

# *Effectiveness of a Culturally Adapted Strengthening Families Program 12– 16 Years for High-Risk Irish Families*

**Karol L. Kumpfer, Jing Xie & Robert  
O'Driscoll**

**Child & Youth Care Forum**  
Journal of Research and Practice in  
Children's Services

ISSN 1053-1890

Child Youth Care Forum  
DOI 10.1007/s10566-011-9168-0



**Your article is protected by copyright and all rights are held exclusively by Springer Science+Business Media, LLC. This e-offprint is for personal use only and shall not be self-archived in electronic repositories. If you wish to self-archive your work, please use the accepted author's version for posting to your own website or your institution's repository. You may further deposit the accepted author's version on a funder's repository at a funder's request, provided it is not made publicly available until 12 months after publication.**

# Effectiveness of a Culturally Adapted Strengthening Families Program 12–16 Years for High-Risk Irish Families

Karol L. Kumpfer · Jing Xie · Robert O'Driscoll

© Springer Science+Business Media, LLC 2012

## Abstract

**Background** Evidence-based programs (EBPs) targeting effective family skills are the most cost effective for improving adolescent behavioural health. Cochrane Reviews have found the *Strengthening Families Program* (SFP) to be the most effective substance abuse prevention intervention. Standardized cultural adaptation processes resulted in successful outcomes in several countries.

**Objective** To promote wide-scale implementation and positive outcomes in Ireland, a unique model of inter-agency collaboration was developed plus guidelines for cultural adaptation with fidelity.

**Methods** 250 high-risk youth and families were recruited to complete SFP and its parent questionnaire. A quasi-experimental 2 group pre- and post-test design was employed where the norms were the comparison group. A  $2 \times 2$  analysis of variance (ANOVA) generated the outcome tables including *p* values and Cohen's *d* effect sizes. Evaluation feedback was used to improve outcomes the next year.

**Results** All 21 measured outcomes had statistically significant positive results. Larger effect sizes were found for the Irish families than the USA families ( $d = 0.57$  vs.  $0.48$  for youth outcomes,  $d = 0.73$  vs.  $0.65$  for parenting and  $d = 0.76$  vs.  $0.70$  for family outcomes). Overt and covert aggression, criminality and depression decreased more in Irish youth, but the USA youth improved more in social skills.

**Conclusions** This study suggests that SFP 12–16 is quite effective in reducing behavioural health problems in Irish adolescents, improving family relationships and reducing substance abuse. Additionally, the Irish interagency collaboration model is a viable solution to recruitment, retention and staffing in rural communities where finding five skilled professionals to implement SFP can be difficult.

---

K. L. Kumpfer (✉) · J. Xie  
Department of Health Promotion and Education, University of Utah, Salt Lake City, UT, USA  
e-mail: kkumpfer@xmission.com

R. O'Driscoll  
Robert O'Driscoll, Health Service Executive South, Drug and Alcohol Services, Cork, Ireland

**Keywords** Family skills training · Parenting · Ireland · Risk behaviours · Prevention of delinquency and substance abuse · Cultural adaptation

## Introduction

Adolescent developmental problems such as delinquency and substance misuse are associated with co-morbid mental health, and behavioural problems. Unfortunately, the increasing rates of adolescents' substance use and increased risky consumption patterns of binge drinking have increased across industrialized countries in recent years (EMCDDA 2009; Friese and Grube 2010; Hibbel et al. 2009; Johnston et al. 2010). The increasing adolescent alcohol and drug misuse in many countries over the period of 1995–2007 are largely related to the increasing levels of prevalence reported by girls (Kumpfer et al. 2008). Good examples of this are the high levels of alcohol misuse in Ireland, the United Kingdom (UK) and the USA. Figures from the 2006 Irish census and the Irish Office of Tobacco Control (2006) suggest that adolescents spend around €145 m on alcohol each year. A report that studied the Health Behaviour of School-aged Children (HBSC) found that 20% of 16-year olds drank alcohol weekly, 50% reported having ever been drunk and 14% had been drunk at least 10 times (Doyle et al. 2009). The study also found that alcohol consumption and drunkenness tended to increase with age. Both licit and illicit substance use have been a growing cause of concern in Ireland with over 14% of all new substance abuse cases treated in Ireland during 2008 aged under 18 years, a slight increase from 2007 (ADRU 2010).

The European Monitoring Centre for Drugs and Drug Addiction (2007) reported that a main factor in the crisis is children growing up in families with problem substance users. After 12 years of a declining trend in the USA, adolescent substance use has increased in the past 3 years, namely for party drugs—alcohol, marijuana, ecstasy and prescription medications (CASA 2010; ONDCP 2010). In the same past 3 years, parents are working more in this difficult economic climate and spending a third less time with their children (4.2 h from 6.2 h per week). Hence, they have less time to monitor their children's behaviours, which are critical mediators of later problem behaviours.

Because of these increasing substance use rates, effective prevention programs are more needed than ever in schools and communities. Fortunately, prevention science has produced a number of effective substance use programs that are now listed on websites (NIDA, CSAP's NREPP, and UNODC). Comparative effectiveness reviews (Cuijpers 2003, 2005; Foxcroft et al. 2003; Midford 2009; Miller and Hendrie 2008) have found that the most effective programs are family interventions that target high risk and disadvantaged groups using behavioural change techniques based on cognitive social learning theory. Also, the *Strengthening Families Program 10–14 Years* (SFP) (Spath and Redmond 1996; Spoth et al. 2001) was found by the Cochrane Reviews at Oxford University to be twice as effective as any school-based substance abuse prevention program for teens (Foxcroft et al. 2003). However, Kumpfer et al. (2010) found that the SFP 12–16 Years was more effective with high risk families such as those targeted in Ireland. Hence, the evidence-based SFP 12–16 for high risk youth (Kumpfer et al. 2003) was selected for dissemination and cross-site evaluation in Ireland. This article reports on the cultural adaptation process and research evaluation results. Hence, this article fits with the stated goals of the special issue (i.e., effectiveness research).

Many research studies (Kumpfer and Alvarado 2003; Biglan and Taylor 2000) have found that parents can be taught family skills to reduce negative outcomes for their

children. Family-focused prevention programs promote healthy parent–child relationships including improved communication, bonding, parental monitoring, supervision, discipline, family organisation and rule setting (Kumpfer et al. 2002a, b; Petrie et al. 2007). These programs incorporate the significant advances in the field's knowledge of epidemiology, etiology and psychosocial behaviour change theories regarding effective ways to decrease adolescent substance abuse. Effect sizes are small (Cohen's  $d = 0.10$ ) for universal youth-only substance abuse prevention programs, but on average nine times greater effect sizes (Cohen's  $d = 0.96$ ) have been found in meta-analyses for family-focused prevention interventions targeting high risk youth (Foxcroft 2006; Foxcroft et al. 2003; Stolle et al. 2010; Tobler and Kumpfer 2001; Tobler and Stratton 1997).

One issue in disseminating EBPs is that many have been developed in the USA and need to be translated and culturally adapted to fit the new country cultural contexts. Some European researchers have argued that they should just design their own programs based on the principles of effective programs listed in the article by Nation et al. (2003). However, Kiely and Egan (2000) posited that these types of EBPs could be culturally adapted to the particular needs and cultural sensitivities of the Irish population and this in turn removes the need to design culturally specific prevention programs (p. 238). Culturally adapting EBPs to fit the participant's cultural reality have been found to be not just desirable as respectful (Holleran Steiker et al. 2008), but also to increase engagement and attendance (Kumpfer and Alvarado 2003). This article discusses that cultural adaptation of the SFP 12–16 for at risk adolescents and their families, and shows the effectiveness of this family intervention for substance misuse prevention in the Irish family context.

### SFP Program Description

The SFP (Kumpfer and DeMarsh 1985; Kumpfer et al. 1989) is an evidence-based 7, 10 or 14-week family skills training program that involves the whole family in three classes run on the same night once a week. All of the different age versions of SFP including SFP 3–5, 6–11, 10–14, 10–16, and 12–16 Years all have the same format and theoretical underpinnings. The only difference is that the universal versions for school-based implementation are shorter, such as SFP 10–14 Years that is 7 sessions long and new SFP DVD 10–16 year group and home use versions that are 10 sessions long. The parents or caretakers of youth attend the SFP parent training program in the first hour. At the same time their adolescents attend the SFP Teen Skills Training Program. In the second hour, the families participate together in a SFP Family Skills Training Program.

In order to improve recruitment and retention of families, the SFP recommended budget provides for all necessary and recommended *core elements* listed below. Such as; Lutra-group 2–3 day training workshops to certify group leaders and site coordinators or supervisors, meals weekly, babysitting on site for children other than the target age group, staffing for two group leaders per group that are gender balanced and ethnically matched to the participating families, transportation when needed, logistics, supplies, weekly incentives for completion of home practices and graduation gifts, follow-up phone calls weekly and annual program evaluation for the full SFP program.

