



Evaluating Parent Gym: a community implemented universal parenting programme

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Evaluating Parent Gym: a community implemented universal parenting programme

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6 **Abstract**
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9 **Background**
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11 There is growing evidence of the efficacy and effectiveness of targeted parenting programmes but
12 the evidence for universal parenting programmes is much less developed. The purpose of this study
13 is to evaluate the effectiveness of Parent Gym, a parenting programme delivered in schools.
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19 **Design/methodology/approach**
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21 In this paper a quasi-experimental design was utilised. Parents were recruited to the Parent Gym
22 programme comprising six 2-hour weekly sessions. Parents completed measures of their parenting
23 efficacy, parenting satisfaction, interest in parenting, and mental well-being at pre- and post-course.
24 Comparative data were derived from a retrospectively defined randomly selected group of non-
25 participant parents at two time points, equivalent to the length of the Parent Gym course.
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33 **Findings**
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35 Changes in the Parent Gym group were compared with the comparison group using repeated
36 measures mixed 2x2 ANOVAs, which accounted for the potential effect of demographic
37 characteristics (parent gender, ethnicity, parent age, parent education level, and single parent
38 status), and their potential interaction with group membership. Parenting satisfaction showed a
39 significantly greater increase for the Parent Gym group with a large effect size ($d = 0.80$). Regarding
40 parenting efficacy, there was a significant time x group interaction indicating efficacy scores
41 increased in the Parent Gym group but decreased in the comparison group ($d = 1.93$). Mental well-
42 being also improved for the Parent Gym group from below the national norm before the course ($d =$
43 -0.26) to significantly greater than the national norm at post-course ($d = 0.29$).
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57 **Research implications/limitations**
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3 Findings from the present study indicate that a universal programme, Parent Gym, was associated
4 with very large improvements in parents' self-efficacy, large improvements in parenting satisfaction
5 and moderate improvements in mental well-being, when delivered in community settings. It is
6 recommended that future studies include a measure of children's behaviour and include a follow up
7 of the programme's effectiveness over time.
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13 **Practical implications**

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15 The evidence provides support for the continued use of the Parent Gym programme in the
16 community as universal provision for parents.
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25 **Introduction**

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27 High levels of prevalence of behavioural, emotional, and social difficulties in children have been
28 identified in many countries (Belfer *et al.*, 2008; Green *et al.*, 2005), which are associated with a
29 range of negative subsequent outcomes (Piquero *et al.*, 2012). One approach to addressing the
30 challenge presented to society by this phenomenon has been the development of parenting
31 programmes designed to promote positive parenting. This strategy has its basis in evidence that
32 positive social development is associated with the quality of parent-child interactions (Pastorelli *et al.*,
33 2018; Sanders *et al.*, 2014) and the nurturing environments within the family (Biglan *et al.*, 2012).
34 It is an approach that has received strong support politically, including the Council of Europe
35 Recommendation on Policy to Support Positive Parenting (Committee of Ministers of the Council of
36 Europe, 2006).
37
38 In addition, a strong driver for supporting early intervention is financial. Chowdry and Fitzsimmons
39 (2016) have estimated the short term costs of late interventions addressed at a range of problems
40 experienced by children and young people, including domestic violence and abuse, child neglect and
41 maltreatment, and mental health problems, to be nearly £17 billion per annum. This estimate does
42 not include the lifelong costs of late interventions (Bonin *et al.*, 2011). England's Chief Medical
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3 Officer has also argued the case for early intervention, including parenting programmes (Davies,
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5 2013) and intervention across a range of health challenges through a policy of proportionate
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7 universalism. This seeks to improve everyone's life but recognises a range of approaches is required,
8
9 including both targeted and universal approaches.

