Impact of A Peer-Led, Community-Based Parenting Programme Delivered At A National Scale: An Uncontrolled Cohort Design With Benchmarking

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1 **Title**

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24 **Abstract**

Background

Childhood behavioural are the most common mental health disorder worldwide and represent a major public health concern, particularly in socially disadvantaged communities. Treatment barriers mean that up to 70% of children do not receive recommended parenting interventions. Innovative approaches, including evidence-based peer-led models, such as Empowering Parents Empowering Communities' (EPEC) Being a Parent (BAP) programme, have the potential to reduce childhood difficulties and improve parenting if replicable and successfully delivered at scale.

Method

This real-world quasi-experimental study, with embedded RCT benchmarking, examined the population reach, attendance, acceptability and outcomes of 128 BAP groups (n=930 parents) delivered by 15 newly established sites participating in a UK EPEC scaling programme.

Results

Scaling programme (SP) sites successfully reached parents living in areas of greater social deprivation (n=476, 75.3%), experiencing significant disadvantage (45.0% left school by 16; 39.9% lived in rental accommodation; 36.9% lone parents). The only benchmarked demographic difference was ethnicity, reflecting the greater proportion of White British parents living in scaling site areas (SP 67.9%; RCT 22.4%). Benchmark comparisons showed scaling sites' parent group leaders achieved similar levels of satisfaction. Scaling site parent participants reported substantial levels of improvement in child concerns (ES 0.6), parenting (ES 0.9), parenting goals (ES 1.2) and parent wellbeing (ES 0.6) that were of similar

magnitude to RCT benchmarked results. Though large, parents reported lower levels of parenting knowledge and confidence acquisition compared with the RCT benchmark.

Conclusion

Despite common methodological limitations associated with real-world scaling evaluations, findings suggest that this peer-led, community-based, parenting approaches can be replicated at scale and may have considerable potential to improve child and parenting difficulties, particularly for socially disadvantaged populations.

Background

Childhood behavioural disorders, characterised by persistent aggressive, oppositional and defiant behaviours, are the most common mental health disorder worldwide, representing a growing public health concern with poor outcomes persisting into adulthood [1-5]. In the UK, 4.6% of children aged 5-19 years meet behaviour disorder criteria [6], and a further 15-20% have significant, subclinical difficulties. UK lifetime estimated costs range from £85,000 per moderate case to £260,000 per severe case [7]. Behaviour disorders are twice as common in disadvantaged neighbourhoods and communities, and between two to four times more likely in families living in poverty, receipt of disability and other welfare benefits [7].

Up to 70% of children with behavioural disorders do not receive recommended interventions [8]. Barriers to care include insufficient service capacity, limited availability of evidence-based intervention, complex access arrangements, long waiting times, family stigma, and poor lay mental health knowledge. Typically, interventions are offered by highly trained specialist mental health professionals with postgraduate level education, delivered at clinic and healthcare facilities using evidence-informed rather than manualised, evidence-based interventions. These barriers hinder problem identification, parent help-seeking, and limit the capability of routine services to deliver effective care at sufficient scale to substantially reduce prevalence and impact, particularly for low income and Minoritised families [9,10]

Group-format evidence-based parenting approaches are effective when tested in highly controlled experimental trial conditions and recommended as the first line response [11-13]. These approaches can maintain performance under in real world conditions but cost and

almost exclusive dependence on delivery by highly trained and specialist practitioners inhibit availability at the scale required [14-17].

There is significant concern about the continuing failure to meet child and family need. The use of more innovative approaches, including peer-led models, has been recommended [18]. Less is known about the delivery at scale of peer-led approaches [19,20], in which manualised parenting approaches are delivered by trained and quality assured non-professionals with the aim of increasing access, acceptability and reach, particularly for low income and Minoritised families. If effective at scale, lower associated service costs of these approaches can potentially increase capacity and reduce the treatment gap.

Benchmarking is potentially an efficient, low-cost method that can be used to systematically examine the performance of evidence-based approaches as they travel from definitive and pragmatic trials to novel settings and real-world conditions [21-23]. Benchmarking can not only compare outcomes but can also assess target population reach and acceptability. As a relatively novel approach, benchmarking has been used to assess interventions in acute medicine and adult mental health but rarely in the field of child mental health and parenting.

Scaling-up and scaling-out evidence-based approaches

Real world replication is complicated, unpredictable and success is not guaranteed [24,25]. Scaling-up involves dissemination based on established conditions in which new providers typically adhere to pre-determined methods and protocols intended to reproduce trial outcomes. Pre-determined trial conditions may be challenging to reproduce in real world settings. Scaling-out, on the other hand, refers to replication in conditions that differ from

original trial conditions [24], potentially offering great flexibility but risking variations in population reach, delivery, and fidelity that can undermine performance [25,26]

Empowering Parents Empowering Communities Scaling Programme

Empowering Parents Empowering Communities (EPEC) is a task sharing, peer-led parenting approach. Its' group-based parenting course format is consistent with policy recommendations and intended to build social support between participants, optimise impact, and lower unit cost. EPEC is delivered in local, community locations and the programme uses high visibility, pro-active local outreach campaigns to engage parents. Within these targeted community locations, an open access approach is typically used, rather than formal referral. The peer-led format is associated with high levels of parent engagement, acceptability and reduced stigma. Randomised control trial and field evidence shows that EPEC *Being a Parent* successfully reaches socially disadvantaged and Minoritised parents of children aged 2-11 years, is highly acceptable, and produces significant improvements in child behaviour, positive parenting and parental concerns when delivered by peer parent group leaders (PGLs) recruited from within target populations, directly trained and supervised by EPEC developers [19,20].