SFP etiological or causal theory is based on a structural equation model (SEM)-tested theory of precursors of substance use, specifically the Social Ecology Model of Adolescent Substance Abuse (Kumpfer et al. 2003) that found that family attachment/bonding, parental supervision and communication of positive family values and norms were the major pathway to preventing substance use. The intervention theories included Bandura's social cognitive theory that supports behavioural skills training interventions to improve

self-efficacy and behaviour change (Bandura 1989) as well as the Resilience Framework Theory (Kumpfer 1999; Kumpfer et al. 2011) that supports positive adaptation in times of adversity with a major stress on purpose in life, dreams and goals and a least one caring adult in children's lives.

### Prior Independent Evaluation Results in Multiple Countries

Replications of SFP in non-experimental and quasi-experimental studies in about 17 countries and randomized control trials (RCTs) in nine countries (United States, Canada, Australia, UK, Sweden, Netherlands, Spain, Italy, and Thailand) with different cultural groups by independent evaluators have found SFP to be an effective program in reducing multiple risk factors for later alcohol and drug abuse, mental health problems and delinquency by increasing family strengths, children's social competencies and improving parent's parenting skills (Kumpfer et al. 2002a; Kumpfer and Johnson 2007; Onrust and Bool 2006; Orte et al. 2007). The Cochrane Collaboration Reviews in Medicine and Public Health at Oxford University conducted a meta-analysis and reported that the universal prevention SFP 10–14 Years (which is half as long as the SFP 12–16 Years implemented in Ireland) is twice as effective as the next best school based alcohol prevention program (Foxcroft et al. 2003). Kumpfer et al. (2010) report on the effect sizes of all of the four age versions of SFP with over 1,600 high risk families. They found that the 14-session SFP 6–11 Years and SFP 12–16 Years reported on in Ireland had larger effect sizes than the shorter 7-session SFP 10–14 Years.

Another rationale for selecting SFP for Ireland is that SFP was reported to be three times as effective as the best youth-only program. Miller and Hendrie (2008) reported that 18% of all youth participating in SFP will reduce or never initiate alcohol use based on longitudinal cost benefit studies. The same authors also found that the next best percentage prevented from using is 14% for a program called *Adolescent Transitions Program* (Andrews et al. 1995). Hence, SFP appeared to be the best choice in reducing alcohol and drug use in Ireland since it had the highest prevention percentages for marijuana (15%) and other drugs (11%) too. SFP was the fifth best program for tobacco prevention (7%) and it was not designed to prevent tobacco use. At 22 years of age, diagnosed mental health problems (depression, anxiety, social phobias and personality disorders) were reduced by 230% to 300% even 10 years after participation in SFP (Spoth et al. 2005). Additionally, the cost benefit ratio has been calculated for SFP to be between \$9.60 (Spoth et al. 2002) and \$11 (Aos et al. 2004; Miller and Hendrie 2008) saved for each dollar spent.

### The Unique Implementation and Dissemination Process in Ireland: The Interagency Collaboration of National and County Delinquency and Substance Abuse Agencies

Social exclusion affecting adolescents and families is a multi-faceted phenomenon in Irish society. It includes aspects of crime and delinquency, substance abuse, educational disadvantage, homelessness, child protection and welfare issues. In these situations Butler (2007) identified “cross departmental” or “cross-cutting” issues, that require a number of services to work together since different agencies have expertise in each of the areas (p. 135). One of the major challenges for agencies implementing the SFP is the high level staffing requirements. While professionally trained social workers or psychologists are not required as the four “group leaders” or the supervisor—called the “site coordinator”, it was difficult for any agency to assign five staff to work at night to implement the SFP family groups. Furthermore, in Ireland there is no one agency with all the answers to solve

the issue of child and adolescent development problems; hence, the Irish implementers immediately seized on the solution to develop an interagency collaboration model to deliver SFP. The interagency approach chosen to deliver SFP has provided a means to harness the distributed expertise of a number of statutory, voluntary and community based agencies in order to provide an EBP to the whole family. The primary collaboration has been between the Local and Regional Drugs Task Forces and Young Persons Probation Services that operate in each county providing funding for SFP implementations and evaluations right across Ireland. This interagency model was first developed by staff in Arbour House Youth Drug and Alcohol treatment Services, Cork, Ireland, with the evaluated pilot study. Agencies in Ireland have implemented an evidence-based model parenting program initiative towards the aim of enacting a region-wide strategy for the prevention of substance abuse and juvenile delinquency in youth, and in order to improve the parenting skills of high-risk adolescents.

### Training of Group Leaders

The Irish cultural dissemination process began with the Irish Health Service Executive South (HSE South) drug and alcohol services, Cork Local, and Southern Regional Drugs Task Forces making contact with the program developers, Dr. Karol Kumpfer, psychologist and professor at the University of Utah and Dr. Henry Whiteside of Lutra Group at the international SFP Training Centre in Salt Lake City, Utah, to discuss the appropriate SFP version to address local need. Based on assessed community needs and risk factors for substance abuse, the EBP chosen to be implemented was the 14 week SFP for families with high-risk adolescents' ages 12–16 years old. Lutra Group is the organization responsible for dissemination including curriculum sales, evaluations, and training group leaders on a worldwide basis.

Dr. Kumpfer and Dr. Whiteside were invited to come and train 50 professionals from a range of disciplines in the South of Ireland in March 2006. Those trained included; program managers and program funders to ensure buy in, in terms of strategic service development and resource allocation, and at a practitioner level, addiction counselors, social workers, probation officers, youth workers and community police. The training was received with great enthusiasm by local services. However, at the group leader training stage, there were concerns expressed about the cultural suitability of the SFP and whether a program developed in America could be successfully implemented in the Irish setting. They were assured that local cultural adaptation was expected as a core element of SFP implementation and that SFP had been culturally adapted successfully in a number of countries following a recommended adaptation process.

### First Pilot Implementation

Following the initial group leader training, Arbour House Youth Drug and Alcohol Services took the initiative. In conjunction with a number of Community Based Drug Projects, Adolescent Homeless Services, Young Person Probation Services, and a prison based project they piloted and implemented the SFP 12–16 for at-risk families for the first time between January and May 2007 in Cork City, Ireland. The first SFP was implemented in its original format with only minor adaptations as recommended by Lutra Group program developers to match the local context. Later adaptations were recommended once the implementers had a better idea of what worked and did not work well in Ireland. The program started with 10 families and nine completed the 14 week family intervention.

## SFP Implementation Procedures

Since the pilot program, SFP has been delivered on an interagency basis across Ireland. Each Local and Regional Drugs Task Force have developed independent working groups made up of local stakeholders to oversee the implementation process and to build on experience gained after each implementation. Le Chéile, a mentoring project funded by Young Person's Probation Service employed a National SFP Coordinator in 2009. The North West Alcohol Forum in 2010 also employed a SFP coordinator in Donegal to oversee implementations along the border counties. Both coordinators facilitate the implementation and evaluation process. The 12–16 year old at-risk version of SFP has been delivered and a number of areas have also implemented the SFP 6–11. The benefits of SFP as a support for Irish families affected by substance abuse was recognized in the National Substance Misuse Strategy 2009–2016 with funding of 1.7 m allocated for family support services (Department of Community, Rural and Gaeltacht Affairs 2010). A SFP focus group comprised of 25 of the stakeholders was conducted in the Southern Region in July 2011 to review the accomplishments with SFP thus far and to uncover and work through challenges and dilemmas that have arisen in the interagency implementation process.

## Development of SFP Ireland Training System

Eight experienced group leaders and site coordinators who had been involved in a number of implementations across Ireland qualified as SFP group leader trainers in 2008 and 2009. Having trained alongside the program developers, Dr. Karol Kumpfer and Dr. Henry Whiteside, on four occasions, the first Irish group leader trainers were accredited and began to contract with Lutra Group to train other group leaders across Ireland. Eventually, SFP Ireland became the first Irish accredited national training system and since then has worked with the Young Person's Probation Service and a number of Local and Regional Drugs Task Forces to develop training systems in Cork, Dublin, and Galway. SFP Ireland also developed a website to assist with the dissemination and group leader training process.

## Diffusion of Innovations

Because of its success in promoting recruitment of diverse high-risk adolescents and families and providing excellent group leaders, the first implementers reported on the success of this collaboration in presentations at many Irish conferences and meetings. Quickly, the word spread across other counties in Ireland that the outcome results were quite large for improvements in parenting, family and adolescent outcomes. As a result of this collaborative approach, the best staff matched to participants in terms of gender and culture for each of the site coordinator and group leader positions was selected to assure that the SFP was implemented as planned, with high quality and fidelity. To help coordinate funding and collection of evaluation tests and reports, the Young Person's Probation Service funded a SFP coordinator position over most of the agencies implementing SFP in Ireland. A few other agencies are implementing SFP on grants with separate evaluation teams. One team implementing SFP plus Coping Power in a randomized control trial (RCT) has modified SFP as well as the outcome instruments, so the fidelity to the model of SFP has not been maintained in this instance.