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12 Given the scale of the challenge, with estimates of 10-20% of children presenting behavioural,
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14 emotional and social difficulties (Green *et al.*, 2005; Collishaw, 2015), it is clear that a wide scale
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16 public health approach is required. Parenting programmes have been designed to have a proximal
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18 impact on parents, for example their parenting skills and mental well-being. Improvements in these
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20 factors are expected to, as a result, have a distal positive effect in improving their children's
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22 behavioural development as a result of improved parenting. This strategy may be characterised as
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24 comprising three levels: universal, aimed at and available to all parents; targeted, designed for
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26 parents of children experiencing or at risk of developing behavioural difficulties; and specialist, for a
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28 small minority of parents whose children's difficulties are severe and/or their own abilities to bring
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30 up their children are substantially compromised.
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35 In practice, the main developments, and the most substantial evidence base for the effectiveness of
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37 interventions in improving parents' parenting skills and mental well-being, and also their children's
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39 behavioural development, have been at the targeted level (e.g. Furlong *et al.*, 2012). A number of
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41 parenting programmes now have strong evidence for their efficacy from more than one randomized
42
43 controlled trial (RCT) and from meta-analyses or systematic reviews (Nowack and Heinrichs, 2008;
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45 Sanders *et al.*, 2014). There is also evidence for the effectiveness of targeted parenting programmes
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47 that have been implemented in community settings and rolled out on a large scale. Lindsay *et al.*
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49 (2011) report on the UK government's implementation of the Parenting Early Intervention
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51 Pathfinder rolled out across 18 English local authorities (LAs), which demonstrated the effectiveness
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53 of three programmes implemented in improving parenting skills and parents' mental well-being and
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55 also reduced their children's behavioural difficulties. As a result, the UK government rolled out these
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57 three, plus additional targeted programmes selected to meet specific criteria for evidence of
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3 efficacy, across all 152 local authorities (LAs) in England (Parenting Early Intervention Programme,
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5 Lindsay and Strand, 2013). This study demonstrated that the effectiveness of the parenting
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7 programmes in improving parenting and children's behaviour could be maintained when rolled out
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9 on a national scale.

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12 Evidence for the efficacy and effectiveness of universal parenting programmes developed in the UK
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14 is limited although a large number of programmes with little evidence are available to parents
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16 (Asmussen et al., 2016). Improving this situation is challenging. Randomised controlled trials (RCTs)
17
18 are regarded as the 'gold standard' but such research, in order to be cost effective and useful,
19
20 should be limited to programmes for which there is already substantial, lower level evidence. This
21
22 evidence hierarchy ranges from a sound theoretical basis, which guides the content of a parenting
23
24 programme; construction of the programme and organisational support for delivery including
25
26 training of facilitators; feasibility trial(s), e.g. a pre-post design, to test improvement on key
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28 measures over the period of the programme, practicality and acceptance; and controlled *efficacy*
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30 trials(s) where the effects of the programme are compared with a control group of parents randomly
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32 selected from comparable parents who do not undertake the programme, typically a randomised
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34 controlled trial (Lindsay & Strand, 2013). In addition, *effectiveness* trial(s) in community settings,
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36 with scaling up of reach and number of parents are needed. Finally, there is a new interest in studies
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38 of programmes as part of community delivery outside the rigours of trials: sustained implementation
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40 (Gray et al., 2018).
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47 Hence the development of a substantial, rigorous evidence base is both demanding and also, by
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49 implication, very expensive. Furthermore, this is particularly so for universal programmes as the
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51 challenges are magnified compared with more highly controlled studies that are possible through
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53 formal trials. First, recruitment is open to communities, leading to the likelihood of a wide range of
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55 parents with respect to ethnicity, social disadvantage, and need for parenting support. Second,
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57 recruitment relies on widespread communication, for example advertising, which also may produce
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59 diverse participants. Furthermore, recruitment is a process ranging from initial engagement of a
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3 parent's interest, initial agreement to participate (enrolment) and then initial attendance. Each of
4 these sub-processes is complex with limited evidence of optimal approaches (Gonzales et al., 2018).