Funded by the UK Early Years Social Action Fund, NESTA and Department for Culture, Media and Sport, the EPEC Scaling Programme examined the scalability of the *Being a Parent* parenting course in 15 newly established EPEC Hubs located in socially disadvantaged areas across England for parents of children aged 2-5-years. The Programme scaled-up established EPEC methods, including its peer-led approach, manualised training, quality assurance procedures, and scaled-out by testing delivery in new service organisations types, such as local authorities and voluntary organisations, rural as well as new urban

settings, inclusion of socially disadvantaged populations that potentially differed in characteristics from previous research and field trials, and novel hub setup, parent group leader recruitment, and implementation support methods.

The evaluation reported in this paper had two aims:

1. To examine the parent population reach, parent attendance and acceptability across Scaling Programme sites and compare these with established *Being a Parent* RCT benchmarks.
2. To evaluate the impact of the *Being a Parent* parenting course across Scaling Programme sites on child, parent and parenting outcomes and compare these with established RCT benchmarks.

Method

Design

A pragmatic cohort design incorporating a benchmarking comparison derived from previously published RCT results was used [19]. Demographic information and outcome measures were collected at the beginning (Time 1) and end (Time 2) of the *Being a Parent* parenting course, acceptability data were collected at Time 2. Attendance data were collected throughout each parenting course. Over the course of the evaluation period, 1135 parents attended a *Being Parent* information session, 930 (89.9%) of these participated in the parenting course, of whom 730 (78.4%) completed Time 1 measures and 405 (55.5%) completed Time 2 measures.

Participants

New EPEC Hubs

Fifteen EPEC hub host organisations: 10 local authorities, three NHS Trusts and two charitable organisations were selected because of compatibility between their local strategic priorities, operational resources, parenting and peer expertise, and population needs, and EPEC aims and programme theory, see Appendix 1. Over the 18-month duration of the Scaling Programme, hubs delivered 128 *Being a Parent* parenting groups from 97 different venues. Sixty-five venues (67.0%) were in the lowest third of the most deprived UK neighbourhoods, with 29 venues (29.9%) in the 10% most deprived areas [27].

Participant parents

Parents were eligible for the *Being a Parent* course when they were a primary parental caregiver who: 1) reported difficulties in managing behaviour of an index child aged 2-5 years, and 2) expressed concerns about their parenting. Families were excluded when the parent: 1) had insufficient English to complete evaluation measures, 2) could not attend weekly course sessions, 3) was not living with the index child, and 4) the child experienced significant neurodevelopmental difficulties, such as autism.

Measures

Demographic information: Included parent age, ethnicity, first language, parent status, educational qualifications, housing and employment status.

Clinical outcomes

In families with more than one child aged 2-5 years, participants completed measures on the child about whom they had most significant concerns.

Concerns About My Child (CAMC, 19). An idiographic measure of parental perception of child difficulties, previously used in *Being a Parent* trial evaluation. Parents rate up to three main child emotional and behavioural concerns from 0 (not concerned at all) to 100 (could not be more concerned). Concerns were categorised into five domains: Conduct Problems, Parent-Child Relationship and Communication Difficulties, Self-Regulation, Emotional Distress and Other.

Arnold O’Leary Parenting Scale (PS, 28). Previously used in the *Being a Parent* trial, this 30-item questionnaire assesses dysfunctional parental discipline styles for children aged 2-16 years, yields a total score and parental verbosity, over-reactivity and laxness subscales. Lower scores indicate more positive parenting skills. Total score ≥ 3.2 differentiates between clinic and non-referred children. In this study, there was good internal consistency for the total score ($\alpha = .77$).

My Parenting Goals (MPG). An idiographic measure of up to two personal parenting goals, using a visual analogue scale from 0 (could not be further from achieving my goal) to 100 (goal completely achieved).

Short Warwick Edinburgh Mental Wellbeing Scale (SWEMWBS, 29). A seven-item parent wellbeing measure each rated on a 5-point Likert scale. High scores represent greater mental wellbeing. SWEMWBS is sensitive to change and the full version has been used in evaluations of parenting programmes. It had good internal consistency, $\alpha = .85$. Raw SWEMWBS scores were transformed to allow comparisons with national survey data.

Being a Parent acceptability and satisfaction

Treatment Acceptability Rating Scale (TARS - 19). This 12-item self-report questionnaire, previously used in *Being a Parent* trial, uses a 4-point Likert scale to assess, (i) parenting knowledge, skills and confidence acquired (TARS KSC - 4 items yield total score 4-16) and

(ii) course satisfaction and quality (TARS SQ - 5 items yield total score 5-20). Higher scores indicate greater acceptability and satisfaction. Three free-text items cover helpful and unhelpful participant experience.

Being a Parent attendance

Parent attendance, non-attendance, cancellation and drop-out was recorded prospectively by parent group leaders for each *Being a Parent* course using a secure online spreadsheet that generated an anonymised identifier for each parent.