## Cultural Adaptation Process Method

### Participants (Adaptation Process)

The results from the pilot outcome evaluation and the process feedback from the site coordinator, group leaders and families after the pilot program and subsequent programs suggested that although the original program materials contained what might be considered distracting Americanisms, it did not reduce the effectiveness of the content at all. The professionals who provided data on the implementation process came from a range of disciplines; health, criminal justice, social work, and youth and community work. In consultation with the program developer, SFP Ireland adapted the training materials and curriculums to make them more culturally relevant to Irish families in 2008.

### Measurements (Adaptation Process)

This light touch adaptation process involved gathering process and program fidelity feedback from SFP group leaders at the end of each session by using the group leader session rating form during a number of implementations in Cork and Kerry. The group leader session rating form is one of a number of evaluation instruments developed by Dr. Kumpfer to learn proactively from the implementation process after each session and improve the quality of implementations over time. The rating form contains measures for all key process domains regarding SFP recommended best practices, the main changes and adaptations made in the program, as well as five major domains evaluation (environment/community context, population, program, staffing and curriculum). At the end of each session, each group leader is required to reflect on the group setting, personal performance in the session, group dynamics and group process and then answer brief questions in the form of Likert scales and open-ended questions (see sample items in Table 1 below).

### Procedures (Adaptation Process)

Recommended steps to culturally adapting EBPs have been presented in a recent publication by Kumpfer et al. (2008a). Additionally, a longer monograph "Guide to Implementing Family Skills Training Programmes for Drug Prevention" was written by Dr. Kumpfer for the United Nations Office of Drugs and Crime (UNODC 2009) in Vienna. Castro et al. (2010) also presented several cultural adaptation stage models that contain

**Table 1** Group leader session rating form sample items

Please rate the group on: 1 = very poor 2 = poor, 3 = average, 4 = good 5 = excellent

- \_\_\_ Group participation
- \_\_\_ Group supportiveness
- \_\_\_ Group understanding of concepts
- \_\_\_ Usefulness of topic to their needs
- \_\_\_ Enjoyment of this session

Session adaptations or modifications

What changes did you have to make in the SFP curriculum for this session to get it to work for your clients?  
(Describe in detail what was supposed to happen and how you changed it)

Did you make up new graphics, stories, examples, or role plays to illustrate the lesson topic? Please describe them? Can you write up the changes and send to Dr. Kumpfer

Why did you feel you needed to make these changes?

Please include other recommendations and comments

**Table 2** Steps to culturally adapting EBPs

Step	Recommended cultural adaptation steps	Irish process
1.	Collect needs assessment information from new or existing data to determine major family risk and protective factors for child developmental problems	Needs data collected by Local and Regional Drugs Task Forces
2.	Collect information from research literature or websites on appropriate family skills EBPs. Select the best program for age, ethnicity and risk level of families (e.g. universal, selective or indicated prevention approaches)	Conducted by HSE South Drug and Alcohol Services
3.	Create a cultural adaptation team including family members and the original program developer	Each county formed own adaptation team
4.	Translate into local language and do minor cultural adaptations	Translation only minor wording changes
5.	Implement "as is" with minimal adaptation at first	Pilot program
6.	Have implementers from local culture who make gradual changes based on what works (culturally appropriate language, stories, songs)	Irish SFP 12–16 Years curriculum edited in 2008
7.	Continuously make additional cultural adaptations and add to curriculum with program developers approval	Ongoing to local need
8.	Continuously conduct pre-and post-test evaluations on each family group to measure if the local cultural adaptations are making the program better or worse	Ongoing with SFP national coordinator
9.	Make adjustments to add or drop new cultural adaptations	If required
10.	Disseminate the culturally adapted version to similar cultural groups if effective	Disseminated nationally in Ireland

deliberate steps to guide national and international dissemination of EBPs while retaining fidelity to the core interventions. The recommended steps to culturally adapting SFP are shown in Table 2 below. These steps guided the implementers in Ireland.

### Results (Adaptation Process)

The adaptation of the SFP group leader manuals involved changing spellings, terminology and names. A compendium of group games and exercises that were more familiar to Irish adolescents participating in SFP was added to the teen group leader manuals. This was to encourage the group leaders to continue to adapt the program to local conditions but still get to the intended objective of each lesson. Here, it is important to note that Irish adaptation of the original SFP 12–16 program structure was not changed, the session content was not changed, no sessions were omitted or rearranged, the home practice assignments continued and the program length remained at 14 weeks to allow adequate time for families to change.

Research on SFP with five major ethnic groups suggest that culturally adapted programs can improve recruitment and retention by up to 40% even if the cultural adaptation did not change the outcomes (Kumpfer et al. 2002a). The Irish cultural adaptation process is an ongoing process and group leaders and site coordinators are trained and encouraged to continue this process by gathering documented feedback by using weekly session rating forms and to use this feedback to make SFP a better fit for the families they are working with.

## Evaluation Research Method

### Experimental Design

The quasi-experimental evaluation design consisted of a repeated measures, pre-and post-test retrospective questionnaire design with post hoc comparisons to the SFP norms as recommended by Campbell and Stanley (1967) to control for more threats to internal validity than a non-experimental single group pre- to post-test only design. Comparisons to the SFP International norms and also to the Irish norms were conducted in multiple replications in sites all over Ireland with individual agency evaluation reports recommending areas of improvement if any of the mean changes or effect sizes were smaller than the Irish SFP norms.

### Participants (Implementation Process)

About 250 families of high-risk youth ages 12–16 years participated in this evaluation study. The families came from a variety of socioeconomic backgrounds, urban, suburban and rural areas from counties; Cork, Limerick, Kerry, Galway, Roscommon Sligo, Mayo, Donegal, Kildare, Meath, Westmeath, and a number of areas across the Irish capital Dublin. More than this number of families participated in SFP, but not all completed SFP or the evaluation instrument. Some agencies chose to use resources for implementing rather than evaluating programs and did not conduct outcome evaluations.

The demographic characteristics of the families in this study of SFP 12–16 Years outcomes are included in the table below along with those of the SFP 12–16 Years normative sample used as the comparison group. As can be seen in Table 3 below, the mean ages of the youth (14 years), mean ages of the parents (40.6 and 40.5 years), genders (57 and 58% male) and parenting status are equivalent, but the ethnicities are different from Ireland to the international SFP 12–16 Years sample with a higher percentages of Irish/White parents (95%) in Ireland sample compared to only 39% in SFP norms. Also, a smaller percentage of fathers participated in the Ireland sample (17% compared to 25%).

### Measures (Implementation Process)

A “SFP Retrospective Parent Pre- and Post-test Questionnaire” using standardized Centre for Substance Abuse Prevention (CSAP) and National Institute of Drug Abuse (NIDA) core measures, was developed and used because of the need for a short, non-research quality, practitioner-friendly evaluation instrument. This self-report parent or guardian questionnaire includes 21 standardized scales embedded within the testing battery. The scales to measure outcome variables are taken from well-known and accepted instruments in this field. It includes basic demographic information, Parenting Scale, Overall Family Strengths/Resilience Scale, Drug and alcohol use (CSAP GRPA), Parent Observations of Child's Activities for child behavioural and emotional changes (POCA-R, Kellam 1972).

To reduce testing burden, only sub-scales of selected Substance Abuse and Mental Health Services Administration (SAMHSA) CSAP Core Measures instruments were used for evaluation as agreed upon by research teams from 12 universities for a cross-site study. They match the hypothesized dependent variables and were used in the construction of the testing batteries. Each of these scales and subscales is discussed in more detail below including the number of testing items and psychometric properties. All of the self-report scales were 5-point Likert scales to improve change sensitivity. The Cronbach internal

**Table 3** Demographic information of Ireland groups compared to the norms

	Ireland	SFP 12–16 Years norms	
1. Mean age of parent (years)	40.6	40.5	
2. Gender of parent			
Male	17%	25%	
Female	83%	75%	
3. Ethnicity of parent			
a. Irish/White	95.0%	38.9%	White
b. Irish Traveler	3.4%	5.0%	Asian
c. Other White	1.0%	19.5%	Other White/Hispanic or Latino
d. African/Black	0.6%	33.2%	African/Black
e. Chinese	0.0%	1.9%	Pacific Islander
f. Other Asian background	0.0%	1.5%	American Indian
g. Other	0.0%	0.0%	Other
4. Parenting status			
a. Single parent	54.1%	45.5%	
b. Two parents	37.2%	44.1%	
c. Joint/shared custody	3.3%	4.5%	
d. Child(ren) in foster care	0.0%	2.7%	
e. Child(ren) with relatives	1.1%	1.0%	
f. Others	4.3%	2.2%	
5. Mean age of youth (years)			
6. Gender of child	14	14	
Male	57%	58%	
Female	43%	42%	

consistency alphas were calculated for all of the 21 outcome scales for the Ireland sample and found to have good reliability except for two of the child outcomes that are not critical to this study, namely the Hyperactivity scale and Criminality scale. See the table of Cronbach's alphas below.

