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Putting Families First

An Evaluation of Functional Family Therapy
in an Irish Context

Alan Carr | Dan Hartnett | Tom Sexton | Clare Graham

Final Report, November 2014

UCD DUBLIN

FFT
FUNCTIONAL FAMILY THERAPY

INDIANA UNIVERSITY

FAMILIES First

Archways

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UCD DUBLIN | FFT FUNCTIONAL FAMILY THERAPY | INDIANA UNIVERSITY | FAMILIES First | Archways

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EXECUTIVE SUMMARY

Functional Family Therapy (FFT) is an evidence-based approach to family therapy developed in the USA. In 2007 the Archways Families First FFT service was established in Clondalkin, Dublin to provide a service for families of adolescents with behavioural problems at risk of involvement in the juvenile justice system. Therapist training was provided by Professor Tom Sexton, an FFT expert from Indiana University, and Astrid van Dam an accredited FFT trainer.

Between 2010 and 2014, a research programme to evaluate the effectiveness and implementation of FFT at Archways Families First was conducted by Professor Alan Carr, Dan Hartnett and Clare Graham from the School of Psychology University College Dublin, in collaboration with Professor Tom Sexton, at Indian University and the team of FFT therapists at Archways Families First. This FFT research programme involved a retrospective survey covering the period 2007-2011 and a prospective randomized controlled trial covering the period 2012-2014.

Study 1. A Retrospective Survey of Functional Family Therapy

A retrospective archival study of FFT for families of adolescents with behavioural problems at risk for juvenile delinquency was conducted at Archways Families First between 2007 and 2011. In this study 9 therapists trained by Professor Tom Sexton and Astrid Van Dam treated 118 families. There were 98 treatment completers and 20 dropouts. All cases were assessed with the Strengths and Difficulties Questionnaire (SDQ) at the beginning of treatment (Time 1) and at the end of treatment, on average 17 weeks later (Time 2) or, on average, 23 months after Time 1 for dropouts. As a routine part of FFT, the adherence of therapists to the FFT model was assessed regularly during clinical supervision. Of the 98 treatment completers 49 were treated by therapists who had high adherence to the FFT clinical model and 49 were treated by low-adherent therapists. Dropouts and cases treated by high- and low-adherent therapists had very similar pre-treatment profiles in terms of adolescent age, gender, family composition and severity of behavioural problems, so differences in baseline profiles did not affect outcome. Key results were as follows.

- Adolescent behaviour problems, assessed by the SDQ, improved in cases treated with FFT. Greatest improvement occurred for families who completed treatment with therapists who implemented FFT with a high degree of fidelity.

- For the 98 treatment completers, significant improvement in mean scores occurred from Time 1 to 2 on SDQ total difficulties, conduct problems, hyperactivity, emotional symptoms and prosocial behaviour scales.

- After an average of 17 weeks of FFT, approximately 40% of all 98 cases were clinically recovered and scored below the clinical cut-off on the SDQ total difficulties scale.

- Therapy completers treated by high-adherent therapists had the most favourable outcome. Almost 60% of these cases were recovered after FFT. In contrast, the worst outcome occurred for dropouts. None of these were recovered at Time 2. The outcome of cases treated by low-adherent therapists fell between these two extremes. Just under 20% of these recovered after treatment.

The retrospective survey helped to identify barriers to the effective implementation of FFT. It showed that for FFT to be effective, therapists had to prevent families from dropping out of treatment and implement FFT with a high degree of treatment fidelity, closely adhering to treatment procedures specified by the FFT clinical practice model. This study had all the methodological limitations associated with a retrospective archival study. For example, cases who dropped out of treatment served as a control group. There was therefore, no random assignment of cases to treatment and control groups. Also, Time 2 assessments for control group cases occurred after a longer time-lapse than those of treated cases. A prospective randomized controlled trial was conducted to overcome the clinical and methodological limitations of the retrospective archival study.

Study 2. A Randomized Controlled Trial to Evaluate the Effectiveness of Functional Family Therapy

To evaluate the effectiveness of FFT within an Irish context, a randomized controlled trial was conducted at Archways Families First between 2012 and 2014. This trial overcame the methodological and clinical limitations of the retrospective survey. FFT was implemented with a high degree of fidelity and therapists had developed strong skills for engaging families in FFT and preventing dropout. Forty-two cases were randomised to the FFT group and 55 to a waiting-list control group. Cases in the waiting-list control arm of the trial continued to receive treatment-as-usual from their referring service which included the Health Service Executive, schools, the Department of Education's behavioural support service, the Irish Youth Justice Service and various community agencies. Minimization procedures were effectively used to control the effects of potentially confounding variables by reducing group differences on demographic and clinical variables at baseline. FFT cases were treated by a team of 5

therapists trained and supervised by Professor Tom Sexton and Astrid van Dam. Cases were assessed at baseline (Time 1), about 20 weeks later (Time 2) and those in the treatment group completed 3-month follow-up assessments (Time 3). Adolescent behaviour problems were evaluated with parent and adolescent-completed versions of the Strengths and Difficulties Questionnaire (SDQ). Family functioning was assessed with the Systemic Clinical Outcomes and Routine Evaluation (SCORE) and the revised Client Outcome Measure (COM). Key results were as follows:

- At 7%, the drop-out rate from FFT was very low, indicating that FFT was acceptable to clients, and that therapists were skilled at engaging and retaining families in treatment.

- Compared to the comparison group, those families who participated in FFT reported significantly greater improvement in adolescent conduct problems and family adjustment on parent and adolescent-completed versions of the SDQ, SCORE and COM.

- Improvements shown immediately after treatment were sustained at three months follow-up.

- Clinical recovery rates were significantly higher in the FFT group than in the control group. 50% of FFT cases were classified as clinically recovered after treatment, compared with 18.2% of cases from the waiting-list control group. Clinical recovery was defined as obtaining a score below the clinical cut-off on the parent-completed SDQ total difficulties scale at Time 2.

- Compared with teenagers, parents perceived a greater degree of improvement in a greater number of domains of adolescent behavioural problems.

This randomized controlled trial showed conclusively that FFT is an effective treatment for adolescent behaviour problems in an Irish context. The results of the trial are comparable to results of other international trials of FFT and both national and international trials of other evidence-based approaches to family therapy.

Conclusions and recommendations

This research programme showed that FFT can be effectively implemented in an Irish Context. It was possible to set up an FFT service, train therapists, develop a local referral network, engage with families, and treat them so that the adjustment of families and adolescents improved.

The establishment of the Archways Families First FFT service and the demonstration of its effectiveness within the prevailing climate of economic austerity between 2007 and 2014 was a remarkable achievement. Although an economic component was not included in our evaluation of the Irish FFT service, it is noteworthy that FFT has been shown in international studies to be exceptionally cost-effective. This suggest that there are probably significant cost savings in terms of criminal justice and crime victim costs arising from the Archways Families First FFT service.

FFT is a useful intervention for preventing the development of juvenile delinquency in young adolescents. As such, the expansion of FFT to other locations, populations, and service delivery systems in Ireland is warranted. That might include the development of a network of trainers and providers in Ireland, and systems for referring young adolescents at risk of juvenile delinquency to FFT in a timely way.

Further large-scale research is required to evaluate the effectiveness of FFT compared to treatment-as-usual for young people at risk of juvenile delinquency in Ireland.

Further research is required to evaluate the cost-effectiveness of FFT within an Irish context.
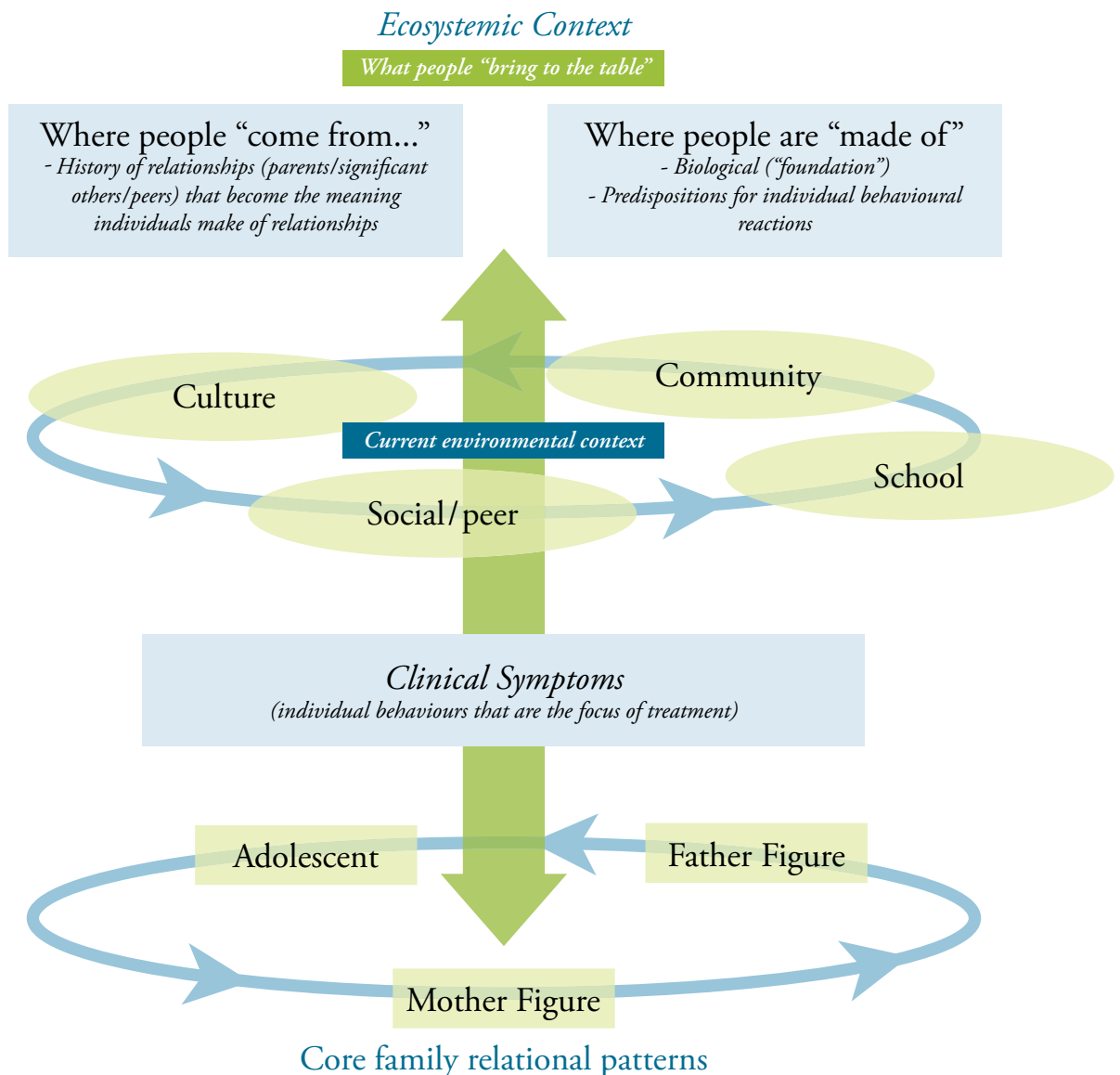
CHAPTER 1.
INTRODUCTION

Two large community surveys have shown that up to 20% of Irish adolescents have significant behavioural problems (Lynch et al., 2004; Martin et al., 2006), a figure consistent with results of epidemiological studies of youth mental health problems in other countries (Costello, 2004; Ford, 2008). In Ireland, young people with behavioural problems at risk for juvenile delinquency and their families may receive help and support from a range of services including the HSE, schools, educational support services, the Irish Youth Justice Service and various community agencies.

However, controlled trials evaluating the effectiveness of these services have not been published. It is therefore not clear how effective they are.

In authoritative reviews of international intervention evaluation studies, evidence-based family therapy programmes have shown particular promise in ameliorating adolescent behavioural problems and reducing risk of juvenile delinquency (Baldwin et al., 2012; Carr, 2012; Henggeler & Sheidow, 2012). Few

Figure 1.1. FFT model of the development of adolescent behavioural problems (From Sexton, 2011, p.2.17).