EPEC *Being a Parent* Scaling Programme

This comprised three inter-related phases:

Phase 1: Hub engagement and initial set up (0-6 months): Hub site selection, licence agreement, staff appointment, initial 3-day hub familiarisation training covering *Being a Parent* quality standards and functions, staff roles and responsibilities, and evaluation.

Phase 2: Hubs organisation (3-9months): Hub staff training in *Being a Parent* manualised content and methods (4-days), PGL recruitment and training, supervision and quality assurance (3-days), and engagement of local stakeholders and communities. Each hub used existing local family, service and community networks to recruit an initial cohort of 12-16 PGLs, who completed a certified 60-hour training covering: (1) *Being a Parent* knowledge, methods and skills, (2) child development and family resilience, (3) group dynamics and facilitation skills, and (4) local safeguarding procedures. Participants completed an assessed portfolio and supervised practice prior to certification.

Phase 3: Hub implementation (6-18 months): Each hub established pathways to engage local parents, ran ‘coffee morning’ information sessions, organised a rolling programme of supervised *Being a Parent* groups. National EPEC consultants used manualised quality standards to appraise hub implementation, problem-solve and support site scaling using ongoing digital and face-to-face contact and quarterly collaborative Hub learning and exchange events equivalent to one-day per month.

Findings are available elsewhere that describe the acceptability and impact of the training provided to hubs during the Scaling Programme and the demographic characteristics and training outcomes for parent group leaders recruited by hubs [30]. Working in pairs, 159 certified parent group leaders delivered 128 *Being a Parent* courses, each co-delivering one to four groups.

Being a Parent Course

The *Being a Parent* course consisted of eight, two-hour sessions, with on-site crèche facilities, for 8-12 parents. It used large and small group discussion, information sharing, demonstrations, practice and homework to enable parents to acquire key parenting knowledge, understanding and skills based on child development, social learning, attachment, systems, family relations, communication and reflective function concepts. This content covered parent wellbeing and expectations; understanding children’s needs, emotions and behaviour; child-led play, listening and communication; praise and encouragement; and positive discipline strategies. Course completion was based on attendance of five or more sessions [19].

Participants were recruited through direct parent contact, word of mouth, recommendation by existing community and specialist services, and printed information and posters available in key family community locations, such as children's centres and local schools. Prior to enrolment, prospective parents were invited to an introductory 'coffee morning' information session. Course fidelity and quality assurance, designed to monitor and maintain course norms, consolidate PGL skills, provide support and monitor safety, was undertaken through 1) PGL fortnightly supervision and (2) supervisor fortnightly observation of course delivery and practice.

Procedure

After registration and prior to the first course session, participant parents received a link to a secure online Qualtrics survey portal to confirm consent and complete Time 1 measures using a uniquely generated anonymised identifier. Time 2 data was collected via a second Qualtrics link sent prior to the final course session. Online data was returned digitally directly to the Scaling Programme evaluation team at King's College London. Parents could withdraw from the evaluation without it affecting their participation in the parenting course. The study team did not have the resources to follow-up parents who did not complete Time 2 measures.

Service evaluation and informed consent

The aims of this evaluation met criteria for service evaluation rather than research or audit [31,32]. It was designed and conducted with the sole purpose of defining or judging the service provided by the national EPEC dissemination team. The service evaluation did not explore nor seek to undertake an experiment to investigate or establish broader evidence about wider research issues related to parenting interventions nor implementation science.

Each parent participating in the service evaluation provided consent prior to completing the evaluation measures. Data was anonymised using individual parent codes. The service received by the parents was not conditional nor affected by taking part in the evaluation.

Analysis plan

A cohort analysis using a merged dataset from across participating sites was conducted. An intention to treat analysis was not planned because of the increased likelihood of substantial data loss in large scale community evaluations of this type [15,33]. No between site comparisons were planned due to the limited sample sizes available for individual sites. Statistical analysis was mainly descriptive using means and SD for continuous demographic, acceptability and attendance data, and medians and range for skewed data. Frequencies and proportions were used to describe categorical variables. Continuous variables were compared using independent sample t-tests and proportion variables were compared using chi squared analysis. Clinical outcome change scores (Time 2 minus Time 1) were calculated for all measures and t-tests. Cohen's d effect sizes ($\alpha=0.05$) were calculated as follows:

$$\text{Cohen's } d_{av} = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{SD_1^2 + SD_2^2}{2}}}$$

To reduce potential bias, univariate outliers were removed pairwise when any data point that was $z=+/-3.29$ from the paired sample mean difference score, resulting in the removal of two cases [34,35].

An established benchmarking methodology was used to compare CAMC and PS outcomes with the RCT comparison. Effect sizes were calculated using the same formula for paired samples and standardised for comparison between the two samples, with the use of non-central t-tests and confidence intervals set to 95% [36,37]. The non-central distribution was

used to take account of the differences of power in the calculation of effect sizes according to sample size. It was assumed that standardised effect size values with non-overlapping confidence intervals were indicative of significant differences between the scaling and benchmark samples [38]. An effect size difference of $d=0.2$ was considered to be clinically meaningful [39].

Analyses showed little systematic bias between participants providing data at both time points and those only completing Time 1 measures (see Appendix 2: Tables 1 and 2). Parents included in the analysis only differed by Time 1 CAMC scores and were more likely to be White British.

