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Evaluating Parent Gym: a community implemented universal parenting programme

Geoff Lindsay, Vaso Totsika and Ruth Thomas

Abstract

Purpose – There is growing evidence of the efficacy and effectiveness of targeted parenting programmes but the evidence for universal parenting programmes is much less developed. The purpose of this paper is to evaluate the effectiveness of Parent Gym, a parenting programme delivered in schools.

Design/methodology/approach – In this paper a quasi-experimental design was utilised. Parents were recruited to the Parent Gym programme comprising six two-hour weekly sessions. Parents completed measures of their parenting efficacy, parenting satisfaction, interest in parenting and mental well-being at pre- and post-course. Comparative data were derived from a retrospectively-defined randomly selected group of non-participant parents at two time points, equivalent to the length of the Parent Gym course.

Findings – Changes in the Parent Gym group were compared with the comparison group using repeated measures mixed 2×2 ANOVAs, which accounted for the potential effect of demographic characteristics (parent gender, ethnicity, parent age, parent education level and single parent status), and their potential interaction with group membership. Parenting satisfaction showed a significantly greater increase for the Parent Gym group with a large effect size ($d = 0.80$). Regarding parenting efficacy, there was a significant time × group interaction indicating efficacy scores increased in the Parent Gym group but decreased in the comparison group ($d = 1.93$). Mental well-being also improved for the Parent Gym group from below the national norm before the course ($d = -0.26$) to significantly greater than the national norm at post-course ($d = 0.29$).

Research limitations/implications – A limitation of the present study is the absence of data on outcomes for children. Second, the administration of the research at local level, primarily the distribution and collection of the measures and return to the research team for analysis, is a potential source of data loss: both pre- and post-programme data were available on 55 per cent of Parent Gym parents, similar to other community studies. Third, the present study did not include a longer term follow-up after the programme ended. Future research is required to examine the sustainability of effects produced from community implemented programmes.

Practical implications – Findings from the present study indicate that a universal programme, Parent Gym, was effective in aiding the positive development of aspects of parenting behaviour, namely parents' self-efficacy, parenting satisfaction and mental well-being, when delivered in community settings. This demonstrates its potential as part of a regular service delivery option of evidence-based support for parents.

Social implications – Successful parenting requires both the development of parenting skills and a positive relationship between parent and child. Parents vary in the resources (e.g. family) available to develop positively. Evidence-based parenting programmes have an important role in aiding parenting development, both those targeted at parents with most challenges and those (universal) aimed across the population. This study demonstrated that the universal Parent Gym programme is effective across a wide range of parents and has the potential to be a positive social resource for community delivery.

Originality/value – This is the first rigorous study of Parent Gym. It adds to the limited evidence about parenting programmes delivered outside of trials, as part of normal service delivery. With this evidence, parent choice of a suitable evidence-based programme is increased.

Keywords Effectiveness, Community, Quasi-experimental design, Parent Gym, Sustained implementation, Universal parenting programme

Paper type Research paper

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Introduction

High levels of prevalence of behavioural, emotional and social difficulties in children have been identified in many countries (Belfer, 2008; Green *et al.*, 2005), which are associated with a range of negative subsequent outcomes (Piquero *et al.*, 2012). One approach to addressing the challenge presented to society by this phenomenon has been the development of parenting programmes designed to promote positive parenting. This strategy has its basis in evidence that positive social development is associated with the quality of parent–child interactions (Pastorelli *et al.*, 2015; Sanders *et al.*, 2014) and the nurturing environments within the family (Biglan *et al.*, 2012). It is an approach that has received strong support politically, including the Council of Europe Recommendation on Policy to Support Positive Parenting (Committee of Members of the Council of Europe, 2006).

In addition, a strong driver for supporting early intervention is financial. Chowdry and Fitzsimmons (2016) have estimated the short-term costs of late interventions addressed at a range of problems experienced by children and young people, including domestic violence and abuse, child neglect and maltreatment and mental health problems, to be nearly £17bn per annum. This estimate does not include the lifelong costs of late interventions (Bonin *et al.*, 2011). England's Chief Medical Officer has also argued the case for early intervention, including parenting programmes (Davies, 2013) and intervention across a range of health challenges through a policy of proportionate universalism. This seeks to improve everyone's life but recognises a range of approaches is required, including both targeted and universal approaches.

Given the scale of the challenge, with estimates of 10–20 per cent of children presenting behavioural, emotional and social difficulties (Green *et al.*, 2005; Collishaw, 2015), it is clear that a wide scale public health approach is required. Parenting programmes have been designed to have a proximal impact on parents, for example their parenting skills and mental well-being. Improvements in these factors are expected as a result, to have a distal positive effect in improving their children's behavioural development as a result of improved parenting. This strategy may be characterised as comprising three levels: universal, aimed at and available to all parents; targeted, designed for parents of children experiencing or at risk of developing behavioural difficulties; and specialist, for a small minority of parents whose children's difficulties are severe and/or their own abilities to bring up their children are substantially compromised.

