor structure obtained from that questionnaire. The SDQ includes subscales for emotional symptoms, conduct problems, hyperactivity, peer problems, and prosocial behaviour, as well as a total difficulties score. Scores can be classified as falling within the normal, borderline, or clinical range. There are also supplemental questions assessing the overall impact of the child's behaviour on his/her family. This questionnaire is psychometrically sound, as it has adequate internal consistency (Cronbach α = .73), cross-informant reliability (r =

.34), and elevated scores predict probability of DSM-IV diagnoses (Goodman, 2001). Test-retest reliability over a four to six month period was .72 for the total score, and ranged from .57 to .72 for the subscales.

Parenting Scale.

The Parenting Scale (PS; Arnold, O'Leary, Wolff & Acker, 1993) is a 30-item measure of dysfunctional disciplinary practices. Parents were asked to rate how they typically respond to various parenting situations, and the probability with which they used particular disciplinary strategies. Each question was anchored on a scale from 1 to 7 with an effective discipline practice on one side, and an ineffective discipline practice on the other side. When the scale was originally developed, a factor analysis determined that it had three subscales reflecting different parenting styles: laxness (11 items), over-reactivity (10 items), and verbosity (7 items). Laxness refers to permissive and inconsistent parenting, over-reactivity indicates harsh and punitive discipline, and verbosity refers to long verbal responses to a child's behaviour (Salari, Terreros, & Sarkadi, 2012). There are four items that contribute to the total score that do not load onto any of the subscales (Arnold et al., 1993). This questionnaire was developed by reviewing empirical research to identify common parenting "mistakes". Each situation that is presented is anchored with one of these strategies and a more beneficial strategy on the other side. The questionnaire items were retained based on feedback from parents and on significant correlation with child behaviour or with the total score.

The PS questionnaire has been validated against various measures. Higher levels of dysfunctional discipline, measured by the total score and subscale scores of the PS were associated with higher levels of child misbehaviour as measured by the Child

Behaviour Checklist (Achenbach, Edelbrock, & Howell, 1987; Arnold et al., 1993). Higher levels of marital discord, measured by the short form of the Locke-Wallace Marital Adjustment Test (Locke & Wallace, 1959), were associated with higher scores on the PS (Arnold et al., 1993). Higher levels of overreactivity were associated with more depression, as measured by the Beck Depression Inventory (Beck, Steer, & Garbin, 1988; Arnold et al., 1993). In addition, the PS subscale scores were related to coded observations of parent-child interaction in a free play and structured activity task (Arnold et al., 1993).

Rhoades and O'Leary (2007) conducted a factor analysis based on the PS items because the verbosity factor was not replicated by other researchers. These authors suggested an alternative factor structure, which was adopted by Triple P in 2009. Laxness (5 items) and over-reactivity (5 items) were retained as subscales, but they included different items than the original subscales, and hostility (3 items) was included as one of the subscales and verbosity was removed. The hostility subscale measures forceful physical or verbal aggression toward a child (Rhoades & O'Leary, 2007). The same thirty item questionnaire was used, but different items were retained for each subscale. A clinical range has been established for all of the subscales and for the total score (Arnold et al., 1993).

Internal consistency alpha levels ranged from .63 to .84 for the original subscales and total score. There was also evidence for this scale's validity, as it was able to discriminate between clinic and non-clinic families, correlated with the Child Behaviour Checklist, and correlated with observed mother and child behaviour (Arnold et al., 1993). Internal consistency alpha levels for the new factor structure range from .52 to .85 for the

subscales and total score. The hostility factor showed the lowest internal consistency (Rhoades & O'Leary, 2007). Test-retest reliability following a two week period was .84 for the total score, and ranged from .79 to .83 for the subscales (Arnold et al., 1993).

Salari et al. (2012) compared the different factor structures that were proposed, and found that the original laxness and over-reactivity subscales were the most psychometrically sound, and recommended using these subscales along with the total score. There was less evidence to support the use of the verbosity and hostility subscales as they have lower internal consistency and have not emerged as distinct factors across studies (Salari et al., 2012). In order to be consistent with recent research, this study will use all three subscales of the newly developed factor structure (laxness, over-reactivity, and hostility).

Parenting Scale- Adolescent.

The Parenting Scale- Adolescent (PSA; Irvine, Biglan, Smolkowski, & Ary, 1999) includes a subset of 13 of the 30 items from the original PS (with the word "teenager" substituted for the word "child"). This questionnaire was created by having parents of middle school students complete the original PS measure, and retaining only the items that loaded onto the two factors that they obtained. The two subscales are laxness (6 items) and over-reactivity (6 items). The items on these two factors differ from the factor structure used for the original PS, and there is an additional item relating to parental monitoring that is included in the total score, but not the subscales. Internal consistency ranges from 0.82 to 0.84 for the subscales and total score of the PSA (Irvine et al., 1999). Test-retest reliability over a three month period was .63 for the total score, .61 for overreactivity, and .65 for laxness.

Being a Parent Scale.

The Being a Parent Scale (BPS; Johnston & Mash, 1989) is a 16-item questionnaire designed to measure parents' efficacy related to parenting. Parents are asked to rate on a Likert scale from 1 (Strongly Agree) to 6 (Strongly Disagree) the degree to which certain items related to feelings about being a parent apply to them. It provides normal and clinical ranges for the satisfaction and efficacy subscales, which were created based on face validity and confirmed through a factor analysis (Johnston & Mash, 1989). The original authors report alpha internal consistency levels at .79 for the total score, .75 for the satisfaction subscale (9 items), and .76 for the efficacy subscale (7 items). Higher scores on the total BPS have been found to be correlated with lower levels of the internalizing and externalizing subscales of the Child Behaviour Checklist (Johnston & Mash, 1989).

Depression Anxiety Stress Scale.

The Depression-Anxiety-Stress Scale (DASS; Lovibond & Lovibond, 1995a) is a measure of symptoms of depression, anxiety, and stress being experienced by the parent. There is a 42-item and a shortened 21-item version of this questionnaire. These two versions are comparable, and doubling the scores on the 21-item version provides approximately equivalent scores as the 42-item version (Henry & Crawford, 2005). The DASS was designed to measure depression and anxiety, but some of the control items emerged as a third factor, related to stress (Crawford & Henry, 2003). Items on the DASS were chosen using statistical techniques (i.e., boot-strapping and factor analysis), and this questionnaire was developed based on a non-clinical sample (Lovibond & Lovibond, 1995b). This questionnaire includes subscales for depression, anxiety, and stress, which

have been supported by factor analyses (Crawford & Henry, 2003). Cutoff scores are provided for normal, mild, moderate, severe, and extremely severe ranges for each of these subscales. These cutoffs are based on percentiles, with 0 to 78 as normal, 78 to 87 as mild, 87 to 95 as moderate, 95 to 98 as severe, and 98 to 100 as extremely severe (Lovibond & Lovibond, 1995b; Crawford & Henry, 2003). Parents were asked to read a series of statements and indicate how much the statement applied to them in the past week on a scale from 0 (did not apply to me at all) to 3 (applied to me very much, or most of the time). The anxiety and depression subscales of the DASS have positive correlations with the Beck Anxiety Inventory and the Beck Depression Inventory, respectively. The DASS also has alpha reliability scores that range from .84 to .90 (Lovibond & Lovibond, 1995b).

Other Measures.

