

# Outcomes of the ON FIRE peer support programme for children and adolescents in families with mental health problems

Kim Foster\*, Ingrid McPhee†, Judith Fethney‡ and Andrea McCloughen§

\*Associate Professor Mental Health Nursing, ‡Biostatistician, §Senior Lecturer Mental Health Nursing, and

†Research Assistant, Sydney Nursing School, The University of Sydney, Sydney, New South Wales, Australia

## Correspondence:

Kim Foster,  
Sydney Nursing School,  
The University of Sydney,  
Sydney, NSW 2006,  
Australia  
E-mail: kim.foster@sydney.edu.au

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## ABSTRACT

Children in families with mental health problems may encounter multiple risks to their well-being. General aims of peer support programmes for these children include fostering resilience and effective coping strategies, and enhancing self-esteem and social skills. This study aimed to evaluate outcomes from a pilot multi-site implementation of the ON FIRE peer support programme. The purpose of ON FIRE is to cultivate hope, resilience and well-being in children and adolescents aged 8–17 years living in families affected by sibling or parental mental health problems. We employed a pre-post test (baseline and 4 months) evaluation using a suite of outcome measures. The Strengths and Difficulties Questionnaire (SDQ), Children's Hope Scale, Kids Connections Scale and Positive and Negative Affect Scale for Children (PANAS-C) were completed for 64 child/adolescent participants. At baseline, participants had significantly greater difficulties compared with Australian norms. At 4 months, there were significant differences in children's hope and in connections outside the family. There were no significant differences in the SDQ or the PANAS-C.

## INTRODUCTION

International longitudinal studies indicate that children whose parents have mental illness (COPMI) have between 41% and 77% risk of developing mental health and/or psychosocial problems (van Doesum *et al.* 2005). Compared with other children, COPMI are at greater risk of disrupted attachments (Cunningham *et al.* 2004), poorer school attendance, academic and peer-interaction problems (Mensah & Kiernan 2010), and behavioural and emotional problems (Maybery *et al.* 2009a). A complex interplay of genetic, environmental and socio-economic factors has been linked with the increased level of risk (Erlenmeyer-Kimling *et al.* 2000), and children can experience a range of outcomes. Using cluster analysis methodology, Mowbray *et al.* (2004) found that over half of 166 adolescents whose parents had

mental illness demonstrated no psychosocial problems, while 42% experienced a range of issues; 27% had behavioural disturbances and 15% demonstrated mental health problems. Consistent with previous literature, Mowbray *et al.* (2004) found that a combination of risk factors, in particular, social contextual factors, were related to outcomes for these children. While the majority of literature has focused on children of parents with mental illness, both parental and sibling mental illness can affect the well-being of the family unit and parent-child/sibling-child relationships. Qualitative literature on sibling mental illness indicates that well siblings can experience embarrassment, resentment and guilt (Sin *et al.* 2012). Siblings have also been found to experience stigma, burden and stress in relation to siblings' mental health problems (Greenberg *et al.* 1997; Sin *et al.* 2012).

In Australia, epidemiological research indicates that between 21% and 23% of children under 18 years live in families where at least one parent has mental illness (Maybery *et al.* 2009b). The risk of adverse outcomes for these children can be reduced, and resilience increased, through early identification and provision of information on mental illness along with other preventative interventions (Foster 2010). Knowledge about risk factors as well as protective factors for children in families with mental health problems (CFMHP) has led to the development and evaluation of a range of tailored interventions including peer support. Such strategies have been found to ameliorate risks and contribute to positive outcomes for CFMHP (Pitman & Matthey 2004; Maybery *et al.* 2006). Numerous peer support programmes, primarily for COPMI, have been implemented nationally and internationally. In a review of 26 Australian peer support group programmes, Reupert & Maybery (2009) reported that the common aims of these programmes included developing peer support networks, increasing self-esteem and children's understanding of mental illness, and teaching communication skills and adaptive coping. Programme structures typically included time-limited holiday programmes, camps or after school programmes, and were usually aimed at specific age groups such as 6–9 years, 9–12 years and 13–18 years.

In terms of outcomes from peer support, review of 12 peer support programmes across several countries indicated that those with a strengths-based framework demonstrated beneficial impact on a variety of measures including well-being and self-esteem, coping abilities, and connections (Reupert *et al.* 2012). Only one published peer-support programme was found that targeted children with parents and siblings experiencing mental health problems. The Simplifying Mental Illness + Life Enhancement Skills programme aims to provide education, teach life skills, improve self-expression and self-esteem, and reduce isolation for children 8–16 years old, and is run over three consecutive days (mostly during school holidays). Outcomes included improved life skills and knowledge of mental illness (Pitman & Matthey 2004). In a review of peer support programmes, Reupert *et al.* (2012) identify that evaluation of most programmes has been limited in that they were within-group pre and post designs, and/or did not employ valid outcome measures or wait list or control groups. Reupert *et al.* (2012) recommend future evaluations include randomized controlled designs and validated outcome measures, and concluded that the evidence base for

these peer support programmes remains in the development stage. This paper reports the evaluation findings of the multi-site pilot implementation of the ON FIRE programme. Evaluation of the programme will contribute to the emergent knowledge base on the impact of peer support for CFMHP.

## ON FIRE PROGRAMME

ON FIRE is a peer support programme for children and adolescents in families affected by mental health problems (parental and sibling mental illness), offered under the auspices of the Schizophrenia Fellowship of New South Wales (NSW) Inc. Australia (SFNSW). ON FIRE had been run on a volunteer basis for 10 years, until funding in 2010 enabled the formal development (including a programme manual and training of programme facilitators) and multi-site rollout to a further three sites in NSW; two regional and one metropolitan. The programme purpose is to cultivate hope, resilience and well-being in children and adolescents aged 8–17 years in families affected by mental health problems. Programme objectives include: to increase positive emotions; to enhance social belonging; to strengthen social-emotional life skills such as hope, positivity, resilience and positive coping; and to improve well-being literacy and build social capital. ON FIRE is informed by the positive psychology philosophy of 'Epicorma', a coaching programme designed to cultivate happiness and success for individuals, groups and communities. The Epicorma vision is that people live flourishing lives where they are at their best or optimal functioning. This includes having a sense of purpose, personal growth, self-acceptance, autonomy, positive relationships and mastery (Yu 2011). Children are referred to the programme by schools, health services, Department of Community Services, women's refuges, non-government organizations and self and family/friends referrals.