Ecosystemic Context
What people "bring to the table"

Where people "come from..."
- *History of relationships (parents/significant others/peers) that become the meaning individuals make of relationships*

Where people are "made of"
- *Biological ("foundation")*
- *Predispositions for individual behavioural reactions*

Culture

Community

Current environmental context

Social/peer

School

Clinical Symptoms
(individual behaviours that are the focus of treatment)

Adolescent

Father Figure

Mother Figure

Core family relational patterns

evidence-based family therapy programmes have been established in Ireland to address adolescent behavioural problems. Only one Irish controlled evaluation of an evidence-based approach to family therapy has been published (Cassells et al., 2014). In this study Positive Systemic Practice, was the approach to family therapy evaluated, was shown to be effective at 6 Crosscare Teen Counselling Centres in Dublin (PSP, Carr et al., 2013).

Functional Family Therapy (FFT) has consistently been identified in authoritative international reviews as a family-therapy programme for treating adolescents at risk for juvenile delinquency with a particularly strong evidence-base including many controlled trials, and a well developed training and monitoring system for implementing FFT in new community-based sites (Baldwin et al., 2012; Carr, 2012; Henggeler & Sheidow, 2012). It was because of these two features - the strong evidence-base and the well developed implementation system - that Archways Families First selected FFT rather than other family therapy approaches as their practice model. Archways Families First was established in 2007. Its primary aim was to implement FFT in an Irish context.
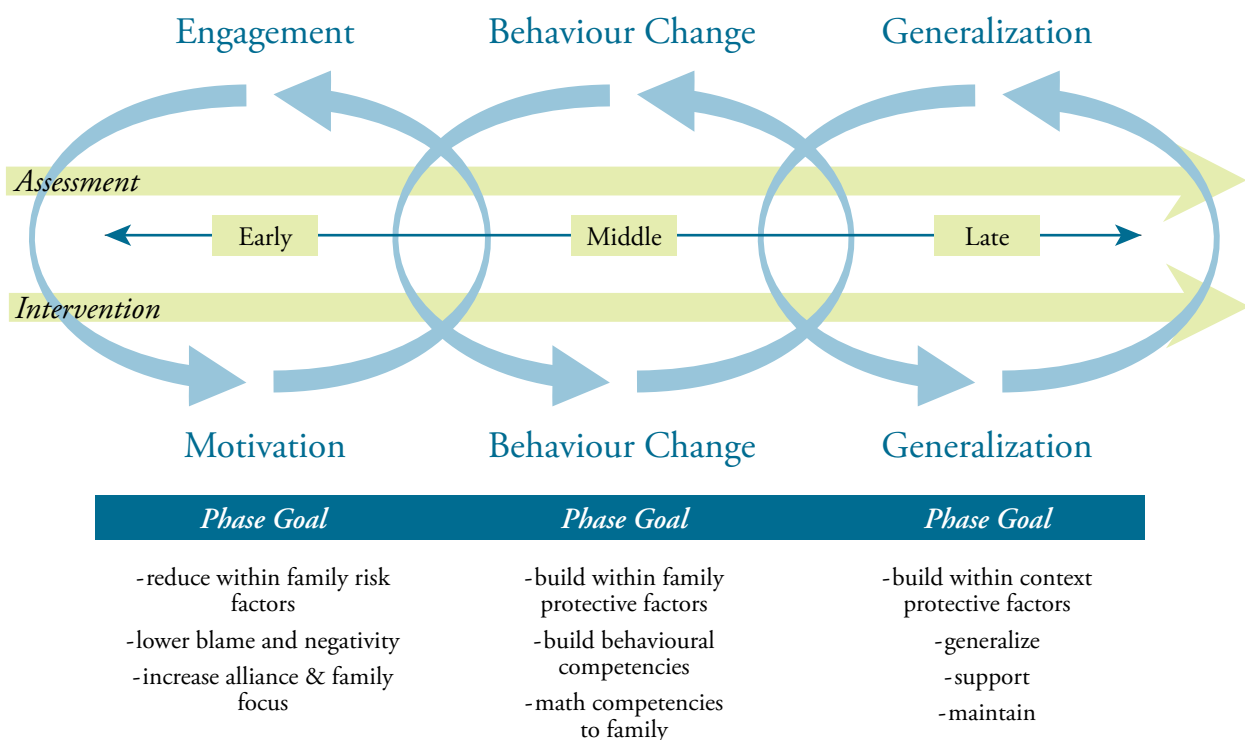
Functional Family Therapy

FFT is an evidence-based treatment for adolescent behavioural problems, conduct disorder, substance misuse and delinquency (Alexander et al., 2013; Alexander & Parsons, 1982; Sexton, 2011). FFT is based on an ecological multifactorial model of risk and protective factors involved in the development of conduct problems as shown in Figure 1.1.

The FFT clinical practice model has three distinct phases: engagement, behaviour change and generalization as shown in Figure 1.2.

Therapist goals and interventions appropriate to each phase are described in a treatment manual (Sexton & Alexander, 2004). Therapists meet regularly, usually on a weekly basis for about 3 or 4 months, with adolescents and their families in conjoint sessions. During these sessions they develop a therapeutic alliance with family members, help families develop better parenting practices, communication and problem-solving skills, and use these skills independently to generalize progress made within therapy to home and community contexts. When FFT is disseminated to community-based sites, adherence to the model (essential for

Figure 1.2. Phases of FFT (Sexton, 2011 p. 3.15).

Phase Goal	Phase Goal	Phase Goal
-reduce within family risk factors	-build within family protective factors	-build within context protective factors
-lower blame and negativity	-build behavioural competencies	-generalize
-increase alliance & family focus	-math competencies to family	-support
		-maintain

treatment fidelity) is achieved through a process of intensive training and supervision. FFT clinical practice and supervision are described in training manuals (Sexton & Alexander, 2004; Sexton, Alexander, & Gilman, 2004). Through supervision with an expert FFT supervisor, therapists' adherence to the FFT model in community-based sites is assessed regularly. Client progress in community-based sites is tracked from session to session. Data on treatment fidelity and client progress are routinely entered by supervisors and therapists into the Functional Family Therapy Quality Improvement System (FFT Q System; FFT Care4), which yields regular reports on model fidelity and therapy process and outcome. The FFT Q and FFT Care4 systems are secure, web-based quality improvement information systems.

A series of evaluation studies has shown that FFT is effective in reducing criminal activity by up to 60%, reducing treatment dropout from 50% to 20%, and improving family functioning in areas such as communication and problem-solving (Alexander et al., 2013; Baldwin et al., 2012; Henggeler & Sheidow, 2012; Sexton, 2011). Furthermore, there is evidence that treatment fidelity mediates outcome in FFT, with cases treated by therapists who adhere to the model having better outcomes than those treated by low-adherent therapists, especially in cases at high risk due to family disorganization or deviant peer group membership (Barnoski, 2002; Sexton & Turner, 2010).

Archways Families First

In 2007 the Archways Families First FFT service was established with funding from Atlantic Philanthropies. A team of therapists employed at Archways Families First was trained by Professor Tom Sexton, from Indiana University and Astrid van Dam. Professor Sexton has played a major role internationally in the Development of FFT, and Astrid van Dam is an accredited FFT supervisor and trainer. Training and implementation were guided by the published FFT training and supervision manuals (Sexton & Alexander, 2004; Sexton Alexander & Gilman, 2004).

Between 2010 and 2014, a research programme to evaluate the effectiveness and implementation of FFT at Archways Families First was conducted by Professor Alan Carr, Dan Hartnett and Clare Graham from the School of Psychology at University College Dublin, in collaboration with Professor Tom Sexton, at Indiana University and the team of FFT therapists at Archways Families First. This FFT research programme involved a retrospective survey covering the period 2007-2011, and a prospective randomized controlled trial covering the period 2012-2014. These studies are outlined below and described detail in later chapters of this report.

Study 1. A Retrospective Survey of Functional Family Therapy

To evaluate the effectiveness of FFT in alleviating adolescent behavioural problems during the early stage of service development a retrospective survey covering the period 2007-2011 was conducted. This study also investigated the impact of treatment fidelity on outcome. It is described in chapter 2. This retrospective survey helped to identify barriers to the effective implementation of FFT. It showed that for FFT to be effective, therapists had to prevent families from dropping out of treatment and implement FFT with a high degree of treatment fidelity, closely adhering to treatment procedures specified by the FFT clinical practice model. These factors were taken into account in implementing FFT in the randomized controlled trial.

Study 2. A Randomized Controlled Trial to Evaluate the Effectiveness of Functional Family Therapy

Following the retrospective survey, a prospective randomized controlled trial was conducted to evaluate the effectiveness of FFT at Archways Families First during a later stage of service development covering the period 2012-2014. At this time therapists had reached a high level of adherence to the FFT manual and were implementing FFT with a high degree of treatment fidelity. They had also developed strong engagement skills to prevent families from dropping out of treatment. The trial provided a valid test of the impact of FFT on adolescent behavioural problems and family adjustment within an Irish context. This study is described in chapter 3.

Ethics

Both studies were conducted with ethical approval of the UCD Human Research Ethics Committee for the Human Sciences, informed consent of adults, and informed assent of adolescents.

CHAPTER 2.
A RETROSPECTIVE SURVEY OF FUNCTIONAL FAMILY THERAPY

To evaluate the effectiveness of FFT in alleviating adolescent behavioural problems during the early stage of service development at Archways Families First, and investigate the effects of therapist adherence to the FFT model on outcome a retrospective survey covering the period 2007-2012 was conducted (Graham et al., 2014).

METHOD
Design

To assess improvement over the course of FFT from Time 1 (intake) to Time 2 (discharge), archival data collected from both parents and adolescents at initial and final therapy sessions from 98 families who completed treatment were analysed. Therapist adherence data, collected at regular supervision sessions, were used to classify these 'treatment completers' into 49 families treated by therapists who showed high adherence to the FFT model, and 49 families treated by therapists with low model adherence. Improvement patterns in these two groups of cases were compared with that of a group of 20 cases who dropped out of treatment after 1 to 3 sessions. For these dropouts, archival data from first sessions (Time 1) were available. Follow-up (Time 2) data were collected by Clare Graham over the telephone, between 9 and 46 months (mean = 23 months) after Time 1 data, from parents of families that dropped out of treatment.

Table 2.1. Demographic and referral characteristics of dropouts and cases treated by high and low adherent therapists

		High Adherence (N = 49)		Low Adherence (N = 49)		Dropouts (N = 20)	
		f	%	f	%	f	%
Gender							
	Male	34	69.4%	23	46.9%	13	65%
	Female	15	30.6%	26	53.1%	7	35%
Age							
	Mean	14.2		13.9		15.15	
	Standard deviation	2.03		1.83		1.75	
Family compositions							
	Two parent	25	51%	17	34.7%	8	40%
	Single parent	24	49%	31	63.3%	12	60%
	Other	0	0%	1	2%	0	0%
Reason for referral							
	Family relationship difficulties	21	42.9%	20	40.8%	10	50%
	School difficulties	15	30.6%	12	24.5%	4	20%
	Aggressive behaviour	3	6.1%	8	16.3%	5	25%
	Parenting Issues	3	6.1%	4	8.2%	0	0%
	Substance use	2	4.1%	2	4.1%	0	0%
	Self-harm	1	2.0%	0	0	1	5%
	Other	4	8%	3	6.1%	0	0%
Source of referrals							
	Schools	28	57.1%	20	40.8%	9	45%
	Mental health services	13	26.5%	15	30.6%	4	20%
	Community agencies	4	8.2%	7	14.3%	3	15%
	Youth Justice	1	2%	2	4.1%	4	20%
	Co. Council	3	6.1%	2	4.1%	0	0%
	Other	0	0%	3	6.1%	0	0%

		High Adherence (N = 49)		Low Adherence (N = 49)		Dropouts (N = 20)	
		f	%	f	%	f	%
Parent SDQ total difficulties score at Time 1.							
	Mean	19.02		19.51		20.85	
	Standard deviation	5.30		5.78		5.86	

Participants

Demographic and referral characteristics of 20 dropouts, 49 cases treated by high-adherent therapists and 49 cases treated by low-adherent therapists are given in Table 2.1. There were no significant differences between groups on any of the variables listed in the table. Thus, differences in outcomes of these 3 groups described in the results section below were not due to differences at Time 1 on variables listed in Table 2.1. Families in this study were mainly of low socio-economic status with parents having semiskilled or unskilled occupations, or being unemployed (O'Hare, Whelan & Commins, 1991).