In addition to the standard measures included in Triple P, data from the Brief Child and Family Phone Interview (BCFPI; Cunningham, Boyle, Hong, Pettingill, & Bohaychuk, 2008) were included when available. This structured computer-assisted telephone interview gathers information from parents of children aged three to 18 years about the child's mental health and family functioning. There are 73 required questions, and 59 optional questions in the interview, which usually takes approximately 30 minutes to complete. The interviewers were staff members at the children's mental health centre, who had completed a BCFPI training program and certification check. The BCFPI was conducted as a screening measure at intake into the participating children's mental health centre, but it was not used at the other community organizations from which archival data were obtained. Each item was scored as 0 (never true), 1 (sometimes true), or 2 (often

true). Scores were then converted into t-scores, with a mean of 50 and standard deviation of 10, which were compared to norms obtained from children aged six to 18 years. T-scores over 70 were considered to be in the clinical range, while t-scores between 65 and 70 were in the borderline range, and t-scores below 65 were in the normal range (Cunningham et al., 2008).

The BCFPI provides 14 subscales, and five composite scales pertaining to the child's mental health, functioning, and impact on family functioning. The subscales that were used as grouping variables in the present study were the Externalizing Behaviour, and Internalizing Behaviour composite scales, each composed of 18 items.

The BCFPI was developed by adapting the revised Ontario Child Health Study scales, which were developed as part of epidemiological and longitudinal studies of mental health problems in children in Ontario, Canada (Cunningham et al., 2008). Cutoff scores for the normal, borderline, and clinical ranges are provided. Internal consistency alphas ranged from .68 to .86 (Cunningham et al., 2008). This scale is considered to be an appropriate screening measure for childhood disorders based on the Diagnostic Interview Schedule for Children (DISC-IV; Shaffer, Fisher, Lucas, Dulcan, & Schwab-Stone, 2000), as one study found that classifications of disorders based on the BCFPI were comparable to diagnoses made based on the DISC-IV (Boyle, Cunningham, Georgiades, Cullen, Racine, & Pettingill, 2009).

Procedure

Parents participated in Level 4 Group Triple P or Level 4 Group-Teen Triple P in groups of up to 12 families, for eight weekly sessions. Five of the sessions were conducted in a group setting, and three sessions were held one-on-one over the phone.

Each session was administered by two trained facilitators, who were accredited based on Triple P International's standards (Sanders, Markie-Dadds, & Turner, 2003). Triple P was offered through two sources, a local children's centre, and through the community program which encompasses many different organizations. The parents who were clients of the children's centre were referred to Triple P by caseworkers in a case conference after intake based on informal clinical judgment. The parents could then make the choice whether to participate in Triple P, as part of their treatment plan. The BCFPI was administered to these parents at intake into the centre. Parents who participated in Triple P through the community program were referred through various sources, such as mental health agencies, community organizations, court-mandated intervention, or self-referred based on media promotion. Although level 4 Triple P was designed for parents of a child with noticeable problems, but not a specific diagnosis, families with a broader range of functioning were included (i.e., some parents participated as a preventative measure, and other parents whose children had diagnoses participated as part of their overall treatment plan). Due to limited resources at the time, the children's centre offered level 4 Group and level 4 Group-Teen Triple P simultaneously (i.e., one facilitator covering material from both the child and teen programs to a group of parents with children and teenagers at the same time).

The participants filled out the pre-intervention questionnaire packet at the first session, and the post-intervention questionnaire on the last session. Both questionnaire packets were identical, except the pre-intervention questionnaire packet included questions regarding demographic information, and the post-intervention questionnaire packet included the Client Satisfaction Survey. The questionnaires were completed in a

group setting, and program facilitators were available to provide assistance to parents. Demographic information was collected through a questionnaire included in the packet for the participants in the community program, and was pulled from case files for the participants who were clients of the children's centre. Facilitators kept records of attendance on a weekly basis. The Brief Child and Family Phone Interview was conducted over the phone with computer assistance at intake into the children's centre for the participants who were clients of the children's centre (not necessarily at intake into the Triple P program).

The participants in the Group Triple P program completed the questionnaires in the following order: demographic questionnaire (community participants only), SDQ, PS, BPS, DASS-42. The participants in the Group Teen Triple P program completed the questionnaires in the following order: demographic questionnaire (community participants only), SDQ, PS-Adolescent, and DASS-21.

Parents and children who participated in this study could have been involved in other services through the children's centre or other community organizations, such as individual therapy, family therapy, support groups, or school-based interventions. Information was not available to the researchers about the services that families were receiving in addition to the Triple P intervention.

Data Analysis

To address hypothesis 1a that there would be overall improvements from pre-intervention to post-intervention levels of child outcomes, a one-way repeated measures MANOVA was conducted (see Table 4 for a summary of hypotheses and analyses). To

Table 4

Planned Statistical Analyses

Hypothesis	Measures	Analyses

1a. Change in child-related variables	• Strengths and Difficulties Questionnaire
	  ○ Emotional Symptoms
	  ○ Conduct Problems
	  ○ Hyperactivity
	  ○ Peer Problems
	  ○ Prosocial Behaviour
		Repeated measures MANOVA

1b. Change in parent-related variables	• Parenting Scale
	  ○ Laxness
	  ○ Overreactivity
	  ○ Hostility
	• Being a Parent Scale
	  ○ Satisfaction
	  ○ Efficacy
		Repeated measures MANOVA

2. Moderation of intervention outcome	• Brief Child and Family Phone Interview (grouping variable)
	  ○ Externalizing Only
	  ○ Comorbid Externalizing and Internalizing
	• Strengths and Difficulties Questionnaire
	  ○ Emotional Problems
	  ○ Conduct Problems
	  ○ Hyperactivity
	  ○ Peer Problems
	  ○ Prosocial Behaviour
	• Parenting Scale
	  ○ Laxness
	  ○ Overreactivity
	  ○ Hostility
	• Being a Parent Scale
	  ○ Satisfaction
	  ○ Efficacy
		Repeated measures MANOVA

3. Comparison of dropouts and program completers	• Demographic Information
	  ○ Age of child
	  ○ Number of children
	• Depression-Anxiety-Stress Scale
	  ○ Total Score
	• Strengths and Difficulties Questionnaire
	  ○ Total Score
		Independent samples t-tests

	• Demographic Information
	  ○ Socioeconomic status (education, income)
	  ○ Gender of child
	  ○ Relationship to child
	  ○ Marital status
	  ○ Family structure
		Chi square tests

evaluate hypothesis 1b that there would be improvements when comparing pre- and post-intervention parent outcomes, a one-way repeated measures MANOVA was conducted. Significant results would indicate that there is an overall multivariate effect on the linear combination of variables being assessed.

To examine hypothesis 2 that the type of child behaviour may moderate the success of the program, cutoff scores from the BCFPI were used to form groups based on the internalizing and externalizing subscale scores of the BCFPI. Children were classified as having clinical levels of externalizing symptoms only (Externalizing Only; $n = 21$), or clinical levels of both internalizing and externalizing symptoms (Comorbid; $n = 25$). Children who did not fit into either of these groups were not included in analyses for hypothesis 2. See Table 5 for a summary of demographic information and pre-intervention symptom ratings for the two study groups. A repeated measures mixed model MANOVA was conducted comparing pre-intervention and post-intervention levels of the outcome measures by group.