Core programme components are fun days and camps which are offered ongoingly throughout the year. Fun days are day-long social outings (once every 4–6 weeks) at different venues. These aim to help children/adolescents have fun, make friends and enjoy leisure. During the evaluation period, camps were run over 2–3 days (twice per site). Camps included fun and leisure activities, combined with group work including peer support groups, mental health literacy groups and life skills coaching groups. 'Chat groups' (face-to-face peer support groups) were conducted at camps or fun days, providing the opportunity for small groups of children and a facilitator to discuss

particular conversation themes relating to children/adolescents in families affected by mental health issues. While ON FIRE has elements in common with other peer support programmes, including fun days and camps, it is distinct from many in that it is offered to a broad range of age groups (8–17 years); includes siblings as well as parents with mental health problems; is underpinned by the coaching philosophy of Epicorma and is ongoing rather than time limited (i.e. does not have a beginning and end point to the programme structure).

### AIM

To evaluate the outcomes for children/adolescents in the ON FIRE peer support programme in its multi-site pilot implementation year.

### METHOD

The study was part of a larger mixed methods evaluation of the programme. In this quantitative phase, a pre- and post-test design with an intervention group was used to evaluate the impact of the programme on children's/adolescents' strengths and problems, emotional well-being, social connectedness and sense of hope, as these were key components of the programme objectives. Children's/adolescents' satisfaction with the programme was also gathered. Data were obtained on programme entry (baseline) and 4 months later (follow-up). This time period allowed for children's participation in at least one of each of the core programme activities (i.e. fun days and camps). As the programme did not have a set entry and exit time point, participants were recruited as they entered (staggered entry) during the pilot implementation period. University Human Ethics approval and endorsement from the ON FIRE Programme Steering Committee of SFNSW were gained for the study.

### PARTICIPANTS

All children/adolescents who commenced in ON FIRE at the three new programme sites during the recruitment period formed the recruitment sample. Inclusion criteria were: child/adolescent aged 8–17 years, with a parent and/or sibling with a mental health problem(s), who participated in at least one activity following programme entry, and who had consented, and had parental/guardian consent to participate. Data for each child participant were collected

from both parents and children. Parents/guardians were invited to complete the Strengths and Difficulties Questionnaire (SDQ) for their child/adolescent at baseline and follow-up, and children/adolescents were invited to complete an additional suite of measures.

### PROCEDURE

Programme facilitators recruited participants at each programme site. On programme entry, parents/guardians were invited to provide written consent for their child's participation in the study, and to complete a parent-report of the SDQ for their child/ren, returned either by post or in person. Prior to the first programme activity, children whose parents had consented and who also consented to participate, completed the suite of child (8–12 years) or adolescent (13–17 years) measures; Kids Connections Scale (KCS), Children's Hope Scale (CHS) and the Positive and Negative Affect Scale for Children (PANAS-C). Thirteen- to seventeen-year-old participants also completed the adolescent version of the SDQ. The same measures were administered at follow-up as well as a satisfaction survey for children/adolescents. At baseline, parent and/or child measures were completed for a total of 64 ON FIRE participants (71.90% overall response), 18 (28.1%) were completed by parent only, eight (12.5%) completed by child only and 38 (59.4%) completed by both parent and child. Child participant age ranged from 8–17 years (11.69  $\pm$  2.51); 54.7% were female.

### MEASURES

#### Strengths and Difficulties Questionnaire (SDQ)

The standardized SDQ (Goodman 1997) comprises 25 items identifying strengths and behavioural and emotional problems across five subscales: emotional problems, conduct problems, hyperactivity/inattention, peer problems and prosocial behaviour. A total difficulties score is also derived. Items are rated on a three-point scale (0 = not at all, 1 = somewhat true, 2 = certainly true). Additional impact questions elicit information about the chronicity and burden of the child's difficulties for others (Goodman 1999). Internal consistency reliability coefficients (Cronbach's alpha) of 0.7 and above are usually considered acceptable (Streiner & Norman 2003). Alpha coefficients for total difficulties and the five subscales range from 0.57 to 0.85 for the parent version and 0.41–0.81 for the

adolescent self-report version (Goodman 2001). Normative data for Australia is available (Hawes & Dadds 2004; Mellor 2005). There are several versions of the SDQ; parent report and adolescent self-report versions were used in this research.

#### **Positive and Negative Affect Scale for Children (PANAS-C)**

The PANAS-C (Laurent *et al.* 1999) is a brief self-report screening measure originally designed to discriminate between anxiety and depression symptoms in young people. PANAS-C can be separated into two subscales: positive affect (PA; 12 items) and negative affect (NA; 15 items). 27 items are rated on a five-point scale (1 = not much at all to 5 = a lot). Higher scores indicate greater levels of PA and NA, respectively. Internal consistency reliability was found to be acceptable in both scale development and replication samples, respectively: alphas of 0.90 for the PA scale and 0.94 for the NA scale (Laurent *et al.* 1999).

#### **Children's Hope Scale (CHS)**

The CHS (Snyder *et al.* 1997) is a six-item self-report questionnaire designed to assess a child's dispositional hope, understood to be measurable through two components: agency (ability to initiate and sustain goal-directed action), and pathways (ability to find a means to achieve goals). The total CHS score is achieved by adding the responses, which are rated on a six-point scale (1 = none of the time to 6 = all of the time). Reliability of the CHS in children and adolescent populations is sound. Cronbach's alphas across six samples ranged from 0.72 to 0.86, with a median alpha of 0.77 (Snyder *et al.* 1997).

