Strong Families: A new family skills training programme for challenged and humanitarian settings: a single-arm intervention tested in Afghanistan

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Abstract

Background

Children living in challenged humanitarian settings are at greater risk of mental health difficulties or behavioural problems, with caregivers acting as their main protective factors. While many family skills programmes exist, very few were developed for or piloted in families living in low resource settings. We therefore designed a brief and light programme and conducted an effectiveness trial in Afghanistan.

Methods

We recruited female caregivers and children aged 8-12 years via schools and drug treatment centres in Afghanistan and enrolled them in a family skills programme over three weeks. Demographic data, emotional and behavioural difficulties of children and parental skills and family adjustment measures were collected from caregivers before, two and six weeks after the intervention. Outcome was assessed through the SDQ (Strengths and Difficulties Questionnaire) and PAFAS (Parenting and Family Adjustment Scales).

Results

We enrolled 72 families in the programme and followed 93.1% up overall. Mean age of caregivers was 36.1 years, they had 3.8 children on average and 91.7% of them had experienced war/armed conflict in their past. The total difficulty score of the SDQ of the 72 children reduced significantly, from 17.8 at pre-test to 12.9 at post-test and 10.6 at follow-up, with no difference in gender and mostly in those with highest scores at baseline. Likewise, PAFAS scores improved significantly after the programme, again with caregivers with the highest scores at baseline improving most.

Conclusions

The implementation of a brief family skills programme was feasible in a resource-limited setting and had an impact on child mental health and parenting practices and family
adjustment skills. This indicated the value of such programme and the feasibility to move it to scale. The effects need to be verified through an RCT and with longer follow-ups.

Background

Children exposed to humanitarian challenged settings are at greater risk of showing signs of mental health difficulties or behavioural problems.\(^1\)\(^,\)\(^2\) This represents a long-term risk as many mental health problems begin in youth and are related to other poor health and developmental outcomes, such as violence, lower educational achievement and substance abuse.\(^3\)\(^,\)\(^4\)

One of the most important factors preventing psychological morbidity in children affected by armed conflict and compounding challenges may be parental support and monitoring.\(^5\)\(^-\)\(^7\) Parents, or primary caregivers, play a crucial role in protecting children’s mental health in challenging contexts buffering the children’s mental health outcomes in times of danger, upheaval, and uncertainty.\(^8\)

Social inequalities are well documented to compromise children’s development through experiences of family instability, poor caregiver mental health linked to prolonged periods of stress. The experiences of challenged and humanitarian settings associated with political conflict exacerbates these factors\(^9\), for such children and families parental and family factors are even more important in achieving positive outcomes.\(^10\)

Family skills programmes offer a combination of parenting knowledge, skill building, competency enhancement and support.\(^11\) They aim to strengthen family protective factors such as communication, trust, problem-solving skills and conflict resolution, and strengthen the bonding and attachment between caregivers and children.

Evidence of the effectiveness of parenting interventions in high income and more stable
contexts indicates potential for such programmes in improving caregiver-child relationships, and subsequent child behaviour and emotional wellbeing in conflict-affected and low-resource settings.\textsuperscript{9, 12}

Overall, very few family skills programmes were designed to serve the needs of families living in low resource settings.\textsuperscript{13} To fill this gap, the United Nations Office on Drugs and Crime (UNODC), with the support of experts in the field, developed the “Strong Families” programme. The “Strong Families” programme is a selective evidence-informed prevention intervention programme designed to improve parenting skills, child well-being and family mental health, amongst those with children aged between 8 and 15 years. Namely it was tailored for challenged and humanitarian settings (including for those in rural/underserved areas, the displaced, refugees, in conflict/post conflict situations). It was developed ensuring it to be brief (as few sessions as possible), “light” (requiring an infrastructure that is easy to mobilise and train), evidence-informed, suitable for low-resource settings, open source (to allow benefitting counterparts to have national ownership to bring it to scale at minimum cost) and cost-effective.

The vision of Strong Families is to support families in recognising their strengths and skills and to make them stronger by sharing their challenges as well as the things that work for them.\textsuperscript{14} It operates through the logic model outlined in Table 1 and was first piloted in Afghanistan.\textsuperscript{15, 16}

Table 1: Logic Model of the Strong Families Programme
| Program components | Program process to address underlying causes | Short term participant and family impact | Long term impact |
|--------------------|---------------------------------------------|-----------------------------------------|------------------|
| Caregiver sessions |                                             |                                         |                  |
| Goal:              |                                             |                                         |                  |
| Normalise and manage stress | Decrease risk factors | Improved caregiver confidence in family management skills | Reduction in violence |
| Improve parenting confidence and develop positive parenting strategies | Favourable attitudes towards coercive parenting strategies; Poor family management skills | Improved caregiving in parenting skills | Reduction in substance abuse |
| Enhancing resources to deal with stress | High levels of stress | Improved child behaviour | Reduction in risky behaviours |
| Child sessions |                                             |                                         |                  |
| Goal:              |                                             |                                         |                  |
| Improve mental health outcomes, better deal with stress, reduce challenging behaviour | Increase protective factors | Increased capacity to cope with stress | Improved mental health outcomes in children and parents |
| Enhance relationships, non-violent discipline, prosocial involvement, caregiver social support | Improved family interaction | Improved mental health for caregivers and children |                  |
| Family sessions |                                             |                                         |                  |
| Goal:              |                                             |                                         |                  |
| Improved communication and relationships |                                             |                                         |                  |