To test hypothesis 3 exploring differences between program completers and non-completers, a series of independent samples t-tests and chi-square tests were used. A parent was considered to be a non-completer if he or she missed three or more of the eight weekly sessions. These analyses compared completers and non-completers on demographic information (age of child, socioeconomic status, gender of child and parent, family structure), as well as parental level of depression, anxiety and stress, and severity of the child's presenting behaviour problems. Bonferroni corrections were used to control the error rates among hypotheses.

Table 5

Demographic Information for Groups in Hypothesis 2

	Externalizing Only (n = 21) *M* (SD), or %	Comorbid (n = 25) *M* (SD), or %
Child Gender		
Male	62%	88%
Female	38%	12%
Marital Status of Parents		
Married	42%	17%
Divorced/Separated	33%	16%
Single	17%	67%
Common Law	8%	0%
Relationship of Participant to Child		
Mother	76%	79%
Father	14%	8%
Step-Mother	0%	0%
Step-Father	5%	8%
Other	5%	4%
Family Structure		
Original Family	33%	0%
Step-Family	17%	50%
Sole Parent Family	33%	50%
Other	17%	0%
Mother's Education		
Did not complete high school	21%	22%
Completed high school	26%	60%
Completed community college	42%	9%
Completed university	11%	9%
Father's Education		
Did not complete high school	29%	40%
Completed high school	7%	50%
Completed community college	36%	11%
Completed university	29%	0%
Initial Ratings		
BCFPI Externalizing Score	79.00 (7.22)	82.56 (5.58)
BCFPI Internalizing Score	56.76 (8.90)	85.64 (12.09)
SDQ Total Pre Score	20.08 (6.08)	23.82 (5.52)
BPS Total Pre Score	59.25 (16.72)	61.37 (10.20)

Missing Data.

In total, data were available for 538 participants (178 from the children's centre, and 360 from the community), but only 241 completed both the pre-intervention and post-intervention questionnaires (89 from the children's centre, and 152 from the community). The expectation maximization algorithm was used to impute data for the cases in which less than 25% of the items for a given questionnaire were missing. Participants who were missing pre-intervention or post-intervention questionnaires were excluded from analyses for hypotheses 1 and 2. Participants who were missing demographic information were excluded from analyses for hypothesis 3.

CHAPTER 3

Results

Assumptions

Independence of Observations.

There were 46 cases (therefore 23 children) for which more than one informant (e.g., mother and father) completed the Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997) about the same child. The responses for both informants were averaged together for this questionnaire only (which is used in hypotheses 1a and 2). Aside from this concern, the assumption of independence of observations was met.

Univariate Normality.

In order to test for univariate normality, histograms, skewness, and kurtosis values were examined. The assumption of normality was met for the SDQ, Parenting Scale-Adolescent (PSA; Irvine et al., 1999), and Being a Parent Scale (BPS; Johnston & Mash, 1989), but was violated for the Depression Anxiety Stress Scale (DASS; Lovibond & Lovibond, 1995), and Parenting Scale (PS; Arnold et al., 1993). The histograms appeared to be positively skewed based on visual inspection for the DASS subscales and total scores. The PS Hostility post, DASS Depression post, DASS Anxiety pre, DASS Anxiety post, and DASS Total post variables had kurtosis values outside of the acceptable range (-3 and 3). Therefore, the assumption of univariate normality was partially met. No transformations of the data were made, so results should be interpreted with caution.

Multivariate Normality.

In order to test for multivariate normality, scatter plots were examined for each paired combination of the dependent variables. The scatter plots appeared to be very

weakly correlated for the SDQ variables amongst themselves, the SDQ and PS together, the SDQ and PSA together, and the SDQ and BPS together. All others appeared to be somewhat correlated based on a visual inspection. Therefore, this assumption was violated, and results should be interpreted with caution.

Homogeneity of Variance-Covariance Matrices.

To test for homogeneity of variance, the Box's M statistic was examined for the groups formed from the Brief Child and Family Phone Interview (BCFPI; Cunningham et al., 2009) scores. It was found that this value was not significant (F (55, 8168.995) = 1.218, p = 0.130), which indicates that this assumption was met.

Absence of Singularity and Multicollinearity.

To test this assumption, a correlation matrix between the dependent variables was made. None of the variables had correlation values that would imply multicollinearity, although some variables had low correlations among one another. This result implied that this assumption was met.

Outliers.

To test for outliers on the outcome variables (Y), the standardized residuals were examined. Twenty two cases had values above |2.5|, and were considered to be outliers. Since the values were within the acceptable ranges of the questionnaires, and to avoid diminishing the sample size, these outliers were included in all subsequent analyses. To test for influential outliers, Cook's distance was examined for each of the participants, and zero cases had values above 1.

Sample Size.

A MANOVA requires a sample size of 20 participants per group. This assumption was met for hypotheses 1a and 1b. After combining data from multiple informants for the SDQ for hypothesis 2, only 13 complete data sets for the SDQ, PS, and BPS remained, which was too few. There were 44 participants with complete data for the SDQ, which met the requirement of 40 participants. Therefore the analyses for hypothesis 2 were run with the SDQ as the only outcome measure, which allowed this assumption to be met.

Preliminary Analyses.

Before testing the hypotheses, independent samples t-tests were used to compare the two samples on initial levels of the outcome variables being used (see Table 6). After a Bonferroni correction (*p* value criterion is now .01), there were significant differences between the two samples on the SDQ and PS, with the participants from the clinic sample presenting with greater initial difficulties.

Hypothesis 1: Pre-Post Comparison

Hypothesis 1a: Child Outcome.

Hypothesis 1a was that the child outcome measures would show a significant improvement from pre- to post-intervention. Data from the two samples were analyzed separately for this hypothesis. For the sample from the children's centre, since there were a small number (n = 8) of participants who completed the group program at the children's centre (as opposed to the mixed Group and Group-Teen program), results for both programs have been combined for this analysis (n = 72). A one-way, repeated measures MANOVA was used to test this hypothesis. The outcome variables for this analysis are

Table 6

Independent Samples t-tests Comparing the Community and Clinic Sample on Initial Levels of Outcome Variables

	Mean (SD)-Clinic Sample	Mean (SD)-Community Sample	t	*p*
Strengths and Difficulties Questionnaire (SDQ)	20.34 (6.28)	14.99 (6.76)	5.80	< .001
Parenting Scale (PS)	102.74 (21.35)	93.39 (20.59)	2.63	.009
Parenting Scale-Adolescent (PSA)	48.88 (8.78)	45.95 (11.22)	1.14	.260
Being a Parent Scale (BPS)	61.50 (13.54)	68.09 (14.28)	2.45	.015
Depression Anxiety Stress Scale (DASS)	26.75 (26.72)	21.35 (21.70)	1.52	.133

Note. Higher scores indicate greater difficulty for SDQ, PS, and DASS. Lower scores indicate greater difficulty for BPS.

the five subscales of the SDQ. The results of this MANOVA were significant (F (5, 67) = 8.80, $p < .001$, Wilk's Lambda = .604, partial $\eta^2 = .396$), indicating overall improvement on the SDQ from pre- to post-intervention. Univariate results suggested that there were improvements on all SDQ subscales except for peer problems (see table 7 for the full results).

In addition, clinical significance was assessed by comparing the frequency of SDQ total scores in the clinical, borderline, or nonclinical ranges. Before the intervention, 65 of the cases (91%) were in the clinical or borderline range of functioning. After the parenting intervention, this figure fell to 49 cases (68%) that were in the clinical or borderline range. A chi-square analysis was significant ($\chi^2 = 26.54$, $p < .001$), which indicated that there was positive change from one level of functioning to another. Overall, these results suggested that this hypothesis was supported for the clients of the children's centre.