In practice, the main developments, and the most substantial evidence base for the effectiveness of interventions in improving parents' parenting skills and mental well-being, and also their children's behavioural development, have been at the targeted level (e.g. Furlong *et al.*, 2012). A number of parenting programmes now have strong evidence for their efficacy from more than one randomized controlled trial (RCT) and from meta-analyses or systematic reviews (Nowack and Heinrichs, 2008; Sanders *et al.*, 2014). There is also evidence for the effectiveness of targeted parenting programmes that have been implemented in community settings and rolled out on a large scale. Lindsay *et al.* (2011) report on the UK government's implementation of the Parenting Early Intervention Pathfinder rolled out across 18 English local authorities (LAs), which demonstrated the effectiveness of three programmes implemented in improving parenting skills and parents' mental well-being and also reduced their children's behavioural difficulties. As a result, the UK government rolled out these three, plus additional targeted programmes selected to meet specific criteria for evidence of efficacy, across all 152 LAs in England (Parenting Early Intervention Programme, Lindsay and Strand, 2013). This study demonstrated that the effectiveness of the parenting programmes in improving parenting and children's behaviour could be maintained when rolled out on a national scale.

Evidence for the efficacy and effectiveness of universal parenting programmes developed in the UK is limited although a large number of programmes with little evidence are available to parents (Asmussen *et al.*, 2016). Improving this situation is challenging. RCTs are regarded as the "gold standard" but such research, in order to be cost effective and useful, should be limited to programmes for which there is already substantial, lower level evidence. This evidence hierarchy ranges from a sound theoretical basis, which guides the content of a parenting programme; construction of the programme and organisational support for delivery including training of facilitators; feasibility trial(s), e.g. a pre–post design, to test improvement on key measures over

the period of the programme, practicality and acceptance; and controlled efficacy trials(s) where the effects of the programme are compared with a control group of parents randomly selected from comparable parents who do not undertake the programme, typically a randomised controlled trial (Lindsay and Strand, 2013). In addition, effectiveness trial(s) in community settings, with scaling up of reach and number of parents are needed. Finally, there is a new interest in studies of programmes as part of community delivery outside the rigours of trials: sustained implementation (Gray *et al.*, 2018).

Hence, the development of a substantial, rigorous evidence base is both demanding and also, by implication, very expensive. Furthermore, this is particularly so for universal programmes as the challenges are magnified compared with more highly controlled studies that are possible through formal trials. First, recruitment is open to communities, leading to the likelihood of a wide range of parents with respect to ethnicity, social disadvantage and need for parenting support. Second, recruitment relies on widespread communication, for example advertising, which also may produce diverse participants. Furthermore, recruitment is a process ranging from initial engagement of a parent's interest, initial agreement to participate (enrolment) and then initial attendance. Each of these sub-processes is complex with limited evidence of optimal approaches (Gonzales *et al.*, 2018). Third, establishment of a control group is problematic with respect to identification of and access to appropriate parents, to secure the initial agreement of parents to be recruited, and then to successfully secure their completion of pre- and, subsequently, post-measures in order to enable a fair comparison with the programme intervention group, when there is no incentive to motivate their compliance.

Fourth, providers may place limitations on the number, type and time available for measures as their main interest is service delivery. Fifth, ensuring systematic evaluation of fidelity of programme delivery may not be practical, and structured collection of data on facilitators may not be possible. Sixth, collection of data may be more open to substantial errors from the programme delivery organisation including failure: to deliver measures for parents to complete, to present measures to and/or collect from parents, and to return completed measures to the research team. This administrative data loss may equal data lost as a result of parent drop out, even in an effectiveness trial (Lindsay and Strand, 2013). Seventh, data attrition can be substantial in funded community trials (Jonkman and Von Wonderen, 2017) and feasibility studies (Barnes and Stuart, 2016) because of participant drop out. This is more likely with universal programmes where there is no initial match between a parent's needs and characteristics and the programme's aims, e.g. parents with reasonable existing parenting skills, confidence, satisfaction and low levels of parenting stress may join and later decide the programme is not necessary (Lindsay and Totsika, 2017).

These examples of threats to the validity of results of the effectiveness of evaluation of universal parenting programmes are inherent in such interventions. The effect of these factors is related to the amount of finance and organisational expertise available to mitigate their impact on any evaluation study, as well as the programme delivery itself.

In summary, the evaluation of the effectiveness of universal programmes is very challenging. Nevertheless, there are attempts to gather evidence, typically at the lower levels of the evidence hierarchy, and indeed programme providers may wish to improve their programme's evidence base.

Within the UK, the most studied is probably the Solihull Approach: understanding your child's behaviour (Douglas, 2006). Qualitative studies have supported the usefulness of the programme in increasing parents' knowledge of strategies and solutions for responding to their child's problems and improving parent-child relationships and the programme's popularity with parents (Vella *et al.*, 2015) and health visitors who deliver the programme (Lumsden and Sarankin, 2014; Drea *et al.*, 2014). However, the studies of effectiveness using pre-post comparisons with or without a comparison group are limited by small sample sizes (Douglas and Brennan, 2004; Bateson *et al.*, 2008; Milford *et al.*, 2006); or by limited designs, for example feedback from parents after sessions with no pre-post comparisons (Johnson and Wilson, 2012; Appleton *et al.*, 2016).

