

A Randomized Controlled Trial of Group Triple P With Chinese Parents in Mainland China

Behavior Modification

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Abstract

This study evaluated the effects of Group Triple P with Chinese parents on parenting and child outcomes as well as outcomes relating to child academic learning in Mainland China. Participants were 81 Chinese parents and their children in Shanghai, who were randomly allocated to an intervention group or wait-list control group. Parents in the intervention condition received Group Triple P training, and parents and children were assessed at three/two time points. Compared with the control group, parents in the intervention group reported significant improvements in child adjustment problems, parenting practices, parental adjustment, and parenting self-efficacy at post-assessment. Moreover, there was a significant increase in parents' satisfaction with children's academic achievement and a reduction in children's academic problem behaviors at post-intervention. All these effects were maintained at 6-month follow-up. There was also a significant increase in the child report of positive parenting at post-intervention.

Keywords

parenting program, Triple P, randomized controlled trial, Mainland China

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Introduction

Parenting programs based on social learning models have been developed to help parents to promote their children's development and to prevent and address developmental, behavioral, and emotional problems (Sanders, 2012). Numerous meta-analyses (e.g., Brestan & Eyberg, 1998; Coren, Barlow, & Stewart-Brown, 2003; Sanders, Kirby, Tellegen, & Day, 2014) have shown that parenting programs improve parenting practices and parenting competence, and reduce children's behavioral and emotional problems. Such parenting programs are effective for a variety of populations, targeting different child and parent concerns, and in a range of formats (see reviews, Pidano & Allen, 2015; Sanders, Kirby, et al., 2014). Moreover, although most parenting programs were developed in Western cultures, research has demonstrated that they are also acceptable and effective across a number of Asian regions such as Japan (e.g., Goto, Yabe, Sasaki, & Yasumura, 2010; Matsumoto, Sofronoff, & Sanders, 2010), Hong Kong (e.g., C. Leung, Sanders, Leung, Mak, & Lau, 2003), and Indonesia (e.g., Sumargi, Sofronoff, & Morawska, 2015). A number of studies have also examined the effectiveness of Western-developed parenting programs (e.g., Gu, 2005; Pan & Wu, 2008) in Mainland China. However, these studies suffer several limitations, including small sample sizes, no control group or lack of a randomized controlled research design, and no measures assessing important outcome variables such as parenting practices and child behavioral problems. There is an urgent need to use a more rigorous research design and employ more comprehensive outcome measures to evaluate the effectiveness of Western parenting programs with Chinese parents in Mainland China.

Confucian philosophy and values such as filial piety have greatly impacted on Chinese parenting practices (Chao, 1994; Chau & Landreth, 1997). Chinese parents have been depicted as emphasizing parental authority and children's obedience (Chao, 1994, 2000), and more "authoritarian" (K. Leung, Lau, & Lam, 1998), "restrictive" (Chiu, 1987), "controlling," and "directive" in their parenting (Jose, Huntsinger, Huntsinger, & Liaw, 2000; Lin & Fu, 1990) than European Western parents. However, Chao (1994) argued that Chinese parents' way of "training" children could explain why they scored high on authoritarian parenting, and their parenting practices were actually motivated by their "highly involved concern and care for children" (p. 1113). Furthermore, Chen, Dong, and Zhou (1997) contended that Chinese parents were typically kindhearted and strict with their children, which is similar to authoritative rather than authoritarian parenting style.

However, China has experienced drastic changes in economy, education, family structure, and family lives (see Chang, Chen, & Ji, 2011) in the past four decades, which are related to the well-known reform and opening policy

since the late 1970s. These changes may have impacted on Chinese parenting to some extent. For example, since the enforcement of the one-child policy, Mainland Chinese parents have been found to overindulge their children to some extent (Liu, Lin, & Chen, 2010). Moreover, a recent empirical study also found that Mainland Chinese parents predominantly endorsed authoritative rather than authoritarian parenting, and they emphasized egalitarian and two-way parent-child relationship and were warmth-oriented rather than control-oriented toward their children (Lu & Chang, 2013). These findings are rather different from the results of earlier studies (e.g., Jose et al., 2000; K. Leung et al., 1998; Lin & Fu, 1990), which might reflect changes in Chinese parenting in the past decades. Although these findings obtained from urban areas may not generalize to other areas in China (Chang et al., 2011), it does appear that Chinese parenting has become more authoritative and more similar to Western parenting.

In this context, it is likely that Mainland Chinese parents, particularly those in urban areas, will accept a Western-developed parenting program and use parenting strategies or approaches learned from the program in their own everyday lives. However, whether parenting programs developed in Western countries can have the same effects in Mainland China is a question that still needs to be empirically answered. This is particularly the case, as some research has found that immigrant Chinese parents in Australia and America tend to resist using some parenting strategies in Western parenting programs (Crisante & Ng, 2003; Lau, Fung, & Yung, 2010).

In addition to the limited knowledge of the cultural acceptability of Western parenting programs in Mainland China, there is a paucity of research on the effectiveness of parenting programs on children's academic outcomes, despite the fact that parenting programs have been shown to be effective for a range of child problems such as developmental disabilities (McIntyre, 2008; Plant & Sanders, 2007), autism spectrum disorders (Roberts & Pickering, 2010; Whittingham, Sofronoff, Sheffield, & Sanders, 2009), and attention deficit/hyperactivity disorder (ADHD; Jones, Daley, Hutchings, Bywater, & Eames, 2007). Moreover, abundant literature has demonstrated the relationship between parental factors such as parental goals and parenting practices and children's academic outcomes (see a review, Spera, 2005). For example, authoritative parenting has consistently shown positive associations with children's academic success (Chen et al., 1997; Steinberg, Elmen, & Mounts, 1989). As parenting programs aim to improve the way parents interact with children, theoretically it is likely they will have significant effects on children's academic outcomes. Currently, the majority of parent programs (see Jeynes, 2012; Mattingly, Prislín, McKenzie, Rodriguez, & Kayzar, 2002) that engage parents in children's academic learning are parent involvement

programs that mainly work to promote parents' involvement in children's education such as communication with schools and helping with children's homework. Although research has demonstrated the effectiveness of such programs on children's academic outcomes, overall, the positive effects are generally limited (see a review, Jeynes, 2012). Moreover, these programs do not pay much attention to improving the quality of parents' involvement (Pomerantz, Moorman, & Litwack, 2007), which might limit their effectiveness on children's academic outcomes. Therefore, it makes sense to consider other approaches to improve children's academic outcomes.