For the sample from the community, there was also a small number ($n = 27$) of participants who completed the teen program that had complete data available for this analysis, and so participants of the Group and Group-Teen programs were combined for this analysis ($N = 166$). Note that the analyses for this hypothesis were run separately for the teen and group participants, and together, and a similar pattern of results emerged. A one-way repeated measures MANOVA was statistically significant (F (5, 161) = 13.45, $p < .001$, Wilk's Lambda = .705, partial $\eta^2 = .295$), indicating improvement from pre- to post-intervention on the SDQ. Univariate results suggested that there were improvements on all subscales of the SDQ (see table 8 for full results).

Table 7

Univariate Results for Hypothesis 1a- Children's Centre Sample

Subscale	Mean (SD)- Pre	Mean (SD)- Post	F	*p*	Partial η^2
SDQ- Emotional Symptoms	4.24 (2.49)	3.31 (2.43)	20.64	< .001	.225
SDQ- Conduct Problems	5.38 (2.19)	4.32 (2.29)	19.10	< .001	.212
SDQ- Hyperactivity	6.90 (2.41)	5.75 (2.58)	22.00	< .001	.237
SDQ- Peer Problems	3.80 (2.25)	3.64 (2.34)	0.66	.420	.009
SDQ- Prosocial Behaviour	5.97 (2.10)	6.58 (1.94)	9.61	.003	.119

Note. Higher scores indicate greater difficulty for all subscales except prosocial behaviour.

Table 8

Univariate Results for Hypothesis 1a- Community Sample

Subscale	Mean (SD)- Pre	Mean (SD)- Post	F	*p*	Partial η^2
SDQ- Emotional Symptoms	3.25 (2.43)	2.56 (2.18)	21.34	< .001	.115
SDQ- Conduct Problems	3.66 (2.20)	2.68 (1.84)	41.22	< .001	.200
SDQ- Hyperactivity	5.56 (2.47)	4.68 (2.42)	34.27	< .001	.172
SDQ- Peer Problems	2.80 (2.04)	2.46 (1.88)	8.61	.004	.050
SDQ- Prosocial Behaviour	7.04 (1.91)	7.63 (1.81)	18.00	< .001	.098

Note. Higher scores indicate greater difficulty for all subscales except prosocial behaviour.

In addition, frequency of SDQ total scores in the clinical, borderline, and nonclinical ranges were compared in order to assess clinical significance of the changes in functioning. Before the intervention, 91 of the cases (54%) were in the clinical or borderline range of functioning. After the parenting intervention, this figure fell to 60 cases (37%) that were in the clinical or borderline range. A chi-square analysis was significant ($\chi^2 = 71.04$, $p < .001$), which indicated that there was positive change from one level of functioning to another. Overall, these results suggested that this hypothesis was supported for the community sample.

A 2 x 2 repeated measures MANOVA was conducted to compare the effectiveness of the program in the two samples. The SDQ subscales were used as the outcome variable for this analysis. Overall, there was a main effect of time (F (5, 224) = 19.65, $p < .001$, Wilk's Lambda = .695), indicating that there were improvements from pre- to post-intervention on this measure. Univariate analyses indicated significant improvement on all subscales. There was also a main effect of sample (F (5, 224) = 9.11, $p < .001$, Wilk's Lambda = .831), indicating that the participants in the clinic sample had overall higher levels of distress on the SDQ than participants in the community sample. This pattern was apparent on all of the SDQ subscales. There was no significant interaction between sample and time (F (5, 224) = 0.58, $p = .718$, Wilk's Lambda = .987), indicating that the program was not differentially effective for one sample or the other. This pattern was apparent on all of the SDQ subscales. See table 9 for univariate results.

Thus, hypothesis 1 was supported, as there were significant improvements from pre- to post-intervention overall for both the clinic and community samples. There was no

Table 9

Univariate Results for MANOVA Comparing Two Samples

	Time		Sample		Time * Sample Interaction	
Subscale	F	*p*	F	*p*	F	*p*
SDQ- Emotional Symptoms	37.26	<.001	10.01	.002	0.80	.372
SDQ- Conduct Problems	53.61	<.001	41.54	<.001	0.09	.762
SDQ- Hyperactivity	51.02	<.001	13.84	<.001	0.92	.339
SDQ- Peer Problems	5.29	.022	15.32	<.001	0.67	.416
SDQ- Prosocial Behaviour	22.89	<.001	20.28	<.001	0.01	.941

significant improvement on the peer problems subscale for the clinic sample. The program showed similar change in outcome for both samples.

Hypothesis 1b: Parent Outcome.

It was anticipated that there would be a significant improvement in parent outcomes from pre- to post-intervention. Similar to hypothesis 1a, analyses were run separately for each of the samples (children's centre and community) and programs (Group and Group-Teen). Four one-way, repeated measures MANOVAs were used to test this hypothesis. For the parents who participated in the Group program at the children's centre (n = 24), the outcome variables for this analysis were the three subscales of the Parenting Scale, and the two subscales of the Being a Parent Scale. Note that although the sample is small for this group, the outcome measures differ between the group and teen programs, and therefore cannot be combined. The results of this MANOVA were significant, (F (5, 19) = 19.000, p = .016, Wilk's Lambda = 0.503, partial η^2 = .497). Univariate contrasts suggested that improvements were found on all subscales, except for the BPS Satisfaction subscale. See table 10 for the full results.

For the parents who participated in the mixed Group-Teen program at the children's centre (n = 20), the outcome variables were the two subscales of the PSA. The results of this MANOVA were significant (F (2, 18) = 24.085, p < .001, Wilk's Lambda = .272, partial η^2 = .728). The univariate contrasts found significant improvements in both subscales (see table 11 for full results). Therefore, this hypothesis was supported. For the parents who participated in the Group program in the community (n = 148), a one-way repeated measures MANOVA was run with the subscales of the PS and BPS as outcome variables. There was a significant multivariate effect (F (5, 143) = 16.16, p <

Table 10

Univariate Results for Hypothesis 1b- Group at Children's Centre

Subscale	Mean (*SD*)- Pre	Mean (*SD*)- Post	F	*p*	Partial η^2
PS Laxness	16.17 (6.99)	12.54 (4.12)	8.598	.007	.272
PS Overreactivity	18.71 (5.90)	14.76 (5.64)	7.243	.013	.239
PS Hostility	6.14 (3.49)	4.88 (2.31)	4.435	.046	.162
BPS Satisfaction	34.92 (9.15)	38.49 (8.60)	3.165	.088	.121
BPS Efficacy	25.78 (7.55)	30.48 (6.08)	12.952	.002	.360

Note. Higher scores on PS subscales indicate more difficulty, whereas lower scores on BPS subscales indicate more difficulty.

Table 11

Univariate Results for Hypothesis 1b- Group-Teen at Children's Centre

Subscale	Mean (*SD*)- Pre	Mean (*SD*)- Post	*F*	*p*	Partial η^2
PSA Laxness	24.40 (5.82)	18.35 (4.55)	27.55	< .001	.592
PSA Overreactivity	22.30 (4.91)	17.60 (5.95)	29.96	< .001	.612

Note. Higher scores indicate greater difficulty for all PSA subscales.

.001, Wilk's Lambda = .639, partial η^2 = .361). Univariate contrasts revealed significant improvements on all subscales (see table 12 for full results).