The largest study is a population level (universal) evaluation of Triple P (Sanders, 1999) in the Longford Westmeath region of Ireland (Doyle *et al.*, 2018). This was substantial in both number of

parents involved and in the study of four levels of the Triple P programme: Level 1, media strategy; Level 2, Triple P services; Level 3, workshop Triple P; and Level 4, Group Triple P. Significant improvements, compared with a comparison sample, were found in parenting skills and children's behaviour; however, effect sizes for the strengths and difficulties total difficulties and emotional symptoms scales, for example, were low, $d = -0.11$ and -0.12 , respectively.

Little *et al.* (2012) also evaluated the Triple P Group programme as well as Incredible Years (Webster-Stratton, 1994) and Promoting Alternative Thinking Strategies (PATHS; Greenberg and Kusche, 2002) as part of the Brighter Futures programme in Birmingham. They found mixed results, with evidence for the positive impact of Incredible Years, with small to medium effects sizes (e.g. SDQ total score $d = 0.50$, conduct problems $d = 0.39$); modest improvements for PATHS, whose effects washed out in a two-year follow-up; and no statistically significant improvements of the Triple P group on any measure. This negative finding for Triple P is unusual given the large amount of positive evidence (e.g. De Graaf *et al.*, 2008; Nowack and Heinrichs, 2008; Sanders *et al.*, 2014). However, the multilevel Triple P programme was found to have no impact on early child mental health problems in a population study in Glasgow over six years (Marryat *et al.*, 2017).

In addition, a large number of programmes to improve parenting skills have been developed internationally but often the evidence base for their effectiveness is limited, particularly for universal programmes. In the UK alone, the Department for Education (2013) reported 51 programmes that had been evaluated by the National Academy of Parenting Support and more recently the Early Intervention Foundation (EIF) reviewed 75 programmes of early intervention (Asmussen *et al.*, 2016). These have often been developed locally and implemented with little or no evidence for their effectiveness. The EIF review concluded that only 17 of the 75 programmes reviewed had evidence that suggested they would be effective if carefully commissioned, while only one of the 19 universal programmes in their review met this level of evidence (Asmussen *et al.*).

One attempt to address the evidence gap for large scale, well-designed evaluations of universal parenting programmes was the two-year CANparent trial in three English LAs, funded by the UK government's Department for Education, comprising 12 providers of universal parenting classes for parents of children aged 0–6 years. Using a quasi-experimental design, the evaluation indicated that universal parenting programmes were associated with small but significant improvements in parents' self-efficacy, interest in parenting and total parenting skills as well as parental mental well-being in relation to a comparison group of parents in LAs who had not received CANparent programmes (Lindsay and Totsika, 2017).

In the present study, we aim to extend the evidence base on the effectiveness of a universal parenting programme, Parent Gym, which is implemented in the community, funded and operated independently by Parent Gym, the provider (<https://uk.themindgym.com/about-us/partnership-with-parent-gym/>). Parent Gym is a six-week manualised programme comprising six two-hour sessions which address: communication, how to balance warmth and discipline, how to be consistent with setting limits, how to raise healthy children, how to encourage learning and how to build a support network for parents and children. Each course, comprising up to 20 parents, is delivered by a volunteer Parent Gym coach who has received assessment and training. Participative sessions are supported by a free magazine for the parents comprising ideas to develop the learning from the session and tasks to be completed between sessions. Parent Gym is a philanthropic programme funded by Mind Gym and is offered in areas of multiple deprivation, those within the top 30 per cent of the Income Deprivation Affecting Children Index, operating through primary schools and children's centres at zero cost to parents and schools (www.parentgym.com).

To date, a qualitative study indicated that participant parents were positive about the programme and reported improvements in their child's behaviour problems as a result of the approaches learned by attending the programme, and this persisted over two months (Driscoll *et al.*, 2012). A subsequent pre–post study with a small comparison non-intervention group produced mixed findings, with indications of improvement relative to the comparison group on some, but not all, measures (Thomae and Driscoll, 2012).

The aim of the present study was to evaluate the effectiveness of Parent Gym and thereby to extend the currently limited research on the effectiveness of universal parenting programmes when implemented in natural settings in the community. We examined change in 380 parents who had attended Parent Gym classes against a randomly selected comparison group of 186 parents who had not attended a parenting programme. This is a stronger design than a comparison of only pre–post improvement of parents who attend the programme.