Afghanistan is one of the five poorest countries in the world\(^{17}\), its public health profile indicates a dangerous combination of ongoing conflict and chronic poverty making it a complicated challenged humanitarian context.\(^8\) The international community has put considerable effort into rebuilding Afghanistan, yet the country faces many challenges: only 46% of people have access to safe drinking water and 92% do not have access to adequate sanitation.\(^{18}\) In addition, while Afghanistan has had a long history of invasion and war, in recent years the country has seen an increase in violence and conflict\(^{19}\)
leaving many Afghans now internally displaced in various parts of the country. Drug use remains a major health and economic problem for Afghans. By March 2014, Afghanistan produced almost three quarters of the world’s illicit opium.\textsuperscript{20} While a significant amount was exported, in 2009, almost 10% of Afghans aged between 15 and 64 years were using drugs, approximately twice the global average, with one of the highest opiate prevalence rates in the world.\textsuperscript{20, 21} In a household survey in 2010-12, an opioid prevalence of 5.6% was found, which could even have been higher were homeless people added.\textsuperscript{22}

With respect to mental health, Afghans experience a high level of difficulties, especially women.\textsuperscript{23-25} One study found 60% of Afghan women scored high on a self-report measure for depression.\textsuperscript{23} This is often linked to exposure to past trauma\textsuperscript{26} and ongoing social and material stressors.\textsuperscript{27, 28} Decades of war and conflict have also had a significant impact on health and well-being across almost all domains of children’s lives, due to exposure to violence, ongoing insecurity, disrupted networks of social support and poor health. One study showed that by 11-16 years of age, Afghan children experience mental health problems that fall within the expected range of psychiatric difficulties and post-traumatic stress in war-affected populations.\textsuperscript{28} Growing up in Afghanistan may lead to exposure to multiple forms of violence through childhood and adolescence. The high levels of exposure to war trauma constituted a risk factor for punitive and neglecting parenting, which was then associated with poor child mental health outcomes.\textsuperscript{29} This is consistent with other research by Panter-Brick and colleagues with Afghan families, where family-level violence (including family conflicts as well as past year reports of violence such as experiencing and/or witnessing severe beatings) was found to predict negative changes in children’s mental health one year post initial assessment.\textsuperscript{8} Significantly, violence negatively
impacted the well-being of both children and parents.

The aim of our study was to test the effectiveness of the Strong Families programme in improving child behaviour and family functioning in families living within the context of Afghanistan.

Methods

**Programme intervention**

The Strong Families programme is a three session in three weeks intervention attended by children and their primary caregivers. It consists of three meetings, one parent (caregiver pre-session) during week one. In weeks two and three, meetings are one caregiver and one children session running in parallel undertaken by trained facilitators immediately followed by a joint family session. The session of week one (caregiver pre-session) explores parents challenges and develops ways to better deal with stress. In week two, caregivers discuss the means of setting love with limits and listening to children, while the children learn how to deal with stress. During the family session they practice positive communication and are encouraged to practice stress relief techniques together. In week three, parents learn to encourage good behaviour and discourage misbehaviour, while children explore rules and responsibilities and think about future goals in addition to the important roles their caregivers play in their lives. In the final family session, caregivers and children learn about family values and practice sharing appreciation to each other.

Table 2: Structure of Strong Families Program
Cultural adaptation of the Strong Families programme to the Afghan context was assured through a three day workshop of a working group with representatives from the Afghan Ministries of Public Health (MOPH), Labour and Social Affairs, Counter Narcotics (MCN), Education (MOE), Afghan NGOs (non-governmental organisations), the programme developers and UNODC.

The translation of the training material for facilitators and questionnaires for the participants into Dari was performed by a qualified and experienced translation company and reviewed by local researchers.

**Study design and participants**

We conducted a feasibility implementation study with an embedded process evaluation including a prospective collection of outcome data assessing changes in children’s behaviour, parenting skills and family adjustment in caregivers.

Participants were selected based on being a female caregiver to a child between the age
of 8-12 years. Sampling was opportunistic, using a ‘universal’ approach, in which facilitators recruited families from the general population, not targeting specifically those with a particular risk. Inclusion criteria included speaking Pashto or Dari, willing to take part in the programme and being in the town for the duration of the whole study and measurement meetings. Families that had already taken part in another family skills training programme in the past 6 months or where the caregiver lived separately from the child were excluded from the programme. The programme was delivered in groups of 12 families each.

**Procedure**

The study took place in 3 towns in Afghanistan, namely in Kabul, in Mazār-i-Sharīf (Balkh) and in Herat between July and October 2018. Based on UNODC’s mandate, and under the umbrella of the National Drug Control Strategy, UNODC approached MCN and MOPH to facilitate the implementation of the programme in Afghanistan who then established a collaboration with MOE, the Ministry of Women Affairs and the Ministry of Health. As displayed in Figure 1, families were recruited via two high schools and one 100 beds Drug Treatment Centre (DTC) for women and children in Kabul, a 150 beds drug demand reduction (DDR) hospital in Balkh and a women DTC in Herat.

The schools were selected by the MOE based on the main criteria of having easy access of the families to the school and the provision of two class rooms for the programme to run. Caregiver information sheets were distributed to all children aged 8-12, who attended the participating schools, to take home to their caregivers. Female caregivers were invited via a self-referral process to attend an information session where they were given further verbal and written information and questions were answered. Caregivers were asked to phone the school within the next 4 days if they wanted to participate. The first to call the
school were invited to take part in the study and attended a baseline measurement session the following week in which written informed consent was obtained prior to data collection.

In Afghanistan, DTC provide health education and services to the most affected families, are well connected with local communities and most families have access to them. Further, the existing Afghan drug demand reduction policy and strategy recommends integration of the drug prevention in health services. DTC were included so as not to bias against families in which children were out of school. Again, female caregivers were given a caregiver information sheet and invited via the same self-referral process to attend the information session at a participating school, and the same recruitment process took place.