Therapists and therapy

There were 9 therapists in the study. Six therapists were female and 3 male. Four had predominantly low TAM profiles with average annual TAM ratings lower than 3, and 5 had predominantly high TAM profiles with average annual TAM ratings of 3 or greater. All had primary degrees or postgraduate qualifications in mental health professions such as psychology, social work, psychotherapy, counselling or applied behavioural analysis. Therapists received systematic training and ongoing supervision in FFT from Tom Sexton and Astrid Van Dam. Therapists varied in the time they spent working on the project, and this ranged from 12 - 52 months. Case-loads of therapists varied from 1 to 29 cases. Numbers of treatment completers seen by therapists ranged from 1 - 26 and numbers of dropouts ranged from 0 to 7. There was no statistically significant association between therapist adherence (defined as having a predominantly high or low average annual TAM rating) and the numbers of completers and dropouts on therapists' case loads.

FFT was guided by the treatment manual (Sexton & Alexander, 2004) and conducted in families' homes or the Families First community-based treatment centre. The mean number of FFT sessions attended by families was 17 and therapy spanned a 3 to 6 month period. The mean numbers of sessions in each FFT phase were: engagement: 7, behaviour change: 7 and generalisation: 5.

Instruments

Therapist adherence to the FFT model was assessed with the Therapist Adherence Measure (TAM, Sexton, Alexander, & Gilman, 2004). Adolescent behaviour problems were evaluated with parent and adolescent-completed versions of the Strengths and Difficulties Questionnaire (SDQ, Goodman, 2001).

RESULTS
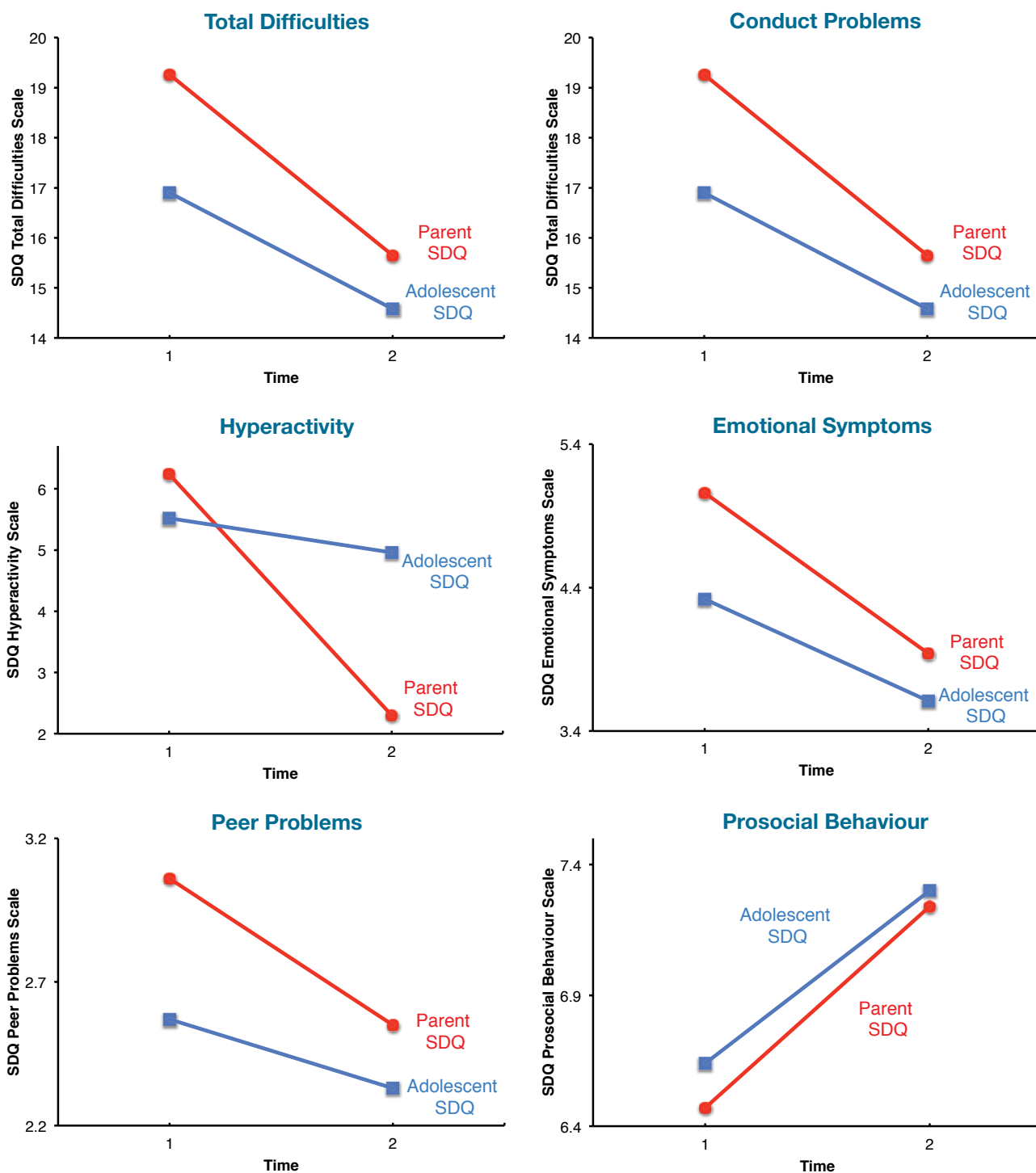## Mean improvement in treatment completers from Time 1 to Time 2

From Time 1 to 2 significant improvement in adolescent behaviour problems, as assessed by the SDQ, occurred where families participated in FFT. A MANOVA followed by paired t-tests were conducted on all 12 scales from parent and adolescent versions of the SDQ. The MANOVA revealed a significant multivariate main effect Wilks' λ = .58, F (1, 97) = 5.19, p <. 001, partial eta squared = .42. Power to detect the effect was 0.99. Results of paired t-tests given in Table 2.2 showed that significant improvement from Time 1 to 2 occurred on all SDQ scales, except the peer problems scale of the adolescent version of the SDQ. The false discovery rate to control for type 1 error associated with conducting multiple statistical tests was used in these analyses (Benjamini & Hochberg, 1995). Patterns of improvement in mean scores are graphed in Figure 2.1. Effect sizes ranged from d = 0.12 - 0.94. A large effect size (d > 0.8) was found for parent-rated hyperactivity. A small effect (d < 0.2) occurred for adolescent-rated peer problems. Effect sizes for the remaining parent-rated scales and all of the adolescent-rated scales were in the moderate range (d = 0.2 - 0.8). Effect sizes for all parent-rated scales were larger than those for adolescent rated scales.

Table 2.2. Status of treatment completers on the parent and adolescent versions of the Strengths and Difficulties Questionnaire (SDQ) at Time 1 and Time 2.

Variable		Parent version of SDQ				Adolescent version of SDQ			
		Time 1	Time 2	t	d	Time 1	Time 2	t	d
SDQ total difficulties	M	19.26	15.65	6.21**	.59	16.90	14.58	4.24**	.41
	SD	5.78	6.39			5.11	6.19		
SDQ conduct problems	M	5.16	3.75	6.43**	.64	4.48	3.63	3.72**	.43
	SD	2.26	2.15			1.89	2.03		
SDQ hyperactivity	M	6.24	2.30	3.50**	.94	5.52	4.96	2.40*	.22
	SD	5.39	2.41			2.37	2.61		
SDQ emotional symptoms	M	5.06	3.94	4.39**	.46	4.32	3.61	3.24*	.27
	SD	2.29	2.58			2.71	2.53		
SDQ peer problems	M	3.06	2.55	2.46**	.22	2.57	2.33	1.11	.12
	SD	2.55	2.10			2.15	1.81		
SDQ prosocial behaviour	M	6.47	7.24	3.63**	.35	6.64	7.30	3.19**	.34
	SD	2.30	2.08			1.90	1.99		

Note. N = 98. SDQ = Strengths and difficulties questionnaire. M = mean. SD = Standard deviation. Time 1 = Intake. Time 2 = discharge. t = value from t-test. d = effect size. *p<.05. **p<.01. Effect sizes are Cohen's d = Mean of the Control group – Mean of the Treatment Group / Pooled SD.

Figure 2.1. Mean scores of treatment completers on the parent and adolescent-completed versions of the Strengths and Difficulties Questionnaire (SDQ) at intake (Time 1) and discharge (Time 2) from FFT.

Clinical improvement of treatment completers from Time 1 to Time 2

Approximately 40% of adolescent from families treated with FFT showed clinical improvement on the SDQ after treatment. Rates of clinical improvement based on scores on the total difficulties scale of the parent and adolescent-completed versions of the SDQ were determined by calculating the percentage of cases who scored below the clinical cut-off point after treatment, expressed as a function of the number of cases that scored above the clinical cut-off point before treatment. For these analyses clinical cut-off points on the total difficulties scale of 17 for the parent-completed version and 20 for the adolescent-completed version were taken from the SDQ website (http://www.sdqinfo.com/). Sixty-three of 98 treatment completers had Time 1 scores at or above the clinical cut-off score of 17 on the total difficulties scale of the parent version of the SDQ. Of these 63, 25 scored below the clinical cut-off at Time 2, indicating an overall clinical improvement rate of 39.7% from intake to discharge. Twenty-four of 98 treatment completers had Time 1 scores at or above the clinical cut-off score of 20 on the total difficulties scale of the adolescent version of the SDQ. Of these 24, 10 scored below the clinical cut-off at Time 2, indicating an overall clinical improvement rate of 41.7% from intake to discharge using this SDQ cut-off criterion. Clinical recovery rates based on SDQ clinical cut-off scores are graphed in Figure 2.2.

Figure 2.2. Clinical recovery rates of treatment completers whose scores improved from above to below the clinical cut-off of the total difficulties scale of the parent and adolescent versions of the Strengths and Difficulties Questionnaire from intake (Time 1) to discharge (Time 2).
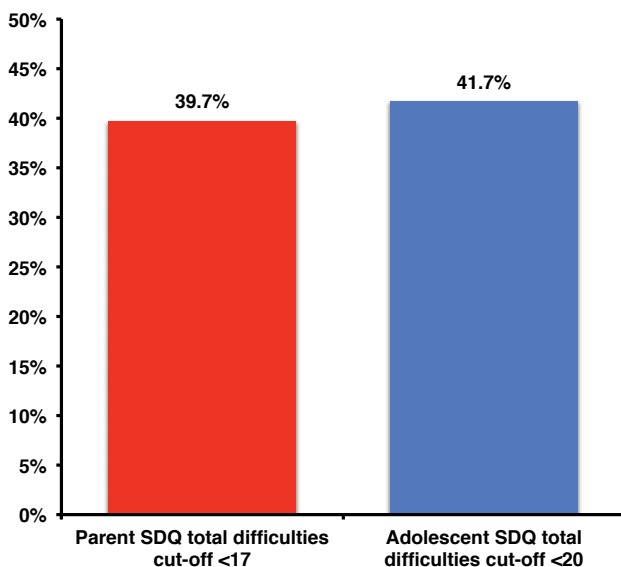
Mean improvement of dropouts and cases treated by high and low adherent therapists

Cases who completed treatment with therapists who had high adherence to the FFT model showed greater improvement than dropouts or therapy-completers treated by low-adherent therapists. A 3 X 2, Groups X Time MANOVA followed by a series of 3 X 2, Groups X Time ANOVAs were conducted on all scales from the parent version of the SDQ. In these analyses there were three groups: 49 cases treated by high-adherent therapists with TAM scores of 3 or greater; 49 cases treated by low-adherent therapists with TAM scores less than 3; and 20 dropouts who attended 3 or fewer appointments. For these 3 groups SDQ data collected at intake (Time 1) and discharge from treatment for completers, or 9-46 months (mean = 23 months) after intake for dropouts (Time 2) were analysed. In these analyses the significant Groups X Time interactions were of central interest, since they indicated that the pattern of improvement or deterioration from Time 1 to 2 differed across the 3 groups. The MANOVA yielded a significant Group X Time interaction, Wilks' λ = .702, $F (2, 115) = 3.54$, $p <. 001$, partial eta squared = .162. Power to detect the effect was .99. From Table 2.3 it may be seen that in a series of ANOVAs significant Group X Time interactions occurred for all SDQ scales except the peer problems scale. The false discovery rate to control for type 1 error associated with conducting multiple statistical tests was used in these analyses (Benjamini & Hochberg, 1995). Significant Group X Time interactions are graphed in Figure 2.3. Tests of simple effects confirmed the impression given by Figure 2.3.