#### **Kids connections scale (KCS)**

The 10-item KCS (Goodyear *et al.* 2009) was developed for another Australian peer support programme to assess possible relationships inside the family (e.g. 'Time spent with your mum') and outside the family (e.g. 'Time spent with your best friend'). Higher scores indicate a greater level of positive connections. To date, only internal consistency reliability has been assessed. Cronbach's alpha for within-family connections was 0.5, and outside-family connections 0.67, with total connections at 0.69 (Maybery *et al.* 2009c). While these alphas are quite low, a measure of social connectedness was important to include to gain a holistic picture of participants' functioning, and to

enable comparisons with the Australian programme for which the scale was first developed.

#### **Participant satisfaction**

After 4 months in ON FIRE, children/adolescents were asked to provide feedback about the programme. The satisfaction survey comprised questions using a five-point Likert scale (1 = really don't agree to 5 = really agree) about how much participants enjoyed ON FIRE, whether they would recommend the programme to other children/adolescents and how they would rate the programme overall. Open-ended questions included what participants liked most and least about the programme and how the programme could be improved.

#### **DATA ANALYSIS**

Data were analysed in two stages. Firstly, the SDQ outcomes for children/adolescents in ON FIRE were compared with Australian normative data (Mellor 2005). This provided a standard against which the current data could be compared. Differences between the data were explored using one sample t-tests. Secondly, differences in outcome measures over time were explored using either paired Wilcoxon signed-rank tests or paired t-tests, depending on the sample size. For pre-post analyses, only participants who remained in the study from baseline to follow-up were included. Because of the exploratory nature of the study, there has been no correction for multiple testing, as techniques to minimize type 1 errors may be overly conservative and not reveal potentially interesting findings. As we were most interested in the magnitude of clinical change, effect sizes (Cohen's *d*) and 95% confidence intervals were also calculated. Following Cohen's effect size conventions (Cohen 1969), 0.2 is small (difference can only be detected statistically), 0.5 is medium (difference can be detected by a trained observer) and 0.8 is large (difference can be detected by an untrained observer). In order to have a standard against which to assess the effect sizes in this study, the 0.5 criterion reported by Norman *et al.* (2003) was used. Across a range of different psychosocial measures, these authors determined that discrimination for change appeared to be approximately half a standard deviation or medium effect size. Effect sizes for the longitudinal aspect of the study were corrected for correlation. SPSS V21 (IBM Corp, Armonk, NY) was used for all analyses.

## RESULTS

## Participant demographics

Of the 64 child/adolescent participants, data were received from 58 (90.6%) as to who in their family had a mental health issue, 38 (65.5%) had parent(s) with mental illness, 11 (19%) a sibling, five (13.2%) had both parent and sibling, while four (10.5%) had neither parent nor sibling with mental health problems, but a close family relative (e.g. grandparent). Seven (12.1%) children had two or three family members with a mental health problem. The most common reported parental and/or sibling mental health problem was depression ( $n = 35$ ; 60.3%), followed by anxiety disorders ( $n = 20$ ; 34.5%), bipolar disorder ( $n = 13$ ; 22.4%) and schizophrenia ( $n = 7$ ; 12.1%). These mental health problems were often co-morbid (see Table 1).

## SDQ analyses

At baseline, the SDQ was completed by 56 parents about their child (8–15 years), and 13 adolescents (16–18 years) completed the self-report. At follow-up, 43 parents and 11 adolescents completed the SDQ. Because of the sample size, age group and between-site comparisons were not appropriate for the completed measures. Parent/guardian ratings of their children/adolescents on the SDQ are reported, followed by the adolescent self-reported ratings. The strengths and difficulties were compared with Australian normative data.

## Parent report

The means and standard deviations, confidence intervals and effect sizes for the total difficulties scale, as well as the subscales, are in Table 2, along with Goodman's (1999) indicative score ranges. ON FIRE means that differ significantly from normative are indicated.

In comparison to the normative group, children in the ON FIRE programme scored higher (worse) in terms of difficulties. Mean total difficulties were in the borderline range for ON FIRE participants, while emotional symptoms were in the borderline-clinical range. Peer problems were approaching borderline. The ON FIRE sample was found to differ significantly from the normative for the total difficulties scale and the emotional symptoms, conduct problems, hyperactivity and peer problems subscales. Further, substan-

Table 1 Demographic data

|  | Demographic                    | Total        |
|--|--------------------------------|--------------|
| <b><i>n</i> in evaluation</b>                        | <b>All</b>                     | <b>64</b>    |
|  | Parent and child completed     | 38           |
|  | Parent only completed          | 18           |
|  | Child only completed           | 8            |
| Gender   | Female                         | 35           |
|  | Male                           | 29           |
| Age groups   | 8–12 years                     | 44           |
|  | 13–17 years                    | 18           |
| Mean age   | Mean (SD)                      | 11.69 (2.51) |
| Person with mental illness                           | Mother                         | 25           |
|  | Brother                        | 10           |
|  | Father                         | 9            |
|  | Stepfather                     | 6            |
|  | Sister                         | 6            |
|  | Stepmother                     | 4            |
|  | Grandfather                    | 2            |
|  | Grandmother                    | 2            |
|  | Guardian                       | 1            |
| Total family member(s) with mental illness per child |                                |              |
|  | 1                              | 48           |
|  | 2                              | 4            |
|  | 3                              | 3            |
| Type of mental illness*                              | Depression                     | 35           |
|  | Anxiety disorder               | 16           |
|  | Bipolar disorder               | 13           |
|  | Schizophrenia                  | 7            |
|  | Borderline personality         | 5            |
|  | Psychosis                      | 4            |
|  | Post-traumatic stress disorder | 4            |
|  | Obsessive compulsive disorder  | 3            |
|  | Panic disorder                 | 3            |
|  | Conduct disorder               | 3            |
|  | Social anxiety                 | 1            |
|  | Schizoaffective disorder       | 1            |
|  | Adjustment disorder            | 1            |

\*Mental illnesses may be co-morbid.

and observable differences in total difficulties, emotional symptoms, conduct problems and peer problems between the normative and ON FIRE participants were indicated by their medium to large (>0.5) effect sizes.

