

ORIGINAL ARTICLE

Completers Versus Dropouts of A Parent Training Programme and Child Behaviour Improvement In Malaysia

Ruziana Masiran¹, Normala Ibrahim¹, Hamidin Awang², Lim Poh Ying³

¹ Department of Psychiatry, Faculty of Medicine and Health Sciences, Universiti Putra Malaysia, 43400 Serdang, Selangor, Malaysia

² Psychiatry Unit, Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia, Persiaran Ilmu, Putra Nilai, 71800 Nilai, Negeri Sembilan, Malaysia

³ Department of Community Health, Faculty of Medicine and Health Sciences, Universiti Putra Malaysia, 43400 Serdang, Selangor, Malaysia

ABSTRACT

Introduction: There is a strong body of evidence advocating parent training programmes in the management of behavioral problems in children. In these programmes, attrition is a major challenge. We aimed to examine the socio-demographic and clinical profiles, parental motivation, and pre-intervention severity of children's behavioural problems as rated by mothers who completed (PC) and mothers who dropped out (PD) of a parent training programme. We also aimed to determine whether there was any change in their children's behaviour scores before and after intervention. We hypothesized that parent and child sociodemographic and clinical profiles, parental motivation, and pre-intervention severity of children's behavioural problems would be different between PC and PD, and that children of PC would experience significant improvements in their behaviour. **Methods:** Data from a randomised controlled trial (RCT) involving 35 mothers and children aged 6–12 years old with behavioural problems who were enrolled in a parent training programme were examined. Child behaviour was measured using the Strength and Difficulties Questionnaire. **Results:** No significant differences were found between PC and PD in terms of the sociodemographic and clinical profiles, parental motivation, and pre- or post-intervention child behaviour. After programme completion, PC (n=27) reported improvements in all the behaviour subscales; total difficulties (p<0.001), emotional problem (p=0.004), conduct problem (p=0.001), hyperactivity symptoms (p<0.001), peer problems (p=0.036), and prosocial behaviour (p=0.001). **Conclusion:** The parent training programme produces significant child behaviour improvements in mothers who complete the programme. Nonetheless, the study has some limitations which restrict the generalizability of these findings.

Malaysian Journal of Medicine and Health Sciences (2023) 19(4):214-224. doi:10.47836/mjmhs19.4.32

Keywords: Attrition, Behavioural problem, Dropout, Incredible Years, Parent training

Corresponding Author:

Ruziana Masiran, Dr (Psych.)

Email: ruziana_m@upm.edu.my

Tel: +603-97692541

INTRODUCTION

Childhood behavioural problems are associated with many negative psychosocial outcomes in all stages of life (1–4). To make matters worse, a systematic review and a meta-analysis of 24 longitudinal studies show that they also predict future suicide attempts in young people (5). Nonetheless, parenting quality (6) and parent-child interaction (7) have long been identified as important precursors of these problems. As a result, a variety of parenting interventions have been implemented, in which parenting behaviours have been the target mechanism (8). Correspondingly, there has been burgeoning evidence supporting the

positive effects of parent training programmes in improving children's behaviour. Among established programmes, results from the literature strongly suggest the Incredible Years parenting programme (IYPP) (9) as an effective intervention (10–12). Despite the documented effectiveness, the IYPP, like any other parenting intervention, has been tremendously affected by low parent attendance and high attrition rates. It was reported that 40–60% of families who had needed parent training dropped out before the programmes began (13,14). A systematic review suggested a 26% attrition rate occurring after at least a session and a combined dropout rate of 51% before and after enrolment (15). Since the mastery of parenting strategies are acquired session by session, attrition from a parenting programme is a threat to its effectiveness and success. Furthermore, children whose parents complete these programmes obtain greater (16) and longer (17) improvement in behaviour than those who did not.

According to Armbruster and Kazdin, treatment attrition occurs when a patient terminates an ongoing treatment against the therapist's advice (18). In a parent training programme, attrition is often used interchangeably with 'dropout' and occurs when parents discontinue their training sessions at any point prior to and after the first training session (15), when parents do not attend two or more of the sessions (19), or when they fail to attend three consecutive sessions (20). Attrition threatens both the internal and external validity of a parenting intervention research (21) with fewer parents completing a programme, the sample size is reduced and random assignment in the comparison groups would be compromised (22). Similarly, problems with external validity may limit the generalizability of the study findings. In addition, the group dynamics, discussion, and collaboration – the key elements of many parenting programmes, are affected when there are smaller number of parents in the group. As a consequence, parents and children might not achieve the optimal outcomes intended. Ironically, families that need parenting intervention the most are typically the ones who are most likely to drop out (19,20). It is important to identify predictors of programme attendance to maximize its outcomes. Among the stages in the parental engagement of a parenting programmes, retention and sessional attendance is the most commonly studied (23). Parental low education, hostile and rejecting parenting, higher levels of hyperactive/inattentive behaviour in children (19), lower-income and social support, single parenthood (22), as well as lower parental perceived programme relevance and greater maladaptive attributions toward children's behavioural problems (20) have been associated with lower attendance. In the IYPP context, the highest treatment benefits have been seen in families with concurrently high levels of negative parenting and child behavioural problems (8,24).

Malaysia is a multiracial, developing country located within the Southeast Asia region. There are three major ethnic groups which includes Malays, Chinese, Indian and other indigenous tribes. Common with other Asian parents (25), family values are central to Malaysian but its rich ethnocultural elements also lend an influence on childrearing. Emotional and behavioural problems are among the commonest causes of mental health issues among Malaysian children aged 5-15 years (26,27) Although its prevalence in the community appears to be more empirically researched (28,29), children with emotional and behavioural problems are often referred to clinicians for treatment. In the Malaysian clinical settings, children with behavioural problems are traditionally managed using child-focused approaches, i.e. via psychological, biological, behavioural, or occupational therapy. So far, there are no parent-focused training programmes that are systematically prescribed to the parents in the clinical settings. Furthermore, despite burgeoning research findings advocating parent training programmes to manage this issue, there remains

a paucity of parenting programme implementation research in Malaysia. Correspondingly, attrition from such programmes has been recognized as one of the factors that impede programme success (19,20,22). In an effort to implement an evidence-based parenting intervention in the country, a gap in identifying the characteristics of parents who complete or drop out from a parenting programme may undermine the efforts to promote active parent attendance and participation. Hence there a need to investigate whether parents who complete the parent training sessions would differ from those who drop out, in the background of a parenting programme implemented in the Malaysian clinical setting.