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7 Third, establishment of a control group is problematic with respect to identification of and access to
8 appropriate parents, to secure the initial agreement of parents to be recruited, and then to
9 successfully secure their completion of pre- and, subsequently, post-measures in order to enable a
10 fair comparison with the programme intervention group, when there is no incentive to motivate
11 their compliance.
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14 Fourth, providers may place limitations on the number, type and time available for measures as their
15 main interest is service delivery. Fifth, ensuring systematic evaluation of fidelity of programme
16 delivery may not be practical and structured collection of data on facilitators may not be possible.
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19 Sixth, collection of data may be more open to substantial errors from the programme delivery
20 organisation including failure: to deliver measures for parents to complete, to present measures to
21 and/or collect from parents, and to return completed measures to the research team. This
22 administrative data loss may equal data lost as a result of parent drop out, even in an effectiveness
23 trial (Lindsay & Strand, 2013). Seventh, data attrition can be substantial in funded community trials
24 (Jonkman & van Wonderen, 2017) and feasibility studies (Barnes & Stuart, 2016) because of
25 participant drop out. This is more likely with universal programmes where there is no initial match
26 between a parent's needs and characteristics, and the programme's aims, e.g. parents with
27 reasonable existing parenting skills, confidence, satisfaction, and low levels of parenting stress may
28 join and later decide the programme is not necessary (Lindsay & Totsika, 2017).
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31 These examples of threats to the validity of results of the effectiveness of evaluation of universal
32 parenting programmes are inherent in such interventions. The effect of these factors is related to
33 the amount of finance and organisational expertise available to mitigate their impact on any
34 evaluation study, as well as the programme delivery itself.
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3 In summary, the evaluation of the effectiveness of universal programmes is very challenging.
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5 Nevertheless, there are attempts to gather evidence, typically at the lower levels of the evidence
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7 hierarchy, and indeed programme providers may wish to improve their programme's evidence base.
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10 Within the UK, the most studied is probably the Solihull Approach: Understanding your child's
11
12 behaviour (Douglas, 2006). Qualitative studies have supported the usefulness of the programme in
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14 increasing parents' knowledge of strategies and solutions for responding to their child's problems
15
16 and improving parent-child relationships and the programme's popularity with parents (Vella *et al.*,
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18 2015) and health visitors who deliver the programme (Lumsden and Sarankin, 2014; Drea, 2014).
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20 However, the studies of effectiveness using pre-post comparisons with or without a comparison
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22 group are limited by small sample sizes (Douglas and Brennan, 2004; Bateson *et al.*, 2008; Milford *et*
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24 *al.*, 2006); or by limited designs, for example feedback from parents after sessions with no pre-post
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26 comparisons (Johnson and Wilson, 2012; Appleton *et al.*, 2016).
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31 The largest study is a population level (universal) evaluation of Triple P (Sanders, 1999) in the
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33 Longford Westmeath region of Ireland (Doyle, Hegarty, and Owens, 2018). This was substantial in
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35 both number of parents involved and in the study of four levels of the Triple P programme: level 1,
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37 media strategy; level 2, Triple services; level 3, workshop Triple P; and level 4, Group Triple P.
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39 Significant improvements compared with a comparison sample were found in parenting skills and
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41 children's behaviour although, for example, the Strengths and Difficulties Total difficulties and
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43 Emotional Symptoms effect sizes were low, $d = -0.11$ and -0.12 respectively.
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47 Little *et al.* (2012) also evaluated the Triple P Group programme as well as Incredible Years
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49 (Webster-Stratton, 1994) and Promoting Alternative Thinking Strategies (PATHS: Greenburg and
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51 Kusche, 2002) as part of the Brighter Futures programme in Birmingham. They found mixed results,
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53 with evidence for the positive impact of Incredible Years, with small to medium effects sizes (e.g.
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55 SDQ Total score $d = 0.50$, Conduct problems $d = 0.39$); modest improvements for PATHS, whose
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57 effects washed out in a two-year follow-up; and no statistically significant improvements of the
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3 Triple P group on any measure. This negative finding for Triple P is unusual given the large amount of
4 positive evidence (e.g. de Graaf *et al.*, 2008; Nowack and Heinrichs, 2003; Sanders *et al.*, 2014).