#### Instrument Scales

##### *Demographic Items*

The questionnaire comprised of 20 questions collecting demographic information about the parents, children and family. The ethnicity items had to be modified to include "Travelers" and other ethnicities in Ireland.

##### *Parenting Scale (Kumpfer 1984)*

This 40-item scale included five parenting subscales measuring positive parenting, parent involvement, parenting skills, parental supervision and parenting efficacy. Most of these test items were adapted from the *Alabama Parenting* questionnaire. As can be seen from Table 4 below, the Ireland data internal consistency alpha values ranged from a low alpha

**Table 4** Ireland Alpha Reliabilities or Internal Consistency of SFP Scales

Scale name	Cronbach's alpha		
	# of items	Pre-test	Post-test
Parental involvement	4	0.75	0.60
Parental supervision	5	0.70	0.63
Parenting efficacy	3	0.75	0.76
Positive parenting	3	0.79	0.74
Parenting skills	5	0.64	0.64
Parent cluster variable	20	0.89	0.84
Family cohesion	2	0.75	0.67
Communication	6	0.69	0.63
Family conflict	4	0.87	0.77
Family organization	4	0.71	0.70
Overall family strengths/resilience	12	0.90	0.86
Family cluster scale	28	0.92	0.90
Concentration	12	0.86	0.86
Covert aggression	6	0.69	0.57
Criminal behaviour	2	0.21	0.11
Depression	4	0.64	0.51
Hyperactivity	3	0.07	0.10
Overt aggression	9	0.83	0.74
Social behaviour	9	0.79	0.77
Child cluster variable	45	0.90	0.87
Alcohol and drug use	6	0.61	0.50

of  $\alpha = 0.64$  for parenting skills to a high alpha of  $\alpha = 0.89$  for the Parenting Cluster Score. This Parent Cluster score, and the Family Cluster score and Child Cluster score are the simple average of these subscale scores. For example, the Parenting Cluster Score is the mean score of the five parenting subscales, namely Parental Involvement, Parental Supervision, Parenting Efficacy, Positive Parenting, and Parenting Skills. Each of these subscales are derived as the mean of a number of testing items measuring that construct allowing for reverse scored questions.

#### *Family Environment Scale (Moos 1974)*

Four of the standardized Moos *Family Environment Scale* (FES) scales were shortened and used to measure changes in the family dynamics, namely family organization, family cohesion, family communication, and family conflict. The original scales were all 10 items long, but were shortened by a team of USA family researchers and the national *Communities that Care* survey (Hawkins and Catalano 2000) to six to two items while retaining high internal consistency. In prior SFP studies at many field sites, like in Ireland, all of these four family measures have demonstrated excellent psychometric properties ( $\alpha = 0.68$ – $0.76$ ). In the Ireland sample the alphas were excellent ranging from alphas of  $\alpha = 0.63$ – $0.87$  (Table 4). Prior SFP studies have also found large effect sizes for these four family outcomes except for Family Conflict ( $d = 0.35$ – $0.45$ ) that is the hardest to reduce in 14 weeks by the immediate intervention post-test.

### *The Family Strengths and Resilience Assessment (12-items)*

The Family Strengths and Resilience Assessment (12-items) is a brief 5-point checklist created by Kumpfer and Dunst (1997) for the American Humane Association to improve measurement of outcomes in child abuse and neglect cases with substance abusers. We have found this global scale to be very change sensitive and a good outcome measure of positive changes in the family's situation. In prior SFP studies this scale has demonstrated excellent internal consistency of  $\alpha = 0.92$ . In the Ireland sample as shown in Table 4, the alphas were excellent at  $\alpha = 0.90$  for the pre-test and  $\alpha = 0.87$  for the post-test. We have found this scale to be very sensitive to intervention improvements with large effect sizes ( $d = 0.68$ – $0.86$ ) in field populations.

### *The Parent Observations of Child Activities (POCA) scale (Kellam 1972)*

The Parent Observations of Child Activities (POCA) scale (Kellam 1972) is a 44-item scale with subscales measured children's overt aggression, covert aggression, concentration problems, criminal behaviour, impulsivity, hyperactivity, depression and sociability. The POCA has similar scales to the Achenbach and Edelbrock (1988) Child Behaviour Checklist (CBCL), but POCA has a five-point scale and is more sensitive to smaller changes than the CBCL. Additionally, the wording is simpler for low education-level families and minimizes offensive wording. The Ireland alpha internal consistency scores for subscales ranged from  $\alpha = 0.07$  Hyperactivity to  $\alpha = 0.90$  for the Child Cluster Scale pre-test score (Table 4). The Hyperactivity scores were hence not applicable to teenagers and were used more as a variable not hypothesized to improve to see if parents inflated their scores.

### *Social Skills*

The children's social and life skills were measured by nine selected items from the Gresham and Elliott Social Skills Scale (1990). The Cronbach alphas were found to be high in prior SFP randomized control trials ( $\alpha = 0.90$ ). In this Irish sample they were smaller at  $\alpha = 0.79$  for the pre-test and  $\alpha = 0.77$  for the post-test (Table 4). All of these parent report items were on 5-point Likert scales as response options.

### *The Parent Alcohol, Tobacco and Illicit Drug Use Scale*

This six item scale was derived from the US *Government Results Performance Assessment (GPRA)* standardized measures for 30-day substance use rates for tobacco, alcohol, binge drinking, marijuana, other illicit drugs and prescription drug misuse. These 30-day measures are used in many state and national incidence and prevalence surveys such as the annual *Monitoring the Future* school survey (Johnston et al. 2010) and the adult *National Household Survey* (SAMHSA/OAS 2010). The Cronbach's alphas for the Ireland sample were alpha of 0.60 on the pre-test and 0.50 on the post-test (Table 4). These instruments are designed to assess child and parent mental health, substance abuse risk and resiliencies, family management and cohesiveness, and parent and child social skills and attitudes.

## Procedure (Implementation Process)

*Data Collection*

The pre- post-test retrospective questionnaires were used for both the Ireland sample and also the SFP 12–16 Year norms so the same data collection strategy was used for both comparison groups. To better control for literacy issues, the recommended test administration is always to have the tests read by the site staff to the participants in a group setting on the week before program graduation ceremonies. Parents were asked to report on their parenting skills and their child's behaviour and skills in the month before participating in the program and at the time the program ended. The voluntary informed consent of each participant was sought and obtained prior to their participation in the research. All of the participants received a detailed description of the purpose of the research as well as an account of what their participation involved. Parents were given assurances that their answers were confidential and would not be shown to anyone including the implementation team. Because the retrospective test contains both the pre-and post-test, no names or unique identifiers were required on the surveys to link the data, thus increasing assurances to the parents of confidentiality. When completed, the questionnaires and Site Information surveys reporting on family members' attendance and fidelity to the required elements of the SFP implementation model were placed in a manila envelope and sent to the Ireland National SFP Coordinator to be sent to Lutra Group for data entry and analysis by an independent statistical analysis consultant.

*Data Analysis*

After cleaning (removing any names, assuring readable marks, checking for missing data and random markings) by the researchers, the data was entered into the SFP database for analysis on a network personal computer (PC) using Statistical Package for the Social Sciences (SPSS) for Windows. There was very little missing data mostly at the end of the test on child outcome scales because of testing fatigue. If a participant was missing more than 10% of their outcome data, they were eliminated from the analysis. For missing data list-wise deletion methods were used. For this study, only the de-identified (coded) parent pre- and post-test quantitative data were entered. These data on the pre- and post-tests were hand-entered by a research assistant and analyzed by an independent biostatistician using SPSS with standardized scales for 18 outcome variables plus three cluster summary variables (Family, Parent and Child outcomes combined) as well as the alcohol and drug measure for a total of 21 outcomes.

The average standard deviations for the 21 outcomes were calculated and were not very large with fewer outliers in the dataset for the post-test than for the pre-test. The effect sizes of all 21 outcomes were calculated using both a Cohen's ( $d$ ) and partial eta squared  $d'$  statistics. Both within subjects and between groups  $2 \times 2$  ANOVAs were conducted for each outcome variable comparing the experimental and comparison SFP 12–16 Years normative groups.

Because we conducted a 2 group (Ireland and norms) by 2 repeated measure, the raw mean and standard deviation scores for both the pre- and post-test means were used in the  $2 \times 2$  ANOVA in calculating  $p$  and  $d$  values and not the mean change scores although they are reported in the tables. The statistically significant within subjects  $p$  values and large  $d$  values suggest that the program had positive impact on the clients. The between groups ANOVA values (reported above each outcome variable on the left side of the table) if

statistically significant suggest that there was difference in outcomes for the Irish sample compared to the SFP 12–16 Year norms. If there is a significant between-groups *p* value then one can look to see if the Irish sample performed worse or better than the SFP norms for that outcome and the relative effect sizes as measured by Cohen's *d* values.