In contrast to parent involvement programs that focus on increasing levels of parents' involvement in children's education, parenting programs aim to improve how parents interact with children across numerous aspects of children's lives including their academic learning. Parenting programs can potentially improve the quality of parenting practices in relation to children's academic learning, and thus improve the quality of parents' involvement and promote children's academic adjustment and well-being. However, little research has examined whether parenting programs can have any positive effects on children's academic outcomes. For Chinese parents, research has consistently found that they have high expectations for children's academic achievement (J. T. Y. Leung & Shek, 2011; Li, 2004), and several studies have also shown the positive effects of their authoritative parenting and negative effects of their authoritarian parenting on children's academic outcomes such as academic motivation and achievement (e.g., Chen et al., 1997; Wang & Chang, 2005). Parenting programs that promote authoritative parenting have the potential to meet the particular needs and concerns of Chinese parents relating to children's academic learning, in addition to addressing broader parenting needs. However, to date, this question has not been addressed empirically.

The Triple P—Positive Parenting Program is an example of evidence-based parenting program that aims to enhance parents' knowledge, skills, and competence to prevent children's behavioral, emotional, and developmental problems (Sanders, 2012). Although the effectiveness of Triple P has been demonstrated with Chinese parents in Hong Kong (e.g., C. Leung et al., 2003), these studies have some limitations: First, Hong Kong as a Special Administrative Region of China has a coexistence of multiple cultures and has been more influenced by Western culture across many aspects, including education, politics, and economy, thus it does not well represent Mainland Chinese culture. Second, the studies to date have only used parent-report measures as outcome indicators, which only captured parents' views of intervention outcomes. However, children have different perceptions of parental behaviors (Tein, Roosa, & Michaels, 1994) and their own behavioral and

emotional problems (Achenbach, McConaughy, & Howell, 1987; Phares, Compas, & Howell, 1989) from their parents, thus it is also important to evaluate the effects of parenting interventions from the child's perspective. Moreover, although a recent longitudinal study (Smith, 2015) has found that Group Triple P can produce long-term positive effects on children's reading and numeracy skills, more research is needed to examine whether Triple P has a positive influence on children's academic lives such as increasing children's learning motivation and reducing academic-related problem behaviors.

To address these gaps, we aimed to test the effects of Group Triple P on general parenting practices and child behaviors, as well as parenting in the academic context and children's academic outcomes in Mainland China. A randomized controlled trial design was used, and Chinese parents recruited in Shanghai were randomly allocated to an intervention group or wait-list control group. We hypothesized that compared with the wait-list control group, parents receiving Group Triple P would report significantly greater positive changes after the intervention, including (a) improvements in parenting practices, parental adjustment, family relationships, and parental teamwork; (b) increase in parenting confidence and decrease in children's adjustment problems; (c) improvements in parenting related to child academic learning, reduction in children's academic-related problem behaviors as well as positive changes in parental cognitions about children's academic achievement; (d) reduction in children's learning stress and increase in children's academic self-regulation; and (e) parents would be satisfied with the program.

Method

Participants

Participants were 81 Chinese parents and their children from 81 families residing in Shanghai. Families had to meet a number of eligibility criteria for participation: (a) parents had a child who was in Grade 1, 2, or 3 in a primary school; (b) child was not diagnosed with a disability (including intellectual and learning disabilities); (c) parents currently lived with their child; (d) parent or child was not participating in programs or receiving services which could potentially improve parenting practices or child behavior; and (e) parents were worried about children's academic learning.¹ A majority of parents were mothers (86.4%) and only 11 parents were fathers, with mean age being 37.75 ($SD = 3.32$). Seventy-seven parents (95.1%) were married and three parents were divorced or separated (one family did not answer this question). Most parents (87.7%) had only one child. There were almost the same

number of boys ($n = 40$) and girls ($n = 39$; two families did not report their child's gender), and their mean age was 8.05 ($SD = 1.12$). More than half (53.1%) of the children were in Grade 1, and there were more children in Grade 2 (27.2%) than in Grade 3 (19.8%). More than half of parents (69.2%) had a university degree or higher, and one fifth of parents had trade/technical college qualifications. In all, 76.5% of parents worked full time, 8.7% worked part time or at home, and 13.6% did not work. Only three parents reported difficulties in meeting essential household expenses during the past 12 months. A majority of parents reported that they had enough money left over to purchase most of the things they really wanted (63%) or some of the things they really wanted (32.1%) after they paid for the essential household expenses.² Table 1 shows demographic characteristics of parents in the intervention and wait-list groups.

Measures

Parent measures. The *Family Background Questionnaire* (Sanders & Morawska, 2010) was used to collect demographic information from parents, including parent and child gender and age, parent marital status, family composition, parent education, work, and financial status.

The Parenting and Family Adjustment Scales (PAFAS; Sanders, Morawska, Haslam, Filus, & Fletcher, 2014) assesses parenting practices and family adjustment for parents of children aged 2 to 12 years old, and it has been validated in a Chinese sample (Guo, Morawska, & Filus, 2016). The measure consists of two subscales: Parenting scale (15 items) and Family Adjustment scale (11 items). The Parenting scale has four factors which include parental consistency, coercive parenting, positive encouragement, and parent-child relationship. The Family Adjustment scale has three factors, including parental adjustment, family relationships, and parental teamwork. Items are rated on a 4-point scale from 0 (*not true of me at all*) to 3 (*true of me very much*). The items are summed to provide total scores for the two subscales, with higher scores indicating higher levels of parenting or family dysfunction. To reflect the intervention effects on the different aspects of family adjustment, we reported the results of the three factors of Family Adjustment separately. In this study, the internal reliabilities were $\alpha = .74$ for PAFAS Parenting and .67, .79, and .61 for the three subscales of PAFAS Family Adjustment, respectively.