Results

Being a Parent reach, attendance and acceptability

The mean age for parents was 34.3 years, with 53.3% aged between 28-38 years and 20.3% aged between 21-27 years, see Table 1. The majority of parents were mothers (92.3%) and White British (67.9%). The largest minority group was South Asian (10.7%).

The majority of parents ($n=476$, 75.3%) lived in areas with higher than UK average social deprivation. Over a quarter (27.4%, $n=173$) lived in communities categorised in the 10% most socially deprived (33), 45.0% left school by age 16, 39.9% lived in rental accommodation, 21.4% were involuntarily unemployed and 36.9% were lone parents, see Table 1.

The only demographic differences between scaling and benchmark samples were ethnicity and first language, with a greater proportion of White British parents (Scaling sample=67.9%; RCT sample=22.4%, $\chi^2(1)=48.25$, $p<0.05$) and lower proportion of parents with English as a second language (Scaling sample=23.9%; RCT sample=46.6%, $\chi^2(1)=14.31$, $p<0.05$), see Table 1.

Table 1: Comparison of Scaling Programme and *Being a Parent* RCT parent demographic characteristics

Demographic characteristic	Value	Scaling Programme		RCT		Sig diff
		N	%	N	%	p
Parent gender	Female	648	92.3	56	96.6	n.s
Parent ethnicity	White British	452	67.9	13	22.4	<0.05
English as a second language	Yes	159	23.9	27	46.6	<0.05
Lone parent status	Yes	244	36.9	N/A	N/A	N/A
Parents highest qualification	University education completed	155	23.8	20	36.2	n.s
Type of housing	Owner/occupier	176	26.6	10	19.0	n.s
Work status	Unemployed	141	21.4	12	22.4	n.s

Being a Parent Attendance

Six hundred and eighty-four parents (73.5%) completed the BaP course across the 15 sites. This was significantly less than the 92.0% course completion rate achieved in the *Being a Parent* RCT ($\chi^2(1)=9.47$, $p<0.01$).

Being a Parent Acceptability

Parents reported high levels of satisfaction with course quality (TARS SQ), see Table 2. Scaling sample TARS SQ ratings were not significantly different from the benchmark comparison (Mean Scaling TARS SQ score=18.8 (SD=1.8), Mean RCT, TARS SQ score=18.9, (SD=1.4), $t(453)=0.4$, $p=ns$).

Table 2: Scaling Programme TARS Course Satisfaction and Quality Results

Treatment Acceptability Rating Scale	Not at all	A little	Quite a lot	A great deal
Course Satisfaction & Quality				
Being a Parent group leader competence	0% (n=0)	1.2% (n=5)	20.5% (n=83)	78.2% (n=318)
Overall satisfaction with Being a Parent course	0.2% (n=1)	0.7% (n=3)	29.3% (n=119)	69.7% (n=283)
Being a Parent covered appropriate content/topics	0% (n=0)	2.2% (n=9)	24.2% (n=98)	73.6% (n=299)
Being a Parent group leaders communicated effectively	0% (n=0)	0.5% (n=2)	18.5% (n=75)	81% (n=329)
Being A Parent group leaders were motivating (e.g., energetic, attentive)	0% (n=0)	1.5% (n=6)	14.3% (n=58)	84.2% (n=342)
TARS Knowledge, Skills and Confidence				
Improved understanding of positive parenting	0% (n=0)	5.2% (n=21)	40% (n=162)	54.8% (n=223)
Increased use of positive parenting skills	0% (n=0)	6.7% (n=27)	38.7% (n=157)	54.7% (n=222)
Increased confidence in effective parenting	0.2% (n=1)	9.4% (n=38)	40.1% (n=163)	50.2% (n=204)

Commitment to use knowledge and skills gain from Being a Parent	0.2% (n=1)	5% (n=20)	39.5% (n=160)	55.3% (n=225)
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Scaling sample parents reported high levels of knowledge, skills and confidence acquisition see Table 2. Despite these high levels of acquisition, TARS KSC mean score for the scaling sample was significantly lower than the benchmarking sample with an effect size suggesting a meaningful difference (Scaling TARS KSC Mean =13.9 (SD=2.1); RCT TARS KSC Mean=14.6 (SD=1.6), $t(453)=2.3$, $p<0.05$, $d=0.3$.)

Parent reported concerns about child difficulties

Parent child concerns decreased significantly over time, equivalent to medium effect size (CAMC Total: Time 1 mean=63.4, SD=22.3, Time 2 mean=48.6, SD=25.3, $t(338) = 9.3$, $p<0.001$, ES $d=0.6$.), see Table 3, with reductions across all problem categories, except idiosyncratic parental concerns (CAMC Conduct Problem: Time 1 mean=65.7, SD=20.5, Time 2 mean=50.8, SD=25.5, $t(197) = 7.5$, $p<0.001$, ES $d=0.6$; CAMC Relationships: Time 1 mean=59.9, SD=15.1, Time 2 mean=43.4, SD=22.9, $t(18) = 3.5$, $p<0.01$, ES $d=0.8$. CAMC Child Self-Regulation: Time 1 mean=68.2, SD=21.2, Time 2 mean=48.6, SD=25.3, $t(62) = 5.5$, $p<0.001$, ES $d=0.8$. CAMC Child Emotional Distress: Time 1 mean=55.8, SD=26.3, Time 2 mean=43.7, SD=25.0, $t(29) = 2.0$, $p<0.05$, ES $d=0.5$. CAMC Other: Time 1 mean=55.9, SD=25.9, Time 2 mean=45.2, SD=23.3, $t(19)$, $p=n.s.$).