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7 However, the multilevel Triple P programme was found to have no impact on early child mental
8 health problems in a population study in Glasgow over six years (Marryat *et al.*, 2017).

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11 In addition, a large number of programmes to improve parenting skills have been developed
12 internationally but often the evidence base for their effectiveness is limited, particularly for universal
13 programmes. In the UK alone, the Department for Education (2013) reported 51 programmes that
14 had been evaluated by the National Academy of Parenting Support and more recently the Early
15 Intervention Foundation (EIF) reviewed 75 programmes of early intervention (Asmussen *et al.*,
16 2016). These have often been developed locally and implemented with little or no evidence for their
17 effectiveness. The EIF review concluded that only 17 of the 75 programmes reviewed had evidence
18 that suggested they would be effective if carefully commissioned, while only one of the 19 universal
19 programmes in their review met this level of evidence (Asmussen *et al.*)

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22 One attempt to address the evidence gap for large scale, well designed evaluations of universal
23 parenting programmes was the 2-year CANparent trial in three English LAs, funded by the UK
24 government's Department for Education (DfE), comprising 12 providers of universal parenting
25 classes for parents of children aged 0-6 years. Using a quasi-experimental design, the evaluation
26 indicated that universal parenting programmes were associated with small but significant
27 improvements in parents' self-efficacy, interest in parenting, and total parenting skills as well as
28 parental mental well-being in relation to a comparison group of parents in LAs who had not received
29 CANparent programmes (Lindsay and Totsika, 2017).

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31
32 In the present study, we aim to extend the evidence base on the effectiveness of a universal
33 parenting programme, Parent Gym, which is implemented in the community, funded and operated
34 independently by Parent Gym, the provider ([https://uk.themindgym.com/about-us/partnership-
35 with-parent-gym/](https://uk.themindgym.com/about-us/partnership-with-parent-gym/)). Parent Gym is a 6-week manualised programme comprising six 2-hour sessions
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3 which address: communication, how to balance warmth and discipline, how to be consistent with
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5 setting limits, how to raise healthy children, how to encourage learning, and how to build a support
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7 network for parents and children. Each course, comprising up to 20 parents, is delivered by a
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9 volunteer Parent Gym coach who has received assessment and training. Participative sessions are
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11 supported by a free magazine for the parents comprising ideas to develop the learning from the
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13 session and tasks to be completed between sessions. Parent Gym is a philanthropic programme
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15 funded by Mind Gym and is offered in areas of multiple deprivation, those within the top 30% of the
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17 Income Deprivation Affecting Children Index (IDACI), operating through primary schools and
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19 children's centres at zero cost to parents and schools (www.parentgym.com).
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24 To date, a qualitative study indicated that participant parents were positive about the programme
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26 and reported improvements in their child's behaviour problems as a result of the approaches
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28 learned by attending the programme, and this persisted over two months (Driscoll *et al.*, 2012). A
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30 subsequent pre-post study with a small comparison non-intervention group produced mixed
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32 findings, with indications of improvement relative to the comparison group on some, but not all,
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34 measures (Thomae and Driscoll, 2012).
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38 The aim of the present study was to evaluate the effectiveness of Parent Gym and thereby to extend
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40 the currently limited research on the effectiveness of universal parenting programmes when
41
42 implemented in natural settings in the community. We examined change in 380 parents who had
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44 attended Parent Gym classes against a randomly selected comparison group of 186 parents who had
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46 not attended a parenting programme. This is a stronger design than a comparison of only pre-post
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48 improvement of parents who attend the programme.
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52 **Methods**