## Adolescent report

Table 2 presents means and standard deviations at baseline for the adolescent self-report total difficulties scale and subscales within the normative and ON FIRE data sets. Total difficulties and peer problems in the ON FIRE adolescents were significantly higher (worse) than the normative data. The other subscales did not differ statistically significantly from the nor-

**Table 2** Parent and adolescent reported means (SD) at baseline for SDQ

| Subscale            | Indicative ranges of scores |            |          | Parent report            |                                  |                 | Adolescent report        |                               |                 |
|---------------------|-----------------------------|------------|----------|--------------------------|----------------------------------|-----------------|--------------------------|-------------------------------|-----------------|
|                     | Typical                     | Borderline | Clinical | Normative<br>n = 910‡    | ON FIRE†<br>Baseline; n = 56     | Effect size (d) | Normative<br>n = 553§    | ON FIRE                       |                 |
|                     |                             |            |          |                          |                                  |                 |                          | Baseline; n = 13              | Effect size (d) |
| Total difficulties  | 0–13                        | 14–16      | 17–40    | 8.2 (6.1)<br>(7.8–8.6)   | 14.20 (8.11)***<br>(10.62–15.02) | –0.84           | 9.0 (5.6)<br>(8.53–9.47) | 14.00 (7.83)*<br>(9.27–18.73) | –0.73           |
| Emotional symptoms  | 0–3                         | 4          | 5–10     | 2.1 (2.0)<br>(1.97–2.23) | 4.64 (2.89)***<br>(3.44–5.02)    | –1.02           | 2.4 (2.0)<br>(2.23–2.57) | 3.77 (2.83)<br>(2.06–5.48)    | –0.56           |
| Conduct problems    | 0–2                         | 3          | 4–10     | 1.5 (1.6)<br>(1.4–1.6)   | 2.52 (2.23)*<br>(1.68–2.85)      | –0.53           | 1.8 (1.7)<br>(1.65–1.90) | 2.54 (2.40)<br>(1.09–3.99)    | –0.36           |
| Hyperactivity       | 0–5                         | 6          | 7–10     | 3.1 (2.4)<br>(2.94–3.26) | 4.20 (3.07)*<br>(2.93–4.53)      | –0.40           | 3.2 (2.3)<br>(3.01–3.39) | 4.31 (2.66)<br>(2.70–5.91)    | –0.45           |
| Peer problems       | 0–2                         | 3          | 4–10     | 1.6 (1.9)<br>(1.48–1.72) | 2.84 (2.29)***<br>(1.97–3.21)    | –0.60           | 1.5 (1.6)<br>(1.37–1.63) | 3.38 (2.10)**<br>(2.71–4.66)  | –1.01           |
| Prosocial behaviour | 6–10                        | 5          | 0–4      | 8.3 (1.7)<br>(8.19–8.41) | 7.91 (1.98)<br>(6.83–8.25)       | 0.21            | 8.0 (1.7)<br>(7.86–8.14) | 7.15 (2.08)<br>(5.90–8.41)    | 0.45            |

†ON FIRE mean is significantly different from normative, where \* $P < 0.05$ ; \*\* $P < 0.01$ ; \*\*\* $P < 0.001$ .

‡Australian normative data is based on Australian means and standard deviations for a 7- to 17-year sample; ON FIRE measured 8–17 years.

§Australian means and standard deviations for the 11+ year old samples as a whole, on which the Australians normative data are based; ON FIRE measured 13+ years. 95% confidence intervals are displayed below each mean. Higher scores are worse, with the exception of prosocial behaviour, where lower scores are worse.

mative sample. Three of the six subscales had effect sizes >0.5, while hyperactivity and prosocial behaviour were marginal.

**BASELINE TO FOLLOW-UP COMPARISONS**

The within-subject design of this evaluation required participants to respond at baseline and follow-up time points. Because of participant dropout, sample sizes reduced from baseline to follow-up. The adolescent sample was reduced by two; 13 parents did not complete the follow-up SDQ measures, while three children did not complete the remaining suite of questionnaires.

**Parent data**

Wilcoxon signed-rank tests were conducted to determine whether there were significant changes in parent report SDQ scores from baseline to 4 months (*n* = 43; see Table 3). No statistically significant changes were found for total difficulties or the subscales (all *P* > 0.05), and effect sizes were small in magnitude, indicating no observable change in these measures as perceived by parents/guardians.

**Adolescent data**

The change in scores from SDQ at baseline to 4 months was analysed for statistical significance using Wilcoxon signed-rank tests. Eight complete cases were analysed. Means and standard deviations, along with effect sizes for both time points, are reported in Table 3. No significant changes were found for total difficulties or any of the subscales, all *P* > 0.72, and effect sizes were small, indicating no observable change in these measures as perceived by the adolescents.

**SDQ impact scores – parent and adolescent**

The impact supplement asked whether the respondent thought the child/adolescent had a problem, and, if yes, requested ratings for distress, social impairment, burden and chronicity, on a four-point Likert scale (1 = Not at all to 4 = A great deal; Goodman 1999). Responses are summed to generate an impact score that ranges from 1 to 10; a score of two or higher indicates high impact and is considered to be in the clinical range. Impact scores were also measured at baseline and 4 months. Wilcoxon signed-rank tests were conducted to ascertain change in impact from