Table 3: Scaling Programme child, parenting and parent well-being outcomes

Domain	N	Mean (SD) Time 1	Mean (SD) Time 2	Significance (p)	Effect size (d)
Parental mental well-being (SWEMWBS)	348	20.5 (3.5)	22.8 (3.8)	<0.001	0.6
Parenting behaviour (PS)	348	3.5 (0.6)	3.0 (0.6)	<0.001	0.9
Concerns about my child (CAMC)	339	63.4 (22.3)	48.6 (25.3)	<0.001	0.6
Parenting Goals (PG)	310	36.9 (23.0)	69.1 (21.0)	<0.001	1.2

Benchmarking comparison of confidence intervals between Scaling Programme CAMC Total effect size ($d=0.6$, 95% CI=0.48-0.76) and the equivalent RCT result ($d=0.85$, 95% CI=0.42-1.26) showed overlapping confidence intervals suggesting that the magnitude of CAMC improvement between the two samples was not significantly different. CAMC subscales were not used in the benchmark RCT.

Parenting behaviour

Scaling programme parents reported significant improvements in positive parenting behaviour, equivalent to a large effect size, (PS Time 1 mean=3.5, SD=0.6, Time 2 mean=3.0, SD=0.6, $t(347)=14.1$, $p<0.001$, ES $d=0.9$). Pre-course PS mean exceeded the established mean for clinic referred samples and below cut-off post-course. All three PS subscales significantly improved, ranging from small to medium effect sizes (PS Over-reactivity Time 1 mean=3.0, SD=0.9, Time 2 mean=2.5, SD=0.8, $t(328)=10.6$, $p<0.001$, ES $d=0.6$; Verbosity Time 1 mean=4.2, SD=0.7, Time 2 mean=3.9, SD=0.7, $t(350)=8.4$,

p<0.001, ES d=0.4; Laxness Time 1 mean=3.4, SD=0.8, Time 2 mean = 3.0, SD=0.7, t(330)=10.0, p<0.001 ES d=0.6).

Scaling sample PS Total Score effect size (d= 0.9 (95% CI ADD CIs) and equivalent RCT result (RCT d=0.8 (95% CI=0.40-1.20) had overlapping confidence intervals, indicating no significant differences in the magnitude of improvement between the two samples.

Parenting goals

Parents reported substantial progress towards achieving selected parenting goals, equivalent to a very large effect size (PG Time 1 mean=36.9, SD=23.0, Time 2 mean=69.1, SD=21.0, t(309)=-20.9, p<0.001, ES d=1.2). No RCT benchmarking information was available for comparison.

Parental mental well-being

Parents starting Scaling Programme *Being a Parent* courses had a mean level of mental wellbeing below the UK national 25th centile score of 21.5 [29]. Parents' wellbeing significantly improved following the course equivalent to a medium effect size (Scaling SWEMWBS Time 1 Mean=20.5, SD=3.5 SWEMWBS Time 2 mean=22.8, SD=3.8), t(347)=-11.0, p<0.001, ES d=0.6), with the Time 2 mean score similar to the UK national 50th percentile. No RCT benchmarking information was available for comparison.

Discussion

Large-scale real-world replication provides evidence about the extent to which efficacious interventions can maintain their performance outside of trial environments and without direct

1 involvement of intervention developers. This study used a quasi-experimental design with
2 embedded benchmarking to evaluate the scaling-up and scaling-out of the *Being a Parent*
3 course in 15 newly established EPEC sites. Results indicate that the sites were largely able to
4 replicate the demographic reach, parent acceptability and outcomes previously achieved
5 under trial conditions.

6
7 Sites successfully engaged parents experiencing significant levels of social disadvantage, low
8 levels of formal education and home ownership, together with significant levels of
9 unemployment and lone parenthood. The scaling sample had a larger proportion of White
10 British parents and fewer parents with English as a second language, probably reflecting
11 ethnicity differences between the south London area in which the benchmark RCT took place
12 and the population profiles of participating sites. For example, 19.5% of the UK population
13 (16-65 years) is of Black and Minority Ethnic origin compared with 46.3% in the RCT area
14 [40,41]. Overall, the proportion of Black and Minority Ethnic parents participating in both
15 EPEC trial and scaling programme was higher than local and national base rates.

16
17 Parent course completion (73.5%) was consistent with mean completion rates across a wide
18 range of profession-led behavioural parent training programmes though lower than the
19 benchmarking trial comparison [42]. Newly established EPEC sites may not immediately
20 achieve course completion rates equivalent to those accomplished under trial conditions but
21 should expect to achieve rates similar profession-led programmes and, in doing so, engage
22 higher proportions of socially disadvantaged parents.

23
24 Participants reported high levels of acceptability and satisfaction with course content,
25 methods and parent group leadership largely consistent with benchmarking data. They also

reported statistically significant and clinically meaningful improvements in parental wellbeing, parenting behaviour, parenting goal progress and child concerns. Where comparisons allowed, these improvements were largely similar to benchmarking data and consistent with those reported for comparable professionally-delivered interventions [12-14].