53 **Design**

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55 Evaluation of the Parent Gym programme was controlled, whereby the changes between pre- and
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57 post-implementation of the programme for the Parent Gym group were compared with changes on
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3 the same measures in a retrospectively-defined comparison sample of randomly selected parents
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5 from the CANparent trial. Comparative designs are superior to pre-post only designs as they provide
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7 a control against changes over time independent of receiving the intervention. It is very difficult to
8
9 implement large scale 'real life' effectiveness studies in the community as there is no incentive for
10
11 comparison participants to engage in the research compared, for example, with a waiting list control
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13 design where participants have the opportunity to receive the intervention later. We had the
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15 opportunity to strengthen the design by use of a large comparison group of parents of children of
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17 the same age range which was used in a separate study, the CANparent trial, also as a control group
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19 against which to compare the effects of the implementation (Lindsay & Totsika, 2017). This control
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21 sample comprised parents who had been selected at random from the defined population of parents
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23 by a very rigorous method using the government's child benefit data from Her Majesty's Revenue
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25 and Customs. Hence the design included two enhancements above a pre-post design: a comparison
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27 of the intervention group with a control group of parents who did not take the programme, and the
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29 random selection of the control group parents through a rigorous process.
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35 For the comparison sample, 16 local authorities (LAs) in the CANparent trial were randomly selected
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37 from all English LAs where CANparent was not being implemented. These LAs were nationally
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39 representative with respect to key demographics and were chosen as comparison LAs to the
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41 CANparent LAs (Cullen *et al.*, 2014; Lindsay and Totsika, 2017). A total of 1535 parents were selected
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43 by a two-stage random sampling procedure based on Her Majesty's Revenue and Customs child
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45 benefit records, which at the time of the study was a non-means tested benefit with an almost
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47 universal coverage. A group of 547 parents were then selected at random from the total comparison
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49 group to provide comparative population data on the Being a Parent scale (see Measures). For the
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51 Warwick-Edinburgh Mental Well-being Scale (WEMWBS) norms were available from the UK
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53 development and validation study (Tennant *et al.*, 2007).
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57 **Participants**

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3 A total of 762 parents attended Parent Gym classes of whom 94.7% were female, with a median age
4 of 26-35 years. The majority (74.3%) were members of ethnic minorities, 9.4% had no educational
5 qualifications and 23.2% were single parents. The comparison sample of 558 parents were similar in
6 age (median age range 26-35 years), but were more likely to be White British (77.2%). Approximately
7 11% had no educational qualifications and 30.5% were single parents.
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14 **Measures**

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17 Two instruments were used to examine the effectiveness of Parent Gym with respect to its impact
18 on parenting skills and parent mental well-being:
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22 *Being a Parent (BAP) Scale* (Johnston and Mash, 1989) comprises 17 items each rated on 6-point
23 scales. We used the recent 3-factor solution (Gilmore and Cuskelly, 2008) supported by our earlier
24 study of CANparent (Lindsay *et al.*, 2014) to define three sub-scales. Parenting satisfaction comprises
25 seven items, which reflect parental anxiety, frustration and motivation with being a parent.
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28 Parenting self-efficacy, also seven items, reflects parents' sense of competence with being a parent.
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31 The third scale, parenting interest, which examines how interested the parent is in parenting,
32 comprises three items. The three scales may be combined to produce a total score. High scores
33 represent positive perspectives. Internal consistency (Cronbach's alpha) of intervention group scores
34 was acceptable for BAP Satisfaction (.72), BAP Efficacy (.74) and BAP Total score (.74) but lower for
35 BAP Interest in parenting (.50). The BAP Interest in parenting score is included in the analysis but
36 care should be exercised in its interpretation given its low internal consistency. The mean (standard
37 deviation) scores from the CANparent comparison sample were: BAP Satisfaction $M = 28.93$, $SD =$
38 6.48; BAP Efficacy $M = 31.38$, $SD = 4.72$; and Interest in parenting $M = 11.63$, $SD = 1.53$ (Table 1).
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52 *Parent mental well-being* was examined through the Warwick-Edinburgh Mental Well-being Scale
53 (WEMWBS: Tenant *et al.*, 2007). The WEMWBS is a subjective measure of positive mental health
54 including experience of happiness and life satisfaction, and perspectives on personal relationships
55 and personal functioning. It comprises 14 items each rated on a 1-5 point scale where higher scores
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3 represent greater mental well-being. The total score of mental well-being is calculated as the sum of
4 all 14 items. Internal consistency in the intervention group was high ($\alpha = .91$). The national mean
5 is 51 (inter-quartile range 45-61; Tenant *et al.*, 2007).
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10 We were unable to include child measures also as Parent Gym wished to limit the impact of
11 completing evaluation measures on parents.
12