Seventeen facilitators were selected through schools and health settings (13 female and 4 male), local NGOs, MCN and MOPH. Their backgrounds were mixed, some teachers, some caregivers who had previously taken part in family skills programmes, psychologists and social workers. This mix in backgrounds was important as the programme is designed to be run by lay people without a particular expertise. Facilitators took part in a 3-day training programme in India, delivered by the developers of the programme who are experienced international trainers. The fidelity in implementation was assured via a national refresher training prior to roll out to families, as well as through remote monitoring via weekly Skype calls between the developers from the UK, UNODC staff in Vienna and in Kabul.

**Confidentiality and ethical considerations**

Our study has been thoroughly reviewed and approved by the UNODC Drug Prevention and Health Branch in the Headquarters office of Vienna and the national field office in Kabul as
well as the associated national ministries (Afghan Ministry of Counter Narcotics, Ministry of Public Health, Ministry of Labour and Social Affairs, Ministry of Education, Ministry of Women Affairs and Ministry of Health) and NGOs that supported the programme as alternative to ethics committee review. The Strong Families programme has been thoroughly reviewed and, after approval, has been integrated in the National Drug Demand Reduction policy 2019-2023 for Afghanistan, as well as the National Drug Demand Reduction Strategy 2018-2022. Further, the donor of the programme development and implementation, US-INL (Bureau of International Narcotics and Law Enforcement Affairs) under the U.S. Department of State, had reviewed and approved the proposal before the start of the trial. Our programme implementation was performed in accordance with the ethical standards of the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

The Chief Investigator and the research team assured the confidentiality of participants in accordance with the Data Protection Act 1998. Each participant was assigned a unique identification number to ensure matching of all questionnaires. All data collected as part of the trial were treated as confidential and were only be viewed by members of the trial team; anonymised data were used wherever possible.

All caregivers completed and signed a consent form at the first evaluation meeting, as all children were under the age of 16 years, they also signed as a legal guardian for their children. In addition to written information being provided in the form of the Participant Information Sheets for the caregiver, participants were provided with a verbal explanation of the evaluation method at the first meeting and again when they attended the first data collection session.

Data collection
Data on demographics, emotional and behavioural difficulties of children and parental skills and family adjustment measures were collected from caregivers through self-administered questionnaires.

Two outcome measures were completed by participants at baseline (i.e. one week before intervention delivery) (t1) and two weeks (t2) and six weeks (t3) after intervention delivery. These were the paper-based Strengths and Difficulties Questionnaire (SDQ) and a Parenting and Family Adjustment Scales (PAFAS). A standardized Family Background Questionnaire (FBQ) was completed at t1 to collect demographic characteristics.

The SDQ is a commonly used short screening tool to assess children’s behavioural, emotional, and social issues over the last six months. It is available in over 40 different languages and is frequently used for research purposes to examine children’s mental well-being. It has shown good psychometric properties and has been used in Afghanistan previously.\(^{30}\) The SDQ examines 25 attributes, each rated on a 3-point Likert scale ranging from 0 (“Not True”) to 2 (“Certainly True”). The answers can be grouped into five subscales (ranging from 0 to 10 points each), including items such as emotional symptoms (e.g. “Often unhappy”) and conduct problems (e.g. “Often fights with other children”). The Total Difficulties score (ranging from 0 to 40 points, with higher scores indicating higher levels of difficulties) is calculated from four of the subscales excluding prosocial behaviours.\(^{31}\) Single informant ratings have shown satisfactory reliability and validity across culturally diverse settings including in Arab-speaking countries\(^ {32}\) where adequate discrimination between community and clinic 5-10 year old children has been established.

We used the cut-points for the 4-banded categorization of the SDQ scores to classify continuous measures into “close to average”, “slightly raised/lowered”, “high/low” and “very high/low” risk.\(^ {33}\)
The PAFAS is a brief 30-item, user-friendly questionnaire measuring parenting practices, risk and protective factors, such as parental emotional adjustment and quality of family. It comprises two scales: (i) Parenting, which comprises four subscales and (ii) Family Adjustment, which includes three subscales. The PAFAS subscales have shown good internal consistencies in two Australian samples (ranging from 0.70 to 0.87) and satisfactory construct and predictive validity. Furthermore, the measure has been validated in other cultures, such as Panama and China. In both studies, the factor structures in the original PAFAS measure were mostly retained with fewer items and adequate internal consistencies (ranging from 0.50 to 0.82 and from 0.65 to 0.95 for Chinese and Panamanian parents, respectively). To our knowledge there are no clinically relevant cut-off points available, however for sub-analyses, a cut off at the 75th percentile was assumed for families with lower/higher difficulties.

**Statistical analysis**

The data was entered in Epidata version 3.1 and analysed using GNU PSPP Statistical Analysis Software, version 1.0.1. Prior to analysis, data completeness was checked, as well as plausibility testing performed.

Continuous variables are presented as mean, standard deviation (SD) and minimum and maximum scores. Categorical data was summarized by frequencies and proportions.

A visual inspection of the histograms, Q-Q plots and box plots as well as the calculation of the skewness and kurtosis z-values within a range of +/- 1.96 showed that data were approximately normally distributed.

In the event of normality, to compare means, a 2-sample t-test was used for continuous variables, while a chi-square test for categorical data. If not, non-parametric tests were
performed, in the form of a Wilcoxon's Signed Rank test were used to compare means or ranks at the different time points (pre-test, post-test and follow-up).

Comparison of the SDQ scores between boys and girls was performed using a 2-sample t-test or a Mann-Whitney-U test. Participants with very high (20-40 points) scores on the total difficulty scale of the SDQ were analysed separately for each of the subscales.

Similarly, a sub-analysis on families cut off at the 75th percentile in each subcategory of the PAFAS at baseline was performed to compare the effects on those families with high problems to those with less difficulties. Significance level was set at 0.05.