Therefore, we aimed to examine the sociodemographic and clinical profiles, parental motivation, and pre-intervention severity of behavioural problems between parents who complete and drop out of a parent training programme. We also aimed to determine whether there was any change in behaviour scores at pre- and post-intervention. We hypothesized that parent and child sociodemographic and clinical profiles, parental motivation, and pre-intervention severity of behavioural problems would be different between PC and PD. We also hypothesized that parents who are completers would experience significant improvements in the behaviour of their children following programme completion.

MATERIALS AND METHODS

Participants and procedures

Data were examined from the main RCT conducted at Child and Adolescent Psychiatry Clinic, Universiti Putra Malaysia, located in the state of Selangor, Malaysia. Participants were recruited based on the referrals made by the clinicians at the paediatrics and child and adolescent psychiatric (CAP) clinics located in three tertiary hospitals providing the CAP services to the population of Klang Valley, an urban conglomeration in Malaysia that is centred in Kuala Lumpur and includes the state of Selangor. Study participants included mothers of children aged 6-12 years with any medical or mental health diagnoses, who also had behavioural problems. This wide age range corresponds to the age of children receiving primary school education in Malaysia, as well as the target age for the IYPP School Age Basic. Children who fulfilled the borderline and abnormal level i.e. the score of 15 or more of the Strength and Difficulties Questionnaires' (SDQ) total difficulties, were eligible for enrolment. Eligible mother-child dyads who gave their consents were subsequently enrolled in the intervention and waitlist control groups in a 1:1 ratio. The study focused only on those in the treatment arm of the RCT.

Intervention

The intervention was the IYPP's School Age Basic parenting programme. Evidently, the IYPP has been equally effective when implemented in culturally

different countries (30) and population groups with a wide range of socioeconomic and ethnic backgrounds (10). In addition, the programme manual has undergone stringent accreditation processes, thus ensuring a high level of programme fidelity. The IYPP has also been recommended by the NICE guidelines for parents of children with, or at risk of developing oppositional defiant or conduct disorder (31). Several meta-analyses highlighted its effectiveness in reducing behavioural problems among children (32,33). Furthermore, the long-term effects of the IYPP as an indicated prevention on children's behavioural problems have also been documented (34).

In this study, mothers in the intervention group received 2.5-3 hour weekly group-based parent training sessions for 14 weeks. Using a collaborative approach, the programme relied on video-based discussions on parenting skills among groups of 8 to 12 parents guided by a trained group leader. Therefore, the intervention was carried out in three separate group of mothers. Each session has separate topics but builds up upon each other. Due to the coronavirus pandemic, the programme had to be withheld after three sessions delivered. After three months lapse, recapitulations of the previously attended sessions were conducted concurrent with the start of the fourth parent training session. Each session was conducted by a group leader and a co-leader. In every aspect of the programme delivery, the group leader would lead and facilitate, rather than 'teach' the participating mothers. The group leader has obtained formal training from the Incredible Years' certified trainer.

Measures and instruments

Generally, the data collections were done at baseline (two weeks prior to intervention), two weeks post-intervention, and three months follow-up. Only the sociodemographic data form and measure of parental motivation were taken at baseline.

Sociodemographic and clinical profiles

The sociodemographic data form included data about mothers' ages, education level, ethnicity, marital status (unmarried, married, divorced), number of children, and total family income; and child's ages, gender, birth order (eldest and non-eldest), education setting, receiving welfare aid, presence of ADHD, and stimulant prescription.

Parental motivation

We assessed the level of parental motivation to take part in the parenting programme at pre-intervention using the Parent Motivation Inventory (PMI) (35). The 25 items correspond with three main components of motivation i.e., the parent's own desire for child change, parent's readiness to change parenting behaviour, and parent's perceived ability to change parenting behaviours. Mothers self-rated each item using a 5-point Likert scale

ranging from "strongly disagree" to "strongly agree" on each item. The internal consistency of the original PMI was reported as 0.96 (35). The Malay version of PMI showed mean Cronbach's α of 0.95.

Child behavioural problem

The SDQ (36) is a 25-item behavioural screening questionnaire that assesses emotional and behavioural symptoms in children and adolescents aged 4 to 17 years. There are five subscales: emotional problems, conduct problems, hyperactivity symptoms, peer problems, and prosocial behaviour. Each item uses a 3-point ordinal Likert scales (0 = not true, 1 = quite true, 2 = true), with five of the items being reverse-scored. The Malay version of parent-rated SDQ was used in this study. Mothers must indicate how far each item applies to their target child. Scores from the first four difficulties subscales (emotional problems, conduct problems, hyperactivity symptoms, peer problems) are combined to provide total difficulties score between 0-40. The higher scores indicate more behavioural problems. The prosocial subscale is grouped on its own, with a higher score indicates more prosocial behaviour. In this study, the mean Cronbach's α coefficient showed acceptable internal consistency of 0.74, corresponding to that reported by Idris et al. (37).

Attendance and dropout

The number of attended sessions was based on a full 2.5-3 hours session attended, from the total of 14 sessions. Mothers who missed any session were offered a make-up session consisting of 30-45 mins of a summarized version of the missed session, but attendance was not be recorded for this. Mothers who consented but did not participate in any of the group training sessions were not given any attendance score. Programme dropouts (PD) were mothers who attended at least a session but never returned to the programme once they had missed a session (25). On the other hand, programme completers (PC) consisted of participants who attended the programme sessions, including the last scheduled session. The latter might have missed one or a few sessions, but eventually returned to the programme.