Reported in Tables 5, 6 and 7 are the significance level or *p* values for pre- to post-test changes as well as a more important statistical outcome called "effect size". Statistically significant only means that these mean differences from pre- to post-test are likely to represent true positive changes in the families and are not likely to have occurred by chance. Whereas Cohen's *d* effect sizes and mean change scores report the amount of size of the change from pre- to post-test.

Type I errors in the data analysis were reduced by assuring that the unit of analysis was the same as the unit of assignment, namely the family. Hence, nesting effects that can lead to inflated positive results were avoided.

## Results

### Attendance

An attrition analysis revealed that of the families accepted into the multi-agency Ireland SFP groups 98% attended one or more sessions and completed pre- and post-test. Of these

**Table 5** Ireland SFP outcomes compared to SFP national norms for parenting outcome variables (pre- to post-test means, standard deviations (SDs), change scores, Fs, *p* values and effect sizes)

Scale name	# Fam	Pre-test	SD	Post-test	SD	Change	F	Sig	Effect size <i>d</i>	ES <i>d'</i>
Parental involvement							0.91	0.34	0.00	0.13
Irish norms	182	3.28	0.97	4.28	0.68	1.00	226.92	0.00	0.56	2.24
SFP norms	1587	3.51	0.94	4.33	0.64	0.82	1716.49	0.00	0.52	2.08
Parental supervision							1.39	0.24	0.01	0.15
Irish norms	212	2.88	0.92	4.15	0.64	1.27	404.28	0.00	0.66	2.77
SFP norms	1585	3.22	0.78	4.18	0.54	0.96	2616.05	0.00	0.62	2.57
Parenting efficacy							0.80	0.37	0.00	0.12
Irish norms	212	2.95	0.98	4.14	0.72	1.19	369.58	0.00	0.64	2.65
SFP norms	1602	3.24	0.88	4.14	0.65	0.91	2175.08	0.00	0.58	2.33
Positive parenting							3.19	0.08	0.01	0.23
Irish norms	216	3.52	0.95	4.53	0.57	1.01	336.33	0.00	0.61	2.50
SFP norms	1602	3.79	0.90	4.62	0.51	0.83	1964.65	0.00	0.55	2.22
SFP parenting skills							7.73	0.01	0.04	0.39
Irish norms	176	3.11	0.84	3.91	0.70	0.80	251.23	0.00	0.59	2.40
SFP norms	1580	3.40	0.74	3.95	0.64	0.55	1480.47	0.00	0.48	1.94
Parent cluster scale							0.01	0.91	0.00	0.02
Irish norms	154	3.06	0.76	4.19	0.48	1.12	404.27	0.00	0.73	3.25
SFP norms	1530	3.41	0.67	4.21	0.44	0.80	2829.04	0.00	0.65	2.72

**Table 6** Ireland SFP outcomes compared to SFP national norms for all family outcome variables (pre- to post-test means, SDs, change scores, Fs, *p* values and effect sizes)

Scale name	# Fam	Pre-test	SD	Post-test	SD	Change	F	Sig	Effect size d	ES d'
Family cohesion							0.86	0.36	0.00	0.12
Irish norms	218	3.29	1.12	4.33	0.73	1.04	281.63	0.00	0.56	2.28
SFP norms	1607	3.61	0.97	4.46	0.62	0.85	1731.52	0.00	0.52	2.08
Family communication							2.03	0.16	0.01	0.19
Irish norms	206	2.99	0.71	4.23	0.52	1.24	590.32	0.00	0.74	3.39
SFP norms	1579	3.18	0.80	4.19	0.58	1.01	3232.51	0.00	0.67	2.86
Family conflict							3.07	0.08	0.01	0.23
Irish norms	206	3.10	1.15	2.41	0.89	(0.69)	94.99	0.00	0.32	1.36
SFP norms	1544	2.40	1.10	1.96	0.86	(0.44)	413.11	0.00	0.21	1.03
Family organization							0.39	0.53	0.00	0.08
Irish norms	214	2.27	0.91	3.80	0.85	1.53	612.03	0.00	0.74	3.39
SFP norms	1597	2.70	0.94	3.97	0.72	1.28	3413.28	0.00	0.68	2.92
Family strengths/ resilience							0.67	0.41	0.00	0.11
Irish norms	194	2.95	0.82	4.12	0.57	1.17	455.40	0.00	0.70	3.07
SFP norms	1570	3.34	0.83	4.32	0.56	0.98	3002.71	0.00	0.66	2.77
Family cluster scale							4.26	0.04	0.02	0.29
Irish Norms	180	2.86	0.72	4.06	0.50	1.20	574.18	0.00	0.76	3.58
SFP Norms	1485	3.27	0.72	4.21	0.49	0.94	3507.46	0.00	0.70	3.07

participants, 82.2% attended at least 8 to 14 sessions and officially were given graduation certificates. Hence, attrition or mortality from the sample was very low and lower than the average 85.6% attendance in the SFP norms.

### Dependent Measures ANOVA Results

As can be seen from Tables 5, 6 and 7 below, there were statistically significant positive results ( $p < 0.05$ ) for 100% or 21 of the outcomes measured for both the Ireland and SFP norms dependent measures. In addition, 13 or 62% of the Ireland outcomes had effect sizes over Cohen's  $d > 0.50$ . The amount of positive changes for parent, family and child outcomes was larger than SFP groups run in the United States, except in the area of youth Social Behaviours or Skills.

### Positive Parent Changes

The participating families improved significantly from pre- to post-test in all five parenting outcomes as shown in Table 5 below according to the within subjects ANOVA. They also had larger improvements or effect sizes in parent change outcomes than for the USA norms for prior groups in the SFP database. The largest positive changes were for Parental Supervision ( $d = 0.66$ ) and the smallest for improvements in Parental Involvement ( $d = 0.56$ ). There was only one  $2 \times 2$  ANOVA between-groups significant difference, namely that the Ireland sites improved significantly more in Parenting Skills ( $d = 0.59$ )

**Table 7** Ireland SFP outcomes compared to SFP national norms for children's outcome variables (pre- to post-test means, SDs, change scores, Fs, *p* values and effect sizes)

Scale name	# Fam	Pre-test	SD	Post-test	SD	Change	F	Sig	Effect size d	ES d'
Concentration							0.24	0.62	0.00	0.07
Irish norms	204	2.77	0.83	3.46	0.74	0.69	227.90	0.00	0.60	2.43
SFP norms	1506	3.18	0.74	3.72	0.66	0.53	1641.30	0.00	0.52	2.09
Covert aggression							21.52	0.00	0.09	0.63
Irish norms	194	2.50	0.82	2.03	0.59	(0.47)	89.91	0.00	0.32	1.37
SFP norms	1508	2.04	0.64	1.79	0.54	(0.25)	298.91	0.00	0.17	0.89
Criminal behaviour							13.15	0.00	0.05	0.48
Irish norms	204	1.47	0.77	1.32	0.59	(0.15)	16.41	0.00	0.07	0.57
SFP norms	1549	1.12	0.41	1.09	0.41	(0.03)	9.55	0.00	0.01	0.16
Depression							15.39	0.00	0.07	0.53
Irish norms	194	2.62	0.84	2.04	0.71	(0.58)	133.11	0.00	0.41	1.66
SFP norms	1512	2.10	0.71	1.79	0.60	(0.31)	513.57	0.00	0.25	1.17
Hyperactivity							22.02	0.00	0.09	0.63
Irish norms	198	2.90	0.85	3.03	0.80	0.13	13.18	0.00	0.06	0.52
SFP norms	1545	2.79	0.86	2.85	0.86	0.07	20.64	0.00	0.01	0.23
Overt aggression							10.69	0.00	0.05	0.45
Irish norms	190	2.59	0.87	1.91	0.54	(0.68)	192.36	0.00	0.50	2.02
SFP norms	1536	2.12	0.71	1.76	0.56	(0.36)	667.41	0.00	0.30	1.32
Social behaviour							0.73	0.39	0.00	0.11
Irish norms	196	3.77	0.70	4.06	0.58	0.28	80.22	0.00	0.29	1.28
SFP norms	1465	3.84	0.69	4.16	0.57	0.31	856.44	0.00	0.37	1.53
Child cluster scale							8.31	0.00	0.05	0.47
Irish norms	204	3.31	0.58	3.84	0.43	0.53	173.34	0.00	0.57	2.30
SFP NORMS	1325	3.70	0.50	4.05	0.41	0.35	1207.61	0.00	0.48	1.91
Alcohol and drug use							3.66	0.06	0.02	0.26
Irish norms	188	1.77	0.70	1.60	0.55	(0.17)	31.50	0.00	0.14	0.82
SFP norms	1552	1.32	0.53	1.25	0.52	(0.07)	48.04	0.00	0.03	0.35

when compared to the SFP normative sites ( $d = 0.48$ ). Improvements in Positive Parenting also approached significantly larger effect sizes ( $p > 0.08$ ) for the Ireland sample with a  $d = 0.61$  vs.  $d = 0.55$  for the norms.