Results

Recruitment, follow-up and missing data

Overall, 72 families were enrolled in the programme (Figure 1), 48 in Kabul, 12 in Bakh and 12 in Herat. The five families who were lost to follow up at t3 were significantly younger (mean age 28.2 compared to 36.7 years; t_{69}=-2.44; p=0.017). No other difference in recruitment site, marital status, education or mean number of children was found.

Missing data on individual questions within the FBQ were regarded as minor and non-systematic. Individual PAFAS answers were missing in less than 5%, apart from PAFAS question 4 (“I threaten something when my child misbehaves”) at time 2 (7/71 missing), for PAFAS question 15 (“I enjoy giving my child hugs and kisses”), where 8, 12 and 12 answers were missing at the 3 time-points. Not surprisingly, PAFAS questions 28-30 regarding parental teamwork (“I work as a team/disagree/ have a good relationship with my partner”) were mainly answered by persons in a relationship. No question in the SDQ at any timepoint was answered by less than 5% of participants.

Demographics of study participants
On average the caregivers were 36 years, with an age range between 17 and 50 years. There was no difference in caregiver’s age between the 3 geographical sites. All 72 caregivers were female, 66% were married, 41% had primary school or less and 25% were working full time, as shown in Table 3. There was a significant difference in marital status and education between caregivers recruited through DTCs and high schools, but there were none regarding their partner’s education or their or their partner’s work status. Children from parents recruited through DTC were significantly older than those recruited through high schools and all caregivers recruited through DTC had experienced war or armed conflict, compared to 83% of those recruited through high schools (Table 3). All 72 participants identified most strongly with the Afghan ethnic or cultural group and reported Afghanistan as their country of origin.

**Table 3: Demographic characteristics of study participants in Afghanistan (n=72)**

| Demographics | Total | DTC | High school | \( p \) value |
|---------------|-------|-----|-------------|--------------|
| **Mean (SD); n (%)** | **Mean (SD); n (%)** | **Mean (SD); n (%)** | **\( \chi^2 \) test** |
| **Age** | 36·1 (7·78) | 36·4 (6·45) | 35·8 (8·97) | 0·77 |
| **Marital status** | | | | |
| Married | 46 (65·7%) | 20 (57·1%) | 26 (74·3%) | 0·014 |
| Divorced | 2 (2·9%) | 2 (5·7%) | 0 | 0·06 |
| Single | 5 (7·1%) | 0 | 5 (14·3%) | 0·06 |
| Cohabiting | 6 | 6 | 0 |
|                      | Primary school or less | Some high school | Completed high school | University degree | Post-graduate |
|----------------------|------------------------|------------------|-----------------------|-------------------|--------------|
| **Widow**            | 11 (15·7%)             | 7 (20·0%)        | 4 (11·4%)             |                   |              |
| **Education**        | 29 (41·4%)             | 20 (57%)         | 9 (26%)               |                   |              |
|                      | 11 (15·7%)             | 7 (20%)          | 4 (11%)               |                   |              |
|                      | 10 (14·3%)             | 4 (11%)          | 6 (17%)               |                   |              |
|                      | 19 (27·1%)             | 4 (11%)          | 15 (43%)              |                   |              |
| **Partner's education** | 22 (37·3%)         | 14 (50%)         | 8 (25·8%)             |                   |              |
|                      | 4 (6·8%)               | 3 (10·7%)        | 1 (3·2%)              |                   |              |
|                      | 12 (20·3%)             | 5 (17·9%)        | 7 (22·6%)             |                   |              |
|                      | 17 (28·8%)             | 4 (14·3%)        | 13 (41·9%)            |                   |              |
|                      | 2 (3·4%)               | 1 (3·6%)         | 1 (3·2%)              |                   |              |
| **Work status**      | 17 (25·4%)             | 11 (32%)         | 6 (18%)               |                   |              |
|                      | 7 (10·5%)              | 3 (9%)           | 4 (12%)               |                   |              |
|                      | 17 (25·4%)             | 4 (12%)          | 13 (39%)              |                   |              |
|                      | 9 (13·4%)              | 4 (12%)          | 5 (15%)               |                   |              |
|                      | 17 (25·4%)             | 12 (35%)         | 5 (15%)               |                   |              |
| **Partner's work status** | 32 (61·5%)       | 16 (57·1%)        | 16 (57·1%)            |                   |              |
|                          | (59·3%) | (13%) | (7·7%) | (17·9%) | \( \chi^2 \) |
|--------------------------|---------|-------|--------|---------|--------------|
| Part time                | 7       | 2     | 5      | 8       | 0            |
| Not working but          | 4       | 2     | 2      | 5       | 6·5          |
| looking for a job        |         |       |        |         |              |
| Home based paid work     | 2       | 1     | 1      | 2       | 0            |
| Not working              | 9       | 5     | 4      | 6·5     | 0            |

| Number of children       | 3·8     | 3·94  | 3·65   | 0·529   | t = -0·64    |
|                          | (1·9)   | (1·81)| (2·01) |         |              |

| Age of child taking part in the programme | 9·6   | 10·19 | 8·97   | 0·011   | t = -0·127   |
|                                         | (2·05)| (1·89)| (2·04) |         |              |

| Gender of child in the programme | Male | 38   | 19    | 19     | X^2 = 0·89  |
|                                  |     | (53·5%)| (52·8%)| (54·3%)|              |
|                                  | Female | 33  | 17    | 16     | X^2 = 0          |
|                                  |       | (46·5%)| (47·2%)| (45·7%)|              |

| Experienced war or armed conflict | Yes | 66  | 36    | 30     | X^2 = 0·164  |
|                                   |     | (91·7%)| (100%)| (83·3%)|              |
|                                   | No  | 6   | 0     | 6      | X^2 = 0·164  |
|                                   |     | (8·3%)| (0%)  | (16·7%)|              |

**Child behaviour, as assessed through the SDQ**

Overall, the total difficulty score of the SDQ reduced significantly over time, from 17·8 at pre-test to 12·9 at post-test and 10·6 at follow-up. Likewise, all SDQ subscales improved.
over time, as shown in Table 4.