Statistical analysis

All data analyses were performed using SPSS 25.0. Descriptive statistical analysis was performed for parent and child characteristics. Comparisons between the PC and PD groups were made using the t-test for continuous outcome variables, and Chi-square test for categorical outcome variables. Fisher's exact test was used if the expected value in each cell was less than five. For all the analyses, p-values, $p < 0.05$ was considered to be significant.

Ethical clearance

This study was approved by the Medical Research and Ethics Committee (MREC) of the Ministry of Health, Malaysia [NMRR-19-107-45772 (IIR)] and Universiti

Putra Malaysia’s Ethics Committee for Research Involving Human Subject (JKEUPM-2021-163).

RESULTS

A total of seventy families took part in the RCT, of which half were randomly selected to receive the IYPP. As shown in Table I, 32 mothers (91.4%) who had been enrolled in the programme attended at least one session. Eight (25%) of attending mothers never missed any session. Nineteen mothers (59.4%) mothers missed at least one session but eventually returned to the programme until the final session. The majority i.e. 12 mothers (63.2%) of this group attended four, nine, or 12 sessions. There were five mothers who dropped out, making the dropout rate 15.6%. It also appeared that the dropouts had actually failed to appear for three consecutive sessions, a dropout definition similar to that by Chacko et al (15) (Table II).

Table I: Attendance and dropouts in the intervention group

Enrolment	Attendance category	Participants per category, n	Sessions attended, n (%)	
Recruited (n = 35)	Perfect attendees, (n = 8)	8	14 (100)	
		4	4 (28.6)	
		2	7 (50.0)	
	Enrolled (n = 32)	Mixed attendees, (n = 19)	1	8 (57.1)
			4	9 (64.3)
			3	10 (71.4)
			1	11 (78.6)
			4	12 (85.7)
			1	1 (7.1)
			3	2 (14.3)
Dropouts, (n = 5)	1	6 (42.9)		
			Make-up sessions attended, n (%)	
	1	1 (7.1)		
	1	2 (14.3)		
Not enrolled (n = 3)			4 (28.6)	

Comparison of the PC and PD groups with regards to their sociodemographic and clinical profiles are presented in Table III. There was no significant difference in maternal age $t(4) = -0.67, p = 0.535$, despite PC ($M = 37.00, SD = 3.84$) consisting of slightly younger mothers than PD ($M = 39.40, SD = 7.80$). There was no significant difference in the ages of children, $t(30) = -0.36, p = 0.722$, despite PC ($M = 8.52, SD = 1.89$) consisting of slightly older children than PD ($M = 8.20, SD = 1.30$). The mean number of children did not differ significantly between the two groups, $t(30) = -0.31, p = 0.759$, with PC ($M = 3.22, SD = 1.20$) similar with PD ($M = 3.40, SD = 0.89$). Mean parental motivation did not differ significantly between the two groups, $t(30) = 1.05, p = 0.301$, despite PC ($M = 110.85, SD = 11.90$) scoring higher motivation level than PD ($M = 104.60, SD = 13.94$). Mean pre-

intervention severity of behavioural problems also did not differ significantly between the two groups, $t(30) = -0.22, p = 0.301$, despite PC ($M = 21.70, SD = 4.72$) having slightly lower behavioural problems than PD ($M = 22.20, SD = 4.82$). Significantly more sessions were attended by mothers from the PC group ($M = 10.19, SD = 3.48$), and PD ($M = 2.60, SD = 1.95$).

The results of the post-intervention behaviour scores demonstrated no significant differences between the PC and PD groups in all the SDQ subscales (Table IV). Within-group analysis of the PC mothers at pre-intervention and post-intervention indicated that the scores for total difficulties, $t(26) = 4.70, p < 0.001$; emotional problems, $t(26) = 3.12, p = 0.004$; conduct problems, $t(26) = 3.95, p = 0.001$), hyperactivity/inattention, $t(26) = 4.81, p < 0.001$); and peer problems $t(26) = 2.22, p = 0.036$) significantly decreased following programme completion (Table IV). In addition, prosocial behaviour significantly increased following programme completion, $t(26) = -3.573, p = 0.001$. On the other hand, within-group analysis of the PD mothers indicated that the scores for total difficulties, $t(4) = 1.71, p = 0.163$); emotional problems, $t(4) = 1.40, p = 0.235$); conduct problems, $t(4) = 2.75, p = 0.052$); hyperactivity/inattention, $t(4) = 0.97, p = 0.388$); and peer problems, $t(4) = 0.56, p = 0.587$) did not significantly decrease. The prosocial behaviour score also did not significantly increase, $t(4) = -0.17, p = 0.876$).

DISCUSSION

This study aimed to examine the sociodemographic and clinical profiles, parental motivation level, and pre-intervention severity of children’s behavioural problems as rated by mothers who completed and those who dropped out of the Incredible Years’ School Age Basic parenting programme. The programme targeted children aged 6-12 years old who presented with behavioural problems in tertiary hospitals with CAP Services in the Klang Valley region in Malaysia. Analysis of mothers who attended the parent training sessions was also carried out to determine whether there were changes in the behaviour scores following the programme completion. While a fraction of mothers managed to attend the whole programme without any absence, the majority managed to attend up to the last session despite many absences in between the sessions. Furthermore, we did not find significant differences between mothers who completed and dropped out in terms of sociodemographic background, clinical profiles, parental motivation, as well as child behaviour before and after the intervention. Nonetheless, we demonstrated significant improvements in all the reported behavioural problem components following the completion of the programme.