The Child Adjustment and Parent Efficacy Scale (CAPES; Morawska, Sanders, Haslam, Filus, & Fletcher, 2014) is a parent-report measure of child adjustment problems and domain specific parent self-efficacy, which has been validated in a Chinese context recently (Guo, Morawska, & Filus,

Table 1. Demographic Characteristic of Participants.

	Intervention (<i>n</i> = 40)		Wait-list (<i>n</i> = 41)		<i>t</i>	<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Child's age	8.21	1.26	7.90	0.97	1.21	.231
Parent's age	37.85	3.15	37.66	3.51	0.25	.802
	<i>n</i>	%	<i>n</i>	%	χ^2	<i>p</i>
Child's gender					0.12	.732
Male	20	50	20	48.8		
Female	18	45	21	51.2		
Child's grade					0.45	.800
Grade 1	20	50	23	56.1		
Grade 2	11	27.5	11	26.8		
Grade 3	9	22.5	7	17.1		
Parent's gender					0.08	.779
Male	5	12.5	6	14.6		
Female	35	87.5	35	85.4		
Marital status					0.40	.527
Married/de facto	37	92.5	40	97.6		
Single/separated/divorced	2	5.0	1	2.4		
Number of children					0.08	.784
1	35	87.5	36	87.8		
2	4	10.0	5	12.2		
Education level					1.88	.390
High school or lower	1	2.5	2	4.9		
Trade/technical college qualification	7	17.5	12	29.3		
University degree or higher	30	75	26	63.4		
Work status					5.46	.141
Full time	27	67.5	35	85.4		
Part time	2	5.0	3	7.3		
Home-based paid work	2	5.0	0	0		
Not working	8	20	3	7.3		
Meeting essential expenses over the past 12 months					0.40	.527
Difficulties	2	5.0	1	2.4		
No difficulties	37	92.5	40	97.6		
Finance, earns					2.97	.226
Enough to purchase most of the things	26	65.0	25	61.0		
Enough to purchase only some things	13	32.5	13	31.7		
Not enough to purchase most of the things	0	0	3	7.3		

Note. Percentages do not add up to 100 due to data missing.

2015). The measure comprises two scales: CAPES Intensity (23 items) and CAPES Self-Efficacy (18 items). The former scale assesses behavioral and emotional adjustment in children aged 2 to 12 years old, consisting of three subscales: Emotional Maladjustment scale, Problem Behaviors scale, and Child Competencies scale. Items are rated on a 4-point scale, ranging from 0 (*not true of my child at all*) to 3 (*true of my child very much/most of the time*). The Child Competencies items are reverse scored. Items are summed to yield a total score, a problem behaviors score, a child competencies score, and an emotional maladjustment score, with higher scores indicating more problems. The Self-Efficacy scale measures parents' confidence in managing children's behavioral and emotional problems. Each item is rated on a 10-point scale, ranging from 1 (*certain I can't do it*) to 10 (*certain I can do it*). The 18 items are summed to obtain a total efficacy score, with higher scores indicating higher levels of self-efficacy. The measure has obtained satisfactory psychometric properties among Chinese parents (Guo et al., 2015). In this study, the internal reliability was good for the three subscales of CAPES Intensity and CAPES Self-Efficacy, $\alpha = .81$, $.78$, and $.77$, and $.92$, respectively.

Parenting in Child's Academic Context Questionnaire (Guo & Morawska, 2014b) was an 18-item questionnaire adapted from the PAFAS Parenting scale (Sanders, Morawska, et al., 2014) to assess parenting practices in children's academic lives. The wording of items was carefully changed to describe parenting practices related to children's academic learning, while the primary content was maintained. For example, the item "I give my child a treat, reward, or fun activity for behaving well" was changed to "I give my child a treat, reward, or fun activity for studying or doing their homework." Some items which are not suitable for adaptation were not included in this questionnaire (e.g., "I enjoy giving my child hugs, kisses, and cuddles"), and several items (e.g., "I help my child with their homework") were added to increase the comprehensiveness of the instrument. The internal reliability was $\alpha = .62$ in this study.

Academic Problem Behavior Questionnaire (Guo & Morawska, 2014a) is an eight-item measure to assess children's problem behaviors in the academic context, which was developed based on our qualitative work (Guo & Morawska, 2015) with Chinese parents. Some examples include "My child is very slow at doing homework" and "My child goes to play before completing homework." Each item is rated on a 4-point scale, ranging from 0 (*not true of my child at all*) to 3 (*true of my child very much/most of the time*). Items are summed to obtain an overall score to represent the level of children's academic problem behaviors. Internal consistency was good in this study ($\alpha = .86$).

Parental Perception of Child's Academic Achievement was assessed with one item "Overall, how good do you think is your child's academic achievement?" The item is rated on a 5-point scale, ranging from A (*very poor*) to E (*very good*). *Parental Satisfaction With Child's Academic Learning* was assessed with one item "To what extent are you satisfied with your child's academic learning?" The item is rated on a 5-point scale, ranging from A (*not satisfied at all*) to E (*very satisfied*).