13 **Procedure**

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16 Parent participants were recruited directly by Parent Gym. Parents enrolled with the programme in
17 response to advertisements in the community and in particular through schools where Parent Gym
18 had arranged to run a course. Financial support was provided by the parent company, Mind Gym.
19
20 Consequently, all parents received their course free. Demographic information was recorded on
21 registration. Parents completed the pre-course version of the measures at their first class meeting,
22 after which the questionnaires were returned to the research team, and the post-course version
23 during the final session six weeks later, after which the post-course measures were returned to the
24 course team. These parents attended one of 86 Parent Gym courses held in 76 schools, with three
25 classes held in one school, two classes in each of six schools and one class in each of remaining 69
26 schools. Parent Gym was implemented by at least 66 different trained coaches: 44 delivered one
27 course, 18 took two courses, one took three, and details were missing for three courses.
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32 The comparison sample of parents completed the pre-course BAP as part of a face-to-face interview
33 at the parent's home. A follow-up post-course version of the BAP was posted to these parents about
34 six weeks later with a return paid envelope; response rate 34.0%, $n = 186$.
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39 The post-course response rate for the Parent Gym sample was 55.0%. Although higher than the
40 response rate in the comparison population sample, the response rate is overall rather low but at
41 levels comparable to other large scale effectiveness trials in community samples (Fives *et al.*, 2014;
42 Marryat *et al.*, 2017). We therefore examined the patterns of missing data. Fisher's exact probability
43 test revealed that post course data were more likely to be missing from male rather than female
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parents ($p = .005$); from White British rather than minority ethnic parents ($p < .001$); from parents who had no educational qualifications ($p < .001$); and from single parents ($p < .001$).

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 $p < .005$, Comparison $p = .001$). Parental age was not associated with missing data in the Parent Gym group (Mann Whitney test, $p = .120$) but younger parents were more likely to have missing data at post in the comparison group $p < .001$

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 – see also Fives *et al.* (2014) and Marryat *et al.* (2017)). The response rate for the comparison group at 33.5% 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

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3 Ethical approval was given by the University of Warwick Humanities and Social Sciences Research
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5 Ethics Committee. Parents were provided with written information about the project and gave their
6
7 written informed consent to participate in the evaluation and for their data to be used in
8
9 publications. They were informed that all data would be anonymised and that they were free to
10
11 withdraw at any time and have their data removed.
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14 Results