### Family Outcomes

All of the Ireland family pre- to post-test outcomes were statistically significant according to the within-S ANOVA with even larger total effect sizes for positive change than for parenting outcomes. The Family Cluster Score effect size was  $d = 0.76$  compared to  $d = 0.70$  for the SFP norms. The largest improvements were for Family Communication and Family Organization (both  $d = 0.74$ ). The smallest improvement was in Family Conflict ( $d = 0.32$ ). Still this outcome was larger than found for other non-Ireland SFP groups ( $d = 0.21$ ). The between-groups ANOVA revealed a significant difference in the Ireland family cluster outcome compared to the non-Ireland SFP groups ( $p < 0.04$ ).

## Children's Outcomes

Likewise, there were significant positive changes in 100% or all of the eight measured youth's outcomes for both samples. The effect sizes were larger for the Ireland groups with significant between-group ANOVAs for all youth outcomes measured except Concentration ( $p < 0.62$ ,  $d = 0.60$  vs.  $0.52$ ). Most impressive were the within-S ANOVA pre- to post-test statistically significant positive changes in the Ireland sample compared to the non-Ireland sample in the youth's problem behaviours and mental health particularly in the areas of increased Concentration ( $p < 0.001$ ;  $d = 0.60$  vs.  $0.52$ ), and decreased Covert Aggression ( $p < 0.001$ ;  $d = 0.32$  vs.  $0.17$ ), depression ( $p < 0.001$ ;  $d = 0.41$  vs.  $0.25$ ), Overt Aggression ( $p < 0.001$ ;  $d = 0.50$  vs.  $0.30$ ) and increased Social Behaviour ( $p < 0.001$ ;  $d = 0.29$  vs.  $0.37$ ).

## Discussion

The Irish cultural adaptation process could be described using terminology coined by Falicov (2009) as "cultural attunements" which are important in attempts to make EBPs more "culturally informed" or "culturally relevant" for the intended target populations (cited in Castro et al. 2010, p. 219). This also draws attention to the difference between what is described in the literature on cultural adaptations as a continuum between surface adaptations, core component adaptations and deep structure adaptations to major modifications of the EBP model that violate fidelity standard and create a different program. To provide contrast, Skärstrand et al. (2008) implemented the SFP 10–14 universal prevention program in Sweden with an unusual amount of resources and found no reductions in substance use or on the risk and protective factors that were targeted. In the Swedish implementation the program core components appeared to be changed. They reported that the program was delivered by teachers in the school setting with up to 28 participants in child sessions, family sessions were reduced to two instead of seven, hence, child sessions were delivered separately from the parent sessions verse family practice time together with coaches. The implementers appeared to not have understood the importance of providing other core elements of SFP such as meals, incentives for behaviour change and attendance, childcare, and transportation if needed as a means of reducing barriers to attendance and reducing attrition. This may explain why in the second part of the implementation only 33% of students had parents attending the program.

The original SFP development RCT research funded by the USA National Institute on Drug Abuse (Kumpfer and DeMarsh 1985; DeMarsh and Kumpfer 1985) employed a randomized 4-group dismantling design to determine if more than the parenting class was needed. It was discovered that the parenting class mostly reduced children's negative behaviours but did not improve children's pro-social behaviours. Only when all three major components (parent skills training, child skills training and the family skills training) were included together did one get the best results in reducing all measured outcomes including substance misuse in parents and older children. Having the full family attend together is the magical ingredient in promoting maximal change in participants and strengthening families. Further Type II translational research is required to determine which core elements of EBPs need to be present to ensure efficacy and maintain overall clinical change during transportation and dissemination to different populations.

The impressive changes achieved by the Irish implementers are not generally found by the end of SFP in 4 months. These results suggest that even by the 4 month post-test

families were making major strides in improving their interaction patterns, which appears to be resulting in very impressive changes almost immediately in the teenagers. These behavioural changes in reducing risky behaviours in the teenagers, such as overt and covert aggression and improving social skills and competencies should according to tested theories of the etiology of adolescent substance abuse (Kumpfer et al. 2003; Ary et al. 1993) result in less substance abuse, delinquency and arrests for crimes in the future. One possible reason for the larger than expected improvements in the family interactions and family systems dynamics was that the families recruited were higher risk than in the SFP database because of having teens who were already beginning to have behavioural problems. The Irish families had lower pre-test scores for all positive family variables and higher scores at baseline for the negative variables such as family conflict. This allowed more room for improvements and may also have created increased incentive to change. Also, the high quality of the fidelity to core components of SFP because of adequate funding and good training and supervision has contributed to the increased size of the positive results.

### Study Limitations

The validity of the outcomes were compromised by the circumstances of most Phase 5 multiple replication dissemination field studies where an EBP tested in Phase 3 randomized control trial (RCT) Efficacy Studies and Phase 4 large scale Effectiveness Studies is now tested under much less experimental control in normal clinical implementations by regular agency staff and not research assistants supervised by the program developer. While external validity is greatly increased by the diversity of agencies and participants all over Ireland who participated in this Phase 5 study, the major limitation of this quasi-experimental research is the lack of a randomized true experimental design that controls for more threats to internal validity. The According to Campbell and Stanley (1967), the repeated measures, pre- and post-test design with post hoc subgroup comparisons control for more threats to internal validity of the comparison results to the SFP norms than the non-experimental single group pre and post-test design. This design attempts to control for History (over same time period), Maturation (same ages), Testing effects of pre-test because of a retrospective pre-test used in both groups, Mortality (attrition was about equal) and Instrumentation with same standardized SFP questionnaire employed by both groups. However, left uncontrolled were Selection, Interaction of Selection and Maturation, and Regression to the mean when the baseline pre-tests are different between the groups. Hence, one major limitation of the study is that by design, the Ireland sample was slightly higher risk youth and families referred by a team from probation, substance abuse treatment, the police, child protective services and schools; hence, their improved effect sizes compared the SFP norms could be impacted by regression to the mean. Unlike family treatment or in-home support services for families in crisis, these families were not in crisis and would have less regression to the mean.

Use of the retrospective pre-test collected at post-test measure, sometimes called the “Then” and “Now” technique, could be considered by some as a study limitation because of memory limitations of remembering. However, this retrospective technique has a number of advantages for parenting interventions because it: (1) could increase recruitment and retention because the participants do not have to complete a revealing and difficult test immediately when entering the program, (2) could increase validity of the outcomes for high risk parents concerned about their answers by reducing a positive response shift bias (Pratt et al. 2000), because at the pre-test many parents do not trust confidentiality of their

answers because codes have to be used to match up the pre- and post-tests, and (3) parents frequently do not know how to rate themselves or their children accurately. “Mindful parenting” exercises and charting their parenting behaviours and those of their children improve their awareness of actual behaviours (Kumpfer et al. 2002a). Additionally using no regular pre-test removes threat to validity of “Testing Effects” of the pre-test biasing the post-test outcomes. Also, when one thinks about it, the “Instrument” in any self-report survey is the person’s own cognitive state at the time of testing. Hence, doing the testing at one point in time removes this bias of changes in cognitive states over time with experience and homework assignments or course learning. This measurement technique has been found to produce more valid results in prior studies when disenfranchised participants are concerned about their answers to questions about illegal behaviours being revealed to authority figures. Studies where a retrospective pre-test and post-test are helpful are with illegal immigrants, students in schools about drug usage (Rhodes and Jason 1987), parents concerned about being honest about illegal parenting practices such as spanking when under review by child protection services, and employees about bosses in workplaces seeing their answers (Wright 2006).

Type I errors were partially controlled by having the unit of assignment equal to the unit of data analysis; hence, the  $p$  values are not effected by nesting effects. Type II errors were much more likely of the data analysis showing reduced outcome effects because fidelity to the core SFP elements were only modestly controlled. Ireland did not have the funds for any external process or fidelity evaluation other than their own Site Coordinators observations and a short report from each site concerning whether core elements of fidelity to the SFP model were maintained. Those reports suggested high fidelity to all aspects of the SFP implementation model. Another limitation was that longitudinal outcomes with more repeated measures was not possible in these field studies, which would be a recommendation for future studies.