Parent-Report Academic Self-Regulation Questionnaire (SRQ-A) was adapted from a 32-item child-report measure (Ryan & Connell, 1989) to assess children's academic self-regulation from parents' perspective. The original measure assesses children's academic self-regulation by asking why they do homework, do classwork, answer questions in class, and try to do well in school. It has demonstrated good reliability and validity in a Chinese context (Guo, 2011; Tang, 2002). The measure has four subscales: Intrinsic Motivation, Identified Regulation, Introjected Regulation, and External Regulation. A Relative Autonomy Index (RAI) is calculated to represent children's overall autonomy in their academic learning, with higher scores indicating higher academic autonomy. To reduce assessment burden for parents, only 16 items were chosen for the adaptation, with eight items asking why their child does his or her homework and eight asking why their child tries to do well in school. Only the wording of the items was changed for parents. For example, the question "why do I do my homework" was changed to "why does your child do homework." Items are rated on a 4-point scale, ranging from 0 (*not true at all*) to 3 (*very true*). The internal reliability of the entire questionnaire was $\alpha = .65$ in this study.

The *Client Satisfaction Questionnaire* (Turner, Markie-Dadds, & Sanders, 2002) is a 13-item questionnaire that assesses parents' perceptions of the quality of service, the extent to which the program met the parents' needs, the improvement in parenting and decrease in children's behavioral problems, and whether the participants would recommend the program to others. It has been translated into Chinese and has previously been used with Chinese parents (C. Leung et al., 2003). This questionnaire was only administered to parents at post-intervention. The internal reliability was excellent, $\alpha = .93$ in this study.

Child measures. The *Alabama Parenting Questionnaire* (APQ; Scott, Briskman, & Dadds, 2011) is a brief 15-item child-report version of the Alabama Parenting Questionnaire (Shelton, Frick, & Wootton, 1996), including five subscales: Positive Parenting, Inconsistent Discipline, Poor Supervision, Involvement, and Corporal Punishment. It has demonstrated satisfactory reliability and validity (Scott et al., 2011) in an Australian sample, and a Chinese

version was available. Items are rated on a 5-point scale ranging from 0 (*never*) to 4 (*always*). The internal reliability estimates were .78, .51, .47, .33, and .75 for the five subscales, respectively, in this study. Given the low internal consistency of inconsistent discipline, poor supervision, and involvement, these subscales were removed from data analysis.

The *Learning Stress Questionnaire* was used to assess learning stress in primary schoolers with five items chosen and modified from the Educational Stress Scale for Adolescents (ESSA; Sun, Hou, Xu, & Dunne, 2011), which was developed in a Chinese cultural context. Some item examples are “I feel there is very much homework to do” and “My parents care about my academic grades too much that brings me a lot of pressure.” Items are rated on a 5-point scale ranging from 0 (*disagree very much*) to 4 (*agree very much*). The internal reliability was $\alpha = .65$ in this study.

The SRQ-A is a 32-item child-report measure (Ryan & Connell, 1989) of children’s academic self-regulation described in the Parent-Report SRQ-A. To make the assessment comparable with the parent version in this study, the same 16 items chosen for parents were used for children to respond to. The internal consistency of the whole questionnaire was .73 in this study.

Procedures

Ethical clearance for this study was obtained from the Behavioral and Social Sciences Ethical Review Committee of The University of Queensland. The trial was registered with the Australian New Zealand Clinical Trials Registry (ACTRN12613000660785). All participating parents provided written informed consent. This study was mainly conducted in the counseling center of East China Normal University and a community service center in Shanghai. To recruit parents to participate in this study, advertisements were posted in online parent forums, family education websites, and social networks, introducing the research and encouraging parents to participate. Moreover, a public notice was posted on the official website of the Counseling Center of East China Normal University and their social networking media (i.e., Weibo). In addition, leaflets were delivered to parents of children in a primary school, which is located in the same district as the community service center.

After parents expressed interest in participation through registration, they received a telephone screening interview to see if they were eligible. Eligible parents were randomly assigned by an independent person who was not involved in the study at any stage to one of the two groups: intervention group or wait-list control group. Specifically, a unique number was assigned to each parent with a sequence of consecutive numbers and then a random number generator was used to randomly assign the sequence of numbers to two groups.

Following this, the first author was informed about the randomization results and advised the parents of their group. Afterward, both groups of parents and their participating children were asked to complete a set of questionnaires before and upon the completion of the intervention. Intervention group parents and their children were also asked to complete the questionnaires 6 months after intervention. Given that children in Grade 1 and 2 might not have adequate literacy to read and understand the child questionnaires, they were helped in person or via telephone (viz., the first author or a research assistant read items one by one to children and explained to them with examples when the child asked for help or reported he or she did not completely understand an item). To avoid parents' influence on children's completion of questionnaires, parents were asked to wait in another room while their children were completing the questionnaires. Parents in the wait-list control group received Group Triple P after they completed post-assessment. If two parents from a family attended the program, only the primary carer completed questionnaires. Similarly, only one child of a participating family with two children eligible for participation was asked to complete questionnaires.

Intervention Condition

Group Triple P is a group variant of Level 4 Triple P, which provides moderate to high intensity of intervention and focuses on improving parent-child interaction and the application of parenting skills to a broad range of target behaviors (Sanders, 2012). It consists of 4×2 hr group sessions for 4 weeks, with a session each week, plus three telephone consultations which lasted 15 to 30 min each for another 3 weeks, with one consultation each week; the eighth session was a group session to summarize program content and discuss how to proceed after the program. Before the first group session, a workbook summarizing the content of every sessions and suggested homework was given to each parent. The group sessions included content presentation, video watching, group discussions, and role-play exercises. Group Triple P utilizes an active skills training process to teach parents a variety of parenting skills. Parents are introduced to 17 positive parenting strategies including ones to develop good relationship with children, encourage desirable behaviors, teach new skills and behaviors, and manage children's misbehavior, as well as planned activities routines for high risk situations to help parents to generalize and maintain parenting skills across settings and over time. In telephone consultations, difficulties that parents encountered or issues that parents would like to discuss are discussed with an accredited Group Triple P practitioner. Parents are also encouraged to do take-home exercises in every session (Turner, Markie-Dadds, & Sanders, 2010).