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18 At pre-course the Parent Gym group had lower levels of BAP Satisfaction (Mean = 22.84, *SD* = 5.75)
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20 compared with the comparison sample (Mean = 28.93, *SD* = 6.48); BAP Efficacy (Mean = 29.36, *SD* =
21
22 5.11) compared with Mean 31.38, *SD* = 4.72 for the comparison group; and BAP Interest in parenting
23
24 (Mean = 14.14, *SD* = 2.85 compared with Mean = 11.63, *SD* = 1.53 for the comparison group. The
25
26 Parent Gym group also had lower levels of mental well-being (Mean = 48.46, *SD* = 8.03) compared
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28 with WEMWBS norms, Mean = 50.7, *SD* = 8.79 (Tenant et al., 2007).
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33 Table 1 presents the mean scores of the two groups over time, along with a standardised mean
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35 difference (effect size) that was calculated to examine the between groups difference in changes
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37 over time accounting for the within group pre-post correlations (Table 1). Effect sizes can be
38
39 interpreted as showing the magnitude of change within the Parent Gym group compared to change
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41 in the comparison group.
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45 To examine whether differences in BAP scores were also statistically significant we conducted a
46
47 series of 2 x 2 ANCOVAs. Group (Parent Gym vs comparison) was the between subjects factor and
48
49 time (Pre vs Post) the within subjects factor and ANCOVA results are presented first for group x time
50
51 interaction effect. If the interaction F ratio is not significant time (pre v post) and group (Parent Gym
52
53 v comparison group) main effects are presented. Effect sizes presented here differ from those
54
55 reported in Table 1 (before controlling for covariates) as they are derived after controlling for the
56
57 covariates.
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<Table 1>

Accounting for the effect of demographic characteristics, there was a significant interaction between time and group in BAP Satisfaction scores, ($F(1, 562) = 12.88, p < .001$ (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 1)

With respect to BAP Self-efficacy, there was a significant interaction between time and group, $F(1, 564) = 171.34, p < .001$. 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 1)

With respect to BAP Interest in parenting, there was no significant interaction between time and group, $F(1, 563) = 3.48, p = .063$. There was a significant difference over time, $F(1, 609) = 5.07, p = .025$, and a significant group effect, $F(1, 609) = 194.62, p < .001$, 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 1).

Finally, analysis of BAP total scores demonstrated a significant interaction effect, $F(1, 599) = 93.72, p < .001$, 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 1). Figure 1 presents all BAP scores for the two groups over time.

<Figure 1>

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-

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2
3 results with the national norms separately using t-tests (see Table 1 for means). At pre-intervention,
4 the Parent Gym group scored highly significantly below the national norms, indicating lower mental
5 well-being: $t(1, 2161) = 4.74, p < .001$. At post-intervention the Parent Gym score was highly
6 significantly greater than the national norm: $t(1, 2161) = 5.27, p < .001$. We estimated the difference
7 between the two groups at each time point separately. In both cases the effect sizes were small (pre:
8 $d = -0.26, 95\% \text{ CI: } -.37, -.15$; post: $d = 0.29, 95\% \text{ CI: } .18, .40$). These findings indicate that before the
9 Parent Gym course, parents' mental well-being was about a third of a standard deviation below
10 national norms, whereas after the intervention it rose to about a third of a standard deviation above
11 the national norm, indicating a medium effect size.
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23 Discussion

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

41 Findings demonstrated that parents who took part in the Parent Gym universal parenting
42 programme initially had lower levels of mental well-being, satisfaction with being a parent and
43 parenting self-efficacy. Following attendance at a Parenting Gym course parents
44 experienced moderate but significant improvements in their mental well-being, their parenting self-
45 efficacy and parenting satisfaction. Compared to parents who did not receive the intervention, gains
46 in parenting self-efficacy were actually very large (effect sizes over 1 for BAP total score and BAP
47 self-efficacy), while gains in parenting satisfaction and mental well-being were small to medium. The
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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 Early Intervention Foundation (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,

1 Parent Gym 01.02.19

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3 initially from small trials and then from evaluation of the programme when delivered in community
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5 settings on a large scale. The present study reflects this process whereby Parent Gym commissioned
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7 independent research to build upon the evidence from the CANparent trial to evaluate effectiveness
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10 from regular service delivery of the programme community settings.