**Table 3** Baseline and follow-up SDQ scores

| Subscale            | Indicative ranges of scores |            |          |                              | Parent report ( <i>n</i> = 43) |                               |                               | Adolescent report ( <i>n</i> = 8) |                               |                               |                 |
|---------------------|-----------------------------|------------|----------|------------------------------|--------------------------------|-------------------------------|-------------------------------|-----------------------------------|-------------------------------|-------------------------------|-----------------|
|                     | Typical                     | Borderline | Clinical | 4 months                     | Effect Size (d)                | Baseline                      | 4-months                      | Effect Size (d)                   | Baseline                      | 4-months                      | Effect Size (d) |
|                     |                             |            |          |                              |                                |                               |                               |                                   |                               |                               |                 |
| Total difficulties  | 0-13                        | 14-16      | 17-40    | 11.88 (8.65)<br>(9.30-14.67) | 0.21                           | 13.60 (8.66)<br>(11.01-16.19) | 16.88 (6.15)<br>(11.75-22.01) | 0.06                              | 17.38 (7.11)<br>(11.45-23.31) | 16.88 (6.15)<br>(11.75-22.01) | 0.06            |
| Emotional symptoms  | 0-3                         | 4          | 5-10     | 3.67 (2.77)<br>(2.84-4.50)   | 0.34                           | 4.53 (3.17)<br>(3.58-5.48)    | 5.25 (2.19)<br>(3.42-7.08)    | -0.08                             | 5.00 (2.39)<br>(3.01-6.99)    | 5.25 (2.19)<br>(3.42-7.08)    | -0.08           |
| Conduct problems    | 0-2                         | 3          | 4-10     | 2.26 (2.22)<br>(1.60-2.92)   | 0.07                           | 2.42 (2.22)<br>(1.76-3.08)    | 3.38 (2.39)<br>(1.39-5.37)    | 0.10                              | 3.62 (2.45)<br>(1.58-5.66)    | 3.38 (2.39)<br>(1.39-5.37)    | 0.10            |
| Hyperactivity       | 0-5                         | 6          | 7-10     | 3.53 (2.86)<br>(2.68-4.39)   | 0.19                           | 4.09 (3.07)<br>(3.17-5.01)    | 4.88 (2.47)<br>(2.82-6.94)    | 0.04                              | 5.00 (2.51)<br>(2.91-7.09)    | 4.88 (2.47)<br>(2.82-6.94)    | 0.04            |
| Peer problems       | 0-2                         | 3          | 4-10     | 2.53 (2.60)<br>(1.75-3.31)   | -0.14                          | 2.26 (2.41)<br>(1.54-2.98)    | 3.38 (1.41)<br>(2.20-4.56)    | 0.14                              | 3.75 (1.83)<br>(2.22-5.28)    | 3.38 (1.41)<br>(2.20-4.56)    | 0.14            |
| Prosocial behaviour | 6-10                        | 5          | 0-4      | 7.21 (3.07)<br>(6.29-8.13)   | 0.33                           | 8.16 (2.01)<br>(7.56-8.76)    | 7.16 (2.70)<br>(4.91-9.41)    | -0.11                             | 6.88 (2.10)<br>(5.13-8.63)    | 7.16 (2.70)<br>(4.91-9.41)    | -0.11           |

baseline to 4 months for either parent-reported or adolescent self-reported measures. The impact supplement was applicable to the children of 28 of the 43 parents who completed the SDQ. Parent-reported baseline impact scores ( $M = 3.25$ ,  $SD = 2.85$ ) were significantly lower at 4 months ( $M = 1.85$ ,  $SD = 2.14$ ),  $Z = -2.78$ ,  $P = 0.005$ ,  $d = 0.51$ . There was no significant difference in impact scores reported by the seven adolescents who completed the impact supplement at baseline ( $M = 3.71$ ,  $SD = 3.55$ ) and 4 months ( $M = 2.00$ ,  $SD = 1.00$ ),  $P = 0.11$ . However, a large effect size of 1.35, corrected for correlation, indicated that clinically or practically relevant change had occurred in adolescent impact scores over the programme.

Table 4 displays the percentage of participants who, either through parent- or self-report, were classified as functioning in the typical, borderline or clinical ranges, based on their impact scores.

From baseline to 4 months, both parents and adolescents indicated a decrease in impact scores, with more adolescents shifting to the typical range. The percentage of children whose parents rated their impact in the borderline or clinical range dropped from 53.5% at baseline to 41.9% at follow-up. Qualitative comments made by parents on the follow-up SDQ supported the reduction in scores e.g. 'With ON FIRE he feels normal. I found they are very understanding, which has boosted his confidence so much. I couldn't ask for anything more', 'He has come out of his shell a lot more. He is finding it easier to meet other kids and talk about the problems or fears that he has. I would recommend this program to kids in the same situation. It helps heaps'. Only seven adolescent participants recorded ratings for an impact score at both baseline and follow-up; no change in the number of scores in the borderline or clinical range was reported after 4 months.

The follow-up SDQ included questions that elicited the respondent's perception of change because of the intervention. Specifically, the questions were about the impact of ON FIRE on child/adolescent problems and whether the programme had been helpful in other

ways. Forty-three per cent of parents considered their child's problems to have improved, 54.8% indicated they were unchanged. Of the adolescents, 81.8% indicated their problems had improved, and 18.2% reported no change. While only 7.1% of parents thought ON FIRE had been helpful in 'other ways', 'a great deal'; 45.5% of adolescents reported their experience of the programme to have been helpful 'a great deal' in 'other ways'. However, this data should be interpreted with caution, as some parents caveated their responses with additional comments (e.g. 'Not sure how much troubles [sic] are just a result of normal, hormonal changes due to adolescence'). While only adolescent participants (13–17 years) completed the SDQ self-report, children of all ages were invited to complete all other measures. Results are reported in Table 5.

#### *Positive and Negative Affect Scale for Children (PANAS-C)*

The PANAS-C was completed by 44 children and adolescents at baseline and 39 at follow-up. Three respondents returned incomplete PANAS-C questionnaires; hence, 36 complete cases were analysed. The means and standard deviations of the complete cases are reported in Table 5. Paired samples t-tests were conducted. While neither PA nor NA showed statistically significant changes from baseline to follow-up, the effect size indicates that the changes in PA were approaching detection by a trained observer.