For the parents who participated in the Group-Teen program in the community (n = 48), a one-way repeated measures MANOVA was run with the subscales of the PSA. There was a significant multivariate effect (F (2, 46) = 22.83, $p < .001$, Wilk's Lambda = .502, partial η^2 = .498). Univariate contrasts revealed significant improvements on both subscales (see table 13 for full results).

Thus, this hypothesis was supported, as improvements in parent outcomes were found for both samples and both programs from pre- to post-intervention. Participants in the group program from the clinic sample did not show a significant improvement in parenting satisfaction.

Hypothesis 2: Effectiveness for Pre-Post Internalizing and Externalizing Symptoms

Hypothesis 2 was that the intervention would be more effective for children presenting with comorbid internalizing and externalizing problems than those with pure externalizing problems. Data for this hypothesis were only available for children who were clients of the children's centre. Data from participants who completed the Group program (n = 7) and the combined Group and Group-Teen programs (n = 37) were analyzed together. Two groups were selected based on clinical cutoff scores from the Internalizing problems and Externalizing problems subscales from the BCFPI. Children were classified as having externalizing problems only (n = 19), or comorbid internalizing and externalizing problems (n = 25). As explained earlier, due to sample size limitations and missing data, the SDQ subscales were the only outcome variables used.

Table 12

Univariate Results for Hypothesis 1b- Group in Community Sample

Subscale	Mean (*SD*)- Pre	Mean (*SD*)- Post	*F*	*p*	Partial η^2
PS Laxness	13.80 (5.17)	11.13 (4.76)	43.65	< .001	.229
PS Overreactivity	16.82 (6.67)	13.23 (6.12)	56.60	< .001	.278
PS Hostility	5.23 (2.52)	4.53 (2.31)	10.71	.001	.068
BPS Satisfaction	38.13 (7.84)	42.11 (6.93)	44.73	< .001	.233
BPS Efficacy	29.50 (6.60)	32.46 (5.55)	34.47	< .001	.190

Note. Higher scores indicate greater difficulty for all PS subscales. Lower scores indicate greater difficulty for both BPS subscales.

Table 13

Univariate Results for Hypothesis 1b- Group-Teen in Community Sample

Subscale	Mean (*SD*)- Pre	Mean (*SD*)- Post	*F*	*p*	Partial η^2
PSA Laxness	20.54 (6.55)	16.02 (5.40)	29.55	< .001	.386
PSA Overreactivity	22.94 (6.74)	17.82 (6.18)	41.08	< .001	.466

Note. Higher scores indicate greater difficulty for both PSA subscales.

A 2 x 2 mixed model MANOVA was conducted (n = 44). The two time points (pre-intervention and post-intervention) were the within-factor, and the two groups based on BCFPI scores were the between-factor (externalizing only, or comorbid). The outcomes for this analysis were the five subscales from the SDQ. There was an overall improvement from pre-intervention to post-intervention (F (5, 38) = 7.59, p < .001, Wilk's Lambda = .50, partial η^2 = .50). Follow-up analyses indicated that significant improvements were seen for all subscales except for the Peer Problems subscale. See Table 14 for means, and Table 15 for univariate results.

There was also a significant main effect of group (F (5, 38) = 3.30, p = .014, Wilk's Lambda = .70, partial η^2 = .30). The children with comorbid difficulties had overall higher levels of symptomology. A follow-up univariate contrast revealed that there were significant differences between groups on the Emotional Symptoms subscale (F (1, 42) = 14.89, p < .001, partial η^2 = .26), on which the children who had comorbid symptoms scored higher than did the externalizing only group.

There was no significant interaction overall between time and group (F (5, 38) = 1.97, p = .105, Wilk's Lambda = .79, partial η^2 = .21), which indicates that there was no overall differential treatment effect based on groups. Univariate results suggested that there was an interaction between time and group for hyperactivity (F (1, 42) = 4.63, p = .037, partial η^2 = .10). More specifically, the children with externalizing problems only showed a steeper decline in hyperactive symptoms from pre- to post-intervention. There were no other significant interactions on the other SDQ subscales.

This hypothesis was partially supported. There was a significant effect of time, indicating improvement from pre- to post intervention. The comorbid group showed

Table 14

Means for Hypothesis 2- SDQ Subscales by Group

Subscale	Pre		Post	
	Mean	*SD*	Mean	*SD*
SDQ- Emotional Symptoms				
Externalizing	3.21	2.21	2.50	2.06
Comorbid	5.93	2.03	4.48	2.20
Total	4.75	2.49	3.63	2.34
SDQ- Conduct				
Externalizing	5.39	2.25	4.31	2.13
Comorbid	6.30	2.04	5.34	2.08
Total	5.91	2.16	4.90	2.14
SDQ- Hyperactivity				
Externalizing	7.43	1.55	5.42	2.14
Comorbid	7.36	2.20	6.75	2.39
Total	7.39	1.93	6.18	2.35
SDQ- Peer Problems				
Externalizing	3.95	2.69	3.47	2.64
Comorbid	4.24	1.83	3.82	2.06
Total	4.11	2.22	3.67	2.31
SDQ- Prosocial Behaviour				
Externalizing	5.68	1.97	6.37	1.91
Comorbid	5.57	1.91	6.34	1.87
Total	5.62	1.91	6.35	1.87

Note. Higher scores indicate greater difficulty for all SDQ subscales except prosocial behaviour.

Table 15

Univariate Results for Hypothesis 2

	Time		Group		Time*Group Interaction	
Subscale	*F*	*p*	*F*	*p*	*F*	*p*
SDQ- Emotional Symptoms	24.71	< .001	14.89	< .001	2.89	.097
SDQ- Conduct Problems	9.02	.004	3.10	.086	0.03	.862
SDQ- Hyperactivity	16.09	< .001	1.26	.268	4.63	.037
SDQ- Peer Problems	3.26	.078	2.19	.627	0.01	.910
SDQ- Prosocial Behaviour	7.40	.009	0.11	.892	0.03	.875

overall higher levels of symptomology. There was no overall interaction between group and time, indicating that the program was similarly effective for children experiencing externalizing problems only, and those with comorbid internalizing and externalizing problems. There was, however, an interaction found for hyperactivity, for which children presenting with externalizing problems only had greater gains.

Hypothesis 3: Comparison of Dropouts and Program Completers

Hypothesis 3 is that parents who do not complete the program will differ from those who do complete the program on demographic variables, initial parent mental health, and initial child behaviour scores. A series of t-tests and chi-square tests were used to compare the participants who completed the program and those who did not. Data from the clinic sample (n = 178) and the community sample (n = 360) were analyzed separately for this hypothesis. Parents who attended six to eight times (out of eight sessions), were considered completers (n = 241), and those who attended zero to five times were considered dropouts (n = 297). This definition identifies 45% of participants who began the program as program completers. A chi-square test indicated that participants were not more likely to be a dropout or completer based on the sample (clinic or community, $\chi^2 = 0.15$, $p = .699$). A Bonferroni correction was used to control for high error rates (criterion is now $p < .0125$ for t-tests). T-tests were run for ratio variables. No significant differences were found for child age, number of children, initial DASS scores, or initial SDQ scores for either sample. See table 16 for full results.