Methods

Design

Evaluation of the Parent Gym programme was controlled, whereby the changes between pre- and post-implementation of the programme for the Parent Gym group were compared with changes on the same measures in a retrospectively-defined comparison sample of randomly selected parents from the CANparent trial. Comparative designs are superior to pre–post only designs as they provide a control against changes over time, independent of receiving the intervention. It is very difficult to implement large scale “real life” effectiveness studies in the community as there is no incentive for comparison participants to engage in the research compared, for example, with a waiting list control design where participants have the opportunity to receive the intervention later. We had the opportunity to strengthen the design by the use of a large comparison group of parents of children of the same age range which was used in a separate study, the CANparent trial, also as a control group against which to compare the effects of the implementation (Lindsay and Totsika, 2017). This control sample comprised parents who had been selected at random from the defined population of parents by a very rigorous method using the government’s child benefit data from Her Majesty’s Revenue and Customs. Hence, the design included two enhancements above a pre–post design: a comparison of the intervention group with a control group of parents who did not take the programme, and the random selection of the control group parents through a rigorous process.

For the comparison sample, 16 LAs in the CANparent trial were randomly selected from all English LAs where CANparent was not being implemented. These LAs were nationally representative with respect to key demographics and were chosen as comparison LAs to the CANparent LAs (Cullen *et al.*, 2014; Lindsay and Totsika, 2017). A total of 1,535 parents were selected by a two-stage random sampling procedure based on Her Majesty’s Revenue and Customs child benefit records, which at the time of the study was a non-means tested benefit with an almost universal coverage. A group of 547 parents were then selected at random from the total comparison group to provide comparative population data on the Being a Parent (BAP) scale (see Measures). For the Warwick–Edinburgh Mental Well-being Scale (WEMWBS), norms were available from the UK development and validation study (Tennant *et al.*, 2007).

Participants

A total of 762 parents attended Parent Gym classes of whom 94.7 per cent were female, with a median age of 26–35 years. The majority (74.3 per cent) were members of ethnic minorities, 9.4 per cent had no educational qualifications and 23.2 per cent were single parents. The comparison sample of 558 parents were similar in age (median age range 26–35 years), but were more likely to be White British (77.2 per cent). Approximately 11 per cent had no educational qualifications and 30.5 per cent were single parents.

Measures

Two instruments were used to examine the effectiveness of Parent Gym with respect to its impact on parenting skills and parent mental well-being.

BAP Scale (Johnston and Mash, 1989) comprises 17 items each rated on six-point scales. We used the recent three-factor solution (Gilmore and Cuskelly, 2009) supported by our earlier

study of CANparent (Lindsay *et al.*, 2014) to define three sub-scales. Parenting satisfaction comprises seven items, which reflect parental anxiety, frustration and motivation with BAP. Parenting self-efficacy, also seven items, reflects parents' sense of competence with BAP. The third scale, parenting interest, which examines how interested the parent is in parenting, comprises three items. The three scales may be combined to produce a total score. High scores represent positive perspectives. Internal consistency (Cronbach's α) of intervention group scores was acceptable for BAP satisfaction (0.72), BAP efficacy (0.74) and BAP total score (0.74) but lower for BAP interest in parenting (0.50). The BAP interest in parenting score is included in the analysis but care should be exercised in its interpretation given its low internal consistency. The mean (standard deviation) scores from the CANparent comparison sample were: BAP satisfaction $M = 28.93$, $SD = 6.48$; BAP efficacy $M = 31.38$, $SD = 4.72$; and interest in parenting $M = 11.63$, $SD = 1.53$ (Table I).

Parent mental well-being was examined through the WEMWBS (Tennant *et al.*, 2007). The WEMWBS is a subjective measure of positive mental health including experience of happiness and life satisfaction, and perspectives on personal relationships and personal functioning. It comprises 14 items each rated on a 1–5 point scale where higher scores represent greater mental well-being. The total score of mental well-being is calculated as the sum of all 14 items. Internal consistency in the intervention group was high ($\alpha = 0.91$). The national mean is 51 (inter-quartile range is 45–61; Tennant *et al.*, 2007).

We were unable to include child measures also as Parent Gym wished to limit the impact of completing evaluation measures on parents.

Procedure

Parent participants were recruited directly by Parent Gym. Parents enrolled with the programme in response to advertisements in the community and in particular through schools where Parent Gym had arranged to run a course. Financial support was provided by the parent company, Mind Gym. Consequently, all parents received their course free. Demographic information was recorded on registration. Parents completed the pre-course version of the measures at their first class meeting, after which the questionnaires were returned to the research team, and the post-course version during the final session six weeks later, after which the post-course measures were returned to the course team. These parents attended one of 86 Parent Gym courses held in 76 schools, with three classes held in one school, two classes in each of six schools and one class in each of remaining 69 schools. Parent Gym was implemented by at least 66 different trained coaches: 44 delivered one course, 18 took two courses, 1 took three and details were missing for three courses.

The comparison sample of parents completed the pre-course BAP as part of a face-to-face interview at the parent's home. A follow-up post-course version of the BAP was posted to these parents about six weeks later with a return paid envelope; response rate 34.0 per cent, $n = 186$.