Scores for both, boys and girls improved significantly, and no difference in gender could be found, apart from the conduct problem scale, where no difference was found between boys and girls at baseline and time 3, however a significant difference at time 2 (p=0.008).

There was no difference in SDQ scores at any time between participants recruited through DTCs or high schools.

In children with very high (20+) scores on the total difficulty scale (n=24; 12 boys, 12 girls) at baseline, highly significant reductions in all sub-scores as well as the total difficulty score could be found after the programme. There was no change between time 2 and time 3, however, overall, the effects were long-lasting, with highly significant differences at time 3 compared to baseline (Table 4).

Table 4: Mean SDQ score over time by gender and those with very high scores at baseline

| Gender-based analysis | Pre-test (Mean (SD) [Min-Max]) | Post-test (Mean (SD) [Min-Max]) | Follow-up (Mean (SD) [Min-Max]) | p-value t1-t2 | t2-t3 |
|-----------------------|-------------------------------|--------------------------------|-------------------------------|--------------|-------|
| **SDQ subscales**     |                               |                                |                               |              |       |
| Emotional problem     | Boys (n=38)                   | 5.50 (2.05) [1-10]             | 4.29 (2.02) [0-9]             | 3.46 (2.19) [0-8] | 0.001 | 0.111  |
| scale [0-10]          | Girls (n=33)                  | 4.91 (1.96) [1-8]              | 4.0 (1.97) [0-9]              | 2.70 (1.56) [0-6] | 0.078 | 0.007  |
| Overall               | 5.24 (2.0) [1-10]             | 4.15 (1.97) [0-9]             | 3.14 (1.95) [0-8]             | <0.001       | 0.003 |       |
| Conduct problem       | Boys (n=38)                   | 3.77 (1.8) [0-7]              | 2.50 (1.31) [0-6]             | 2.11 (1.63) [0-7] | 0.007 | 0.165  |
| scale [0-10]          | Girls (n=33)                  | 3.30 (2.07) [0-7]             | 1.56 (1.46) [0-6]             | 1.64 (1.28) [0-4] | <0.001 | 0.750  |
| Overall               | 3.55 (1.94) [0-7]             | 2.03 (1.45) [0-6]             | 1.91 (1.43) [0-7]             | <0.001       | 0.224 |       |
| Hyperactivity scale   | Boys (n=38)                   | 5.42 (2.02) [1-10]            | 3.62 (1.86) [0-8]             | 3.19 (2.04) [0-9] | <0.001 | 0.203  |
| [0-10]                | Girls (n=33)                  |                                |                                |               |       |
| Scale | Boys (n=38) | Girls (n=33) | Overall | p-value |
|-------|-------------|--------------|---------|---------|
| Peer problem scale [0-10] | 3.80 (1.47) [0-7] | 3.75 (1.57) [0-6] | 3.78 (1.51) [0-7] | 0.029 0.221 |
| | 7.74 (1.40) [4-10] | 8.13 (1.45) [5-10] | 7.90 (1.44) [4-10] | <0.001 0.627 |
| | 7.68 (1.96) [3-10] | 8.04 (1.53) [5-10] | 7.80 (1.79) [3-10] | <0.001 0.627 |
| Prosocial scale [10-0] | 6.33 (1.95) [2-10] | 6.91 (1.93) [4-10] | 6.61 (1.93) [2-10] | <0.001 0.867 |
| | 7.74 (1.40) [4-10] | 8.13 (1.45) [5-10] | 7.90 (1.44) [4-10] | <0.001 0.627 |
| | 7.68 (1.96) [3-10] | 8.04 (1.53) [5-10] | 7.80 (1.79) [3-10] | <0.001 0.627 |
| Total Difficulty Scale [0-40] | 18.52 (5.08) [10-32] | 16.97 (6.23) [4-26] | 17.77 (5.67) [4-32] | <0.001 0.009 |
| | 13.61 (4.53) [6-22] | 12.27 (5.62) [3-27] | 12.9 (5.07) [3-27] | <0.001 0.008 |
| | 11.24 (5.56) [2-23] | 9.74 (4.17) [2-19] | 10.62 (4.98) [2-23] | <0.001 0.008 |

**Very high (20+) on total difficulty scale (n=24; 12 boys, 12 girls) at baseline**

| Scale | Pre-test Mean (SD) [Min-Max] | Post-test Mean (SD) [Min-Max] | Follow-up Mean (SD) [Min-Max] | p-value |
|-------|-----------------------------|-------------------------------|-------------------------------|---------|
| Emotional problem scale | 6.96 (1.33) [4-10] | 4.46 (2.21) [1-9] | 3.81 (2.29) [0-8] | <0.001 0.458 |
| Conduct problem scale | 4.79 (1.50) [2-7] | 2.26 (1.81) [0-6] | 1.86 (1.35) [0-5] | <0.001 0.297 |
| Hyperactivity scale | 7.17 (1.20) [5-10] | 3.96 (1.94) [1-8] | 3.38 (2.22) [0-9] | <0.001 0.344 |
| Peer problem scale | 4.46 (1.32) [2-6] | 2.78 (1.70) [0-6] | 2.75 (1.48) [0-6] | 0.002 0.522 |
| Prosocial scale | 6.26 (2.30) [2-10] | 8.22 (1.54) [4-10] | 7.57 (2.20) [3-10] | <0.001 0.135 |
| Total Difficulty Scale | 23.38 (2.20) [0-9] | 13.91 (1.95) [0-8] | 11.55 (1.91) [0-9] | <0.001 0.663 |

*Includes boys and girls.*
Parenting practices and parent and family adjustment, as assessed through the PAFAS

Overall, parenting practices improved highly significantly as assessed through all 4 PAFAS subscales between baseline and post-intervention and at follow-up compared to baseline. Particularly participants with scores above the 75th percentile at baseline in each of the subscales benefitted most from the intervention, having highly significant reductions throughout, as shown in Table 5. Likewise, family adjustment skills improved significantly after the programme, as seen in all 3 subscales. Again, those with the highest scores at baseline benefitted most from the intervention.