In this study, all group sessions and telephone consultations were conducted by the first author, who was a PhD candidate in psychology and a Group Triple P accredited practitioner. Some minor tailoring was done to help parents to use strategies in their children's academic lives. Examples concerning children's academic behaviors were given to parents in presentations; some exercises were demonstrated by the practitioner around children's academic behaviors in group sessions; and parents were also encouraged to practice Triple P strategies to deal with children's learning behaviors in group exercises and homework. No other adaptations were made to the program because the existing literature does not support the advantage of culturally adapted parent training interventions over unadapted typical interventions for ethnic populations (Ortiz & Del Vecchio, 2013). Furthermore, it has also been contended that before making adaptations for a particular cultural population, "One should first implement the program as written, except for minor changes in the songs, examples, and wording to match local culture and context better" (Kumpfer, Pinyuchon, de Melo, & Whiteside, 2008, p. 231).

The program delivery closely followed the standard Facilitator's Manual for Group Triple P (Turner et al., 2010). To help the facilitator adhere to the content of the program and as a part of the self-regulatory approach which underlies all versions of Triple P, the practitioner was supervised by the second author who is a clinical psychologist and experienced Triple P practitioner throughout the program. The supervision included the practitioner's report of the progress, discussing how to address emerging difficulties as well as preparing for potential challenges for the next session. Moreover, the program checklists (see Turner et al., 2010) for each session were completed by the facilitator and adherence and non-adherence was determined by whether the essential elements were covered in each session. Adherence to all sessions was 100%.

For parents in the intervention group, six groups were conducted ranging in size from three to 10 parents ($M = 6.67$) in each group. Parents participated in an average of six sessions ($M = 6.23$, $SD = 1.90$) of the eight-session program, ranging from two to eight sessions.

Data Analysis

An intent-to-treat approach was used for data analysis. To deal with missing values (both missing questionnaire item responses and attrition of participants), a multiple imputation (MI) approach is highly recommended compared with traditional methods such as case deletion and mean substitution (Schafer & Graham, 2002). Therefore, MI was employed using SPSS v.20 for missing data in this study and five data sets were created with the

substitutions of missing values. After that, statistical analyses were conducted for each data set separately.

The short-term intervention effects were analyzed using two-way (condition by time) repeated measures (pre vs. post-intervention) MANOVAs for conceptually related variables (i.e., parental cognitions about children's academic learning and the two subscales of the Alabama Parenting scale), and a series of two-way repeated measures ANOVAs for all other dependent variables. As only parents and children in the intervention group completed the questionnaires at 6-month follow-up, one-way (time) repeated measures (pre vs. post) MANOVAs were used for the conceptually related variables and a series of one-way repeated measures ANOVAs were used for other dependent variables to evaluate the long-term intervention effects. The approach developed by van Ginkel et al. (van Ginkel, 2014; van Ginkel & Kroonenberg, 2014) was used to pool the results of two-way repeated measures ANOVAs and one-way repeated measures ANOVAs. However, given the current lack of an approach to pool the results of MANOVA analysis, F and p value ranges are reported in the results.

Results

Preliminary Analysis

There were 10.80% and 7.28% missing values in the entire parent data sets for the intervention group and control group, respectively. Little's MCAR tests showed that the data sets were both missing completely at random, with $\chi^2 = 897.02$, $df = 8,574$, $p > .999$ for the intervention group and $\chi^2 < .01$, $df = 2,567$, $p > .999$ for the control group. Similarly, there were 11.64% and 8.16% missing values in the child data sets for the intervention and control groups of children. Little's Missing Completely at Random (MCAR) tests showed that $\chi^2 = 534.32$, $df = 1,369$, $p > .999$ for the intervention group, and $\chi^2 = 291.74$, $df = 515$, $p > .999$ for the control group, indicating that the two data sets were missing completely at random. A series of independent t tests revealed that there was no significant difference between the two groups on all outcomes at pre-intervention assessment for parents and children, except for a significant difference in the RAI for children. Specifically, intervention group children at pre-test scored significantly higher on the RAI than control group children, $t(76) = 2.24$, $p = .028$.

Attrition

As shown in Figure 1, one out of 81 parents (1.23%) and three out of 81 children (3.70%) did not complete the pre-intervention questionnaires. Out of the