The post-course response rate for the Parent Gym sample was 55.0 per cent. Although higher than the response rate in the comparison population sample, the response rate is overall rather

Table I Comparison of Parent Gym and comparison group pre- and post-course results

	Parent Gym			Comparison			Effect size*
	Pre-mean (SD)	Post-mean (SD)	n	Pre-mean (SD)	Post-mean (SD)	n	
BAP satisfaction	22.84 (5.75)	26.02 (5.82)	384	28.93 (6.48)	29.51 (5.97)	185	0.44
BAP self-efficacy	29.36 (5.11)	32.32 (4.67)	385	31.38 (4.72)	28.38 (3.07)	186	1.38
BAP interest in parenting	14.14 (2.85)	14.75 (2.75)	385	11.63 (1.53)	11.76 (1.56)	185	0.19
BAP total score	66.44 (9.61)	73.19 (9.59)	380	70.49 (9.67)	68.06 (8.16)	186	1.05
WEMWBS	48.46 (8.03)	53.19 (7.98)	414	50.7 ^a (8.79)	50.7 ^a (8.79)	1749 ^a	na

Notes: *Effect size is the standardised mean difference of change over time within parent gym (post to pre) in relation to change over time in the comparison group (Higgins and Green, 2011). ^aThis is the standardisation sample of WEMWBS as reported by Tennant *et al.* (2007). $p < 0.001$ in all cases

low but at levels comparable to other large scale effectiveness trials in community samples (Fives *et al.*, 2014; Marryat *et al.*, 2017). We, therefore, examined the patterns of missing data. Fisher's exact probability test revealed that post-course data were more likely to be missing from male rather than female parents ($p = 0.005$); from White British rather than minority ethnic parents ($p < 0.001$); from parents who had no educational qualifications ($p < 0.001$); and from single parents ($p < 0.001$).

Comparing patterns of missing data within the Parent Gym and comparison group, parent gender, ethnicity or education level were not associated with missing data within Parent Gym or comparison groups. However, single parents were more likely to have missing data at post and this was the case in both groups (Parent Gym $p < 0.005$, Comparison $p = 0.001$). Parental age was not associated with missing data in the Parent Gym group (Mann Whitney test, $p = 0.120$) but younger parents were more likely to have missing data at post in the comparison group, $p < 0.001$.

Unlike efficacy trials which typically have substantial involvement from the research team to optimise retention, effectiveness studies in community settings depend on the implementation of the data gathering from parents to be conducted by the programme implementation staff, in this case Parent Gym coaches, supported by the administration of the main programme team. The level of post-course responses was similar to other large scale effectiveness studies such as the Parenting Early Intervention Programme (Lindsay and Strand, 2013; Lindsay *et al.*, 2011; Fives *et al.*, 2014; Marryat *et al.*, 2017). The response rate for the comparison group at 33.5 per cent was lower: unlike a waiting list control group, this was a non-intervention group which had no possibility of benefitting from the study later. Given the high level of missing data, it is not valid to account for this missing data by multiple imputation as this produces biased estimates (Allison, 2012). We, therefore, analysed data on those participants with available data, and we accounted for the association between missingness and demographic profile of participants by including variables associated with missing data in the models as covariates, whilst also accounting for a likely differential pattern of missingness between groups by including demographic profile interactions with group membership in the models.

Ethical approval

Ethical approval was given by the University of Warwick Humanities and Social Sciences Research Ethics Committee. Parents were provided with written information about the project and gave their written informed consent to participate in the evaluation and for their data to be used in publications. They were informed that all data would be anonymised and that they were free to withdraw at any time and have their data removed.

Results

At pre-course, the Parent Gym group had lower levels of BAP satisfaction (mean = 22.84, SD = 5.75) compared with the comparison sample (mean = 28.93, SD = 6.48); BAP efficacy (Mean = 29.36, SD = 5.11) compared with mean = 31.38, SD = 4.72 for the comparison group; and BAP interest in parenting (mean = 14.14, SD = 2.85 compared with mean = 11.63, SD = 1.53 for the comparison group. The Parent Gym group also had lower levels of mental well-being (mean = 48.46, SD = 8.03) compared with WEMWBS norms, mean = 50.7, SD = 8.79 (Tennant *et al.*, 2007).

Table I presents the mean scores of the two groups over time, along with a standardised mean difference (effect size) that was calculated to examine the between-group difference which changes over time accounting for the within-group pre-post correlations. Effect sizes can be interpreted as showing the magnitude of change within the Parent Gym group compared to change in the comparison group.