For cases treated by high-adherent therapists means at Times 1 and 2 on the total difficulties, conduct problems, hyperactivity, emotional problems and prosocial behaviour scales differed significantly, indicating that improvement on these scales occurred in this group. In contrast, for dropouts and cases treated by low-adherent therapists, means at Times 1 and 2 on these 5 SDQ scales did not differ significantly, indicating that no improvement occurred on any of these scales in these two groups.

Furthermore, at Time 2, means of the group treated by high-adherent therapists were significantly lower than those of the group treated by low-adherent therapists and dropouts on the total difficulties, conduct problems, hyperactivity, and emotional symptoms scales. These results indicate that the group treated by high-adherent therapists showed greater improvement after treatment than cases treated by low-adherent therapists and dropouts on these 4 scales. On the prosocial behaviour scale, at Time 2 the mean of the group treated by high-adherent therapists was significantly greater than that of dropouts, indicating that on

this scale the group treated by high-adherent therapists showed greater improvement than dropouts at Time 2.

At Time 2 means of the group treated by low-adherent therapists were significantly lower than those of dropouts on the total difficulties, conduct problems, and hyperactivity SDQ scales. These differences largely reflect deterioration in the dropout group.

Effect sizes were computed for the 5 SDQ scales on which significant Groups X Time interactions were found in the ANOVAs reported above. Effect sizes at Time 2 for groups treated by high- and low-adherent therapists were computed by comparing means of these two groups at Time 2 with means of dropouts. From Table 2.3 it may be seen that effect sizes for the group treated by high-adherent therapists were greater than those

for the group treated by low-adherent therapists for the total difficulties, conduct problems, hyperactivity, emotional symptoms and prosocial behaviour scales. Effect sizes for the group treated by high-adherent therapists ranged from d = 0.65-1.59. In this group, effect sizes for the total difficulties, conduct problems, hyperactivity and emotional problems scales were in the large range (d > 0.8), and the effect size for prosocial behaviour was in the medium range (d = 0.2-0.8). In contrast, effect sizes for the group treated by low-adherent therapists ranged from d = 0.24-0.88. Only the effect size for the hyperactivity scale was in the large range (d > 0.8) and the remainder were in the medium range (d = 0.2-0.8).

Table 2.3. Status of dropouts and cases treated by high and low adherent therapists on the parent-completed version of the Strengths and Difficulties Questionnaire (SDQ) scales at Time 1 and Time 2.

Variable		High Adherence (n=49)		Low Adherence (N=49)		Dropouts (N =20)		ANOVA F	Effect Sizes (d) at Time 2	
		Time 1	Time 2	Time 1	Time 2	Time 1	Time 2	Group X Time	High adherence vs Dropouts	Low adherence vs Dropouts
SDQ total difficulties	M	19.02	13.46	19.51	17.83	20.85	22.65			
	SD	5.30	5.78	6.27	6.27	5.86	5.79	14.49**	1.59	0.79
SDQ conduct problems	M	5.18	3.34	5.14	4.16	4.90	5.80			
	SD	1.90	1.94	2.60	2.29	2.61	2.62	11.18**	1.07	0.67
SDQ hyperactivity	M	6.04	4.81	6.44	5.98	7.10	8.15			
	SD	2.11	1.42	2.49	2.29	2.22	2.62	6.95**	1.59	0.88
SDQ emotional symptoms	M	5.12	3.22	5.00	4.67	5.10	5.25			
	SD	2.61	2.37	1.94	2.60	2.67	2.17	6.79**	0.89	0.24
SDQ peer problems	M	2.93	2.08	3.18	3.02	3. 30	3.50			
	SD	2.23	2.04	2.48	2.06	2.61	1.50	2.15	-	-
SDQ prosocial behaviour	M	5.93	7.30	7.02	7.18	5.95	5.80			
	SD	2.14	2.02	2.34	2.15	2.28	2.58	5.63*	0.65	0.58

Note. N = 118. SDQ = Strengths and difficulties questionnaire. M = Mean. SD = Standard deviation. Time 1 = Intake. Time 2 = Discharge or 9-46 months after intake in the case of dropouts. ANOVA F = F ratio for group X time interaction from 3 X 2, Group X Time ANOVAs. *p<.05. **p<.01. Effect sizes are Cohen's d = Mean of the Control group – Mean of the Treatment Group / Pooled SD.
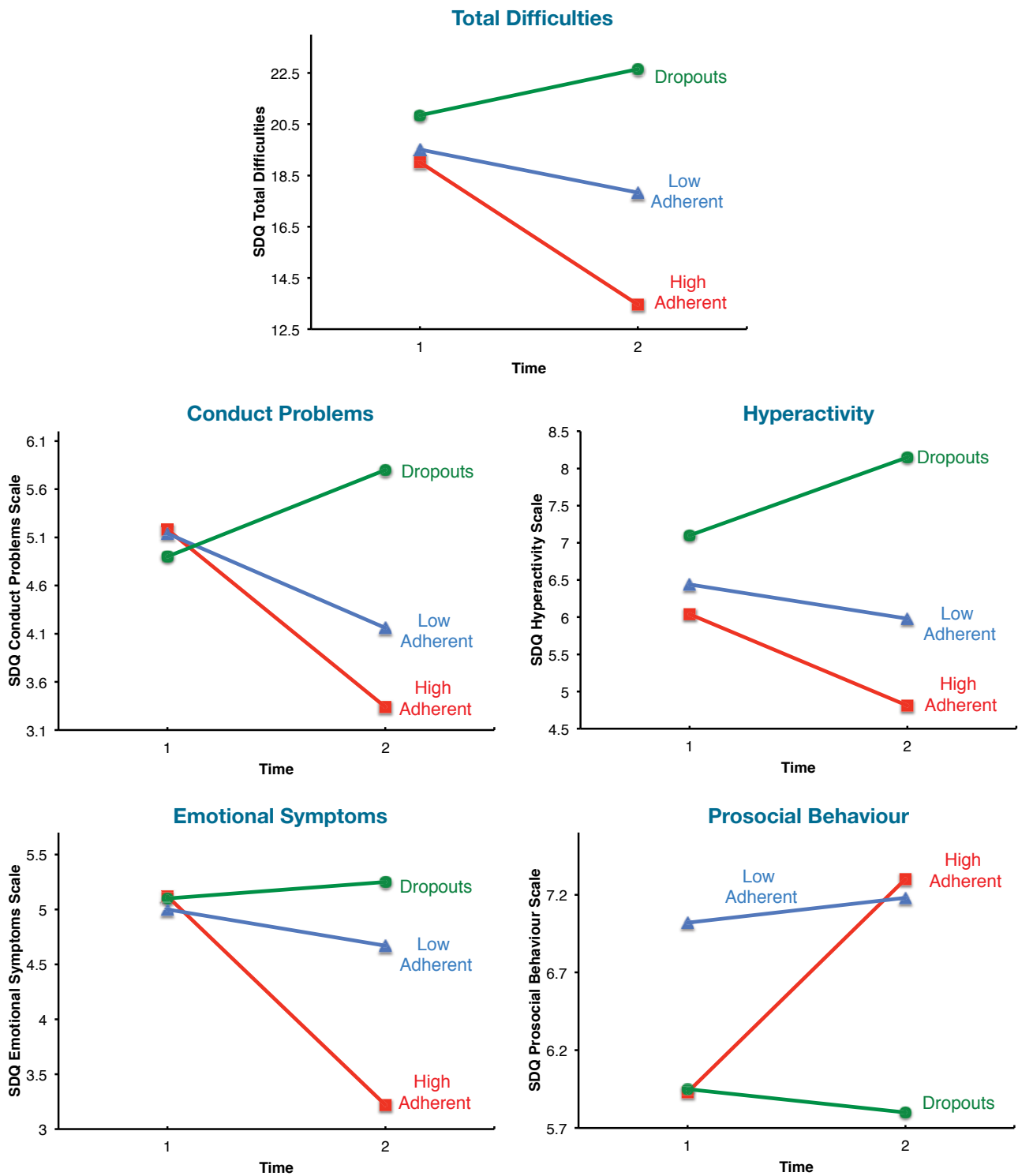
Figure 2.3. Status of dropouts and cases treated by high and low adherent therapists on the parent-completed version of the Strengths and Difficulties Questionnaire (SDQ) scales at Time 1 and Time 2.

Clinical recovery rates of dropouts and cases treated by high and low adherent therapists

The group treated by high-adherent therapists had the greatest clinical recovery rate. Clinical recovery rates based on SDQ cut-off scores are graphed in Figure 2.4. The improvement rate of the group treated by high-adherent therapists was 59.4% (19/32). This was significantly greater than that of the rates for the group treated by low-adherent therapists (19.4% (6/31)) and dropouts (0% (0/15)) (Chi square (2, N = 78) = 20.34, p < .001). Rates of clinical improvement were determined by calculating the percentage of cases who scored below the clinical cut-off point of 17 taken from the SDQ website (http://www.sdqinfo.com/) for the parent-completed version of the SDQ after treatment, expressed as a function of the number of cases that scored above the clinical cut-off point before treatment.

Figure 2.4. Percentages of dropouts and cases treated by high- and low-adherent therapists clinically recovered after FFT whose scores improved from above to below the clinical cut-off of 17 on the total difficulties scale of the parent version of the Strengths and Difficulties Questionnaire from intake (Time 1) to discharge or 9-46 months later (Time 2).
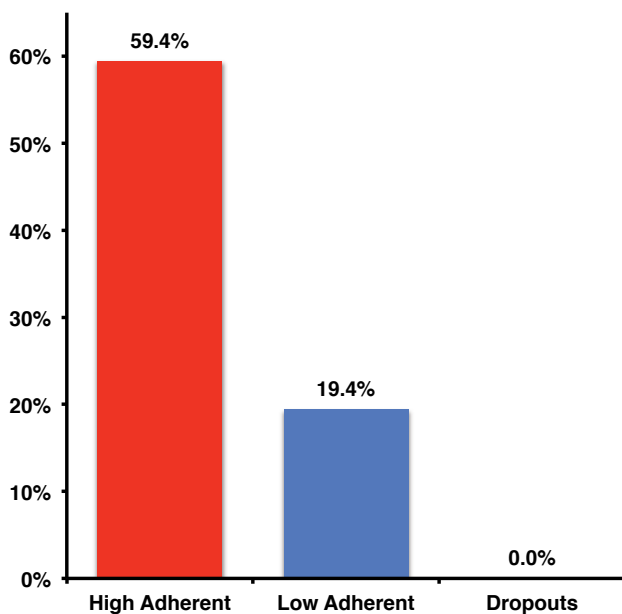
CONCLUSIONS

The principal results of the retrospective survey were as follows:

- Adolescent behaviour problems, assessed by the SDQ, improved in cases treated with FFT. Greatest improvement occurred for families who completed treatment with therapists who implemented FFT with a high degree of fidelity.