#### *Children's Hope Scale (CHS)*

At baseline, 44 children/adolescents completed the CHS, while 39 completed it at follow-up. Two respondents returned incomplete CHS questionnaires; hence, 37 complete cases were analysed. The means and standard deviations for total hope, as well as the agency and pathways components are shown in Table 5. A paired sample t-test revealed that the increase in hope was statistically significant and approaching detection by a trained observer.

**Table 4** Parent and adolescent SDQ impact scores

| Group               |          | Typical (%) | Borderline (%) | Clinical (%) | No impact indicated (%) |
|---------------------|----------|-------------|----------------|--------------|-------------------------|
| Parent Baseline     | $n = 43$ | 11.60       | 7.00           | 46.50        | 34.90                   |
| Parent 4 months     |          | 20.90       | 7.00           | 34.90        | 37.20                   |
| Adolescent Baseline | $n = 8$  | 0.00        | 37.50          | 50.00        | 12.50                   |
| Adolescent 4 months |          | 0.00        | 37.50          | 50.00        | 12.50                   |

**Table 5** Baseline and follow-up child/adolescent measures

| Measure                      | Subscale(s)       | Baseline                       | Follow-up†                     | Effect size (d) |
|------------------------------|-------------------|--------------------------------|--------------------------------|-----------------|
| PANAS-C<br>( <i>n</i> = 36)‡ | Positive affect   | 38.39 (11.83)<br>(34.5–42.22)  | 42.31 (9.83)<br>(39.10–45.52)  | –0.32           |
|                              | Negative affect   | 29.69 (14.67)<br>(21.90–31.48) | 28.47 (10.04)<br>(25.19–31.75) | 0.091           |
| CHS<br>( <i>n</i> = 37)‡     | Agency            | 11.24 (3.80)<br>(10.02–12.46)  | 12.65 (3.59)*<br>(11.49–13.81) | –0.38           |
|                              | Pathways          | 10.49 (3.51)<br>(9.36–11.62)   | 11.76 (3.28)<br>(10.7–12.82)   | –0.33           |
|                              | Total hope        | 21.73 (6.66)<br>(19.58–23.88)  | 24.41 (6.40)*<br>(22.35–26.47) | –0.39           |
| KCS<br>( <i>n</i> = 38)‡     | Family            | 6.97 (2.38)<br>(6.21–7.73)     | 7.00 (2.86)<br>(6.09–7.91)     | –0.01           |
|                              | Outside family    | 9.89 (3.07)<br>(8.91–10.87)    | 11.76 (3.79)*<br>(10.55–12.97) | –0.46           |
|                              | Total connections | 18.15 (5.27)<br>(16.47–19.83)  | 18.76 (5.11)<br>(17.14–20.38)  | –0.09           |

†Follow-up mean is significantly different from baseline, where \* $P < 0.05$ .

‡Samples sizes vary because of exclusion of incomplete questionnaires.

### *Kids Connections Scale (KCS)*

Responses on the KCS were received from 47 children/adolescents at baseline and 38 at follow-up. The means and standard deviations for children's/adolescents' perceptions of their connections are in Table 5. Paired sample *t*-tests were conducted. Connections outside the family were found to have increased significantly and to be observable.

### *Participant satisfaction*

Satisfaction responses were returned by 39 children/adolescents. The majority of participants agreed/really agreed that ON FIRE was enjoyable to attend (94.9%) and they would recommend the programme to other children (92.3%). Participants gave the programme a mean rating of 8.5/10 (+/–1.74). Aspects of the programme that participants most liked were: meeting new people and making friends, the activities and camps, and having a good time. Participants identified the behaviour of other children, particularly boys, as the least liked aspect of their ON FIRE experience; however, most responded there was nothing they disliked about the programme and there was nothing else that could have made ON FIRE better.

## DISCUSSION

At baseline, ON FIRE participants, rated by their parents, were found to have greater difficulties than their peers in a normative Australian sample (Mellor

2005). This finding is consistent with the broader literature, which has reported higher peer interaction, behavioural and emotional difficulties for this group of children (Maybery *et al.* 2009a). The reported level of difficulties experienced by ON FIRE participants were largely comparable to those in another Australian COPMI sample (CHAMPS) pre-intervention and higher on total difficulties and all subscales compared with a self-identified general community COPMI group (i.e. not referred for an intervention programme through mental health services) (Maybery *et al.* 2009a). This suggests that, while small, the ON FIRE sample was largely representative of the broader COPMI population.

At 4 months, no statistically significant changes in the SDQ total difficulties, emotional symptoms, conduct problems, hyperactivity, peer problems or prosocial behaviour were found. The lack of statistically significant changes reported by parents should be interpreted cautiously. As this was an evaluation, the sample size was highly dependent on the number of participants in the programme and the number of those willing to participate in the study during the evaluation period. It was not possible to power the study to detect statistically significant differences, and the interpretation of effect sizes was more meaningful in terms of programme effectiveness than *P*-values. Despite this, all results were in the expected direction (i.e. showing improvements), except for peer problems and prosocial behaviour. Parents also reported that their child's reported difficulties had less of an impact on others following 4 months of participation.

These results contrast somewhat with SDQ outcomes reported for the CHAMPS programmes. For children who participated in the CHAMPS school holiday programme, parents rated their behaviour as significantly less hyperactive at 4 weeks follow-up, while following the after school programme, parents rated their children significantly lower on the emotional symptoms and conduct problems subscales (Maybery *et al.* 2006). Interestingly, parents of participants in ON FIRE and CHAMPS programmes reported reductions in prosocial behaviour, with a statistically significant decrease reported after the CHAMPS after-school programme. It is unclear why these peer support programmes are negatively impacting participants' prosocial behaviour; it may be the result of children seeking more information/gaining knowledge about mental illness. This needs further investigation, although as Maybery *et al.* (2009a) note, the low internal consistency of the prosocial subscale may limit interpretation of findings.