To examine whether differences in BAP scores were also statistically significant, we conducted a series of 2x2 ANCOVAs. Group (Parent Gym vs comparison) was the between subjects factor and time (Pre vs Post) the within subjects factor and ANCOVA results are presented first

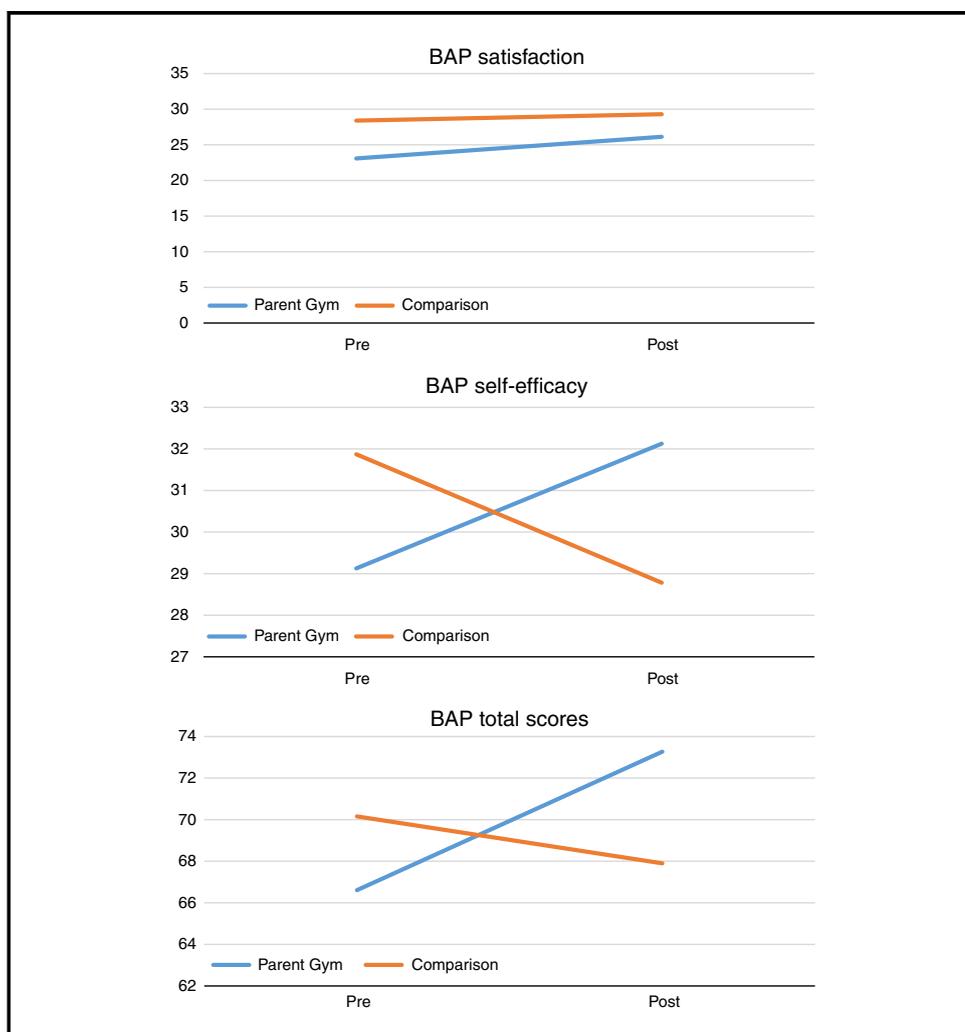
for group \times time interaction effect. If the interaction F ratio is not significant, time (pre v post) and group (Parent Gym v comparison group) main effects are presented. Effect sizes presented here differ from those reported in Table I (before controlling for covariates), as they are derived after controlling for the covariates.

Accounting for the effect of demographic characteristics, there was a significant interaction between time and group in BAP satisfaction scores, ($F(1, 562) = 12.88, p < 0.001$ (Figure 1)), indicating that the increase in parenting satisfaction was significantly greater for the Parent Gym group than the comparison group (Figure 1). The effect size for the Parent Gym group was large, $d = 0.80$, 95% CI: 0.65, 0.95 (Table I).

With respect to BAP self-efficacy, there was a significant interaction between time and group, $F(1, 564) = 171.34, p < 0.001$. Parent Gym group scores increased significantly compared with the comparison group scores, which reduced over time (Figure 1). The effect size of the increase in BAP efficacy scores for the Parent Gym group was very large, $d = 1.93$, 95% CI: 1.76, 2.09 (Table I).

With respect to BAP interest in parenting, there was no significant interaction between time and group, $F(1, 563) = 3.48, p = 0.063$. There was a significant difference over time, $F(1, 609) = 5.07$,

Figure 1 Interaction effects for Being a Parent (BAP) pre- to post-course comparisons, after accounting for the effect of parental gender, age, educational qualifications, single family status and ethnicity



$p = 0.025$, and a significant group effect, $F(1, 609) = 194.62$, $p < 0.001$, indicating that overall parenting interest scores were higher in the Parent Gym group, and increased over time in both groups, but they did not increase more in the Parent Gym group. The effect size for BAP interest in parenting was small ($d = 0.25$, CI: 95% 0.10, 0.41) (Table I).

Finally, analysis of BAP total scores demonstrated a significant interaction effect, $F(1, 599) = 93.72$, $p < 0.001$, indicating that the BAP total scores in the Parent Gym group increased while those of the comparison group decreased over time. Effect size was very large for BAP total score, $d = 1.46$, 95% CI: 1.30, 1.61 (Table I). Figure 1 presents all BAP scores for the two groups over time.