Chi-square tests were run for categorical variables. A Bonferroni correction was used to control for high error rates for these tests (criterion is now $p < .005$ for chi-square

Table 16

Results for Hypothesis 3- Ratio Variables

	Clinic Sample			Community Sample		
	Mean (*SD*)	*T*	*p*	Mean (*SD*)	*T*	*p*
Child Age						
Dropout	9.66 (2.70)	0.61	.546	7.68 (4.26)	0.29	.776
Completer	9.92 (2.18)			7.83 (4.23)		
Number of Children						
Dropout	2.16 (1.12)	2.44	.016	2.04 (1.01)	0.29	.770
Completer	2.65 (1.13)			2.00 (0.94)		
DASS Total Pre						
Dropout	26.13 (27.56)	0.46	.648	25.16 (26.55)	0.57	.572
Completer	23.84 (23.09)			23.43 (22.58)		
SDQ Total Pre						
Dropout	21.19 (5.17)	0.73	.466	15.79 (6.88)	1.77	.079
Completer	20.33 (6.28)			14.20 (6.91)		

Note. Higher scores indicate greater difficulty for SDQ, and DASS.

tests). In the community sample, no significant associations were found between dropout status and any of the variables tested, which were child gender, year, marital status, relationship to child, family structure, mother's education level, father's education level, mother's employment status, father's employment status, sample, and program (see table 17). In the clinic sample, there was a significant association between dropout status and year of program ($\chi^2 = 20.32$, $p = .001$), where there were more dropouts than expected in 2012, and fewer dropouts than expected in 2008 and 2013. The remaining variables tested in the clinic sample (see above) showed no significant associations. Therefore this hypothesis was not fully supported, as the only difference between dropouts and completers was year in the clinic sample.

Table 17

Results for Chi Square Tests for Hypothesis 3 Categorical Variables

	Clinic Sample		Community Sample	
	Chi-Square Value	*p*	Chi-Square Value	*p*
Program (Group or Teen)	0.71	.401	0.37	.545
Child Gender	0.18	.671	0.28	.598
Year	20.32	.001	13.56	.035
Marital Status	9.45	.051	8.36	.079
Relationship to Child	4.65	.590	5.59	.470
Family Structure	6.56	.087	10.25	.017
Mother's Education	2.17	.539	1.14	.767
Father's Education	12.07	.007	9.71	.021
Mother's Employment Status	0.97	.615	0.79	.673
Father's Employment Status	0.18	.670	0.24	.624

CHAPTER 4

Discussion

This study sought to evaluate parent and child outcomes based on participation in the Triple P level 4 Group and Group-Teen programs in both clinical and community settings. The results of this study overall supported positive changes from pre- to post-intervention. In the sections below, the unique aspects of the present study sample are reviewed to provide a context for discussing the results. Next, the results from each hypothesis are interpreted, and the implications, study limitations, and suggestions for future research are discussed.

Sample Characteristics

There are some key characteristics of this sample that may differ from samples collected by other researchers, and from the population from which this sample was drawn. In the clinic sample, 74% of the participants were boys, whereas 51% of the community sample was male. This difference in gender ratios could have affected the results of this study. Indeed, a meta-analysis by De Graaf et al. (2008) reported stronger effects for studies with a higher ratio of boys to girls in the sample. However, in the present study, similar results were found in this study between the clinic and community samples, which had different ratios of boys to girls. It is common for a greater number of boys to be involved in Triple P since boys are more likely to present with externalizing problems, and children with externalizing problems are more likely to be referred for treatment (Fanti, 2007).

Another key characteristic of this sample to consider is the rate of parental employment. In this sample, 41% of mothers and 63% of fathers for whom this

information was available reported being employed. This rate is much lower than the average in the city in which this study took place (Windsor, Ontario). In May 2011, the unemployment rate, which refers to the number of people searching for a job relative to the total labour force, was 12.2% in Windsor (Statistics Canada, 2013). This figure dropped to 8.5% as of November 2013 (Statistics Canada, 2013). The employment rate in May 2011 was 49.7%, which refers to the percentage of people aged 15 years and older who are employed (Statistics Canada, 2013). The difference in employment status between the sample in this study and the average of the population indicates that this sample is not representative of the region in which the study was conducted. By extension, the sample collected may have a lower socioeconomic status than participants in other studies, and the population of Windsor.

In addition, it is important to understand the context of the country and in which this study was conducted. Canada's universal health care system allows people to access these services free of change, which eliminates financial barriers of people with a lower socioeconomic status (Pylypchuck & Sarong, 2013). Windsor borders with the United States, particularly Detroit, Michigan, which has experienced economic difficulties that have contributed to Windsor's high unemployment rates. Windsor also has high diversity, a high proportion of manufacturing jobs, and a poor public transit system (Statistics Canada, 2013). These sample characteristics should be taken into account when considering the results of this study.

It is also important to note that many of the families may have been involved with other programs and services that could have contributed to the positive outcomes found

in this study after participation in Triple P. This information was not available, and thus could not be taken into account when considering the results of this study.

Hypothesis 1a

Hypothesis 1a predicted that there would be significant improvements from pre to post intervention in child outcomes. This hypothesis was supported for both the Group and Group-Teen programs in the community and clinic samples. These results are consistent with the robust evidence base supporting the general effectiveness of Triple P in improving child mental health outcomes (Cann, Rogers, & Matthews, 2003; Crisante & Ng, 2003; De Graaf, Speetjens, Smit, de Wolff & Tavecchio, 2008; Dean, Myors, & Evans., 2003; Markie-Dadds, & Sanders, 2006a; Nowak & Heinrichs, 2008; Ralph & Sanders, 2003; Sanders, 2012).

In the present study, when the child behavioural subscales were considered individually, there were no significant improvements in peer problems for children in the clinical sample. Significant improvement was found on all other subscales (i.e., emotional symptoms, hyperactivity, conduct problems, and prosocial behaviour) in both samples. Other studies that also used the Strengths and Difficulties Questionnaire (Goodman, 1997) as an outcome measure to evaluate the effectiveness of level 4 Group Triple P also failed to find significant improvements in the peer problems subscale (Crisante & Ng, 2003; Fujiwara et al., 2011; Matsumoto et al., 2010; Sanders et al., 2008). The lack of significance was not confined to the peer problems subscale in these other studies, which also did not find significant results in other subscales of the SDQ (Crisante & Ng, 2003; Fujiwara et al., 2011; Matsumoto et al., 2010; Sanders et al., 2008). The effectiveness of Triple P for specific subscales of the SDQ is inconsistent, and

may be related to differences in sample characteristics. For example, Fujiwara et al. (2011) studied a sample of Japanese parents with a three year old child, whereas Sanders et al. (2008) studied a population-based sample of Australian parents of children aged four to seven years. These differences in the age of the children, and the cultural context in which the interventions were provided may have implications for the results and the way that they are interpreted. Triple P has been implemented and evaluated in a wide range of samples (Sanders, 2012), which attests to its universality, but the diversity in sample characteristics can make it difficult to interpret divergent results.

There are many possible explanations for the lack of significant improvement in the peer problems domain for the children in the clinical sample. The lack of statistically significant improvement in peer problems was only apparent in the clinical sample in the present study, and was not found in the community sample. A possible explanation for this finding is that children typically interact with peers in the school environment, and so the parent completing the questionnaire may not have had enough opportunity to observe changes in peer problems in their child. Another explanation is that it may take longer than the eight weeks in the program for a child to build new relationships with peers, or to repair negative relationships.