In this study, mothers’ enrolment and attendance were described separately in an attempt to understand the different patterns in parental engagement, which has

Table II: Attendance of participants in each parent training session

ID	Session number														Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
1	Yes	Yes	No	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	Yes	9
2	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	2
3	Yes	No	No	No	No	No	Yes	Yes	Yes	No	Yes	No	Yes	Yes	7
4	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	12
5	Yes	Yes	Yes	No	No	Yes	Yes	Yes	No	No	Yes	Yes	No	Yes	9
6	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	12
7	Yes	No	Yes	No	No	No	No	No	No	No	No	No	No	No	2
8	Yes	No	Yes	No	No	No	Yes	No	No	No	No	No	No	Yes	4
9	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	1
10	Yes	No	No	No	No	No	No	No	Yes	No	Yes	No	No	Yes	4
11	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	12
12	Yes	Yes	Yes	No	No	Yes	Yes	Yes	No	No	No	No	No	Yes	7
13	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	14
14	Yes	Yes	Yes	No	No	No	No	Yes	Yes	No	Yes	Yes	Yes	Yes	9
15	No	No	No	No	No	No	No	No	No	No	No	No	No	No	0
16	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	14
17	Yes	Yes	No	Yes	No	No	No	Yes	No	Yes	No	Yes	Yes	Yes	8
18	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes	No	Yes	Yes	10
19	No	No	No	No	No	No	No	No	No	No	No	No	No	No	0
20	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	14
21	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	12
22	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	14
23	No	No	No	No	No	No	No	No	No	No	No	No	No	No	0
24	Yes	Yes	Yes	No	No	No	Yes	Yes	No	Yes	No	No	No	No	6
25	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	14
26	Yes	Yes	Yes	No	No	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	10
27	Yes	No	Yes	No	No	No	No	No	No	No	No	No	No	No	2
28	Yes	Yes	Yes	No	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	11
29	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	Yes	4
30	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	14
31	No	Yes	Yes	No	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	10
32	No	No	No	No	No	No	No	Yes	No	Yes	No	Yes	No	Yes	4
33	No	No	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes	9
34	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	14
35	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	14

been given various definitions (14,19). The enrolment rate of 91.4% (32 of 35 mothers in the IYPP group) is much higher than the 30-84% reported in a review of culturally adapted parenting programmes (14) and 75% in a review of behaviour parenting programmes, perhaps due to a clear recruitment process coupled with clinicians' involvement in the recruitment (13). Treatment dropouts referred to mothers who attended the parent training sessions in the beginning but discontinued afterward. This dropout definition was used instead of the three consecutive sessions cut-off (20) or the missing data collection (8). However, it was also noted later that mothers who dropped out in this study had also missed at least three consecutive parent training sessions. The liberal take on dropouts took into consideration different challenges faced by parents at each stage of IYPP delivery. The 15.6% dropout rate is

much lower than the 26% reported in a review of 262 studies (15). However, it is higher than the dropout in an IYPP study on preschool children (12). In this study, the participating mothers were the primary caretakers of their children. While they had to look after the problematic children and other children in their families, they bore other domestic responsibilities and family matters. An additional burden was the unavailability of childcare services while they attended the sessions. Therefore, attending weekly parent training sessions has been a great challenge for these women. Furthermore, among attendees, half attended ten or more sessions, and hence receiving most (71.4%) of the programme contents, which is less than the proportion of parents in a similar 14-sessions IYPP for preschool children (37). Although one could argue that parents of younger children commit better, recent studies (8,15,23) found

Table III: Comparison of sociodemographic and clinical characteristics between PC and PD

	PC(n=27) N(%)	PD (n=5) N(%)	Total (N=32)	<i>p</i>
Parents				
Ethnicity				
Malay	24 (88.9)	5 (100)	29	1.000 ^a
Non-Malay	3 (11.1)	0 (0.0)	3	
Marital status				
Divorced	3 (11.1)	1 (20.0)	4	0.512 ^a
Married	24 (88.9)	4 (80.0)	28	
Education level				
Tertiary and beyond	19 (70.4)	2 (40.0)	21	0.310 ^a
Secondary	8 (29.6)	3 (60.0)	11	
Total family income				
≥3000	17 (63.0)	3 (60.0)	20	1.000 ^a
<3000	10 (37.0)	2 (40.0)	12	
Child				
Birth order				
Eldest	12 (44.4)	2 (40.0)	14	1.000 ^a
Non eldest	15 (55.6)	3 (60.0)	18	
Gender				
Male	20 (74.1)	3 (60.0)	23	0.604 ^a
Female	7 (25.9)	2 (40.0)	9	
Classroom setting				
Special	4 (14.8)	1 (20.0)	5	1.000 ^a
Mainstream	23 (85.2)	4 (80.0)	27	
Welfare aid received				
Yes	3 (11.1)	2 (40.0)	5	0.163 ^a
No	24 (88.9)	3 (60.0)	27	
Presence of ADHD				
Yes	8 (29.6)	0 (0.0)	8	0.296 ^a
No	19 (70.4)	5 (100.0)	24	
Stimulant medication received				
Yes	4 (14.8)	0 (0.0)	4	1.000 ^a
No	23 (85.2)	5 (100.0)	28	

^a: Fisher's exact test (2-sided)

no significant effect of the child's age.