ON FIRE adolescents did not report any statistically significant changes in total difficulties or subscales from baseline to 4 months follow-up. Despite this, adolescents did report a reduction in the impact of their difficulties. The inherent challenges of being an adolescent should be acknowledged when considering this outcome. It is possible that other issues outside of ON FIRE's remit were impacting these adolescents' day-to-day functioning and self-perception of difficulties; however, given the small sample, only tentative conclusions can be drawn.

Total hope (sum of 'agency', the ability to initiate and sustain goal-directed action, and 'pathways', ability to find means to achieve goals) increased significantly from baseline to 4 months. This result suggests participants were achieving the programme objective of strengthening hope. While the CHS has not been used previously with the CFMHP population, a study conducted with high school students provided evidence of the role hope can play as a protective factor, moderating the relationship between stressful life events and adolescent well-being (Valle *et al.* 2006). Hope has been identified as resilience factor for higher-risk children (Brooks 1994), and was reported to function as a protective factor in a high-risk group of children whose mothers were incarcerated (Hagen *et al.* 2005). Given the adverse life experiences that CFMHP can be exposed to, the increase in hope is a key finding. The construct of hope has not been investigated in previous peer support evaluations for this group of children and is an important area for future exploration, particu-

larly in relation to resilience. Hope may be useful for outcome measurement in other peer support programmes.

The results for the KCS, which indicated a significant increase in positive connections outside the family after 4 months in ON FIRE, provided further support for achievement of programme goals, specifically, enhancement of social belonging and development of social capital. Connections within the family did not increase; however, improvements in these relationships, which may be impaired because of separation/divorce and/or mental health problems, may not be easily impacted through a peer support programme. The noted increase in connections outside the family is consistent with the outcomes for the CHAMPS school holiday programme, but not the CHAMPS after-school programme for which no significant changes in connections was found (Maybery *et al.* 2006). While developing friendships with other children/adolescents who can empathize with the experience of living with mental health issues may be viewed as positive, some researchers have raised concerns about the risk of (unintentionally) restricting peer support networks to individuals in the programme (Hargreaves *et al.* 2008). The impact of developing social capital within the ON FIRE programme, to the possible exclusion of other peers, needs evaluation over the longer term. While child and adolescent participants did not indicate significant changes in positive or NA, an increase in mean PA was noted (approaching detection by a trained observer). This outcome is consistent with the ON FIRE programme goal to increase positive emotions. No published literature on the use of the PANAS-C with COPMI was identified for comparison of the results in the current study.

The challenges of evaluating peer support programmes such as ON FIRE warrant discussion. The evaluation of child/adolescent outcomes from this programme was limited by a relatively small sample and lack of control group, related to the need to conduct the evaluation within a relatively short time period. Because of the limited time frame for the evaluation, we were not able to employ a waitlist design. Because of the limited sample size, differences between the programme sites could not be determined, and less powerful non-parametric testing were used in some instances. Caution should be used when trying to generalize the findings or attribute programme outcomes to children's/adolescents' well-being. The absence of statistically significant changes in some measures may also relate to the lack of

uniform and intensive delivery of the programme across sites. The 'dose effect' needs to be considered. In contrast to most other peer support programmes for this group of children (Reupert *et al.* 2012), ON FIRE is not time limited. Children can enter the programme at any point during the year. Participation in programme activities for children during the evaluation therefore ranged from one fun day to two camps and four fun days. It is not clear what aspects of the programme may have specifically contributed to the changes. Given the variation in participation, the amount of change from one participant to another might be expected to vary accordingly. Goodyear *et al.* (2009), e.g. found that while the content of the CHAMPS school holiday and after-school programmes was similar, the intensity of the school holiday programme, run over four consecutive days, led to greater improvements at follow-up (4 weeks post programme), compared with the after-school programme, conducted for 2-hour sessions weekly or fortnightly across the school term.

Further, given a number of children were reported by site facilitators to be contending with their own mental health problems and/or developmental disorders, perhaps significant change after 4 months of episodic peer support, rather than an individually tailored psychological intervention, was an unrealistic expectation for some participants. Peer support programmes such as ON FIRE may need to address the mental health needs of the children/adolescents, or alternatively, implement a screening and referral procedure, guiding those in need of psychological intervention to appropriate services.

Questions regarding the influence of parental mental illness on SDQ ratings, and hence, the validity of these responses, are also pertinent. Najman *et al.* (2000) found that greater levels of behavioural problems were reported for children whose mothers were currently anxious and/or depressed, compared with the children themselves and mothers without a diagnosed mental illness. It is a limitation of this study that detailed questions about the severity, chronicity and treatment of the sibling and/or parent mental illness(es) reported were not asked.

Notwithstanding the challenges of conducting the evaluation, the findings suggest that the ON FIRE programme was achieving, or close to achieving, its primary goals in the multi-site pilot implementation year. Further, the majority of ON FIRE members enjoyed the programme and would recommend it to other children. Continued evaluation of the programme over a longer-term period is recommended to

measure changes that may need longer than 4 months to manifest. For future research, a larger sample size so comparisons can be made across programme sites, and the inclusion of a control group, is recommended so that more robust conclusions about the impact of the programme on participants' hope, resilience and well-being can be made.