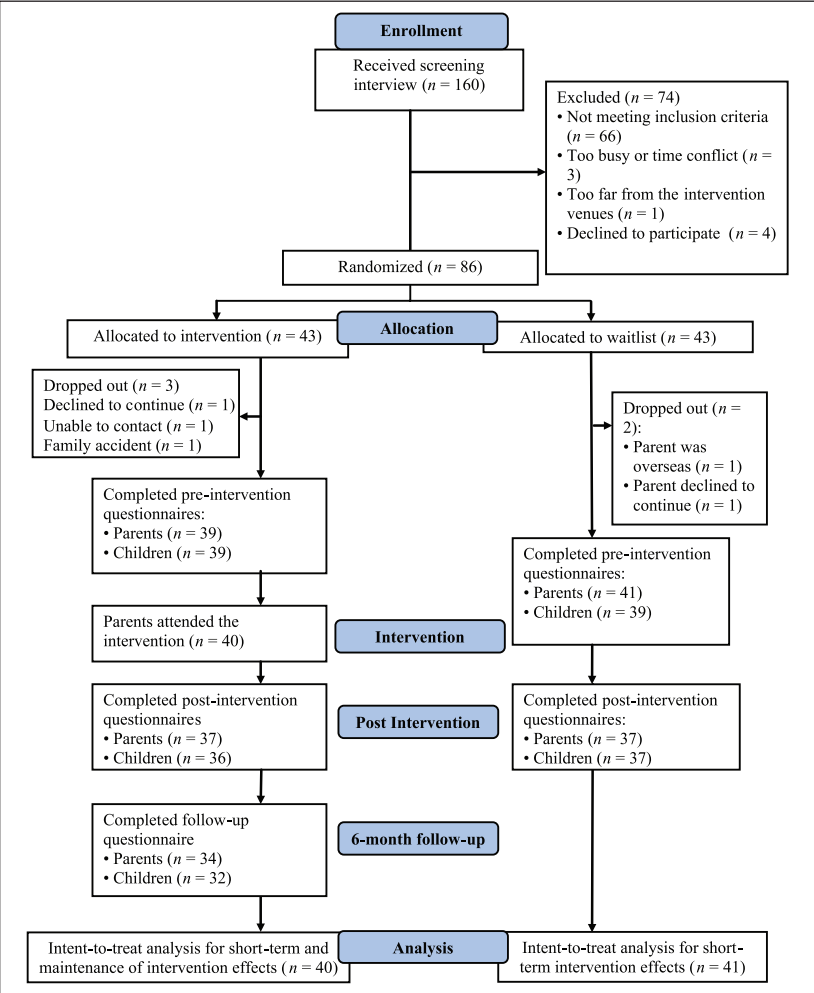


Figure 1. Flow diagram of participants according to the CONSORT.

81 families, seven parents (8.64%) and eight children (9.88%) did not complete post-intervention assessment; and six parents (15%) and eight children (20%) in the intervention group did not complete assessment at 6-month follow-up.

Chi-square tests of independence (using Fisher's Exact Test to compute exact p values due to expected cell frequencies violating the assumption of

chi-square) showed non-significant difference in attrition rates between two groups at pre-intervention assessment for parents, $\chi^2(1, 81) = 1.04, p = .494$, or for children, $\chi^2(1, 81) = .32, p > .999$. Moreover, no significant difference was also found in attrition rates at post-intervention for parents, $\chi^2(1, 81) = .13, p > .999$, or for children, $\chi^2(1, 81) < .01, p > .999$.

Short-Term Intervention Effects

Table 2 summarizes the short-term intervention effects of Group Triple P on all parent-report outcomes and child-report outcomes.

Parent-report outcomes. In terms of parent outcomes measured by PAFAS, the repeated measures ANOVA results showed significant intervention effects on parenting practices and parental adjustment. Specifically, intervention group parents reported significant improvement in parenting practices, $F(1, 73) = 17.76, p < .001$, and parental adjustment problems, $F(1, 76) = 7.24, p = .009$, than control group parents at post-intervention. However, there were non-significant group by time interaction effects on family relationships, $F(1, 56) = .02, p = .885$, or parental teamwork, $F(1, 49) = .28, p = .601$, indicating no significant intervention effects on these two outcomes.

Repeated measures ANOVAs also showed that parents in the intervention group significantly increased their parenting confidence compared with control group parents at post-intervention, $F(1, 76) = 5.16, p = .026$, and their children also had significantly lower levels of child adjustment problems than control group children after the intervention, $F(1, 60) = 7.26, p = .009$.

Academic-related parent-report outcomes. In relation to academic-related outcomes, repeated measures ANOVAs revealed that the intervention group parents reported significant improvement in parenting practices in children's academic lives, $F(1, 71) = 20.20, p < .001$, as well as academic problem behaviors, $F(1, 75) = 11.03, p = .001$, in their children at post-intervention. The multivariate group by time effects on parental cognitions about children's academic learning was also significant, $F(2, 78) = 4.89-6.00, p = .004-.010$. The results of univariate ANOVA analyses showed that parents' satisfaction with children's academic achievement increased significantly for the intervention group compared with parents in the control group at post-intervention, $F(1, 76) = 10.54, p = .002$, but the intervention effect on parents' perceptions of children's academic learning was not significant, $F(1, 56) = 2.27, p = .137$. In addition, there was no significant intervention effect on parent-report RAI, $F(1, 75) = 0.86, p = .356$.

Table 2. Short-Term Intervention Effects.

Measure	Intervention (n = 40)				Wait-list control (n = 41)				F	df	p	d [95% CI]
	Pre		Post		Pre		Post					
	M	SD	M	SD	M	SD	M	SD				
Parent measures												
PAFAS parenting	14.67	4.83	10.45	4.05	14.29	5.78	14.97	5.12	17.76	(1, 73)	<.001***	0.91 [0.46, 1.36]
PAFAS parental adjustment	4.98	1.93	3.43	2.01	4.74	2.08	4.38	2.06	7.24	(1, 76)	.009**	0.59 [0.15, 1.03]
PAFAS family relationships	3.11	2.16	2.57	2.46	3.43	2.19	2.83	1.91	0.02	(1, 56)	.885	−0.03 [−0.46, 0.40]
PAFAS teamwork	2.71	1.67	2.09	1.81	3.27	1.68	2.85	1.56	0.28	(1, 49)	.601	0.12 [−0.31, 0.55]
CAPES confidence	132.89	22.64	147.01	19.09	134.73	23.05	138.77	19.39	5.16	(1, 76)	.026*	0.44 [0.00, 0.87]
CAPES child adjustment	19.49	6.69	16.71	6.73	19.92	8.35	21.07	8.55	7.26	(1, 60)	.009**	0.51 [0.08, 0.95]
Parenting in child's academic context	19.66	5.45	13.84	5.36	18.32	5.42	18.13	5.81	20.20	(1, 71)	<.001***	1.03 [0.57, 1.48]
Academic problem behaviors	9.66	5.24	6.76	3.57	9.34	5.30	9.53	5.37	11.03	(1, 75)	.001**	0.58 [0.14, 1.02]
Parental perception	3.19	0.97	3.32	0.71	3.35	0.69	3.21	0.80	2.27	(1, 56)	.137	0.32 [−0.12, 0.75]
Parental satisfaction	2.70	0.99	3.07	0.91	3.28	1.01	2.94	0.90	10.54	(1, 76)	.002**	0.70 [0.26, 1.15]
Relative Autonomy Index	−1.26	2.61	−1.06	2.31	−1.10	2.48	−1.45	2.47	0.86	(1, 75)	.356	0.21 [−0.22, 0.65]
Child measures												
Positive parenting	8.22	2.67	9.57	2.54	8.17	2.78	7.81	2.62	8.06	(1, 67)	.006**	0.62 [0.18, 1.06]
Corporal punishment	3.61	3.52	3.10	3.36	3.53	3.05	2.70	2.55	0.25	(1, 51)	.616	−0.10 [−0.53, 0.34]
Learning stress	9.01	3.93	8.97	4.28	9.90	4.37	9.36	4.16	0.25	(1, 46)	.620	−0.12 [−0.55, 0.31]
Relative Autonomy Index	1.40	3.33	0.74	3.11	−0.13	2.48	0.40	2.38	5.77	(1, 65)	.019*	−0.40 [−0.84, 0.03]