The absence of pre-intervention differences between the completers and dropouts is concordant with the finding from an early longitudinal study on Parent-Child Interaction Therapy (PCIT) (17). Our finding also corresponds with a recent study demonstrating that oppositional defiant behaviour scores were not a significant predictor of programme attendance (38). We did not find evidence to support previous literature which showed the link between parental demographics, particularly parental education, with programme attendance (19,38). Nevertheless, it is important to note that a higher proportion of mothers who completed the programme received a tertiary level

Table IV: Comparison of behaviour scores of children in PC and PD groups at post-intervention

SDQ subscale	M	SD	95% CI	t	df	<i>p</i>
Total difficulties						
PC	15.81	5.88	-7.78, 3.40	-0.798	30	0.431
PD	18.00	3.54				
Emotional problems						
PC	3.15	2.13	-3.11, 1.00	-1.045	30	0.304
PD	4.20	1.64				
Conduct behaviour						
PC	3.41	1.65	-1.39, 1.80	0.265	30	0.793
PD	3.20	1.30				
Hyperactivity/inattention symptoms						
PC	5.59	2.10	-2.53, 1.714	-0.392	30	0.698
PD	6.00	2.35				
Peer problems						
PC	3.67	2.02	-2.95, 1.08	-0.946	30	0.352
PD	4.60	2.07				
Prosocial behaviour						
PC	7.41	1.76	-1.09, 2.71	0.867	30	0.393
PD	6.60	2.70				

sd: standard deviation
CI: confidence interval
t: independent t-test value
df: degree of freedom

education as compared to those who dropped out, who mostly reached secondary education. Also, our finding does not support better programme attendance among dual-parent and higher-income families (22). Moreover, evidence generated from this study also seems to disagree with the notion that parents with more severely behaved children would be more motivated to enrol (23) and complete (22) the programme. It also contradicts the finding that parents who reported more hyperactive or inattentive symptoms in their children tend to discontinue the programme (19).

Although parents who perceive the children to have more problematic behaviours may have higher motivations to complete the training sessions to learn to address the difficult behaviours, the presumed improved motivation may not translate into a better attendance rate. Parents may instead experience overwhelming parenting stress that deter them from attending further sessions (17). Mothers in this study reported almost similar behavioural problem severity at pre-intervention, with the score of 21.7 and 22.2 in the PC and PD groups respectively. It would then be expected that mothers in both groups would have a similar level of motivation before starting the programme. However, we found it remarkable that mothers who completed the IYPP had higher motivation scores, despite not reaching statistical significance.

Table V: Comparison of children's behaviour scores in PC and PD group before and after intervention

SDQ subscale					t		df		p	
	PC		PD		PC	PD	PC	PD	PC	PD
Total difficulties	M	SD	M	SD						
Pre-intervention	21.70	4.72	22.2	4.82	4.70	1.71	26	4	<0.001**	0.163
Post-intervention	15.81	5.88	18.00	3.54						
Emotional problems										
Pre-intervention	4.96	2.68	5.40	2.30	3.12	1.40	26	4	0.004*	0.235
Post-intervention	3.15	2.13	4.20	1.64						
Conduct problems										
Pre-intervention	4.89	2.03	4.60	1.52	3.95	2.75	26	4	0.001*	0.052
Post-intervention	3.41	1.65	3.20	1.30						
Hyperactivity/inattention										
Pre-intervention	7.07	1.69	7.20	1.48	4.81	0.97	26	4	<0.001**	0.388
Post-intervention	5.59	2.10	6.00	2.35						
Peer problems										
Pre-intervention	4.78	1.87	5.00	1.41	2.22	0.56	26	4	0.036*	0.587
Post-intervention	3.67	2.02	4.60	2.07						
Prosocial behaviour										
Pre-intervention	6.15	2.66	6.40	2.41	-3.57	-0.17	26	4	0.001*	0.876
Post-intervention	7.41	1.76	6.60	2.70						

sd: standard deviation

CI: confidence interval

t: independent t-test value

df: degree of freedom

*p <0.05

**p <0.001

This seems to suggest a trend for mothers with higher motivation to complete the programme as compared to those with lower motivation. In a similar vein, a study on the parent-level and parental attributional factors of parents who dropped out of a parenting programme also revealed that parents who perceived the intervention to be less important for their children dropped out (20).

Within the group of mothers who completed some, most or all the parent training sessions, it was demonstrated that the IYPP significantly improved all aspects of their children's behaviour. Although we did not make a direct comparison on the outcomes between the completers and dropouts, it was shown that children whose mothers dropped out did not seem to have significantly improved behaviour. It is also worth noting that all the behaviour subscales recorded better scores, except for the conduct problem which was notably higher among children of programme completers. Such positive outcomes is consistent with studies among Asian families (39,40) and a recent meta-analysis (31) that support IYPP effectiveness for children aged 1-12 year-olds in improving conduct behaviour and hyperactivity symptoms. These positive results may be a consequence of the high programme adherence and fidelity. On top of this, it is also likely to be associated with the IYPP module which imparts skills on positive reinforcement, praise, and natural/logical consequences (covered in sessions 6, 7, and 13 respectively in the present study) which had been shown to have stronger effects ($d_s = 0.50, 0.50$ and 0.52 , respectively) in reducing disruptive behaviours (41).

There are several limitations in this study. The primary limitation of this study lies in its small sample size, which has limited the statistical power to detect even a substantial effect size. Thus, the finding of only a few statistically significant associations was not unexpected. This limitation also significantly undermines the study's abilities to make generalizable claims. Hence, sample calculation in future studies may need to include data analyses of programme enrolment, attendance, and engagement separately. The second but most concerning limitation is the changes made in the weekly scheduled session due to the pandemic. The three months lapse in treatment during the COVID pandemic, coupled with the stressors families coped with during this time, have strongly impacted our constructs of interest (completers vs. dropouts, problems as measured by the SDQ). In relation to this, it is difficult to determine whether any behaviour change and dropout rate are attributed to the intervention alone or to hardship experienced during the three months hiatus from parenting intervention. Furthermore, the lack of mid-treatment assessment, the study was unable to assess whether the pandemic has disproportionately impacted different groups. As the result, sensitivity analyses are required to examine the extent to which the time lapse and possible COVID-initiated stress have some associations with the outcomes of interest. Nonetheless, researchers have put in their best effort to abide by the intervention manual provided and made regular consultation with the programme developer, while conforming to the regulations against mass gathering during that phase of

the pandemic. Thirdly, this study was aimed at mothers or female caregivers. Therefore, it is not known whether the same pattern of attendance would apply to fathers of the children in this study in the same way, as different factors may impact mothers' and fathers' attendance. Furthermore, demands in research on father-inclusive parenting interventions have resurfaced recently (42-44). Targeting fathers in future studies would then respond to this demand and answer whether programme engagement is better among them.