The children from the clinic sample had higher initial ratings on peer problems on referral when compared to the children from the community sample, which could indicate that this group is in greater need of specialized, individualized treatment. It is possible that the children in these studies did not receive an adequate intervention for addressing peer relationship problems (Sanders et al., 2008). Interventions that are provided directly to the child could be more suited to this goal. Perhaps the Triple P program could include

more specific instruction to parents on how to encourage their children to interact with others appropriately, and teach them to model or role play with their child to improve these skills. However, it is important to remember that significant improvement in peer problems was found in the community sample, which indicates that level 4 Group Triple P may be effective in this domain for some children.

One finding that should be taken into consideration is that there were significant improvements on the emotional symptoms subscales for both samples in this study. This finding provides some evidence that level 4 Triple P Group may be effective in improving symptoms such as somatic complaints, anxiety, and depression in these children. Triple P is usually indicated for children with high levels of externalizing problems, but this research suggests that it may be effective in improving internalizing symptoms as well.

Hypothesis 1b

Hypothesis 1b predicted that there would be significant improvements in parent outcomes from pre to post intervention. This hypothesis was supported overall, which implies that parents improved their parenting skills, and felt more confident in their roles as parents after participating in Triple P. This finding is consistent with the large evidence base supporting the effectiveness of Triple P in improving parenting skills and other parent-based outcomes (Cann, Rogers, & Matthews, 2003; Crisante & Ng, 2003; De Graaf, Speetjens, Smit, de Wolff & Tavecchio, 2008; Dean, Myors, & Evans., 2003; Markie-Dadds, & Sanders, 2006b; Nowak & Heinrichs, 2008; Ralph & Sanders, 2003).

When the parenting subscales were considered individually, there was no significant improvement in parenting satisfaction among the participants in the clinic

sample. Significant differences were found in all other subscales (i.e., laxness, overreactivity, hostility, and efficacy) in both samples, and there was significant improvement in parenting satisfaction in the community sample. Many other studies that have used the same measure when evaluating Triple P have found significant improvements in parental satisfaction (Bodenmann et al., 2008; Bor et al., 2002; Cann et al., 2003; Leung et al., 2003; Markie-Dadds & Sanders, 2006b; Rogers et al., 2003; Sanders et al., 2004). Thus, this result is not consistent with previous findings.

Although not statistically significant, there was a slight improvement in parental satisfaction for parents in the clinic sample. It is possible that there was not sufficient power due to sample size in this study to detect the effect. Significant improvements on this subscale were found for parents in the community sample, which had a higher sample size. The lack of improvement on parental satisfaction could have been partially related to a ceiling effect, since parents reported high levels of satisfaction in their role as parents in both pre- and post-intervention questionnaires. Indeed, the initial ratings of satisfaction were higher than what has been reported in other studies using the same measure (Leung et al., 2003; Markie-Dadds & Sanders, 2006b; Rogers et al., 2003; Sanders et al., 2004). Social desirability could have played a role in the parent's report of satisfaction, as parenting questionnaires are particularly susceptible to this bias (Gooden & Struble, 1990). It is also possible that these parents require additional supports in their role as parents. This support could take the form of individualized therapy, respite care for their children, or involvement in a parent support group. Some of the items on the satisfaction scale of this measure may be reflective of parental mental health concerns, such as depression (e.g., *I go to bed the same way I wake up in the morning, feeling I*

have not accomplished a whole lot; Johnston & Mash, 1989*).* The parents also may have negative attributions for their child's behaviour or for themselves as parents, which could be addressed by individual therapy. Perhaps the Triple P program could address issues related to parenting satisfaction more directly.

Hypothesis 2

Hypothesis 2 predicted that children presenting with clinical levels of both externalizing and internalizing symptoms would show more improvement from pre to post intervention when compared to those presenting with clinical levels of externalizing symptoms only. This finding was partially supported. There was overall improvement from pre- to post-intervention, as expected. The children presenting with comorbid difficulties also had higher overall levels of symptomology, particularly on the emotional symptoms subscale. This finding is consistent with research that indicates that children with comorbid difficulties have higher levels of impairment than do those with pure internalizing or externalizing difficulties (Fanti, 2007).

Overall, there was no significant interaction between time and group, indicating similar improvements in outcome measures for the two groups of children. There was, however, an interaction found for the hyperactivity subscale, in which the children with externalizing problems only showed more improvement after the intervention. It is somewhat surprising that the comorbid group did not experience steeper declines since this group had the highest levels of symptomology, and thus the most "room" for improvement. These findings are not consistent with past research which suggests that children with comorbid difficulties show the most improvement in response to other interventions (Connell et al., 2008). The sample studied in Connell et al. (2008) was

much younger than the children in the present study (age two to four years, compared to age four to 16 years in the present study clinic sample), which could have had an effect on the results. Perhaps children with comorbid difficulties are more responsive to earlier intervention than those with pure externalizing problems. Younger children can be more responsive to interventions than older children and adolescents which could partially explain this discrepancy in results (Hautmann et al., 2011; Weisz, Weiss, Alicke, & Klotz, 1987). It could be that the hyperactivity expressed by children with externalizing problems only was a simpler problem that was more directly related to poor parenting skills, which could then be ameliorated by improving the strategies used by parents while interacting with their children (Gilliom & Shaw, 2004; Reitz et al., 2006). It is possible that the hyperactivity seen in the children with comorbid difficulties could be related to more complicated issues than parenting, such as anxiety, or other disorders that are present.

Although the finding of similar improvements in outcome measures for the externalizing only and comorbid groups is counter to the present study hypothesis, it is nonetheless a positive finding. Triple P was designed to be effective for a broad array of children's mental health problems (Sanders, 1999), so it is encouraging that positive changes were found for both subgroups. This finding implies that Triple P can be used to address a number of problems in children experiencing different difficulties with a similar degree of success. The present study provides support for continuing to offer Triple P to families of children with externalizing problems, and those with comorbid externalizing and internalizing problems.

Hypothesis 3

Hypothesis 3 predicted that parents who did not complete the program would differ from those who completed the program on demographic variables, initial child behavioural problem scores, and parent mental health ratings. This hypothesis was not supported, as the only significant difference that was found between these groups was the year in which the program was offered for the clinical sample. It was not possible to predict dropout status by demographics, the severity of child's problems, or the parents' mental health. This finding is not consistent with past research which suggests that there are differences between parents who drop out and those who do not in many factors, such as parent age, socioeconomic status, race, marital status, initial levels of child behaviour, maternal negative affect and family dysfunction (Bor et al., 2002; Cunningham et al., 2000; Danoff et al., 1994; Dumas et al., 2007; Sanders et al., 2000; Winslow et al., 2009). Consistent with the present study findings, some studies evaluating Triple P have found no differences between participants who dropped out and those who did not on variables such as risk factors, initial child behaviour and parent mental health (Bor et al., 2002; Markie-Dadds & Sanders, 2006b). It is likely that dropout status is difficult to predict, and is related to factors that were not measured in this study. Situational factors that were not measured in the present study may have played a greater role in a parent's decision to drop out or complete the program. Some examples could be time constraints, transportation, family commitments, perception of a lack of progress, negative perceptions of the group, lack of childcare, or other factors (Dumas et al., 2007). These factors should be investigated more thoroughly in future research.

In the present study, year in which the program was offered was found to be significantly associated with dropout status in the clinic sample. These differences may be due to factors specific to the groups that were offered at this time. For example, differences in facilitators, group dynamics, time and location in which the program was offered, and other factors may have influenced the parent's decision to complete the program or not. These factors would have varied from group to group, and may explain why there were differences in dropout rates in these years.