- For the 98 treatment completers, significant improvement in mean scores occurred from Time 1 to 2 on SDQ total difficulties, conduct problems, hyperactivity, emotional symptoms and prosocial behaviour scales.

- After an average of 17 weeks of FFT, approximately 40% of all 98 cases were clinically recovered and scored below the clinical cut-off on the SDQ total difficulties scale.

- Therapy completers treated by high-adherent therapists had the most favourable outcome. Almost 60% of these cases were recovered after FFT. In contrast, the worst outcome occurred for dropouts. None of these were recovered at Time 2. The outcome of cases treated by low-adherent therapists fell between these two extremes. Just under 20% of these recovered after treatment.

The results of this study show that FFT was effectively implemented, that the effectiveness of treatment was associated with families remaining in treatment for an average of 17 sessions, and that the best outcomes occurred when receiving treatment from therapists who conduct FFT with a high degree of fidelity. These findings are consistent with those of Barnowski (2002) and Sexton and Turner (2010) who found that both therapist-adherence and psychosocial risk factors are both associated with outcome.

The retrospective survey helped to identify barriers to the effective implementation of FFT. It showed that for FFT to be effective, therapists had to prevent families from dropping out of treatment and implement FFT with a high degree of treatment fidelity, closely adhering to treatment procedures specified by the FFT clinical practice model. The study also had all the methodological limitations associated with a retrospective archival study. For example, cases who dropped out of treatment served as a control group. There was therefore, no random assignment of cases to treatment and control groups. Also, Time 2 assessments for control group cases occurred after a longer time-lapse than those of treated cases. A prospective randomized controlled trial was conducted to overcome the clinical and methodological limitations of the retrospective archival study.

CHAPTER 3.
A RANDOMIZED CONTROLLED TRIAL TO EVALUATE THE
EFFECTIVENESS OF FUNCTIONAL FAMILY THERAPY

A randomized controlled trial was conducted to evaluate the effectiveness of FFT at Archways Families First during the period 2012-2014. In this trial FFT was implemented with a high degree of fidelity and therapists had developed strong skills for engaging families in FFT and preventing dropout. This trial overcame the methodological and clinical limitations of the retrospective survey described in chapter 2.

METHOD
Design

This was a randomized controlled trial with FFT and waiting-list control group arms. Cases in the waiting-list control arm of the trial continued to receive treatment-as-usual from the referring service. These services included the Health Service Executive (36.6%), schools (30.5%), community agencies (17.10%), the Department of Education's behavioural support service (7.3%), the Irish Youth Justice Service (3.7%), and other sources (4.9%).

Figure 3.1. Flow of cases through the trial.
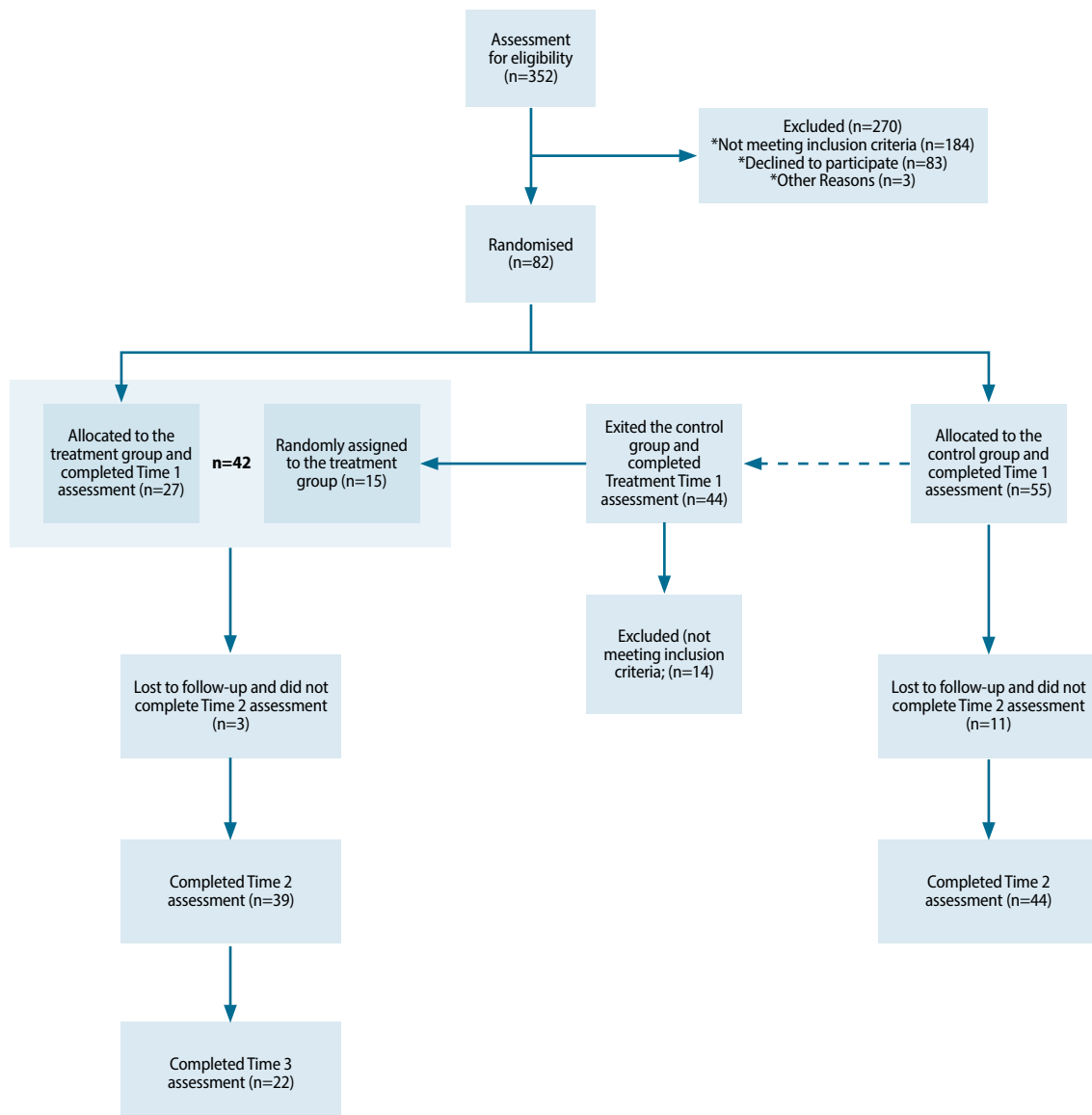
Cases in FFT and control group arms were assessed a baseline (Time 1) and approximately 17 weeks later (Time 2). The flow of cases through the study is shown in Figure 3.1. Three hundred-and-fifty-two cases were assessed for eligibility, 270 of which were excluded. One hundred-and-eighty-four did not meet the inclusion criterion of scoring at or above 17 (the clinical cut-off score) on the total difficulties scale of the parent-completed version of the Strengths and Difficulties Questionnaire (SDQ, Goodman, 2001), 83 declined to participate and 3 were excluded for other reasons. Eighty-two cases were randomized with 27 assigned to the treatment group and 55 initially assigned to the waiting-list control group. Minimization procedures were used to reduce differences between treatment and control group cases on age, gender, family composition (one- or two-parent family) and SDQ profile.

Eleven of the 55 control group cases dropped out and did not complete Time 2 assessment. There were 44 trial-completers in the control group. When these cases completed Time 2 assessment they became eligible for random assignment to the FFT group. As with the initial randomization procedure, minimization procedures were used to reduce differences between FFT and control groups on key variables.

Each case in the control group was matched as closely as possible on age, gender, family composition, and SDQ profile with other cases exiting the control group. From this subgroup of closely matched cases one was randomly assigned to the treatment group. Using this procedure, 15 cases were randomized to the FFT group giving at total of 42 cases in the FFT group. Eleven cases who exited the control group, who did not meet the inclusion criterion were excluded from this process. These cases did not score at or above 17 (the clinical cut-off score) on the total difficulties scale of the parent-completed version of the SDQ. A further three cases did not engage with the service and so were also excluded. Of the 42 cases randomized to the FFT group, 39 were assessed at Time 2 and 3 dropped out before Time 2 assessment. Of the 39 who completed Time 2 assessment, 22 also completed assessments 3 months later at Time 3.

Sample size, power analysis

With 42 FFT cases and 55 control group cases and an overall N of 97 the design was adequately powered. A power analysis with C*power showed that a total sample size of 26 would be required to detect an effect size of d = 0.7, with a one-tailed α error probability (p value) of .01, and a power (1-β error probability) of 0.99. The effect size of d = 0.7 used in this power analysis was based on that found in a recent meta-analysis of trials of evidence-

based approaches to family therapy for adolescent behavioural problems in which the outcome from family therapy was compared with that from control groups (Baldwin et al., 2012).

Participants

Demographic and clinical characteristics of all randomized cases are given in Table 3.1. The average age or referred adolescents was about 14 years. There were slightly more girls than boys. Just under half of participating families were living in two-parent households, with the remainder living in one-parent households or alternative family forms. Most families were Irish and only 3 were non-nationals. In just under half of participating families, parents were unemployed, and the remainder were predominantly from lower socio-economic groups (O'Hare et al., 1991). The mean score on the total difficulties scale of the parent-completed version of the SDQ of 23 exceeded the clinical cut-off score of 17 (http://www.sdqinfo.com/). This indicated that adolescents in these families had very significant behavioural problems. The mean total score on the parent-completed version of the SCORE family assessment measure (Systemic Clinical Outcomes and Routine Evaluation) exceeded the clinical cut-off score of 2.86 (Fay et al., 2013). This indicated that overall, these families had very significant adjustment problems. There were no significant differences between FFT and control groups on any demographic or clinical variables at Time 1. Thus, differences between FFT and control groups at Time 2 described below in the results section were not due to group differences at Time 1 on variables listed in Table 3.1.

Therapists

There were 5 therapists in the study. Four of the therapists were female and 1 was male. All had primary degrees or postgraduate qualifications in mental health professions such as psychology, sociology, psychotherapy, counselling or applied behavioural analysis. Therapists varied in their experience of FFT which ranged from 2 to 7 years. All had high TAM profiles with average TAM ratings of 3 or 4 on 7-point scales, based on 7-27 ratings given by Astrid van Dam from FFT Associates between 2012 and 2014. In this study Astrid van Dam was the primary clinical supervisor for all therapists. Alice Anne Lee from Archways Families First provided secondary supervision. Therapists completed FFT with between 5 and 13 cases for the trial.

Instruments

Therapist adherence to the FFT model was assessed with the Therapist Adherence Measure (TAM, Sexton, Alexander, &

Table 3.1. Demographic and clinical characteristics of FFT and control groups at Time 1.