Finally, despite being conducted in a multi-ethnic country, this study had an almost monoethnic involvement, hence lacks ethnic diversity. It is not possible from the present sample to explore potential differences in attendance across minority racial and ethnic groups, and this represents a serious limitation of those data, making any findings from these analyses tentative. Future studies should include more diverse ethnic groups. In addition, the majority of participants were from the same geographic locations, which means the results may not generalize to other areas. The study also did not highlight the importance of cultural element in the programme implementation. Whether IYPP is appropriate for a multicultural country like Malaysia requires striking a balance between broader coverage of families and being culturally competent (45). Moreover, according to meta-analyses, culturally adapted interventions are more effective than non-adapted ones (46,47). As it was developed in a foreign, more developed country which is less collectivistic in nature, questions were raised as to whether the parenting values would fit into the local population. The authoritative parenting techniques promoted in the Parenting Pyramid® of IYPP may not be in line with the generally-authoritarian Asian countries, including Malaysia (48,49). However, the IYPP has been found to be equally effective when implemented in culturally different countries from its birthplace (50). Nonetheless, a study assessing the programme's cultural acceptability in the local population, perhaps through a qualitative approach, would be beneficial to answer this.

This study adds to the scarce literature on evaluating the implementation of a Western parenting programme in an Asian country within the low- and medium-income countries (LAMICS) setting. It provides initial local and regional data on the attrition rates and the likely characteristic of mothers who are at risk of dropping out of a parenting programme. In addition, this study suggests that the Incredible Years School Age Basic parenting programme may be useful for improving children's behavioral problems if the mothers choose to complete the programme. This would further point to the need to look into strategies to ensure each participating parent completes the programme. As this study demonstrated the implementation of an Incredible Years programme in the context of a RCT, it also examines the challenges encountered in promoting parental attendance and

efforts to overcome them, including providing incentives for recruitment and retention and making programmes easily accessible through the suitable venue and schedule. In any parent training programme, actively engaged participants learn more and those who attend more sessions would have better engagement.

CONCLUSION

In summary, this study suggests that mothers who completed a parenting programme by attending some or all the sessions, and mothers who dropped out of a parent training programme after attending at least one session, are not significantly different in their sociodemographic and clinical profile, parental motivation, and pre-intervention or post-intervention behavioural problems. Mothers who completed the IYPP experienced significant behaviour improvement in their children, but mothers who dropped out did not.

ACKNOWLEDGEMENT

This work is supported by Inisiatif Putra Muda (IPM) Grant (GP-IPM/2018/9670700) from Universiti Putra Malaysia, Malaysia.

REFERENCES

1. Karjalainen P, Kiviruusu O, Aronen ET, Santalahti P. Group-based parenting program to improve parenting and children's behavioral problems in families using special services: A randomized controlled trial in a real-life setting. *Child Youth Serv Rev.* 2019;96, 420–9. doi: 10.1016/j.childyouth.2018.12.004.
2. Okano L, Jeon L, Crandall A, Powell T, Riley A. The Cascading Effects of Externalizing Behaviors and Academic Achievement Across Developmental Transitions: Implications for Prevention and Intervention. *Prev Sci.* 2020;21(2):211–21. doi: 10.1007/s11121-019-01055-9. PMID: 31848838.
3. Lewis GJ, Asbury K, Plomin R. Externalizing problems in childhood and adolescence predict subsequent educational achievement but for different genetic and environmental reasons. *J Child Psychol Psychiatry Allied Discip.* 2017;58(3):292–304. doi: 10.1111/jcpp.12655.
4. Narusyte J, Ropponen A, Alexanderson K, Svedberg P. Internalizing and externalizing problems in childhood and adolescence as predictors of work incapacity in young adulthood. *Soc Psychiatry Psychiatr Epidemiol.* 2017;52(9):1159–68. doi: 10.1007/s00127-017-1409-6.
5. Soto-Sanz V, Castellvñ P, Piqueras JA, Rodríguez-Maññ J, Rodríguez-Jimñez T, Miranda-Mendizbal A, et al. Internalizing and externalizing symptoms and suicidal behaviour in young people: a systematic review and meta-analysis of longitudinal studies. *Acta Psychiatr Scand.*