Limitations

Conclusions about the replication at scale of this evidence-based approach should be drawn with a degree of caution. The study's quasi-experimental design inevitably resulted in lower levels of internal validity compared with those typically achieved by randomised designs.

The scaling programme consisted of multiple training and implementation components, many of which, though not all, were manualised and monitored for acceptability, fidelity and impact [30]. However, the current study was not designed to assess the relative impact of these multiple components nor site-related factors affecting performance [43].

Benchmarking comparisons provided an efficient, pragmatic and low-cost method to compare scaling programme with trial performance. The study made direct benchmarking comparisons of most demographic and acceptability data though not all outcome measures. Ideally, benchmarking would have included the entire battery of RCT measures. This was not possible because of site concerns about undue real world measurement burden and site preference for the inclusion of the SWEMWBS, not used in the previous RCT. The benchmarking relied upon effect sizes derived from only one RCT. Though of high methodological quality, the benchmarking comparison would have been strengthened by access to a larger pool of trial results, narrowing effect size confidence intervals and reducing the likelihood of type 2 errors.

1
2 Data completion rates were at least comparable to similar scaling evaluations, possibly
3 assisted by the emphasis on evaluation within each phase of the scaling implementation and
4 the ongoing commitment of local site supervisors and parent group leaders. However,
5 acceptability and impact data were not available for a significant minority of participants and
6 results are therefore may be susceptible to bias [44]. Typical research trial data acquisition
7 methods, such as participants' positive choice to engage in research, financial and altruistic
8 incentivisation, and dedicated research staff, were not available in this real-world evaluation
9 because of cost constraints.

10
11 The evaluation infrastructure built during the scaling programme means that EPEC is in a
12 strong position to test data quality improvement methods including ongoing training, rapid
13 and continuous site feedback, site-specific data improvement plan and cooperation on
14 evaluation priorities across sites. Improvements in data quality and larger site samples will
15 enable between-site acceptability and outcome comparisons, as well as the future
16 examination of the effectiveness of specific scaling programme components.

17 18 **Conclusion**

19
20 Despite methodological limitations, these findings suggest that it is possible to successfully
21 replicate at scale EPEC *Being a Parent*, a peer-led, community-based, parenting approach. In
22 maintaining reach, acceptability and impact at scale, this approach has considerable potential
23 to make a significant contribution to improving child and parenting outcomes and, in so
24 doing, reducing the child behaviour treatment gap, particularly for socially disadvantaged

1 populations. The results also provide sufficient evidence to warrant a large scale, definitive
2 randomised trial of the scaling programme.

3

4

1 **List of abbreviations**

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3 NICE – National Institute for Health and Clinical Excellence

4 EPEC – Empowering Parents Empowering Communities

5 BaP – Being a Parent

6 NHS – National Health Service

7 EBI – Evidence Based Intervention

8 RCT – Randomised Controlled Trial

9 CAMC – Concern About My Child measure

10 SWEMWBS – Short Warwick Edinburgh Mental Wellbeing Scale

11 PS – Parenting Scale

12 MPG – My Parenting Goals

13 TARS – Treatment Acceptability Rating Scale

14 ITT – Intention To Treat

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Declarations

Ethics approval and consent to participate – No application for ethical approval was required for the service evaluation of the EPEC National Team Scaling Programme. The funding body, NESTA, independently reviewed and approved the aims, objectives and design of the evaluation prior to commencement. All methods were carried out in accordance with relevant guidelines and regulations (Declaration of Helsinki). Informed consent for the service evaluation was obtained from all participants.

Consent for publication - Not applicable.

Availability of data and materials – The datasets generated and/or analysed during the current study are not publicly available due privacy of participants involved but are available from the corresponding author on reasonable request.

Competing interests – CD is the lead developer of EPEC’s Being a Parent course. There are no financial conflicts of interest and no other conflicts of interest.

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Authors’ contributions - All authors contributed to the study conception and design. Material preparation, data collection and analysis were performed by JH, NK and CD. The first draft of the manuscript was written by JH and all authors commented on and made revisions to previous versions of the manuscript. All authors read and approved the final manuscript.

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References

1. Polanczyk GV, Salum GA, Sugaya LS, Caye A, Rohde LA. Annual Research Review: A meta-analysis of the worldwide prevalence of mental disorders in children and adolescents. *J Child Psychol Psychiatry*. 2015;56(3):345–365; doi:10.1111/jcpp.12381.
2. Fergusson DM, Horwood J, Ridder EM. Show me the child at seven: the consequences of conduct problems in childhood for psychosocial functioning in adulthood. *J Child Psychol Psychiatry*. 2005 Aug 1;46(8):837–49; doi:10.1111/j.1469-7610.2004.00387.x.
3. WHO. World report on violence and health. 2002.
https://apps.who.int/iris/bitstream/handle/10665/42495/9241545615_eng.pdf?sequence=1. Accessed 8 June 2021.
4. Powell T, Barber S, Powell T, Parkin E, Long R, Bolton P, et al. Early Intervention, Briefing paper 7647. House Commons Libr [Internet]. 2019.
<https://researchbriefings.parliament.uk/ResearchBriefing/Summary/CBP-7647>. Accessed 22 Jan 2020.
5. WHO. Preventing violence through the development of safe, stable and nurturing relationships between children and their parents and caregivers. 2009.
https://apps.who.int/iris/bitstream/handle/10665/44088/9789241597821_eng.pdf?sequence=1. Accessed 8 June 2021.
6. Mandalia D, Sadler K, Vizard T, Ford T, Goodman A, Goodman R, et al. Mental Health of Children and Young People in England, 2017. NHS Digit. 2018.
<https://digital.nhs.uk/data-and-information/publications/statistical/mental-health-of-children-and-young-people-in-england/2017/2017>. Accessed 8 June 2021.