Table 5: Mean PAFAS scores over time and families > 75th percentile in each subcategory at baseline

| PAFAS                  | Pre-test Mean (SD) [Min-Max] | Post-test Mean (SD) [Min-Max] | Follow-up Mean (SD) [Min-Max] | p-value       |
|------------------------|-------------------------------|-------------------------------|-------------------------------|---------------|
|                        |                               |                               |                               | t1-t2         |
| Parenting Consistency  |                               |                               |                               | 0.069         |
| Score 0-8 (n=41)       | 6·39¹ (1·51) [1-8]             | 5·89 (2·67) [1-12]             | 6·60 (2·13) [3-11]             | 0·426         |
|                        |                               |                               |                               | 0·789         |
| Score 9+ (n=24)        | 10·13 (1·08) [9-12]            | 6·90 (2·22) [4-11]             | 7·15 (1·84) [4-10]             | <0·001        |
|                        |                               |                               |                               | 0·105         |
|                        |                               |                               |                               | <0·001        |
| Overall                | 7·77 (2·27) [1-12]             | 6·28 (2·46) [1-12]             | 6·90 (2·02) [3-11]             | <0·001        |
|                        |                               |                               |                               | 0·072         |
|                        |                               |                               |                               | 0·008         |
| Coercive Parenting     |                               |                               |                               |               |
| Score 0-10 (n=47)      | 6·51 (2·23) [1-10]             | 5·36 (3·06) [0-11]             | 4·79 (2·97) [0-12]             | 0·019         |
|                        |                               |                               |                               | 0·004         |
| Score 11+              | 12·73                         | 5·00                          | 4·76                          | <0·001        |

¹ Data not normally distributed, non-parametrical tests used for all statistics involving this group; statistically significant (p < 0·05); SD: standard deviation;
| (n=22) | (1·28) [11-15] | (2·65) [1-11] | (2·83) [0-9] | Overall | 8·49 (3·52) [1-15] | 5·23 (2·88) [0-11] | 4·85 (2·84) [0-12] | <0·001 | 0·492 | <0·001 |
|---|---|---|---|---|---|---|---|---|---|---|
| Positive Encouragement [0-9] | | | | | | | | | | |
| Score 0-1 (n=37) | 0·62 (0·49) [0-1] | 0·83 (1·12) [0-5] | 0·63 (0·96) [0-3] | Overall | 0·269 | 0·796 | 0·648 |
| Score 2+ (n=33) | 3·18 (1·47) [2-7] | 0·80 (0·96) [0-3] | 0·90 (0·84) [0-3] | Overall | <0·001 | 0·452 | <0·001 |
| Parent-child Relationship [0-15] | | | | | | | | | | |
| Score 0-2 (n=44) | 0·73 (0·69) [0-2] | 0·66 (1·15) [0-5] | 0·31 (0·80) [0-3] | Overall | 0·511 | 0·064 | 0·010 |
| Score 3+ (n=20) | 4·90 (2·43) [3-11] | 0·93 (1·21) [0-4] | 0·50 (0·94) [0-3] | Overall | 0·001 | 0·785 | 0·001 |
| FAMILY ADJUSTMENT | | | | | | | | | | |
| Parental Adjustment [0-15] | | | | | | | | | | |
| Score 0-7 (n=41) | 5·12 (1·86) [0-7] | 4·30 (1·82) [1-9] | 3·94 (2·38) [0-9] | Overall | 0·070 | 0·615 | 0·013 |
| Score 8+ (n=26) | 8·73 (1·08) [8-12] | 5·14 (2·57) [1-11] | 4·81 (2·32) [0-8] | Overall | <0·001 | 0·939 | <0·001 |
| Family relationships [0-12] | | | | | | | | | | |
| Score 0-4 (n=37) | 2·73 (1·41) [0-4] | 2·34 (1·98) [0-9] | 1·70 (2·04) [0-8] | Overall | 0·416 | 0·110 | 0·019 |
| Score 5+ (n=33) | 6·09 (1·42) [5-9] | 2·77 (1·71) [0-7] | 2·03 (2·18) [0-8] | Overall | <0·001 | 0·036 | <0·001 |
| Parental teamwork [0-9] | | | | | | | | | | |
| Score 0-4 (n=44) | 1·95 (1·51) [0-4] | 1·67 (1·88) [0-9] | 1·28 (1·47) [0-6] | Overall | 0·285 | 0·165 | 0·007 |
| Score 5+ | 5·53 (1·06) | 2·27 (2·09) | 2·11 (2·47) | Overall | 0·001 | 0·234 | 0·014 |
| (n=15) | [5-9] | [0-6] | [0-8] |         |         | <0·001 |
|--------|-------|-------|-------|---------|---------|--------|
| Overall | 2·86  | 1·82  | 1·38  | 0·002   | 0·049   | <0·001 |
|        | (2·10)| (1·88)| (1·71)|         |         |        |
|        | [0-9] | [0-9] | [0-8] |         |         |        |

Statistically significant \((p < 0·05)\), SD: standard deviation; \(^1\) Data not normally distributed, non-parametrical tests used for all statistics involving this group;

**Discussion**

The Strong Families programme seems feasible in a resource-limited setting. Moreover, despite being a light intervention, the programme reflected a positive short-term effect on the child mental health, as well as the parenting practices and parent and family adjustment skills. Interestingly, the intervention benefitted girls and boys alike, this is important considering the value the United Nations is placing on gender sensitive responses.