## Conclusion

The outcome results are very encouraging suggesting significant improvements in all of the outcomes measured including 100% or five of five family outcomes, 100% or five of five parenting outcomes, and 100% or eight of eight youth outcomes. Very few other agencies in the history of SFP have ever had significant improvements in all of the outcomes measured by the immediate post-test. Additionally, the results suggest large improvements in the parents and in the family environment and family resilience and even in the children’s outcomes such as concentration and covert aggression. Even by this immediate post-test the data suggest that the youth’s behaviours are already showing statistically significant improvements in the areas measured for Overt Aggression (fighting, bullying, etc.), Covert Aggression (lying, stealing, etc.), Depression, Social Skills, Hyperactivity, Concentration and Criminal Behaviour. These risk factors are the most important in reducing later substance use and abuse. In addition, the magnitude of these positive outcomes in the youth’s behaviours for 218 Irish families is larger than the USA SFP norms, except for Social Behaviour. Of course, as in SFP RCT longitudinal outcomes are also desirable to have to assure the continuation of these positive results. When there was funding for 2–10 year outcomes, the results in some outcomes (positive mental health) have actually grown over time because of improvement in the total family relations and environment while some outcomes such as substance use rates required boosters after about 3 years.

The implementation of SFP in Ireland appears to be conducted with fidelity to the SFP core elements and with excellent cultural adaptations. The outcome results are better than those reported by other non-Ireland sites, possibly due to the increased problems in these youth and families at intake because they are indicated youth referred by drug projects, social services or probation services.

To put the effect sizes reported for SFP in Ireland into perspective, the average effect size of all obesity prevention programs was found to be Cohen's  $d = 0.006$  or a miniscule positive change that is clinically insignificant and probably not worth the time or money to implement the obesity prevention programs (Stice et al. 2006). The overall effect size in reducing or preventing substance abuse for all youth-only substance abuse prevention programs is about  $d = 0.10$ . The effect size of the DARE program was  $d = 0.08$  (Tobler and Kumpfer 2001; Tobler and Stratton 1997). Parenting and family interventions have larger effect sizes—averaging nine times larger than youth-only prevention programs or  $d = 0.96$ .

Overall the wide scale dissemination of the culturally adapted SFP for Ireland and repeated individual agency outcome evaluations have made SFP in Ireland a model for disseminating to other countries. The multi-agency collaboration model is also excellent for increasing family recruitment and staffing in rural areas where finding five culturally matched group leaders with excellent skills in running SFP can be difficult. The unforeseen benefit of adopting and adapting SFP to Ireland has been the strengthened relationships between services in the statutory, community and voluntary sectors while they are working together to disrupt the trajectories of at-risk families towards social exclusion and helping these families to be able benefit from and contribute to Irish society.

**Conflict of interest** Karol Kumpfer, Ph.D. is an experimental and developmental psychologist, University of Utah full professor and the program developer of all of the SFP age versions. She was the Substance Abuse and Mental Health Services Administration (SAMHSA) Director of the Center for Substance Abuse Prevention in Washington, DC until 2000 and then CDC Coordinating Scientist evaluating evidence-based substance abuse approaches for the Centers for Disease Control and Prevention (CDC) *Guide to Community Preventive Services* until 2005. About half of the eight SFP RCTs were conducted on her federal National Institutes of Health (NIH) research grants. Two years ago the sales of all of the SFP CDs and the evaluations that supported her graduate students were transferred from the university to Lutra Group, Inc. Hence, she does have a potential conflict of interest now because her husband, Dr. Henry Whiteside, is president of Lutra Group. Also she conducts some of the training workshops and evaluations for Lutra Group including those for a few of the sites in Ireland. Robert O'Driscoll is an addiction counselor with the Irish Health Service Executive South Drug and Alcohol Services. He was the site coordinator on the pilot SFP program and is also an accredited SFP Ireland group leader trainer. He has been involved in a number of implementations and evaluations and has trained SFP group leaders across Ireland. He has also consulted with numerous implementers on how best to deliver SFP in marginalized communities where it is most needed. Jing Xie, M.S., is a doctoral student of Dr. Kumpfer's who works for Lutra Group in the summer and entered most of the Ireland data and worked on writing the individual Ireland agency evaluation reports conducted annually. Keely Cofrin Allen, Ph.D. is an independent biostatistician and psychologist who directs the biostatistics division for the Utah State Department of Health. She maintains the SFP SPSS normative database and conducts most of the SFP data analyses including all of those for the Ireland agencies. She is responsible for the integrity of the data and the reported data analysis.

## References

- Achenbach, T. M., & Edelbrock, C. (1988). *Child behavior checklist (CBCL)*. Burlington, VT: Center for Children, Youth, and Families, University of VT.
- Alcohol and Drug Research Unit. (2010). *Treated problem drug use in Ireland: Figures for 2008 from the national drug treatment reporting system*. Dublin: Health Research Board. Retrieved from <http://www.drugsandalcohol.ie/12771>. Accessed 26 Aug 2010.

- Andrews, D. W., Solomon, L. H., & Dishion, T. J. (1995). The adolescent transition program: A school-based program for high-risk teens and their parents. *Education and Treatment of Children, 18*, 478–498.
- Aos, S., Lieb, R., Mayfield, J., Miller, M., & Penucci, A. (2004). *Benefits and costs of prevention and early intervention programs for youth*. Washington State Policy Institute. Retrieved from <http://www.wsipp.wa.gov/rptfiles/04-07-3901.pdf>. Accessed 05 Sep 2011.
- Ary, D. V., Tildesley, E., Hops, H., & Andres, J. (1993). The influence of parent, sibling, and peer modelling and attitudes on adolescent use of alcohol. *The International Journal of the Addictions, 28*, 853–880.
- Bandura, A. (1989). Human agency in social cognitive theory. *American Psychologist, 44*, 1175–1184.
- Biglan, A., & Taylor, T. (2000). Increasing use of science to improve child rearing. *Journal of Primary Prevention, 21*(2), 207–226.
- Butler, S. (2007). Rabbitte revisited: The first report of the ministerial task force on measures to reduce demand for drugs—ten years on. *Administration, 55*(3), 125–144.
- Campbell, D. T., & Stanley, J. C. (1967). *Experimental and Quasi-experimental designs for research*. Chicago: Rand McNally and Company.
- Castro, F. G., Barrera, M., & Holleran Steiker, L. K. (2010). Issues and challenges in the design of culturally adapted evidence-based interventions. *Annual Review of Clinical Psychology, 6*, 213–239.
- Centre on Addiction, Substance Abuse. (2010). *National survey of American attitudes on substance abuse XV: Teens and parents*. New York: The National Center on Addiction and Substance Abuse at Columbia University.
- Cuijpers, P. (2003). Three decades of drug prevention research. *Drugs: Education, Prevention, and Policy, 10*, 7–20.
- Cuijpers, P. (2005). Prevention programs for children of problem drinkers. A review. *Drugs: Education, Prevention, and Policy, 12*(6), 465–475.
- DeMarsh, J. P., & Kumpfer, K. L. (1985). Family-oriented interventions for the prevention of chemical dependency in children and adolescents. *Journal of Children in Contemporary Society: Advances in Theory and Applied Research, 18*(122), 117–151.
- Department of Community, Rural and Gaeltacht Affairs. (2010). *Report of the steering group on the mid-term review of the National Drugs Strategy 2001–2008*. Dublin, Ireland. Retrieved from <http://www.pobail.ie/en/OfficeoftheMinisterforDrugs/ReportoftheWorkingGrouponDrugsRehabilitation/file,8392,en.pdf>. Accessed 10 May 2011.
- Doyle, P., Molcho, M., & Nic Gabhainn, S. (2009). *HBSC Ireland: Age related patterns in alcohol consumption and cannabis use among Irish children between 1998–2006*. Short report. Galway: Health Promotion Research Center, National University of Ireland. Retrieved from <http://www.nuigalway.ie/hbsc/shortreports.html>. Accessed 11 Sep 2011.
- EMCDDA. (2007). *The state of the drugs problem in Europe*. Annual Report. Luxembourg: Publication Office of the European Union.
- EMCDDA. (2009). *Preventing later substance use disorders in at-risk children and adolescents: a review of the theory and evidence base of indicated prevention*. Annual Report. Luxembourg: Publication Office of the European Union.
- Falicov, C. J. (2009). Commentary: On the wisdom and challenges of culturally attuned treatments for Latinos. *Family Process, 48*, 292–309.
- Foxcroft, D. R. (2006). *Alcohol misuse prevention in young people: A rapid review of recent evidence*. Oxford, UK: WHO Technical Report, Oxford Brooks University.
- Foxcroft, D. R., Ireland, D., Lister-Sharp, D. J., Lowe, G., & Breen, R. (2003). Longer-term primary prevention for alcohol misuse in young people: A systematic review. *Addiction, 98*, 397–411.
- Friese, B., & Grube, J. W. (2010). *Youth drinking rates and problems: A comparison of European Countries and the United States*. U.S. Department of justice. Retrieved from [http://resources.prev.org/underagedrinking\\_resources.html](http://resources.prev.org/underagedrinking_resources.html). Accessed 16 Apr 2010.
- Gresham, F. M., & Elliott, S. N. (1990). *Social skills rating system*. Circle Pines, MN: American Guidance Service.
- Hawkins, D., & Catalano, R. (2000). *Communities that care* (2nd ed.). San Francisco, CA: Jossey-Bass.
- Hibbel, B., Guttormsson, U., Ahlström, S., Balakireva, O., Bjarnson, T., Kokkevi, A., et al. (2009). *The 2007 ESPAD report: Substance use among students in 35 European countries*. Stockholm: Sweden, The Swedish Council for Information on Alcohol and Other Drugs (CAN).
- Holleran Steiker, L. K., Castro, F. G., Kumpfer, K. L., Marsiglia, F. F., Coard, S., & Hopson, L. M. (2008). A dialogue regarding cultural adaptation of interventions. *Journal of Social Work Practice in the Addictions, 8*(1), 154–162.