		FFT Group N= 42	Control Group N= 55
Age (continuous)	M	14.22	14.39
	SD	1.45	1.55
Age (categories)			
Under 16 (10-15y)	f	37	45
	%	88.10	81.8
Over 16 (16-18y)	f	5	10
	%	11.90	18.20
Gender			
Male	f	27	33
	%	64.30	60.00
Female	f	15	22
	%	35.70	40.00
Family structure			
Living with both biological parents	f	18	27
	%	42.90	49.10
Living with one parent	f	19	23
	%	45.20	41.80
Living with one parent and step-parent	f	4	4
	%	9.50	7.30
Living in substitutive care	f	1	1
	%	2.40	1.80
Ethnicity			
Irish	f	41	53
	%	97.60	96.40
Non-national	f	1	2
	%	2.40	3.60
SES			
Unemployed	f	18	27
	%	42.90	49.10
Unskilled manual	f	5	15
	%	11.90	27.30
Semi-skilled manual	f	3	0
	%	7.10	0.00
Skilled manual	f	5	3
	%	11.90	5.50

		FFT Group N= 42	Control Group N= 55
Other non-manual	f	8	4
	%	19.00	7.30
Lower professional/managerial	f	2	3
	%	4.80	5.50
Higher professional/managerial	f	1	3
	%	2.40	5.50
Adolescent's Educational Level			
No exams	f	12	9
	%	28.60	16.10
Junior school 5th or 6th class exam	f	16	20
	%	38.10	36.40
Junior cert	f	14	24
	%	33.3	43.60
Leaving cert	f	0	2
	%	0.00	3.60
SDQ-P-Adolescent Behaviour			
Total difficulties	M	23.07	23.05
	SD	3.80	3.70
Emotional difficulties	M	6.03	6.36
	SD	2.25	2.16
Conduct problems	M	5.29	5.03
	SD	1.64	2.04
Hyperactivity	M	7.17	7.27
	SD	2.19	1.90
Peer problems	M	3.97	3.89
	SD	2.16	2.23
Prosocial behaviour	M	5.36	6.25
	SD	2.62	2.58
SDQ-A-Adolescent Behaviour			
Total difficulties	M	16.81	16.67
	SD	5.47	3.84
Emotional difficulties	M	4.00	4.02
	SD	2.41	2.18
Conduct problems	M	4.29	4.09
	SD	1.37	1.55
Hyperactivity	M	5.74	6.00
	SD	2.39	2.05

		FFT Group N= 42	Control Group N= 55
Peer problems	M	2.52	2.31
	SD	2.16	1.64
Prosocial behaviour	M	6.86	6.70
	SD	2.10	1.71
SCORE-P-Family Adjustment			
SCORE-P-Family Adjustment	M	3.35	3.33
	SD	0.71	0.71
Family strengths	M	3.00	2.89
	SD	1.13	0.79
Family difficulties	M	3.62	3.5
	SD	1.13	1.16
Family communication	M	3.66	3.8
	SD	0.87	0.99
Problem severity	M	7.92	8.00
	SD	1.94	2.00
Problem impact	M	7.63	7.72
	SD	2.24	2.01
SCORE-A-Family Adjustment			
SCORE-A-Family adjustment	M	3.45	3.14
	SD	0.95	0.86
Family strengths	M	3.28	3.03
	SD	1.15	1.01
Family difficulties	M	3.26	2.76
	SD	1.12	1.11
Family communication	M	3.83	3.56
	SD	1.03	0.98
Problem severity	M	6.83	6.24
	SD	2.20	2.28
Problem impact	M	6.31	5.60
	SD	2.07	2.58
COM-Family Adjustment			
COM-P-Family Adjustment	M	17.49	16.34
	SD	6.74	6.00
COM-A-Family adjustment	M	16.19	14.33
	SD	5.85	5.60

Note: M = Mean. SD = Standard deviation. f = frequency. SES = socioeconomic status. SDQ = Strengths and Difficulties Questionnaire. SCORE = Systemic Clinical Outcomes and Routine Evaluation. COM = Client Outcome Measure

Gilman, 2004). Adolescent behaviour problems were evaluated with parent and adolescent versions of the Strengths and Difficulties Questionnaire (SDQ, Goodman, 2001). Family functioning was assessed with the Systemic Clinical Outcomes and Routine Evaluation - 28 (SCORE, Cahill et al., 2010) and the parent and adolescent versions of the revised Client Outcome Measure (COM, Kinser, 2010).

Procedure

Participants referred to the trial were screened for suitability with the SDQ during home-visits or at the Archways Families First centre. Those scoring at or above the clinical cut-off of 17 on the total difficulties scale of the parent-completed version of the SDQ were randomized to FFT or control groups, and completed the Time 1 assessment protocol. Cases in both the FFT and control groups were assessed again at Time 2, about 20 weeks after Time 1, which for FFT cases was after completing treatment. Cases in the FFT group completed Time 3 assessments about 3 months after Time 2.

Each case in the FFT group was treated by a single therapist over about 20 sessions spanning 4-5 months, with initial sessions being offered weekly and later sessions being offered less frequently, for example, fortnightly. FFT sessions were convened in clients' homes or at the Archways Families First centre, depending on client preferences and practical considerations. Where possible whole family sessions were held with all members of adolescents' households attending. When this was not possible or appropriate, session with some family or household members were convened. Where appropriate, non-resident parents were included in some FFT sessions. Treatment progressed from engagement, through behaviour change, to generalization phases as diagrammed in Figure 1.2.

RESULTS

An intent-to-treat analysis was conducted with last-observation carried forward where data were missing at Time 2 or 3.

Improvement in mean scores of FFT and control groups

Analyses of changes in mean scores from Time 1 to 2 showed that greater improvement occurred for the FFT group compared with the control group on a range of variables assessing adolescent behaviour problems and family adjustment. The overall pattern of results indicated that, compared with teenagers, parents perceived a greater degree of improvement in more domains of adolescent

emotional and behavioural problems.

To determine whether mean scores of the FFT group on all dependent variables improved more than those of the control group from Time 1 to Time 2, a 2 X 2, Group X Time multivariate analysis of variance (MANOVA) was conducted. In this analysis, all 26 variables from the parent and adolescent-completed versions of the SDQ, SCORE, and COM were included. This MANOVA yielded a significant multivariate Group X Time interaction Wilks' $\lambda = 0.528$, $F (24, 58) = 2.156$, $p <. 001$, partial eta squared = .472. Power to detect the effect was 0.982. This significant interaction, along with inspection of the means in Table 3.2. indicated that the FFT group improved more than the control group from Time 1 to Time 2 on most dependent variables.

To determine the precise variables on which the FFT group improved significantly more than the control group, a series of 2 X 2, Group X Time ANOVAs were conducted. Result of these are presented in Table 3.2. The false discovery rate to control for type 1 error associated with conducting multiple statistical tests was used in these analyses (Benjamini & Hochberg, 1995). Effect sizes comparing FFT and control group means at Time 2 were also computed.

From Table 3.2 it may be seen that significant Group X Time interactions occurred on totals for 5 out of 6 assessment instruments: the parent-completed SDQ, and the parent and adolescent-completed SCORE and COM. These interactions are graphed in Figure 3.2 (along with data on the durability of treatment effects mentioned in the next section). Effect sizes expressing the degree to which the FFT group was better adjusted than the control group at Time 2 for these 5 total scales at Time 2 ranged from d = 0.27 to d = 0.71. Effect sizes of d = 0.2 are considered small, of d = 0.5 are considered moderate, and of d = 0.8 are considered large. Effect sizes on parent-completed instruments were in the moderate to large range (d = 0.64-0.71). Effect sizes on adolescent-completed instruments were in the small to moderate range (d = 0.27-0.29) but greater than those found in meta-analyses of adolescent targeted interventions such as mental health and behavioural programmes for low-income urban youth (Faramand et al., 2012; d = 0.25).

On parent-completed instruments, significant Group X Time interactions occurred on 8 of 10 (80%) SDQ and SCORE subscales. These were the SDQ emotional difficulties, conduct problems, hyperactivity, and prosocial behaviour subscales; and the SCORE family strengths, difficulties, problem severity and impact subscales. Effect sizes for these subscales ranged from small to moderate (d = 0.16-0.60), except for those from the SCORE

problem severity (d = 1.19) and impact (d = 0.82) subscales which were based on single items and were large.

For adolescent-completed instruments, significant Group X Time interactions occurred on 6 of 10 (60%) SDQ and SCORE subscales. These were the SDQ conduct problems subscale, and the SCORE family strengths, difficulties, communication, problem severity and impact subscales. Effect sizes for multi-item subscales were small (d = 0.22‑0.37). Those for the SCORE problem severity (d = 0.64) and impact (d = 0.73) subscales, which were based on single items, were moderate to large.

A greater number of significant Group X Time interactions on scales and subscales occurred on parent-completed (11/13) than on adolescent-completed (8/13) (85% vs 62%) instruments. Across all scales and subscales the trend was for effect sizes to be larger for parent-completed (d = 0.16‑1.19) than for adolescent-completed (d = 0.22‑0.73) instruments.
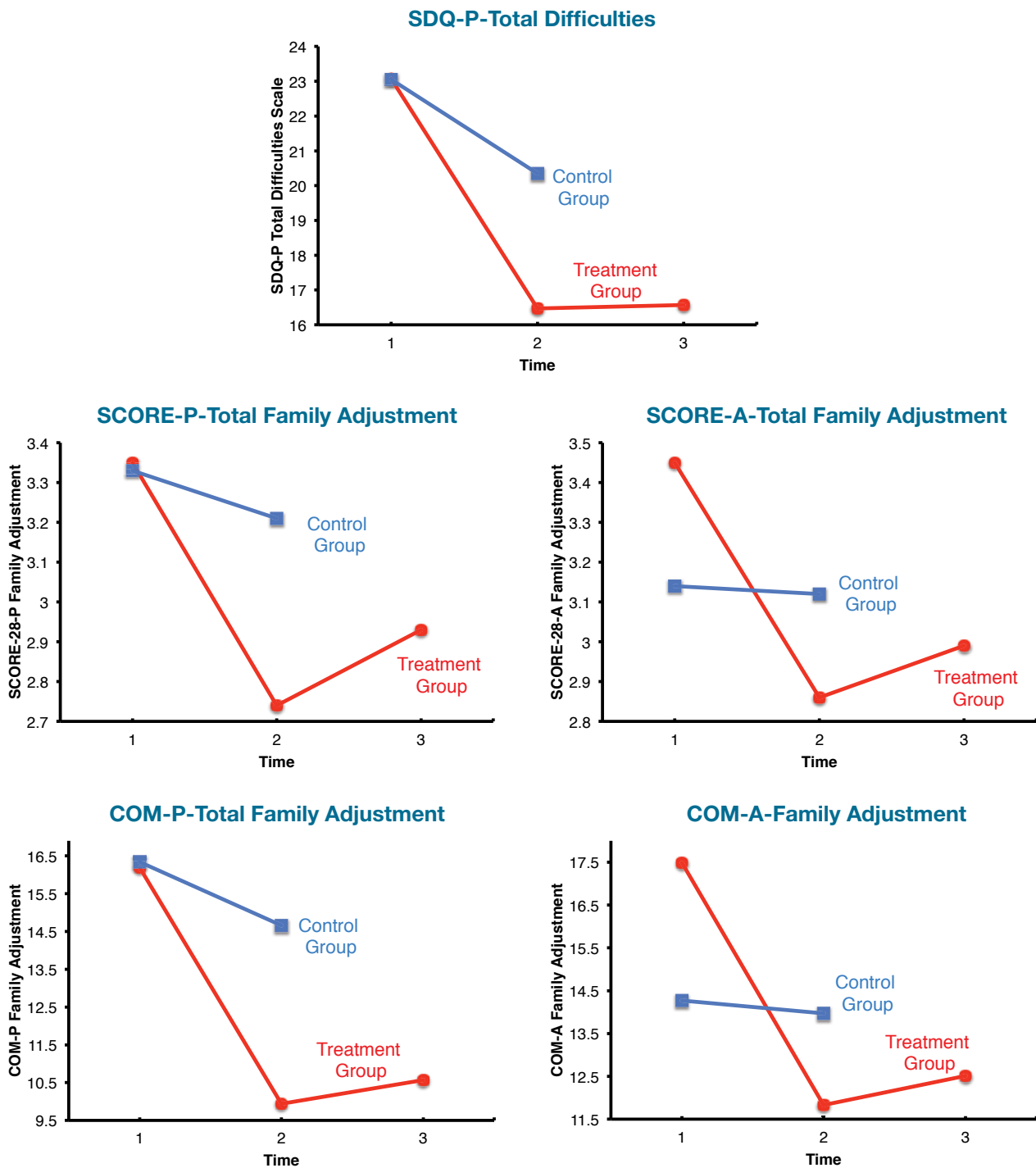
Table 3.2. Mean scores of treatment and control groups at Times 1 and 2 on all continuous dependent variables, ANOVA results and effect sizes.