Note. Pre and Post = pre- and post-intervention assessment consisting of pooled M and SE values from multiple imputation data sets; F, df, p = the pooled ANOVA results for time by group computed from multiple imputation data sets; d = Cohen's d for pre-test and post-test-control group designs; 95% CI = 95% confidence intervals of effect sizes; PAFAS = Parenting and Family Adjustment Scale; CAPES = Child Adjustment and Parent Efficacy Scale.

*p < .05. **p < .01. ***p < .001.

Child-report outcomes. Regarding child-measure outcomes, there was a significant multivariate group by time interaction effect on parenting practices, $F(2, 78) = 3.67$ – 5.54 , $p = .006$ – $.030$. Univariate ANOVA analyses indicated that intervention group children reported their parents used more positive parenting practices than children in the control group after the intervention, $F(1, 67) = 8.06$, $p = .006$, but there was no significant difference in use of corporal punishment between the two groups, $F(1, 51) = .25$, $p = .616$. The ANOVA results also showed no significant intervention effect on children's learning stress, $F(1, 46) = .25$, $p = .620$. However, child-report RAI in intervention group children decreased significantly more than control group children at post-intervention, $F(1, 65) = 5.77$, $p = .019$.

Long-Term Effects

Parent-report outcomes. The analyses of long-term effects were restricted to the intervention group only. The results are presented in Table 3. As shown in the table, the repeated measures ANOVAs showed a significant time effect for parenting practices, $F(1, 35) = 11.83$, $p = .002$, parental adjustment, $F(1, 35) = 22.55$, $p < .001$, and family relationships, $F(1, 36) = 7.85$, $p = .006$, for the intervention group at 6-month follow-up, indicating significant improvement in these parent outcomes. However, no significant improvement was found in parental teamwork, $F(1, 27) = 2.02$, $p = .167$. Parents also reported significantly higher parenting confidence, $F(1, 36) = 28.21$, $p < .001$, and less child adjustment problems, $F(1, 34) = 19.07$, $p < .001$, at 6-month follow-up.

Academic-related parent-report outcomes. For academic-related outcomes, the repeated measures ANOVA results showed significant improvement in parenting practices in the academic context, $F(1, 36) = 39.13$, $p < .001$, and academic problem behaviors, $F(1, 35) = 14.36$, $p < .001$, in children at 6-month follow-up. Similarly, there was a significant multivariate effect on parental cognitions about children's academic learning, $F(2, 38) = 9.01$ – 12.01 , $p < .001$. Univariate ANOVA analyses showed that parents reported significant increased satisfaction with children's academic achievement, $F(1, 27) = 17.69$, $p < .001$, but their change in the perceptions of children's academic learning was not significant, $F(1, 25) = 1.81$, $p = .191$. There was no significant time effect for parent-report RAI, $F(1, 32) = 0.22$, $p = .643$.

Child-report outcomes. There were mixed long-term effects for child report of parents' use of parenting practices, $F(2, 38) = 2.48$ – 5.57 , $p = .097$ – $.008$. Univariate ANOVA analyses indicated significant time effects for positive parenting, $F(1, 24) = 6.89$, $p = .015$, but not for corporal punishment, $F(1, 36) = .31$,

Intervention ($n = 40$)

Note. Pre and follow-up = pre-intervention and follow-up assessment consisting of pooled *M* and *SE* values from multiple imputation data sets; t , *df*, and *p* = the results of pooled *t* tests that were computed from multiple imputation data sets; *d* = Cohen's *d* for single-group repeated measures design; 95% CI = 95% confidence intervals of effect sizes; PAFAS = Parenting and Family Adjustment Scale; CAPES = Child Adjustment and Parent Efficacy Scale. **p* < .05. ***p* < .01. ****p* < .001.

$p = .581$. In addition, the intervention effects were not significant on either child reports of learning stress, $F(1, 34) = .28, p = .597$, or child-report RAI, $F(1, 32) = 2.31, p = .138$, at 6-month follow-up.

Client satisfaction. Parents' ratings of satisfaction with the program ranged from 42 to 89 (possible range = 13-91). On average, parents were very satisfied with the program ($M = 69.89, SD = 10.52$).

Discussion

To our knowledge, this is the first randomized controlled trial of a Western-developed parenting program in Mainland China. We evaluated the effects of Group Triple P on general parent and child outcomes including parenting practices and child adjustment problems, and parent outcomes related to child academic learning as well as children's academic outcomes.

In regard to general parent and child outcomes, we found that Group Triple P significantly improved dysfunctional parenting and parental adjustment, increased parenting confidence and reduced child adjustment problems, and all the effects were maintained at 6-month follow-up. These results are consistent with Triple P trials with parents in other Asian countries (C. Leung et al., 2003; Matsumoto et al., 2010; Sumargi et al., 2015). Triple P encourages nurturing, engaging, consistent, and assertive parenting (Sanders, 2012); hence, it coaches authoritative parenting. As recent research (Lu & Chang, 2013) has shown that Mainland Chinese parents endorse authoritative parenting and this is positively related to children's social and school adjustment (Chen et al., 1997; Wang & Chang, 2005), it is not surprising that Group Triple P had positive effects on a range of parent and child outcomes in this study.