The dropout rate of 45% found in the present study is considerably higher than the rate that is typically reported in other studies of Triple P. Dropout rates ranging from 16% to 28% have been reported in studies evaluating the effectiveness of Triple P (Bor et al., 2002; Markie-Dadds & Sanders, 2006b; Martin & Sanders, 2003; Sanders et al., 2000; 2004; 2007; 2008). Many of these studies provided the Triple P intervention in the context of research, so greater efforts may have been made to ensure that parents complete the program, whereas in the present study, Triple P was offered primarily as a service to families with research as a secondary goal. The dropout rate of 45% may not be unusual for parenting interventions more generally, as dropout rates in outpatient family therapy tend to range from 40% to 60% (Nordstrom, 2004). A study conducted by Dumas et al. (2007) reports that 49% of mothers who enrolled in a parenting program completed at least five of eight sessions, and they considered this to be a high attendance rate. The mothers in the Dumas study (2007) were of diverse ethnic and socioeconomic backgrounds, and were recruited from local daycare settings. This sample appears to be similar to the community sample that was studied in the present study, since both have a

sizeable proportion of single parents, lower family income, and lower educational attainment (Dumas et al., 2007).

Although the dropout rate may not be unusual for this type of intervention, it would still be beneficial to put forth efforts to encourage parents to attend, as attendance in the program is associated with better outcome (Baydar et al., 2003; Nix et al., 2009). It is important to put in place methods to reduce barriers to participation, such as providing childcare, transportation, and convenient locations. Parental perceptions of barriers to treatment may play a key role in determining whether a parent successfully participates in a family-based intervention or not (Nordstrom, 2004). Information could be provided to parents to address their concerns. It would be beneficial for future research to further investigate why some parents drop out of the Triple P program, and what could be done to improve parent participation.

Implications, Limitations, and Directions for Future Research

There are many ways in which the results of this study can be applied in practice. These findings suggest that significant improvements in child mental health and parenting skills are associated with both the level 4 Group and Group-Teen Triple P programs in clinical and community samples. Similar levels of improvement were seen in children with externalizing problems alone and those with comorbid internalizing and externalizing problems. Although parent management training programs such as Triple P are typically implemented for children presenting primarily with externalizing problems (Connell et al., 2008), it can be effective in treating children with comorbid internalizing problems, and it can be effective in improving internalizing symptoms such as emotional symptoms.

There were some limitations of the current study that need to be taken into consideration when interpreting the results. There was a large amount of missing data, due to the high level of dropouts, and measures that were not completed. This missing data could lead to some bias in the information that was collected. For example, parents who did not perceive progress in the program may have dropped out prematurely, which would influence the results of this study. However, there were no significant differences found in the characteristics of parents who dropped out compared to those who completed the program. Nearly half of the participants who began the program did not complete it, which implies that many parents who may be able to benefit from Triple P intervention are not receiving it. There is a need to further explore locally how to increase utilization of available resources by these parents, which could be done through the use of qualitative methods such as interviews with parents.

One possible avenue to explore in attempts to improve parent participation is to investigate parent response to the negative language that is used in many of the Triple P measures. Although it is called Positive Parenting Program, many of the subscales for the SDQ and the Parenting Scale (Arnold et al., 1993) are phrased in ways that may be perceived as negative and critical. Some examples of negatively phrased subscale names are conduct problems, peer problems, laxness, over-reactivity, and hostility. Many of these could be rephrased in the positive direction, for example, laxness could be renamed consistency. This shift in wording is especially important since the parents are given feedback about their scores on many of these measures during the telephone sessions. Related to this idea, there could be a greater emphasis on strengths in parent training

research. The SDQ does focus on both strengths and difficulties, but only one of the five subscales (i.e., prosocial behaviour) measures positive behaviour.

The present study examined the program as actually implemented in practice. This approach leads to having high external validity and generalizability of the results, but at the cost of lower internal validity. There are many factors which were not tightly controlled, such as consistency between facilitators, group dynamics, presenting problems of children who were referred, treatment fidelity, and combining the delivery of Group and Group-Teen programs in some sessions. Despite these limitations, it is encouraging that positive results were found supporting the effectiveness of Triple P as it is currently being offered.

There was no control group present in this study that could be used as a comparison group, which means that we are relying on the accuracy of parental self-report. This method introduces an unknown amount of bias, because parents may be reporting inaccurately (Epkins & Meyers, 1994). These inaccuracies could be based on their expectations for improvement, their perception of their child's behaviour, and their opportunity to observe their child's behaviour. Future research would be strengthened by including an expectancy measure, or other sources of information, such as direct observation, teacher-report, or child self-report. However, convergent validity among parent- teacher-, and self-report of child mental health and behaviour tends to be substantial (Epkins & Meyers, 1994). Other studies have found similar results supporting the effectiveness of Triple P using teacher-report and parent-child observation, which suggests that parent-report is a valid representation of change (Hahlweg et al., 2010; Sanders et al., 2004).

The present study also did not follow-up after the intervention had finished to assess the maintenance of treatment gains. However, many other studies evaluating Triple P have conducted follow-ups up to three years later and found that families tend to maintain their gains (Dean et al., 2003; Hoath & Sanders, 2002; Ireland et al., 2003; Martin & Sanders, 2003; Sanders et al., 2007; Sanders et al., 2008). Other limitations are that statistical assumptions were violated, and that information was not available about whether families were participating in other interventions or services which could have contributed to improvements in parenting and child mental health.

Children presenting with internalizing problems are referred to Parent Management Training programs less frequently than are children with externalizing problems alone (McConaughy & Skiba, 1993), but there is some evidence from the present study that Triple P would be effective in improving internalizing problems as well (i.e. there was significant improvement on the emotional symptoms subscale for all groups). Some of the parenting strategies that are taught in Triple P (e.g., safe and engaging environment) could serve to promote greater emotion regulation and a more positive parent-child relationship. There is very little research that has examined the effectiveness of Triple P in children presenting with internalizing problems, so explicit evaluation of the Triple P intervention for children presenting with internalizing problems could be a useful direction for future research.

There are many ways in which future research could build upon the current knowledge in this area. There is a lot of support for the general effectiveness of Triple P in many countries, but there has been little research conducted in Canada. It is clear that there are many benefits to parents participating in Triple P, so future research should

move beyond simple effectiveness studies and consider some of the more specific issues, such as who the program is the most effective for, what can be done to improve parenting satisfaction, what factors contribute to parents dropping out, and how the child's peer relations can be better addressed. There has been little research that has examined the effectiveness of Triple P for children presenting with internalizing problems, which could be done in future research. Although it is much more convenient to rely on parent-report, future studies could be strengthened with inclusion of additional sources of information, including qualitative methods, additional informants, observational components, and the child's perspective. Supplementing parent report with other sources of information on child behaviour is especially important since parent-report can be particularly influenced by social desirability in responding (Nordstrom, 2004).

Overall, the results of this study suggest that level 4 Group and Group-Teen Triple P is an effective intervention for improving child and parent outcomes for a wide variety of presenting problems. These results suggest that continuing to devote community resources to making Triple P available to parents is warranted. Further, it will be important to study variables related to non-completion so that it is possible to encourage more families to take advantage of the potential benefits available to them through participation in Triple P.

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VITA AUCTORIS

NAME:	Jenna B. Jones
PLACE OF BIRTH:	Waterloo, ON
YEAR OF BIRTH:	1990
EDUCATION:	Great Lakes Christian High School, Beamsville, ON, 2008
	Brock University, B.A.(Hons.), St. Catharines, ON, 2012