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## REFERENCES

- Brooks, R.B. (1994) Children at risk: fostering resilience and hope. *American Journal of Orthopsychiatry*, **64**, 545–553.
- Cohen, J. (1969) *Statistical Power Analysis for the Behavioral Sciences*, Academic Press, London.
- Cunningham, J., Harris, G., Vostanis, P., Oyeboode, F. & Blissett, J. (2004) Children of mothers with mental illness: attachment, emotional and behavioural problems. *Early Child Development and Care*, **174**, 639–650.
- Erlenmeyer-Kimling, L., Rock, D., Roberts, S.A., Janal, M., Kestenbaum, C., Cornblatt, B. *et al.* (2000) Attention, memory, and motor skills as childhood predictors of schizophrenia-related psychoses: the New York High-Risk Project. *The American Journal of Psychiatry*, **157**, 1416–1422.
- Foster, K. (2010) 'You'd think this roller coaster was never going to stop': experiences of adult children of parents with serious mental illness. *Journal of Clinical Nursing*, **19**, 3143–3151.
- Goodman, R. (1997) The Strengths and Difficulties Questionnaire: a research note. *Journal of Child Psychology and Psychiatry*, **38**, 581–586.
- Goodman, R. (1999) The extended version of the Strengths and Difficulties Questionnaire as a guide to child psychiatric caseness and consequent burden. *Journal of Child Psychology and Psychiatry*, **40**, 791–799.
- Goodman, R. (2001) Psychometric properties of the strengths and difficulties questionnaire. *Journal of the American Academy of Child & Adolescent Psychiatry*, **40**, 1337–1345.
- Goodyear, M., Cuff, R., Maybery, D. & Reupert, A. (2009) CHAMPS: a peer support program for children of parents with a mental illness. *Australian e-Journal for the Advancement of Mental Health*, **8**, 296–304.
- Greenberg, J.S., Kim, H.W. & Greenley, J.R. (1997) Factors associated with subjective burden in siblings of adults with severe mental illness. *American Journal of Orthopsychiatry*, **67**, 231–241.

- Hagen, K.A., Myers, B.J. & Mackintosh, V.H. (2005) Hope, social support, and behavioral problems in at-risk children. *American Journal of Orthopsychiatry*, **75**, 211–219.
- Hargreaves, J., Bond, L. & O'Brien, M. (2008) The PATS peer support program. Prevention/early intervention for adolescents who have a parent with a mental illness. *Youth Studies Australia*, **27**, 43–51.
- Hawes, D.J. & Dadds, M.R. (2004) Australian data and psychometric properties of the Strengths and Difficulties Questionnaire. *Australian and New Zealand Journal of Psychiatry*, **38**, 644–651.
- Laurent, J., Catanzaro, S.J., Joiner, T.E. Jr., Rudolph, K.D. & Potter, K.I. (1999) A measure of positive and negative affect for children: scale development and preliminary validation. *Psychological Assessment*, **11**, 326–338.
- Maybery, D., Reupert, A. & Goodyear, M. (2006) Evaluation of a model of best practice for families who have a parent with a mental illness. Charles Sturt University, Wagga Wagga.
- Maybery, D., Reupert, A., Goodyear, M., Ritchie, R. & Brann, P. (2009a) Investigating the strengths and difficulties of children from families with a parental mental illness. *Australian e-Journal for the Advancement of Mental Health*, **8**, 165–174.
- Maybery, D., Reupert, A., Patrick, K. & Goodyear, M. (2009b) Prevalence of parental mental illness in Australian families. *Psychiatric Bulletin*, **33**, 22–26.
- Maybery, D., Steer, S., Reupert, A. & Goodyear, M. (2009c) The kids coping scale. *Stress and Health*, **25**, 31–40.
- Mellor, D. (2005) Normative data for the strengths and difficulties questionnaire in Australia. *Australian Psychologist*, **40**, 215–222.
- Mensah, F. & Kiernan, K. (2010) Parents' mental health and children's cognitive and social development. *Social Psychiatry and Psychiatric Epidemiology*, **45**, 1023–1035.
- Mowbray, C.T., Bybee, D., Oyserman, D., Allen-Meares, P., MacFarlane, P. & Hart-Johnson, T. (2004) Diversity of outcomes among adolescent children of mothers with mental illness. *Journal of Emotional and Behavioral Disorders*, **12**, 206–221.
- Najman, J.M., Williams, G.M., Nikles, J., Spence, S.U.E., Bor, W., O'Callaghan, M. *et al.* (2000) Mothers' mental illness and child behavior problems: cause-effect association or observation bias? *Journal of the American Academy of Child & Adolescent Psychiatry*, **39**, 592–602.
- Norman, G.R., Sloan, J.A. & Wyrwich, K.W. (2003) Interpretation of changes in health-related quality of life: the remarkable universality of half a standard deviation. *Medical Care*, **41**, 582–592.
- Pitman, E. & Matthey, S. (2004) The SMILES program: a group program for children with mentally ill parents or siblings. *American Journal of Orthopsychiatry*, **74**, 383–388.
- Reupert, A. & Maybery, D. (2009) A 'Snapshot' of Australian programs to support children and adolescents whose parents have mental illness. *Psychiatric Rehabilitation Journal*, **33**, 125–132.
- Reupert, A.E., Cuff, R., Drost, L., Foster, K., van Doesum, K.T.M. & van Santvoort, F. (2012) Intervention programs for children whose parents have a mental illness: a review. *Medical Journal of Australia Open*, **1**, 18–22.
- Sin, J., Moone, N., Harris, P., Scully, E. & Wellman, N. (2012) Understanding the experience and service needs of siblings of individuals with first-episode psychosis: a phenomenological study. *Early Intervention in Psychiatry*, **6**, 53–59.
- Snyder, C.R., Hoza, B., Pelham, W.E., Rapoff, M., Ware, L., Danovsky, M. *et al.* (1997) The development and validation of the children's hope scale. *Journal of Pediatric Psychology*, **22**, 399–421.
- Streiner, D.L. & Norman, G.R. (2003) *Health Measurement Scales: A Practical Guide to Their Development and Use*, 3rd edn. Oxford University Press, Oxford.
- van Doesum, K.T.M., Hosman, C. & Riksen-Walraven, J.M. (2005) A model-based intervention for depressed mothers and their infants. *Infant Mental Health Journal*, **26**, 157–176.
- Valle, M.F., Huebner, E.S. & Suldo, S.M. (2006) An analysis of hope as a psychological strength. *Journal of School Psychology*, **44**, 393–406.
- Yu, N. (2011) *Epicorma: principles and practices for human flourishing (ON FIRE program manual)*. Gladesville, NSW, Schizophrenia Fellowship.