- Johnston, L. D., O'Malley, P. M., Bachman, J. G., & Schulenberg, J. E. (2010). *Monitoring the future national survey results on drug use, 1975–2009. Vol I: Secondary school students (NIH Publication No. 10–7584)*. Bethesda, MD: National Institute on Drug Abuse.
- Kellam, S. (1972). *Parent observation of children's activities (POCA)*. Baltimore, MD: Johns Hopkins University.
- Kiely, E., & Egan, E. (2000). *Drug education: A social and evaluative study*. Litho Press: National University of Ireland Cork.
- Kumpfer, K. L. (1984). *Strengthening Families Program Parenting Scale*. SLC, UT: College of Social Work, University of Utah.
- Kumpfer, K. L. (1999). Factors and processes contributing to resilience: The resilience framework. In M. D. Glantz & J. L. Johnson (Eds.), *Resilience and development: Positive life adaptations*. NY: Kluwer.
- Kumpfer, K. L., & Alvarado, R. (2003). Family strengthening approaches for the prevention of youth problem behaviors. *American Psychologist*, *58*, 6–7.
- Kumpfer, K. L., Alvarado, R., Smith, P., & Bellamy, N. (2002a). Cultural sensitivity in universal family-based prevention interventions. *Prevention Science*, *3*(3), 241–244.
- Kumpfer, K. L., Alvarado, R., Tait, C., & Turner, C. (2002). Effectiveness of school-based family and children's skills training for substance abuse prevention among 6–8 year old rural children. *Psychology of Addictive Behavior* (Special Issue). In R. Tarter, P. Tolan, & S. Sambrano (Eds.).
- Kumpfer, K. L., Alvarado, R., & Whiteside, H. O. (2003). Family-based interventions for substance abuse prevention. *Substance Use and Misuse*, *38*(11–13), 1759–1789. [PMID: 14582577].
- Kumpfer, K. L., & DeMarsh, J. P. (1985). Family environmental and genetic influences on children's future chemical dependency. *Journal of Children in Contemporary Society: Advances in Theory and Applied Research*, *18*(1–2), 49–91.
- Kumpfer, K. L., DeMarsh, J. P., & Child, W. (1989). *Strengthening families program: Children's skill training curriculum manual, parent training manual, and family skills training manual*. (Prevention Services to Children of Substance-abusing Parents). Utah: Social Research Institute, Graduate School of Social Work, University of Utah.
- Kumpfer, K. L., & Dunst, C. (1997). *The Family Strengths and Resilience Scale*. Denver, CO: American Humane Society.
- Kumpfer, K. L., Fenollar, J., Xie, J., & Bluth Dellinger, B. (2011). Resilience framework: Resilience and resourcefulness in the face of chronic family adversity. In K. Gow & M. Celinski (Eds.), *Continuity versus creative response to challenge: The primacy of resilience and resourcefulness in life and therapy* (pp. 259–272). Hauppauge, NY: Nova Science Publications.
- Kumpfer, K. L., Greene, J. A., Allen, K. C., & Miceli, F. (2010). Effectiveness outcomes of four age versions of the Strengthening Families Program in statewide field sites. *Group Dynamics: Theory, Research, and Practice*, *14*(3), 211–229.
- Kumpfer, K. L., & Johnson, J. L. (2007). Strengthening family interventions for the prevention of substance abuse in children of addicted parents. *Adicciones*, *19*(1), 13–25.
- Kumpfer, K. L., Pinyuchon, M., de Melo, A., & Whiteside, H. O. (2008a). Cultural adaptation process for international dissemination of the Strengthening Families Program (SFP). *Evaluation and Health Professions*, *33*(2), 226–239.
- Kumpfer, K. L., Smith, P., & Franklin Summerhays, J. (2008b). A wake-up call to the prevention field: Are prevention programs for substance use effective for girls? *Substance Use and Misuse*, *43*(8), 978–1001.
- Midford, R. (2009). Drug prevention programs for young people: Where have we been and where should we be going? *Addiction*, *105*(10), 1688–1695.
- Miller, T. A., & Hendrie, D. (2008). *Substance abuse prevention: Dollars and cents: A cost-benefit analysis*. Center for Substance Abuse Prevention (CSAP), SAMHSA. DHHS Pub.No. 07-4298, Rockville, MD.
- Moos, R. H. (1974). *Family environment scale*. Palo Alto, CA: Consulting Psychologist Press, Inc.
- Nation, M., Crusto, C., Wandersman, A., Kumpfer, K. L., Seybolt, D., Morrissey-Kane, E., et al. (2003). What works in prevention: Principles of effective prevention programs. *American Psychologist*, *58*, 449–456.
- ONDCP. (2010). Newsletter of the office of national drug control policy. *ONDCP Update*, *1*(1), 3.
- Onrust, S., & Bool, M. (2006). *Evaluation of the Cursus Gezin aan Bod: The Dutch adaptation of the Strengthening Families Program (SFP 12-16)*. Utrecht, Netherlands: Trimbos Institute.
- Orte, C., March, M., Ballester, L., & Touza, C. (2007). *Results of a family competence program for Spanish drug abusing parents (2005–2006)*. Poster presented at the 15th annual conference of the society for prevention research, Washington, DC.
- Petrie, J., Bunn, F., & Byrne, G. (2007). Parenting programs for preventing tobacco, alcohol or drug misuse in children: A systematic review. *Health Education Research*, *22*(2), 177–191.

- Pratt, C., Mcguigan, W., & Katzev, A. (2000). Measuring program outcomes: Using retrospective pretest methodology. *American Journal of Evaluation*, 21(3), 341–349.
- Rhodes, J. E., & Jason, L. A. (1987). The retrospective pretest: An alternative approach in evaluating drug prevention programs. *Journal of Drug Education*, 17(4), 345–356.
- Skärstrand, E., Larsson, J., & Andreasson, S. (2008). Cultural adaptation of the Strengthening Families Programme to a Swedish Setting. *Health Education*, 108, 287–300.
- Spoth, R. L., Guyll, M., & Day, S. (2002). Universal family-focused interventions in alcohol-use disorder prevention: Cost-effectiveness and cost-benefit analyses of two interventions. *Journal of Studies on Alcohol*, 63(2), 219–228.
- Spoth, R. L., & Redmond, C. (1996). Illustrating a framework for rural prevention research: Project family studies of rural family participation and outcomes. In R. Peters & R. J. McMahon (Eds.), *Preventing childhood disorders, substance abuse, and delinquency* (pp. 299–368). Thousand Oaks, Newbury Park, CA: Sage publications, Inc.
- Spoth, R. L., Redmond, C., & Shin, C. (2001). Randomized trial of brief family interventions for general populations: Adolescent substance abuse outcomes 4 years following baseline. *Journal of Consulting Clinical Psychology*, 69, 627–642.
- Spoth, R., Redmond, C., Mason, A., Kosterman, R., Haggerty, K., & Hawkins, D. (2005). Ten-year follow-up assessment of brief, family-focused intervention effects on lifetime conduct and antisocial personality disorders: Preliminary results. Poster presented at 13th annual Society for Prevention Research conference, Washington, DC.
- Stice, E., Shaw, H., & Marti, C. N. (2006). A meta-analytic review of obesity prevention programs for children and adolescents: The skinny on interventions that work. *Psychological Bulletin*, 132(5), 667–691.
- Stolle, M., Sack, P. M., Stappenbeck, J., & Thomasius, R. (2010). Familienbasierte prävention bei kindern und jugendlichen. *Das Strengthening Families Program. Sucht*, 56(1), 56–60.
- Tobler, N. S., & Kumpfer, K. L. (2001). *Meta-analyses of family approaches to substance abuse prevention*. Rockville, MD: Report prepared for the Center for Substance Abuse Prevention (CSAP).
- Tobler, N. S., & Stratton, H. H. (1997). Effectiveness of school-based prevention programs: A meta-analysis of the research. *Journal of Primary Prevention*, 18(1), 71–128.
- United Nations Office on Drugs Crime. (2009). *Guide to implementing family skills training programmes for drug prevention*. United Nations, New York.
- Wright, D. (2006). *Evaluation of an online public health education program for health department employees*. Doctoral Dissertation Abstracts. Salt Lake City, Utah: Department of Health Promotion and Education, University of Utah.