7. Parsonage M, Khan L, Saunders A. Building a better future: the lifetime costs of childhood behavioural problems and the benefits of early intervention. Lond Cent Ment Health. 2014.
8. Children's Society. The good childhood inquiry: health research evidence. London: Children's Society; 2008.
9. Andrade LH, Alonso J, Mneimneh Z, Wells JE, Al-Hamzawi A, Borges G, et al. Barriers to mental health treatment: results from the WHO World Mental Health surveys. Psychol Med. 2014;44(6):1303–1317; doi:10.1017/S0033291713001943.
10. Kazdin AE. Annual Research Review: Expanding mental health services through novel models of intervention delivery. J Child Psychol Psychiatry. 2019;60(4):455–472; doi:10.1111/jcpp.12937.
11. National Institute for Health and Care Excellence (NICE). Antisocial behaviour and conduct disorders in children and young people: recognition and management: Clinical guideline 158. 2013. <https://www.nice.org.uk/guidance/cg158>. [updated 19 Apr 2017]. Accessed 8 June 2021.
12. Furlong M, McGilloway S, Bywater T, Hutchings J, Donnelly M, Smith SM, et al. Behavioural/cognitive-behavioural group-based parenting interventions for children age 3-12 with early onset conduct problems. Cochrane Libr [Internet]. 2010. <http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD008225/full>. Accessed 12 June 2016.
13. Reyno SM, McGrath PJ. Predictors of parent training efficacy for child externalizing behavior problems – a meta-analytic review. J Child Psychol Psychiatry. 2006 Jan 1;47(1):99–111; doi:10.1111/j.1469-7610.2005.01544.x.

14. Michelson D, Davenport C, Dretzke J, Barlow J, Day C. Do evidence-based interventions work when tested in the “real world?” A systematic review and meta-analysis of parent management training for the treatment of child disruptive behavior. *Clin Child Fam Psychol Rev.* 2013;16(1):18–34; doi:10.1007/s10567-013-0128-0.
15. Lindsay G, Strand S, Davis H. A comparison of the effectiveness of three parenting programmes in improving parenting skills, parent mental-well being and children’s behaviour when implemented on a large scale in community settings in 18 English local authorities: the parenting early intervention pathfinder (PEIP). *BMC Public Health.* 2011;11(1):962.
16. Lindsay G, Strand S. Evaluation of the national roll-out of parenting programmes across England: the parenting early intervention programme (PEIP). *BMC Public Health.* 2013;13(1):972.
17. Lindsay G, Totsika V. The effectiveness of universal parenting programmes: the CANparent trial. *BMC Psychol.* 2017;5(1):35; doi:10.1186/s40359-017-0204-1.
18. Kazdin AE. Addressing the treatment gap: A key challenge for extending evidence-based psychosocial interventions. *Behav Res Ther.* 2017;88:7–18; doi:10.1016/j.brat.2016.06.004.
19. Day C, Michelson D, Thomson S, Penney C, Draper L. Evaluation of a peer led parenting intervention for disruptive behaviour problems in children: community based randomised controlled trial. *BMJ.* 2012;344:1–10; doi:10.1136/bmj.e1107.
20. Thomson S, Michelson D, Day C. From parent to ‘peer facilitator’: a qualitative study of a peer-led parenting programme. *Child Care Health Dev.* 2015;41(1):76–83; doi:10.1111/cch.12132.

- 21 Fortin M, Dionne J, Pinho G, Gignac J, Almirall J, Lapointe L. Randomized controlled trials: do they have external validity for patients with multiple comorbidities? *Ann Fam Med*. 2006;4(2):104–108.
22. Hogue A, Dauber S, Henderson CE. Benchmarking family therapy for adolescent behavior problems in usual care: fidelity, outcomes, and therapist performance differences. *Adm Policy Ment Health Ment Health Serv Res*. 2017;44(5):626–641; doi:10.1007/s10488-016-0769-7.
23. Spilka MJ, Dobson KS. Promoting the internationalization of evidence-based practice: benchmarking as a strategy to evaluate culturally transported psychological treatments. *Clin Psychol Sci Pract*. 2015;22(1):58–75; doi:10.1111/cpsp.12092.
24. Aarons GA, Sklar M, Mustanski B, Benbow N, Brown CH. “Scaling-out” evidence-based interventions to new populations or new health care delivery systems. *Implement Sci*. 2017;12(1):111; doi:10.1186/s13012-017-0640-6.
25. Milat AJ, Bauman A, Redman S. Narrative review of models and success factors for scaling up public health interventions. *Implement Sci*. 2015;10(1):113; doi:10.1186/s13012-015-0301-6.
26. Schoenwald SK, Hoagwood K. Effectiveness, transportability, and dissemination of interventions: what matters when? *Psychiatr Serv*. 2001;52(9):1190–1197; doi:10.1176/appi.ps.52.9.1190.
27. Ministry of Housing, Communities and Local Government. English indices of deprivation 2019 [Internet]. 2019. <http://imd-by-postcode.opendatacommunities.org/imd/2019>. Accessed 8 June 2021.