		Treatment group N= 42		Control Group N= 55		ANOVA F Group X Time	Effect Size d at Time 2
		Time 1	Time 2	Time 1	Time 2		
SDQ-P-Adolescent Behaviour							
Total difficulties	M	23.07	16.47	23.05	20.35	11.30**	0.68
	SD	3.80	6.72	3.70	4.98		
Emotional difficulties	M	6.02	3.98	6.37	5.51	5.56*	0.56
	SD	2.25	2.97	2.16	2.52		
Conduct problems	M	5.29	3.79	5.04	4.62	8.02*	0.37
	SD	1.64	2.29	2.04	2.21		
Hyperactivity	M	7.17	5.50	7.27	6.76	15.99*	0.60
	SD	2.19	2.19	1.90	2.03		
Peer problems	M	3.98	3.17	3.89	3.38	0.44	-
	SD	2.16	2.19	2.23	2.22		
Prosocial behaviour	M	5.36	6.62	6.25	6.2	8.46*	0.16
	SD	2.62	2.66	2.58	2.51		
SDQ-A-Adolescent Behaviour							
Total difficulties	M	16.81	13.81	16.67	16.03	4.21	-
	SD	5.47	6.32	3.84	5.62		
Emotional difficulties	M	4.00	3.17	4.02	3.91	2.91	-
	SD	2.41	2.42	2.18	2.48		
Conduct problems	M	4.29	3.26	4.09	4.00	6.24*	0.37
	SD	1.37	2.19	1.55	1.83		
Hyperactivity	M	5.74	5.24	6.00	5.53	0.00	-
	SD	2.39	2.38	2.04	2.31		
Peer problems	M	2.52	2.14	2.31	2.55	2.73	-
	SD	2.16	1.98	1.64	1.99		
Prosocial behaviour	M	6.86	7.33	6.69	7.09	0.03	-
	SD	2.10	1.76	1.71	1.58		

		Treatment group N= 42		Control Group N= 55		ANOVA F Group X Time	Effect Size d at Time 2
		Time 1	Time 2	Time 1	Time 2		
SCORE-P-Family Adjustment							
SCORE-P-Family Adjustment	M	3.35	2.74	3.33	3.21	13.91**	0.64
	SD	0.71	0.63	0.71	0.80		
Family strengths	M	3.00	2.42	2.2.89	2.83	14.00**	0.52
	SD	0.83	0.77	0.79	0.81		
Family difficulties	M	3.62	2.81	3.59	3.36	5.92*	0.48
	SD	1.13	1.11	1.16	1.17		
Family communication	M	3.66	3.16	3.80	3.66	4.01	-
	SD	0.87	0.94	0.99	1.09		
Problem severity	M	7.87	3.81	7.97	6.64	23.84**	1.19
	SD	1.87	2.78	1.97	2.07		
Problem impact	M	7.59	4.09	7.68	6.26	11.96**	0.82
	SD	2.19	3.05	1.98	2.35		
SCORE-A-Family Adjustment							
SCORE-A-Family adjustment	M	3.45	2.86	3.14	3.12	11.51**	0.27
	SD	0.95	1.02	0.86	0.89		
Family strengths	M	3.28	2.76	3.03	3.01	7.19*	0.22
	SD	1.15	1.19	1.01	1.08		
Family difficulties	M	3.26	2.40	2.76	2.65	13.88**	0.24
	SD	1.12	1.16	1.11	0.96		
Family communication	M	3.83	3.30	3.56	3.58	7.31*	0.25
	SD	1.03	1.22	0.98	1.00		
Problem severity	M	6.85	4.04	6.35	5.72	14.83**	0.64
	SD	2.15	2.92	2.14	2.36		
Problem impact	M	6.34	3.77	5.76	5.52	18.59**	0.73
	SD	1.99	2.63	2.44	2.20		
COM-Family Adjustment							
COM-P-Family Adjustment	M	16.19	9.94	16.34	14.66	10.98**	0.71
	SD	5.85	5.04	6.00	7.70		
COM-A-Family adjustment	M	17.49	11.83	14.27	13.97	15.88**	0.29
	SD	6.73	8.45	5.65	6.29		

Note: M = Mean. SD = Standard deviation. SDQ = Strengths and Difficulties Questionnaire. SCORE = Systemic Clinical Outcomes and Routine Evaluation. COM = Client Outcome Measure. P = Parent-completed instrument. A = Adolescent-completed instrument, ANOVA F = F ratio for Group X Time interaction from 2 X 2, Group X Time ANOVA. *p<.05. **p<.01. Effect sizes are Cohen's d = Mean of the Control group – Mean of the Treatment Group/Pooled SD.

Figure 3.2. Significant improvements in mean scores on totals of the SDQ, SCORE and COM.

SDQ-P-Total Difficulties

SCORE-P-Total Family Adjustment

SCORE-A-Total Family Adjustment

COM-P-Total Family Adjustment

COM-A-Family Adjustment

Note: SDQ = Strengths and Difficulties Questionnaire. SCORE = Systemic Clinical Outcomes and Routine Evaluation. COM = Client Outcome Measure. P = parent-completed instrument, A = Adolescent-completed instrument.

Durability of improvements in FFT group at follow-up

Analyses of changes in mean scores of the FFT group from Time 1, through Time 2 to Time 3, showed that improvements made from Time 1 to 2 were sustained at Time 3, three months after the end of therapy.

To determine whether mean scores of the FFT group on all dependent variables improved from Time 1, through Time 2, to Time 3, a one-way repeated measures MANOVA was conducted. In this analysis, all 26 variables from the parent and adolescent versions of the SDQ, SCORE, and COM were included. This MANOVA yielded a significant multivariate Time effect, Wilks' λ = 0.002, $F (24, 10) = 182.377$, $p <0.001$, partial eta squared = 0.998. Power to detect the effect was 0.99. This significant Time effect, along with inspection of the means in Table 3.3 indicated that on most dependent variables improvements made from Time 1 to 2 were sustained at Time 3.

To determine the precise variables on which the FFT group improved significantly, and whether significant improvement occurred from Time 1 to 2 and from Time 1 to 3, a series of one-way repeated measures ANOVAs followed by dependent t-tests was conducted. Results of these analyses are presented in Table 3.3. The false discovery rate to control for type 1 error associated with conducting multiple statistical tests was used in these analyses (Benjamini & Hochberg, 1995). Effect sizes comparing means at Time 1 and 2 and at Time 1 and 3 were also computed.

From Table 3.3 it may be seen that significant Time effects occurred on totals of all 6 assessment instruments: the parent and adolescent completed versions of the SDQ, SCORE and COM. Paired t-tests showed that differences between means at Time 1 and 2 and Time 1 and 3 were statistically significant, indicating that gains made from Time 1 to 2 were maintained at Time 3. These means are graphed in Figure 3.2 for all of these variables except the adolescent-completed SDQ, since no significant interaction occurred on this in the Groups X Time ANOVAs described in the previous section. Effect sizes expressing the extent to which means of total scores for all 6 instruments improved from Time 1 to 2 and Time 1 to 3 ranged from $d = 0.40$ to $d = 1.26$. Effect sizes for totals from parent-completed instruments were moderate to large and ranged from $d = 0.62$ to $d = 1.26$. In contrast, effect sizes for totals from adolescent-completed instruments were moderate and ranged from $d = 0.40$ to $d = 0.69$.

On parent-completed instruments, significant Time effects occurred on 9 of 10 (90%) SDQ and SCORE subscales. These were the SDQ emotional difficulties, conduct problems, hyper-activity, and prosocial behaviour subscales; and the SCORE family strengths, difficulties, communication, problem severity and impact subscales. Time 1 - 2 and Time 1 - 3 effect sizes for multi-item subscales were moderate to large ($d = 0.33 - 1.00$). Time 1 - 2 and Time 1 - 3 effect sizes for the SCORE problem severity and impact subscales, which were based on single items, were large ($d = 1.22 - 1.73$).

On adolescent-completed instruments, significant Time effects occurred on 8 of 10 (80%) subscales. These were the SDQ emotional difficulties, conduct problems and peer problems subscales; and the SCORE family strengths, difficulties, communication, problem severity and impact subscales. Significant improvement occurred on all of these subscales except peer problems. Time 1 - 2 and Time 1 - 3 significant effect sizes for multi-item subscales were small to moderate ($d = 0.34 - 0.75$). Time 1 - 2 and Time 1 - 3 effect sizes for the SCORE problem severity and impact subscales, which were based on single items, were large ($d = 0.87 - 1.00$).

Clinical recovery rates

Clinical recovery rates, graphed in Figure 3.3, were significantly higher in the FFT group than the control group. Clinical recovery rates were determined by calculating the percentage of cases scoring below the clinical cut-off point on SDQ total difficulties scales after treatment. Clinical cut-off points on the total difficulties scale of 17 for the parent-completed version and 20 for the adolescent-completed version were taken from the SDQ website (http://www.sdqinfo.com/). Recovery rates for FFT and control groups differed significantly, when parent-completed SDQ, or combined parent and adolescent-completed SDQ scores were used, but not when recovery was based in adolescent SDQ scores only. Clinical recovery rates defined in terms of scoring below the clinical cut-off score on the total difficulties scale of the parent-completed version of the SDQ at Time 2 were 50% (21/42) for the FFT group and 18.2% (10/55) for the control group (Chi Square (df = 1, N = 97), = 11.87, p<.01). Clinical recovery rates defined in terms of scoring below the clinical cut-off score on the total difficulties scale of both the parent and adolescent-completed version of the SDQ at Time 2 were 41.5% (17/41) for the FFT group and 12.7% (7/55) for the control group (Chi Square (df = 1, N = 96), = 10.35, p<.01).

Table 3.3. Mean scores of treatment group at Times 1, 2 and 3 on all continuous dependent variables, ANOVA results, paired t-test results, and effect sizes

		Time 1 N = 42	Time 2 N = 42	Time 3 N = 42	ANOVA F	t-tests T1-T2	t-tests T1-T3	Effect sizes d T1-T2	Effect sizes d T1-T3
SDQ-P-Adolescent Behaviour									
Total difficulties	M	23.07	16.47	16.57	35.27**	6.11**	6.42**	1.22	1.26
	SD	3.80	6.72	6.32					
Emotional difficulties	M	6.02	3.98	3.90	18.26**	4.16**	4.68**	0.78	0.84
	SD	2.25	2.97	2.81					
Conduct problems	M	5.29	3.79	3.98	16.88**	5.04**	4.20**	0.76	0.68
	SD	1.64	2.29	2.21					
Hyperactivity	M	7.17	5.50	4.90	19.00**	3.99**	5.16**	0.77	1.00
	SD	2.19	2.19	2.39					
Peer problems	M	3.98	3.17	3.74	2.32	-	-	-	-
	SD	2.16	2.19	1.98					
Prosocial behaviour	M	5.36	6.62	6.62	9.68**	3.27**	3.56**	0.48	0.53
	SD	2.62	2.66	2.13					
SDQ-A-Adolescent Behaviour									
Total difficulties	M	16.81	13.81	14.64	6.24**	3.12**	2.24*	0.51	0.40
	SD	5.47	6.32	5.36					
Emotional difficulties	M	4.00	3.17	3.60	3.72*	2.53*	-	0.34	-
	SD	2.41	2.42	2.43					
Conduct problems	M	4.29	3.26	3.07	8.76**	3.01**	3.94**	0.57	0.70
	SD	1.37	2.19	2.06					
Hyperactivity	M	5.74	5.24	4.81	2.48	-	-	-	-
	SD	2.39	2.38	2.09					
Peer problems	M	2.52	2.14	3.17	5.29**	-	-	-	-
	SD	2.16	1.98	2.01					
Prosocial behaviour	M	6.86	7.33	7.33	1.69	-	-	-	-
	SD	2.10	1.76	2.08					
SCORE-P-Family Adjustment									
SCORE-P-Family Adjustment	M	3.35	2.74	2.93	18.24**	5.21**	3.64**	0.92	0.62
	SD	0.71	0.63	0.64					
Family strengths	M	3.00	2.42	2.59	14.34**	4.79**	3.29**	0.73	0.49
	SD	0.83	0.77	0.85					
Family difficulties	M	3.62	2.81	3.04	9.81**	3.90**	2.73**	0.73	0.51
	SD	1.13	1.11	1.16					
Family communication	M	3.66	3.16	3.37	5.26**	3.00**	-	0.55	-
	SD	0.87	0.94	0.89					