- 2019;140(1):5–19. doi: 10.1111/acps.13036.
6. Hentges RF, Shaw DS, Wang M Te. Early childhood parenting and child impulsivity as precursors to aggression, substance use, and risky sexual behavior in adolescence and early adulthood. *Dev Psychopathol.* 2018;30(4):1305–19. doi: 10.1017/S0954579417001596.
 7. Popov LM, Ilesanm RA. Parent-child relationship: Peculiarities and outcome. *Rev Eur Stud.* 2015;7(5):253–63. doi: 10.5539/res.v7n5p253.
 8. van Aar J, Leijten P, Orobio de Castro B, Weeland J, Matthys W, Chhangur R, et al. Families Who Benefit and Families Who Do Not: Integrating Person- and Variable-Centered Analyses of Parenting Intervention Responses. *J Am Acad Child Adolesc Psychiatry.* 2019;58(10):993–1003. doi: 10.1016/j.jaac.2019.02.004.
 9. Webster-Stratton C, Reid MJ. The Incredible Years Program for children from infancy to pre-adolescence: Prevention and treatment of behavior problems. Murrihy R, Kidman A, Ollendick T, editors. *Clinical Handbook of Assessing and Treating Conduct Problems in Youth.* New York: Springer Press; 2011. doi: 10.1007/978-1-4419-6297-3_5
 10. Gardner F, Leijten P, Harris V, Mann J, Hutchings J, Beecham J, et al. Equity effects of parenting interventions for child conduct problems: a pan-European individual participant data meta-analysis. *The Lancet Psychiatry.* 2019;6(6):518–27. doi: 10.1016/S2215-0366(19)30162-2.
 11. Zarakoviti E, Shafraan R, Papadimitriou D, Bennett SD. The Efficacy of Parent Training Interventions for Disruptive Behavior Disorders in Treating Untargeted Comorbid Internalizing Symptoms in Children and Adolescents: A Systematic Review. *Clin Child Fam Psychol Rev.* 2021; 24(3):542-552. doi: 10.1007/s10567-021-00349-1.
 12. Seabra-Santos MJ, Gaspar MF, Azevedo AF, Homem TC, Guerra J, Martins V, et al. Incredible Years parent training: What changes, for whom, how, for how long? *J Appl Dev Psychol.* 2016;44:93–104. doi: 10.1016/j.appdev.2016.04.004
 13. Axford N, Lehtonen M, Kaoukji D, Tobin K, Berry V. Engaging parents in parenting programs: Lessons from research and practice. *Child Youth Serv Rev.* 2012;34(10):2061–71. doi: 10.1016/j.childyouth.2012.06.011.
 14. Butler AM, Titus C. Systematic Review of Engagement in Culturally Adapted Parent Training for Disruptive Behavior. *J Early Interv.* 2015;37(4):300–18. doi: 10.1177/1053815115620210.
 15. Chacko A, Jensen SA, Lowry LS, Cornwell M, Chimklis A, Chan E, et al. Engagement in Behavioral Parent Training: Review of the Literature and Implications for Practice. *Clin Child Fam Psychol Rev.* 2016;19(3):204–15. doi: 10.1007/s10567-016-0205-2.
 16. Saunders R, Brack M, Renz B, Thomson J, Pilling S. An Evaluation of Parent Training Interventions in Scotland: The Psychology of Parenting Project (PoPP). *J Child Fam Stud.* 2020;29(12):3369–80. doi: 10.1007/s10826-020-01817-y.
 17. Boggs SR, Eyberg SM, Edwards DL, Rayfield A, Jacobs J, Bagner D, et al. Outcomes of Parent-Child Interaction Therapy: A Comparison of Treatment Completers and Study Dropouts One to Three Years Later. *Child Fam Behav Ther.* 2005;26(4):1–22. doi: 10.1300/J019v26n04_01.
 18. Armbruster P, Kazdin AE. Attrition in Child Psychotherapy. In: Ollendick TH, Prinz RJ, editors. *Advances in Clinical Child Psychology.* Boston: Springer; 1994. doi: 10.1007/978-1-4757-9041-2_3.
 19. Ozbek A, Gencer O, Mustan AT. Which parents dropout from an evidence-based parenting programme (Triple-P) at CAMHS? Comparison of programme-completing and dropout parents. *Clin Child Psychol Psychiatry.* 2019;24(1):144–57. doi: 10.1177/1359104518792294.
 20. Chacko A, Wymbs BT, Rajwan E, Wymbs F, Feirsen N. Characteristics of Parents of Children with ADHD Who Never Attend, Drop Out, and Complete Behavioral Parent Training. *J Child Fam Stud.* 2017;26(3):950–60. doi: 10.1007/s10826-016-0618-z.
 21. Barry AE. How attrition impacts the internal and external validity of longitudinal research. *J Sch Health.* 2005;75(7):267–70. doi: 10.1111/j.1746-1561.2005.tb06687.x.
 22. Baker CN, Arnold DH, Meagher S. Enrollment and Attendance in a Parent Training Prevention Program for Conduct Problems. *Prev Sci.* 2011;12(2):126–38. doi: 10.1007/s11121-010-0187-0.
 23. Finan SJ, Swierzbiolek B, Priest N, Warren N, Yap M. Parental engagement in preventive parenting programs for child mental health: A systematic review of predictors and strategies to increase engagement. *PeerJ.* 2018; 6:e4676. doi: 10.7717/peerj.4676.
 24. Reid MJ, Webster-Stratton C, Baydar N. Halting the Development of Conduct Problems in Head Start Children: The Effects of Parent Training. *J Clin Child Adolesc Psychol.* 2010;33(2):279–91. doi: 10.1207/s15374424jccp3302_10.
 25. Chao R, Tseng V. Parenting of Asians. *Handbook of parenting.* 2002; 4: 59-93. Available from: https://www.researchgate.net/publication/275714074_Parenting_of_Asians
 26. Idris IB, Barlow J, Dolan A. A longitudinal study of emotional and behavioral problems among Malaysian school children. *Ann Glob Heal.* 2019;85(1):30. doi: 10.5334/aogh.2336.
 27. Institute for Public Health. National Health and Morbidity Survey 2015 (NHMS 2015). Vol. II: Non-Communicable Diseases, Risk Factors & Other Health Problems. 2015. Available from: <https://www.moh.gov.my/moh/resources/NHMS2015->