Given that the intentions of the programme to support the most vulnerable, it was reassuring to see it did so, and across the different subscales of the SDQ, while being applied universally within such settings helping families at different level of risk and vulnerability. This gives the programme a level of flexibility of application not requiring a specific filtering infrastructure that is hard to find or mobilise in challenged settings.

The Strong Families programme has a disclosing filtering remark stating that “it is not meant for adults or children with severe reactions to hardship and stress”. Nevertheless, 92\% of caregivers responding to our open invitation in the recruitment area had experienced war or armed conflict, hence elevated scores at baseline were to be expected. As previously described however, war exposure accounted for only about 15\% of the variance in PTSD (Post-traumatic stress disorder ) symptom levels in Kabul,\(^{27, 37}\)

whereas locally salient daily stressors such as overcrowded housing, poverty,
unemployment, the security situation, violence in the home, poor health, air pollution, and traffic congestion were better at predicting depression, functional impairment, and general distress in men and women. An overall mean SDQ Total Difficulty score of 17.77 in our study reflects therefore the challenging situations our young study participants were living in.

Interestingly the Strong Family more strongly benefited the children with the higher level of difficulty per their caregiver’s assessment at baseline including those with an SDQ score over the cut off score indicating potential clinically apparent disorders. It is very reassuring that a short and light intervention, such as our Strong Families programme can reduce these scores even after 6 weeks post implementation. This echoes our previous findings of a very light touch intervention consisting of a two-hour parenting seminar and take-home booklet on “caregiving in conflict and post-conflict setting” piloted in Nablus in the State of Palestine. Previously, we had even tested the value of a self-read leaflet on “caregiving in conflict and post-conflict settings” with positive beneficial effects as assessed by families. Families living in such settings can benefit a lot from such family interventions, however needless to say an interactive intervention including all family members does have an added advantage of building skills and embracement of change within the family given they are all implicated. However, the circumstances in such challenged and humanitarian settings sometimes determines what kind of parenting intervention can be disseminated.

The long-term impact of the Strong Families programme, as outlined in the logic model, still needs to be assessed in the future, however, the promising short-term results such as “Improved child behavior”, “Reduced aggressive and hostile behaviors” and “Increased capacity to cope with stress” already benefitted the mental health of our participants. The
use of the SDQ in the Arabic context has been shown previously and, like in our study, found to be a valid tool in countries with shortage of skilled manpower.\textsuperscript{30, 32, 40}

With the PAFAS we aimed to assess the improvement of parent and family functioning skills, that are known to be protective or risk factors for child emotional and behavioural problems. We could not find any cutoff points that can predict future risk behavior or that would require clinical interventions. Therefore, for our sub-analysis, we arbitrarily set the cutoff at the 75\textsuperscript{th} percentile for each of the domains. Again, those caregivers with higher scores at baseline in the domain of parenting practices, quality of parent-child relationship, parental emotional adjustment, positive family relationships and parental teamwork benefitted significantly from the programme. We conclude therefore that the Strong Families programme targeted these areas well, such as promoting child’s positive and prosocial behaviour (e.g. praise through “Using love and limits”), reciprocal warmth and understanding for each other, support to parents to deal with stress and anxiety, setting rules and targets to support a conflict-free family environment and for caregivers to support each other.\textsuperscript{34} In our study, we had only few missing data in the answers to the PAFAS questionnaire, apart from question 15 (“I enjoy giving my child hugs, kisses and cuddles”), which had more missing answers at all 3 timepoints compared to all other questions. We assume that the translation and/or cultural interpretation might have been misunderstood and hence this question was omitted by some participants. A re-evaluation of this question is planned for our upcoming clinical trial. The effect of the Strong Families programme on the domain “Parent-child relationship” (including question 15) might therefore have even been underestimated, as we excluded persons with missing answers from the analyses.

By implementing the Strong Families programme we aim to support filling the gap with
interventions that focus at strengthening community and family support, as well as for young children, as recommended by Jordans et al.\textsuperscript{37} Parent training makes up a highly promising intervention in behavioural disorders of children\textsuperscript{41} as well as in the prevention of a variety of negative social outcomes.\textsuperscript{42} The Strong Families programme was successfully delivered by lay persons in Afghanistan, as previously successfully described for the delivery of community components of a variety of interventions,\textsuperscript{43} such as humanitarian settings or substance abuse treatment programs.\textsuperscript{43, 44} Particularly in the prevention/promotion of child and adolescent mental health, trained lay persons have been successfully used in the past,\textsuperscript{43, 45} however it was found uncertain whether they could reduce clinically apparent PTSD symptoms among children.\textsuperscript{45} We did not formally assess our study population, and therefore cannot comment on possible clinical diagnoses of our participants at baseline. The training of our lay persons was only 5 days overall, unlike previously described up to a few months.\textsuperscript{43} Fidelity data were collected in our pilot, as suggested by Kohrt and Mutamba,\textsuperscript{43, 46} however these data need to be verified on a larger scale. According to our experience, cultural adaptation was necessary and well received by the families, accelerating the impact, as previously described by Jordans et al.\textsuperscript{37} Despite the promising results of our study, there are also some limitations to it. First, due to cultural/religious reasons, only mothers and children received the programme, and we therefore cannot assess the impact and role of fathers in the Afghan context. Based on personal communication though, fathers would be interested in taking the programme, and the impact on the training of the primary caregiver of a family is one of our objectives of the next phase, a randomised controlled trial (RCT) of the Strong Families programme.
in Afghanistan.