		Time 1 N = 42	Time 2 N = 42	Time 3 N = 42	ANOVA F	t-tests T1-T2	t-tests T1-T3	Effect sizes d T1-T2	Effect sizes d T1-T3
Problem severity	M	7.87	3.81	4.52	48.32**	8.22**	6.93**	1.73	1.49
	SD	1.87	2.78	2.61					
Problem impact	M	7.59	4.09	4.62	34.19**	6.52**	5.83**	1.33	1.22
	SD	2.19	3.05	2.69					
SCORE-A-Family Adjustment									
SCORE-A-Family adjustment	M	3.45	2.86	2.99	11.02**	4.17**	3.36**	0.60	0.48
	SD	0.95	1.02	0.97					
Family strengths	M	3.28	2.76	2.88	6.95**	3.27**	2.88**	0.44	0.34
	SD	1.15	1.19	1.18					
Family difficulties	M	3.26	2.40	2.74	11.79**	5.03**	2.55*	0.75	0.45
	SD	1.12	1.16	1.18					
Family communication	M	3.83	3.30	3.30	8.21**	3.10**	3.27**	0.44	0.52
	SD	1.03	1.22	1.01					
Problem severity	M	6.85	4.04	4.66	21.34**	5.65**	4.40**	0.99	0.87
	SD	2.15	2.92	2.85					
Problem impact	M	6.34	3.77	4.15	28.06**	6.65**	5.40**	1.00	0.87
	SD	1.99	2.63	2.99					
COM-Family Adjustment									
COM-P-Family Adjustment	M	16.19	9.94	10.57	31.66**	5.91**	5.84**	1.26	1.07
	SD	5.85	5.04	4.71					
COM-A-Family adjustment	M	17.49	11.83	12.51	17.23**	4.63**	5.01**	0.69	0.67
	SD	6.73	8.45	8.16					

Note: M = Mean. SD = Standard deviation. SDQ = Strengths and Difficulties Questionnaire. SCORE = Systemic Clinical Outcomes and Routine Evaluation. COM = Client Outcome Measure. ANOVA F = F value from one-way repeated measures ANOVA. *p<.05. **p<.01. Effect sizes are Cohen's d = Mean of the Control group – Mean of the Treatment Group/Pooled SD.

CONCLUSIONS

The principal results of the prospective randomized controlled trial were as follows:

- At 7%, the drop-out rate from FFT was very low, indicating that FFT was acceptable to clients, and that therapists were skilled at engaging and retaining families in treatment.

- Compared to the comparison group, those families who participated in FFT reported significantly greater improvement in adolescent conduct problems and family adjustment on parent and adolescent-completed versions of the SDQ, SCORE and COM.

- Improvements shown immediately after treatment were sustained at three months follow-up.

- Clinical recovery rates were significantly higher in the FFT group than in the control group. 50% of FFT cases were classified as clinically recovered after treatment, compared with 18.2% of cases from the waiting-list control group. Clinical recovery was defined as obtaining a score below the clinical cut-off on the parent-completed SDQ total difficulties scale at Time 2.

- Compared with teenagers, parents perceived a greater degree of improvement in a greater number of domains of adolescent behavioural problems.

This randomized controlled trial showed conclusively that FFT is an effective treatment for adolescent behaviour problems in an Irish context.

The results of the trial are comparable to results of other international trials of FFT and other evidence-based approaches to family therapy. For example, in our study the effect size on the total difficulties scale of parent-completed version of the SDQ was d = 0.68, which is very similar in magnitude to the effect size of d = 0.7 which Baldwin et al., (2012) found in a meta-analysis of FFT and other evidence-based approaches to family therapy. In this meta-analysis of 24 international studies Baldwin et al. (2012) evaluated the effectiveness of brief strategic family therapy (Robbins et al., 2010), functional family therapy (Sexton, 2011), multisystemic therapy (Henggeler & Schaeffer, 2010) and multidimensional family therapy (Liddle, 2010). They found that all four forms of family therapy were effective compared with non-treatment control groups (with an effect size of .7) and somewhat more effective than treatment as usual or alternative treatments (where the effect sizes were about .2).

Only one Irish study of an evidence-based approach to family

therapy has been published (Cassells et al., 2014). The results of the current trial of FFT are very similar to those from this recent Irish study of family therapy for adolescents with emotional and behavioural problems. Positive Systemic Practice was the approach to family therapy evaluated in this trial (PSP, Carr et al., 2013). It was offered to families of adolescents attending 6 Crosscare Teen Counselling Centres in Dublin. In this trial of PSP involving 37 treated cases and 35 waiting-list controls, Cassells et al. (2014) found a post-treatment effect size of 1.03 in a treatment-completer analysis on the total difficulties scale of the parent-completed version of the SDQ. This effect size of 1.03 from a relatively liberal treatment-completer analysis, is comparable to the effect size of 0.68 which we found in the relatively conservative intent-to-treat analysis in the current study of FFT.

Figure 3.3. Clinical recovery rates based on SDQ cut-off scores
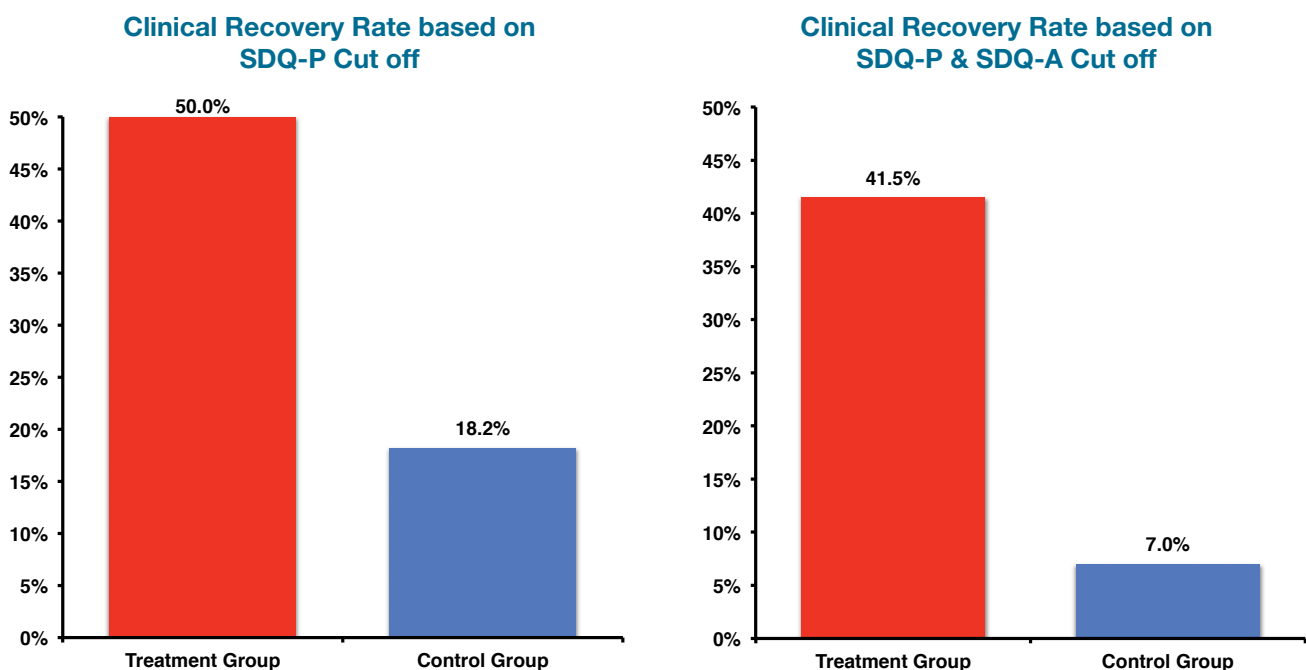
CHAPTER 4.
CONCLUSIONS AND RECOMMENDATIONS

The results of the research programme conducted between 2010 and 2014, described in this report provides strong support for the effectiveness of FFT as practiced at Archways Families First in reducing behaviour problems and the risk of juvenile delinquency. The main conclusion is that FFT can be effectively implemented in an Irish Context. It was possible to set up an FFT service, train therapists, develop a local referral network, engage with families, and treat them so that the adjustment of families and behaviour of adolescents improved.

Retrospective survey

The results of the retrospective survey covering the period 2007-2011 show that FFT was effectively implemented by some (but not all) therapists during the early years of service development, that the effectiveness of treatment was associated with families remaining in treatment for an average of 17 sessions, and that the best outcomes occurred when families completed treatment with therapists who conduct FFT with a high degree of fidelity.

Randomized controlled trial

The results of the prospective randomized controlled trial covering the period 2012-2014, showed that as the service matured, FFT was implemented with a high degree of fidelity by all therapists, that therapists developed strong engagement skills as evidenced by the remarkably low FFT drop-out rate (7%), and that FFT was effective in reducing adolescent behaviour problems and improving family adjustment. The results of the randomized controlled trial showed conclusively that FFT is an effective treatment for adolescent behaviour problems in an Irish context. The results of the trial are comparable to those of other international trials of FFT and both national and international trials of other evidence-based approaches to family therapy.

Economic climate and cost-effectiveness of FFT

An exceptionally challenging economic climate prevailed through-out the project described in this report. In Ireland 2007-2014 was a period of unprecedented economic austerity with significant cut-backs in state-funded health, educational, social and juvenile justice services. This climate of austerity created many barriers to integrating the fledgling Archways Families First FFT agency into the network of services which support disadvantaged families of young people at risk of juvenile delinquency. The establishment of the Archways Families First FFT service and the demonstration of its effectiveness within the prevailing climate of economic austerity was a remarkable achievement.

Although an economic component was not included in our evaluation of the Irish FFT service, it is noteworthy that FFT has been shown in international studies to be exceptionally cost-effective. In a large-scale study conducted in Washington State involving 917 families of juvenile delinquents and 38 therapists, FFT led to a 38% reduction felony crime, and a 50% reduction in violent crime. The costs of FFT per family was $2,500. The cost-savings in terms of criminal justice and crime victim costs avoided was $16,250 per case. Initial costs for FFT were paid back through cost-savings within a year (Sexton, 2011, p. 3-22.). These findings suggest that there are probably significant cost-savings in terms of criminal justice and crime victim costs arising from the Archways Families First FFT service.

Recommendations

FFT is a useful intervention for reducing behaviour problems and preventing the development of juvenile delinquency in young adolescents. As such, the expansion of FFT to other locations, populations, and service delivery systems in Ireland is warranted. That might include the development of a network of trainers and providers in Ireland, and systems for referring young adolescents at risk of juvenile delinquency to FFT in a timely way.

Further large-scale research is required to evaluate the effectiveness of FFT compared to treatment-as-usual for young people at risk of juvenile delinquency in Ireland.

Further research is required to evaluate the cost-effectiveness of FFT within an Irish context.

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Current community studies have shown that up to 20% of Irish adolescents have significant behavioural problems (Lynch et al., 2004; Martin et al., 2006), a figure consistent with results of epidemiological studies of youth mental health problems in other countries (Costello, 2004; Ford, 2008). Over one third (34%) of adolescents referred to Families First from all referral sources had one or more formal clinical diagnoses highlighting the degree of distress present for these adolescents.

Functional Family Therapy (FFT) has consistently been identified in authoritative international reviews as a family-therapy programme for treating adolescents at risk for juvenile delinquency with a particularly strong evidence-base including many controlled trials, and a well developed training and monitoring system for implementing FFT in new community-based sites.

Between 2010 and 2014, a research programme to evaluate the effectiveness and implementation of FFT at Archways Families First was conducted by the School of Psychology in UCD in collaboration with Indiana University. The research study involved a retrospective analysis of participating clients who had engaged with the Family First service during the period 2007 to 2011 and a randomised controlled trial covering the period 2012-2014.

The results of the retrospective survey and the randomised controlled trial indicate that FFT is an effective treatment for adolescent behaviour problems in an Irish context. The results of the trial are comparable to results of international trials of FFT and international trials of alternative evidence-based approaches.