Comparison data for WEMWBS were available from the scale's standardisation sample at a single time point (Tennant *et al.*, 2007). Therefore, we compared the Parent Gym sample's pre- and post-results with the national norms separately using *t*-tests (see Table I for means). At pre-intervention, the Parent Gym group scored highly significantly below the national norms, indicating lower mental well-being: $t(1, 2161) = 4.74$, $p < 0.001$. At post-intervention the Parent Gym score was highly significantly greater than the national norm: $t(1, 2161) = 5.27$, $p < 0.001$. We estimated the difference between the two groups at each time point separately. In both cases, the effect sizes were small (pre: $d = -0.26$, 95% CI: -0.37 , -0.15 ; post: $d = 0.29$, 95% CI: 0.18, 0.40). These findings indicate that before the Parent Gym course, parents' mental well-being was about a third of a standard deviation below national norms, whereas after the intervention it rose to about a third of a standard deviation above the national norm, indicating a medium effect size.

Discussion

This study aimed to examine the effectiveness of a universal parenting programme, Parent Gym, as delivered by practitioners in community settings. The study adds to the relatively limited research evidence that addresses whether universal parenting programmes are effective when implemented in a natural community setting. In this section, we first consider the evidence for the effectiveness of Parent Gym and then consider the contribution made by the present study to the wider research base on researching implementations of universal parenting programmes in community settings.

Effectiveness of Parent Gym

Findings demonstrated that parents who took part in the Parent Gym universal parenting programme initially had lower levels of mental well-being, satisfaction with BAP and parenting self-efficacy. Following attendance at a Parenting Gym course parents experienced moderate but significant improvements in their mental well-being, their parenting self-efficacy and parenting satisfaction. Compared to parents who did not receive the intervention, gains in parenting self-efficacy were actually very large (effect sizes over 1 for BAP total score and BAP self-efficacy), while gains in parenting satisfaction and mental well-being were small to medium. The only aspect of parenting that did not change was interest in parenting, which tended to be higher initially in the Parent Gym group. However, note the low reliability of this short scale.

When the covariates of ethnicity, level of educational qualifications and being a single parent or not were built into the model, controlling for the impact of these other factors, effect sizes of the differences between the Parent Gym and comparison groups in three BAP scores increased and became large, BAP satisfaction 0.80; or very large, BAP self-efficacy 1.93, BAP total score 1.46. However, interest in parenting (0.25) was small. Pre-post course differences in mental well-being (WEMWBS) improved from about one third of a standard deviation below the national mean to about one third of a standard deviation above the national mean, indicating a medium effect size. These results provide evidence of the effectiveness of Parenting Gym. It is also important to note that, despite taking ethnicity into account statistically through the analysis of covariance, the Parent Gym sample largely comprised parents from minority ethnic backgrounds. Cultural factors are important for practitioners, and researchers, to consider in the delivery of parenting programmes.

From trials to community evaluation

It is not feasible to expect that the efficacy of all or even many of the large number of parenting programmes developed in the UK will be subjected to an RCT, especially universal programmes. In recognition of this, but acknowledging the need to develop an evidence base, the EIF has produced an evidence rating system for programmes, which is available online (<http://eif.org.uk/evidence-standards>). The EIF's review of programmes allows commissioners and others, including parents, to be made aware of the level of evidence for the effectiveness of individual programmes (<http://guidebook.eif.org.uk/programmes-library>). Programme providers may then decide to build up evidence of the effectiveness of their programmes, which starts with the logic model which sets out the pathway from theoretical underpinnings leading to the development of the programme, to the expected outcomes for parents attending the programme. This includes producing the evidence necessary to demonstrate the effectiveness of the programme, initially from small trials and then from the evaluation of the programme when delivered in community settings on a large scale. The present study reflects this process whereby Parent Gym commissioned independent research to build upon the evidence from the CANparent trial to evaluate effectiveness from regular service delivery of the programme community settings.

The use of a pre-post comparison and quasi-experimental studies of the effects of a parenting programme are typically viewed as preliminary evidence in systems such as that of the EIF – i.e. precursors to RCTs. However, beyond the RCT as a measure of efficacy, it is also important to examine whether this (efficacy) is maintained outside a rigorous, but often small, RCT when implemented in a natural setting (effectiveness) and on a larger scale. In effectiveness evaluations, community practitioners will implement the programme as practice as usual without the oversight and framework of a research team running a trial, which may be led by the programme originator and with highly motivated researchers. These approaches represent part of an evaluation strategy comprising several stages from the fundamental scientific bases of the programme through efficacy to effectiveness trials, and then studies of implementation (Society for Prevention Research: Flay *et al.*, 2005). Hence, the sequence includes not only the evidence of what works, but also under what conditions, and hence sustainability (August *et al.*, 2006; Gottfredson *et al.*, 2015).