It is noteworthy that there was no significant effect on family relationships until the 6-month follow-up, which may be due to a longer time that parents need to significantly influence family member relationships. Moreover, parent's participation in Group Triple P also significantly increased children's perceptions of positive parenting at post-intervention, meaning that parents used significantly more positive parenting practices in children's eyes. However, this short-term effect was not maintained at 6-month follow-up indicated by the mixed MANOVA significance levels, though the univariate ANOVA result showed a significant intervention effect. As this is a rare attempt to evaluate parenting changes in a parenting program from a child perspective, more research is needed to explore children's views on changes in parenting practices following parents' participation in a parenting program. The intervention effect on child report of corporal punishment was not

significant either at post-intervention or 6-month follow-up, which might be caused by a floor effect due to the low average level of corporal punishment reported by parents in this study.

Regarding academic-related outcomes, the results showed that Group Triple P improved parenting in the academic context and reduced child academic problem behaviors, and the effects continued to be significant at 6-month follow-up. These findings suggest that Chinese parents applied Triple P strategies they learned to children's academic lives and thus made a significant impact on children's academic behaviors. Moreover, the parenting intervention also significantly enhanced parents' satisfaction with children's academic achievement, which might be because parents adjusted their expectations and became more accepting of their children's academic achievement or an actual change in their child's academic achievement. Unfortunately, we were not able to measure academic performance directly in this study, although a recent 15-year follow-up study (Smith, 2015) in Western Australia indicated Group Triple P when delivered to parents of children aged at 3 to 4 years produced sustained improvements in children's literacy and numeracy scores once at school (Smith, 2015).

Unexpectedly, the results indicated no significant effect of the intervention on parents' reports of children's academic self-regulation, but the intervention significantly reduced child report of academic autonomy at post-intervention, though the effect was not maintained at 6-month follow-up. Children may have temporarily perceived the parenting changes as an increased expectation for them to achieve more in academic learning so that they became more externally regulated in the short term. However, Group Triple P did not effectively promote children's academic self-regulation in this study as expected. As child academic self-regulation in primary schoolers is positively associated with positive parenting (Grolnick & Ryan, 1989; Guo, 2011), and there was significant improvement in parenting practices for this sample, the non-significant effect on academic self-regulation seems to contradict this hypothesis. Similarly, the insignificant effects on children's learning stress also indicated that the parenting intervention did not reduce learning stress in children as expected. Although some research (G. S. M. Leung & He, 2010) has shown that parental support contributes to buffering the negative influence of academic stress on academic achievement for primary schoolchildren, little research has illuminated the relationship between parenting practices, parenting efficacy, and primary schoolers' learning stress. This means that it is unclear whether a parenting program can reduce children's learning stress through improving parenting practices and promoting parental confidence. Alternatively, it might be more difficult to make a change to internalizing problems such as self-regulation and learning stress

than externalizing problems, or the intensity of the parenting intervention is not strong enough to make expected changes as only examples were tailored in group sessions rather than including additional content focused on children's academic learning.

There were some limitations to the study that should be considered. First, parents were only recruited from a developed city, had received higher education, and had better financial status than the average levels in Mainland China. Specifically taking education for instance, 69.2% of parents in this study had a university or higher degree, whereas the gross rate of enrollment in higher education was only 34.5% in 2013 and lower in the years before 2013 (Ministry of Education of the People's Education of China, 2014). This limits the generalizability of the findings to families in other areas of China or parents with lower education or worse financial situation. As greater Triple P intervention effects have been found to be related to lower family income for Chinese parents in Hong Kong (C. Leung, Sanders, Lp, & Lau, 2006), further research is warranted to examine similar issues in Mainland China to inform public policies and family services. Second, several measures used in the study were newly designed (e.g., Academic Problem Behavior Questionnaire) or adapted from other existing measures (e.g., Parenting in Academic Context Questionnaire), and they had not been previously validated. Although most of the measures (except APQ) obtained adequate internal reliability, it is still unknown whether they had satisfactory validity for Chinese parents or children. Moreover, even though we helped children in Grades 1 and 2 to complete the questionnaires, it is possible that the children did not fully understand the items or how to respond properly, which may have influenced the validity of the assessment, particularly considering that three subscales of the APQ for children had low internal reliability. Therefore, the results of some outcomes need to be treated with caution. Furthermore, even for validated measures including PAFAS and CAPES, there is lack of normative values for Chinese parents and children; thus, it was not possible to identify cases within or outside the clinical range and to compute reliable change indices. Finally, the present design could not rule out the possibility that intervention effects may be related to the increased attention provided to the participating parents in the intervention arm compared with the wait-list control. However, we considered it problematic and potentially unethical to use an attention placebo control condition as a comparator. Such a condition can create additional difficulties in retaining parents thereby creating a condition by attrition interaction. Despite the aforementioned limitations, this study can offer unique contribution to understanding the effectiveness of a Western parenting program with Chinese parents and especially its effects on parent outcomes related to child academic learning as well as children's academic outcomes.

Declaration of Conflicting Interests

The author(s) declared the following potential conflicts of interest with respect to the research, authorship, and/or publication of this article: The Triple P–Positive Parenting Program is owned by The University of Queensland. The University, through its main technology transfer company, UniQuest Pty Ltd., has licensed Triple P International Pty Ltd. to publish and disseminate the program worldwide. Royalties stemming from published Triple P resources are distributed in accordance with the University's intellectual property policy and flow to the Parenting and Family Support Centre, School of Psychology, Faculty of Health and Behavioral Sciences, and contributory authors. No author has any share or ownership in Triple P International Pty Ltd. Matthew Sanders and Alina Morawska are authors of various Triple P resources and Mingchun Guo is a PhD recently graduated from the Parenting and Family Support Center.

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Notes

1. Parents needed to answer "Yes" to the question "Are you worried about your child's academic learning?" and rate five or higher on a 10-point scale from 1 to 10 when responding to the question "To what extent are you worried about your child's academic learning."
2. Percentages do not add up to 100 due to missing data.

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