- 1 28. Arnold DS, O’leary SG, Wolff LS, Acker MM. The Parenting Scale: a measure of
2 dysfunctional parenting in discipline situations. *Psychol Assess.* 1993;5(2):137.
- 3 29 Fat LN, Scholes S, Boniface S, Mindell J, Stewart-Brown S. Evaluating and establishing
4 national norms for mental wellbeing using the short Warwick–Edinburgh mental well-
5 being scale (SWEMWBS): findings from the health survey for England. *Qual Life Res.*
6 2017;26(5):1129–1144.
- 7 30 Day, C., Nicoll, J., Harwood, J., Kendall, N., Kearney, L. & Kirkwood, J. (2020)
8 Transforming children’s lives: EPEC scaling programme. NESTA/Department of
9 Digital Culture Media & Sport. London: South London & Maudsley NHS Foundation
10 Trust.
- 11 31. National Research Ethics Service (NRES). Defining research. 2013. www.clahrc-
12 coe.nihr.ac.uk/wp-content/uploads/2014/04/defining-research.pdf, accessed 24.01.22
- 13 32. Twycross, A., Shorten, A. Service evaluation, audit and research: what is the difference?
14 *Evidence-Based Nursing.* 2014;**17**:65-66.
- 15 33. Wright CC, Sim J. Intention-to-treat approach to data from randomized controlled trials:
16 a sensitivity analysis. *J Clin Epidemiol.* 2003;56(9):833–842; [doi:10.1016/S0895-](https://doi.org/10.1016/S0895-4356(03)00155-0)
17 [4356\(03\)00155-0](https://doi.org/10.1016/S0895-4356(03)00155-0)
- 18 34 Tabachnick, B.G. and Fidell, L.S. Using multivariate statistics. 6th ed. Boston: Pearson;
19 2013.
- 20 35. Field A. Discovering statistics using IBM SPSS statistics [Internet]. Sage; 2013.
21 [https://books.google.co.uk/books?hl=en&lr=&id=c0Wk9IuBmAoC&oi=fnd&pg=PP2&](https://books.google.co.uk/books?hl=en&lr=&id=c0Wk9IuBmAoC&oi=fnd&pg=PP2&dq=andy+fields+statistics&ots=LaHpMJ-u0E&sig=1ccFWTPuG1QI4-7nqZg7XScnuEE)
22 [dq=andy+fields+statistics&ots=LaHpMJ-u0E&sig=1ccFWTPuG1QI4-](https://books.google.co.uk/books?hl=en&lr=&id=c0Wk9IuBmAoC&oi=fnd&pg=PP2&dq=andy+fields+statistics&ots=LaHpMJ-u0E&sig=1ccFWTPuG1QI4-7nqZg7XScnuEE)
23 [7nqZg7XScnuEE](https://books.google.co.uk/books?hl=en&lr=&id=c0Wk9IuBmAoC&oi=fnd&pg=PP2&dq=andy+fields+statistics&ots=LaHpMJ-u0E&sig=1ccFWTPuG1QI4-7nqZg7XScnuEE). Accessed 3 Mar 2017.

36. Self-Brown S, Valente JR, Wild RC, Whitaker DJ, Galanter R, Dorsey S, et al. Utilizing benchmarking to study the effectiveness of parent–child interaction therapy implemented in a community setting. *J Child Fam Stud*. 2012;21(6):1041–1049; doi:10.1007/s10826-012-9566-4.
37. Smithson M. Correct confidence intervals for various regression effect sizes and parameters: the importance of noncentral distributions in computing intervals. *Educ Psychol Meas*. 2001;61(4):605–632.
38. Lakens D. Calculating and reporting effect sizes to facilitate cumulative science: a practical primer for t-tests and ANOVAs. *Front Psychol*. 2013;4:863; doi:10.3389/fpsyg.2013.00863.
39. Minami T, Serlin RC, Wampold BE, Kircher JC, Brown GJ. Using clinical trials to benchmark effects produced in clinical practice. *Qual Quant*. 2008;42(4):513; doi:10.1007/s11135-006-9057-z.
40. ONS. Census. 2011; <https://www.ons.gov.uk> (2011). Accessed 3 Mar 2017.
41. Williamson C. Protected characteristics in Southwark JSNA factsheet. Southwark Counc. 2017.
42. Chacko A, Jensen SA, Lowry LS, Cornwell M, Chimklis A, Chan E, et al. Engagement in behavioral parent training: review of the literature and implications for practice. *Clin Child Fam Psychol Rev*. 2016;19(3):204–215; doi:10.1007/s10567-016-0205-2.
43. Greenhalgh T, Robert G, Fraser M, Bate P, Kyriakidou O. Diffusion of innovations in service organisations: systematic review and recommendations. *Millbank Quarterly*. 2004, 82(4), 581-629; doi:10.1111/j.0887-378X.2004.00325.x

- 1 44. Rotnitzky A, Wypij D. A note on the bias of estimators with missing data. *Biometrics*.
2 1994;1163–1170.

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