Although the mental health of children was assessed by parents only in our study, the inter-rater agreement between parent-, teacher- and self-reports has been proven comparable in previous studies in similar age-groups.\textsuperscript{47, 48}

There was no difference in child behaviour or parenting skills in people recruited via schools or DTC, however through our opportunistic sampling we might have introduced a recruitment bias. It is possible, that only families who regarded themselves in need for support, attended the programme, and hence were more willing to make changes in their behavior. On the other side, people with severe problems might not have the time or understanding of the benefits of such a programme, and hence we might have only recruited families who were eager on showing their good intentions and who might not have had a particular need. However, the parental ratings of their children at baseline indicated a wide range of scores varying between the four bands of the total SDQ score. Nevertheless, the mean score was elevated (high band category of the total SDQ\textsuperscript{33}). To overcome this possible bias in either direction in the future, we will follow a strict recruitment protocol, and report on non-responders/non-willing persons thoroughly in our upcoming RCT.

Family skills programmes have been recommended for prevention as they are more beneficial and cost-effective than treatment of possible mental health or substance use disorders\textsuperscript{42, 43, 49} and service user and caregiver involvement in mental health system strengthening was recommended.\textsuperscript{50} Patel et al estimated that cost-effective interventions for key mental, neurological, and substance use disorders in low and lower-middle-income countries lies around US$3-4 per head of population per year, often taking a chronic or disabling course, resulting in additional costs for treatment, with often less than 1\% of
health expenditure spent on these people.

Family skills interventions have been recommended by the UNODC WHO International Standards on Drug Use Prevention,\textsuperscript{42} by the WHO Violence Prevention Alliance for Prevention of Youth Violence,\textsuperscript{51} by the INSPIRE Interagency Initiative to end violence against children\textsuperscript{52} and most recently in a new UNODC Training Manual on Prevention of Child Recruitment and Exploitation by Terrorist and Violent Extremist Groups.\textsuperscript{53} Hence, investment in such prevention intervention has shown to be effective and cost-effective,\textsuperscript{42} particularly in support of the Sustainable Development Goals.\textsuperscript{54}

Conclusions

Based on the findings of our study, family skills programmes to prevent mental health problems in children living in challenged settings are recommended. This is particularly true with the introduction of light programmes such as Strong Families that can be delivered by lay facilitators trained on the programme. Future research needs to be added to assess the long-term impact of the programme and to compare children with or without the intervention through an RCT. Policy makers should be motivated to integrate such programmes into their countries implementation strategies for reducing negative health and social outcomes, recognizing parenting as a key factor for improving outcomes and mitigating children’s exposure to low resource induced risk and harm. Similarly, parents living in challenged settings engagement to take a family skills programme to improve communication between family members and support reciprocal understanding between parents and their (pre-)teenage children, particularly in difficult living conditions is feasible and demonstrating effective change. Even a short and light programme such as Strong Families can make an impact on families’ lives and supports reaching healthy and safe development of youth particularly those living in such challenged settings.
List Of Abbreviations

MOPH        Ministry of Public Health
MCN         Ministry of Counter Narcotics
MOE         Ministry of Education
NGO         Non-governmental organisation
UNODC       United Nations Office on Drugs and Crime
DTC         Drug Treatment Centre
DDR         Drug demand reduction
SDQ         Strengths and Difficulties Questionnaire
PAFAS       Parenting and Family Adjustment Scales
FBQ         Family Background Questionnaire
RCT         Randomised controlled trial
UK          United Kingdom
US-INL      Bureau of International Narcotics and Law Enforcement
SD          standard deviation
SDG         Sustainable Development Goal
WHO         World Health Organization

Declarations

Ethics approval and consent to participate

Our study has been thoroughly reviewed and approved by the UNODC Drug Prevention and Health Branch in the Headquarters office of Vienna and the national field office in Kabul as well as the associated national ministries (Afghan Ministry of Counter Narcotics, Ministry of Public Health, Ministry of Labour and Social Affairs, Ministry of Education, Ministry of Women Affairs and Ministry of Health) and NGOs that supported the programme as alternative to ethics committee review. The Strong Families programme has been reviewed and, after approval, has been integrated in the National Drug Demand Reduction policy 2019-2023 for Afghanistan, as well as the National Drug Demand Reduction Strategy 2018-2022. Further, the donor of the programme development and implementation, US-INL (Bureau of International Narcotics and Law Enforcement Affairs) under the U.S. Department of State, had reviewed and approved the proposal before the start of the trial. Our programme implementation was performed in accordance with the ethical standards of the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

All caregivers completed and signed a consent form at the first evaluation meeting, as all children were under the age of 16, they also signed as a legal guardian for their children.
In addition to written information being provided in the form of the Participant Information Sheets for the caregiver, participants were provided with a verbal explanation of the evaluation method at the first meeting and again when they attended the first data collection session.

Consent for publication
Not applicable

Availability of data and material
The datasets generated and analysed during the current study are available in the Mendeley Data repository, http://dx.doi.org/10.17632/v5dryspfy4.1

Competing interests
The authors declare that they have no competing interests.

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Authors' contributions
VM wrote the substantive content of the Strong Families programme training manual. WM and AE supported the design and conceptualised the training programme and the implementation study. The Afghanistan field implementation team oversaw the fieldwork, including recruitment and participant data collection and established contacts with the national governmental and non-governmental counterparts. KH was responsible for the data validation and performed the statistical analysis and interpretation of data, with guidance from WM. KH prepared the first draft of the manuscript, with AE and WM, which was critically revised by all authors. All authors had full access to all data in the study and
had final responsibility for the decision to submit for publication. All authors read and approved the final manuscript.

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Authors' information (optional)

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Figure 1

Recruitment of participants, follow-up and missing data from SDQ and PAFAS over time