The size of effects of parenting programmes is likely to differ depending on both the aim of the programme and the rigour of the study. The first concerns whether the programme is designed to be universal, available to all parents; targeted-selective, aimed at families whose characteristics put them at greater risk of having or developing problems; or targeted-indicated, for families where a parent or child has an identified difficulty that requires more intensive support. There is a greater potential for change when working with a targeted group of parents because these have been selected for the high level of difficulties they already face (Furlong *et al.*, 2012; Lindsay and Strand, 2013). Universal offers deliberately seek to attract a much wider group of parents, many of whom may experience few difficulties and have relatively little scope for improvement on the measures used (Doyle *et al.*, 2018; Lindsay and Totsika, 2017). In that sense, therefore, lower levels of effect sizes achieved following universal programme provision may be predicted but these may be considered reasonable.

Second, the use of quasi-experimental or randomised controlled designs provides a higher level of rigour than pre-post designs without a control group. The results of the present study, using a quasi-experimental design, therefore, provide important evidence for the effectiveness of the Parent Gym programme, compared with universal programmes whose evidence has been derived from research using less rigorous designs. Finally, the present research provides more evidence for the developing field of evaluation of sustainability of effectiveness of parenting programmes when implemented in community settings outside trial conditions (Moore *et al.*, 2017).

Strengths and limitations

This study of a parenting programme delivered in community settings had a number of strengths. Consequently, the study adds to the limited evidence available for universal parenting programmes.

The evaluation of a universal parenting programme in the community, outside a funded trial, is challenging. However, this challenge must be faced if the evidence base of programmes is to improve. Currently, there is a lack of evidence about most universal parenting programmes and, where evidence exists, it is at the lower levels of the evidence hierarchy described above, primarily qualitative studies of the perspectives of parents' or non-controlled pre-post comparisons indicating improvement. The present study improved on these designs. It was true to the intention of the provider, Parent Gym, that the research would examine all the data provided by parents who attended the course. It was large scale, both in terms of the number of parents and also the number of facilitators and groups attended. In addition, we used data from an independent community sample of parents with a child of the same age range who had not participated in the programme and who had been selected at random from a large sample of parents. In addition, our analyses took into account missing data and also the influence of demographic factors. Our analyses, therefore, compared findings of the effectiveness of Parent Gym with those of a randomly selected non-intervention community sample over a similar period. This is a strong design which compares the improvements of parents who attended the programme against a comparable group who did not, so allowing the evaluation of relative improvements.

As noted, there are, however, limitations inherent in the evaluation of universal parenting programmes delivered in the community and these occurred in the present study. The Parent Gym and comparison samples were similar on most demographic factors, for example both were overwhelmingly female, but the Parent Gym group were substantially more likely to be from a minority ethnic background. The gender distribution, however, is typical of parenting programme attendees and, importantly, all demographic factors were controlled for in the analysis producing valid comparisons. There was substantial loss of post-course data in the Parent Gym group, reducing this to 55 per cent of the initial sample and was higher in the control group. Although similar losses are also found in large scale effectiveness and sustained implementation studies, for example 53.5 per cent parents' post-course data were available in the Parenting Early Intervention Programme (Lindsay and Strand, 2013), these data losses limit the interpretation of results. In addition, no data on children's behaviour were collected as the programme delivery organisation, Parent Gym, was concerned that this additional measure was an unreasonable extra measure for parents and could adversely affect recruitment and retention. Finally, no data were collected on group leaders, other than that they were all trained successfully to deliver Parent Gym. These various factors are common in community studies, with funded trials. Nevertheless, overall the study provided a valid comparison of the relative effects of the Parent Gym parenting programme against randomly selected parents who had not received the programme.

Conclusions

There is indicative evidence that a universal parenting programme, Parent Gym, which is delivered in community settings was associated with large improvements in parenting self-efficacy and parenting satisfaction, and moderate gains in parents' mental well-being. The evidence supports its continued use in the community as a universal provision. Given the limitations, which are common to those found in studies of universal programmes delivered as part of a community service rather than a formal trial, care is required in interpreting these results. Further research is needed to examine whether benefits from Parent Gym participation can be seen for other domains of parenting, such as parent-child relationship, and also other outcomes, including child behaviour and skills; and whether the benefits are maintained over time.

Key messages

1. The Parent Gym parenting programme is indicated to be an effective method for improving parents' self-efficacy as a parent, parenting satisfaction and parents' mental well-being.
2. The study increases the relatively limited evidence for universal parenting programmes being delivered in the community outside formal trials.

3. Evaluation of universal parenting programmes is possible during community implementation but it is necessary to balance the needs of the research with the practical needs of the provider, e.g. demands on parents associated with number of measures.

Implications of the research for policy and practice

- Parent Gym universal parenting programme was associated with improvements in parents' self-efficacy, parenting satisfaction and mental well-being.
- Commissioners have evidence to assist choice of the programme as part of their support for parents.
- The study provides indicative evidence that universal parenting programmes can produce positive improvements which are personally and socially important across the population.
- We also demonstrate the benefits of programme developers commissioning evaluation from independent researchers to provide independent evidence for consideration by the public and other professionals.

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