- Volumell.pdf
28. Sahril N, Ahmad NA, Idris IB, Sooryanarayana R, Abd Razak MA. Factors Associated with Mental Health Problems among Malaysian Children: A Large Population-Based Study. *Children*. 2021;8(2):119. doi: 10.3390/children8020119.
 29. Zainudeen ZT, Juliana I, Hamid A, Nur M, Azizuddin A, Farhani F, Bakar A, Sany S, Zolkepli IA, Mangantig E. Psychosocial impact of COVID-19 pandemic on Malaysian families: a cross-sectional study. *BMJ Open*, 2021;11(e050523). doi: 10.1136/bmjopen-2021-050523
 30. National Collaborating Centre for Mental Health. Antisocial Behaviour and Conduct Disorders in Children and Young People: The NICE Guideline on recognition, intervention and management. The British Psychological Society and The Royal College of Psychiatrists; 2013. Available from: <http://www.nice.org.uk/guidance/cg158>
 31. Leijten P, Gardner F, Landau S, Harris V, Mann J, Hutchings J, et al. Research Review: Harnessing the power of individual participant data in a meta-analysis of the benefits and harms of the Incredible Years parenting program. *J Child Psychol Psychiatry Allied Discip*. 2018;59(2):99–109. doi: 10.1111/jcpp.12781.
 32. Leijten P, Raaijmakers M, Wijngaards L, Matthys W, Menting A, Hemink-van Putten M, et al. Understanding Who Benefits from Parenting Interventions for Children's Conduct Problems: an Integrative Data Analysis. *Prev Sci*. 2018;19(4):579–88. doi: 10.1007/s11121-018-0864-y
 33. Overbeek G, van Aar J, de Castro BO, Matthys W, Weeland J, Chhangur RR, et al. Longer-Term Outcomes of the Incredible Years Parenting Intervention. *Prev Sci*. 2020;22(4):419–31. doi: 10.1007/s11121-020-01176-6.
 34. Nock MK, Photos V. Parent motivation to participate in treatment: Assessment and prediction of subsequent participation. *J Child Fam Stud*. 2006;15: 333–46. doi: 10.1007/s10826-006-9022-4.
 35. Goodman R. The Strengths and Difficulties Questionnaire: A Research Note. *J Child Psychol Psychiatry*. 1997;38(5):581–6. doi: 10.1111/j.1469-7610.1997.tb01545.x.
 36. Idris IB, Barlow J, Dolan A, Surat S. The reliability and validity of the Malay parent-report version of the Strengths and Difficulties Questionnaire. *Malaysian J Med Sci*. 2019;26(1):125–37. doi: 10.21315/mjms2019.26.1.12.
 37. Lees D, Frampton CM, Merry SN. Efficacy of a Home Visiting Enhancement for High-Risk Families Attending Parent Management Programs: A Randomized Superiority Clinical Trial. *JAMA Psychiatry*. 2019;76(3):241–8. doi: 10.1001/jamapsychiatry.2018.4183.
 38. Nicolai AC, Fabiano GA, Gordon CT. An investigation of predictors of attendance for fathers in behavioral parent training programs for children with ADHD. *Child Youth Serv Rev*. 2020;109(December 2019):104690. doi: 10.1016/j.childyouth.2019.104690
 39. Javier JR, Coffey DM, Schragger SM, Palinkas LA, Miranda J. Parenting Intervention for Prevention of Behavioral Problems in Elementary School-Age Filipino-American Children: A Pilot Study in Churches. *J Dev Behav Pediatr*. 2016;37(9):737–45. doi: 10.1097/DBP.0000000000000342
 40. Kong MM, Au TK. The Incredible Years Parent Program for Chinese Preschoolers With Developmental Disabilities. *Early Educ Dev*. 2018;29(4):494–514. doi: 10.1080/10409289.2018.1461987.
 41. Leijten P, Gardner F, Melendez-Torres GJ, van Aar J, Hutchings J, Schulz S, et al. Meta-Analyses: Key Parenting Program Components for Disruptive Child Behavior. *J Am Acad Child Adolesc Psychiatry*. 2019;58(2):180–90. doi: 10.1016/j.jaac.2018.07.900.
 42. Fletcher, R, Freeman E, Matthey S. The Impact of Behavioural Parent Training on Fathers' Parenting: A Meta-Analysis of the Triple P-Positive Parenting Program. *Fathering: A Journal of Theory, Research, and Practice about Men as Fathers*, 2011; 9(3), 291–312. doi: 10.3149/ft.0903.291.
 43. Lechowicz ME, Jiang Y, Tully LA, Burn MT, Collins DAJ, Hawes DJ, et al. Enhancing Father Engagement in Parenting Programs: Translating Research into Practice Recommendations. *Aust Psychol*. 2019;54(2):83–9. doi: 10.1111/ap.12361.
 44. Laxman DJ, Higginbotham BJ, Bradford K. Predictors of attrition and attendance in a fatherhood education program. *Child Youth Serv Rev*. 2019;103:287–97. doi: 10.1016/j.childyouth.2019.05.007.
 45. Baumann AA, Powell BJ, Kohl PL, Tabak RG, Penalba V, Proctor EK, et al. Cultural adaptation and implementation of evidence-based parent-training: A systematic review and critique of guiding evidence. *Child Youth Serv Rev*. 2015;53:113–20. doi: 10.1016/j.childyouth.2015.03.025.
 46. van Mourik K, Crone MR, de Wolff MS, Reis R. Parent Training Programs for Ethnic Minorities: a Meta-analysis of Adaptations and Effect. *Prev Sci*. 2017;18(1):95–105. doi: 10.1007/s11121-016-0733-5.
 47. Hall GCN, Ibaraki AY, Huang ER, Marti CN, Stice E. A Meta-Analysis of Cultural Adaptations of Psychological Interventions. *Behav Ther*. 2016;47(6):993–1014. doi: 10.1016/j.beth.2016.09.005.
 48. Keshavarz S, Baharudin R. Parenting style in a collectivist culture of Malaysia. *Eur J Soc Sci*. 2009;10(1):66–73. Available from: https://www.researchgate.net/publication/283832677_Parenting_style_in_a_collectivist_culture_of_Malaysia
 49. Mamauag BL, Alampay LP, Lachman JM, Madrid BJ, Hutchings J, Ward CL, et al. A South-to-

South Cultural Adaptation of an Evidence-Based Parenting Program for Families in the Philippines. *Fam Process*. 2021;60(4):1202–16. doi: 10.1111/famp.12625.

50. Leijten P, Melendez-Torres GJ, Knerr W, Gardner

F. Transported Versus Homegrown Parenting Interventions for Reducing Disruptive Child Behavior: A Multilevel Meta-Regression Study. *J Am Acad Child Adolesc Psychiatry*. 2016;55(7):610–7. doi: 10.1016/j.jaac.2016.05.003.