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12 The use of a pre-post comparison and quasi-experimental studies of the effects of a parenting
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14 programme are typically viewed as preliminary evidence in systems such as that of the EIF – i.e.
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16 precursors to RCTs. However, beyond the RCT as a measure of efficacy, it is also important to
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18 examine whether this (*efficacy*) is maintained outside a rigorous, but often small, RCT when
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20 implemented in a natural setting (*effectiveness*) and on a larger scale. In effectiveness evaluations,
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22 community practitioners will implement the programme as practice as usual without the oversight
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24 and framework of a research team running a trial, which may be led by the programme originator
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26 and with highly motivated researchers. These approaches represent part of an evaluation strategy
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28 comprising several stages from the fundamental scientific bases of the programme through efficacy
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30 to effectiveness trials, and then studies of implementation (Society for Prevention Research: Flay *et al.*
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32 *et al.*, 2005). Hence, the sequence includes not only evidence of what works, but also under what
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34 conditions, and hence sustainability (August *et al.*, 2006; Gottfredson *et al.*, 2015)).
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40 The size of effects of parenting programmes is likely to differ depending on both the aim of the
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42 programme and the rigour of the study. The first concerns whether the programme is designed to be
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44 universal, available to all parents; targeted-selective, aimed at families whose characteristics put
45
46 them at greater risk of having or developing problems; or targeted-indicated, for families where a
47
48 parent or child has an identified difficulty that requires more intensive support. There is a greater
49
50 potential for change when working with a targeted group of parents because these have been
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52 selected for the high level of difficulties they already face (Furlong *et al.*, 2012; Lindsay and Strand,
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54 2013). Universal offers deliberately seek to attract a much wider group of parents, many of whom
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56 may experience few difficulties and have relatively little scope for improvement on the measures
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3 used (Doyle *et al.*, 2018; Lindsay and Totsika, 2017). In that sense, therefore, lower levels of effect
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5 sizes achieved following universal programme provision may be predicted but these may be
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7 considered reasonable.
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11 Second, the use of quasi-experimental or randomised controlled designs provide a higher level of
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13 rigour than pre-post designs without a control group. The results of the present study, using a quasi-
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15 experimental design, therefore, provide important evidence for the effectiveness of the Parent Gym
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17 programme, compared with universal programmes whose evidence has been derived from research
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19 using less rigorous designs. Finally, the present research provides more evidence for the developing
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21 field of evaluation of sustainability of effectiveness of parenting programmes when implemented in
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23 community settings outside trial conditions (Moore *et al.*, 2017).
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26 27 **Strengths and Limitations** 28

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30 This study of a parenting programme delivered in community settings had a number of strengths.
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32 Consequently, the study adds to the limited evidence available for universal parenting programmes.
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34 The evaluation of a universal parenting programme in the community, outside a funded trial, is
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36 challenging. However, this challenge must be faced if the evidence base of programmes is to
37
38 improve. Currently, there is a lack of evidence about most universal parenting programmes and,
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40 where evidence exists, it is at the lower levels of the evidence hierarchy described above, primarily
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42 qualitative studies of the perspectives of parents' or noncontrolled pre-post comparisons indicating
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44 improvement. The present study improved on these designs. It was true to the intention of the
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46 provider, Parent Gym, that the research would examine all the data provided by parents who
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48 attended the course. It was large scale, both in terms of number of parents and also number of
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50 facilitators and groups attended. In addition, we used data from an independent community sample
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52 of parents with a child of the same age range who had not participated in the programme and who
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54 had been selected at random from a large sample of parents. In addition, our analyses took into
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56 account missing data and also the influence of demographic factors. Our analyses therefore
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2
3 compared findings of the effectiveness of Parent Gym with those of a randomly selected non-
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5 intervention community sample over a similar period. This is a strong design which compares the
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7 improvements of parents who attended the programme against a comparable group who did not, so
8
9 allowing the evaluation of *relative* improvements.
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12 As noted, there are, however, limitations inherent in the evaluation of universal parenting
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14 programmes delivered in the community and these occurred in the present study. The Parent Gym
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16 and comparison samples were similar on most demographic factors, for example both were
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18 overwhelmingly female, but the Parent Gym group were substantially more likely to be from a
19
20 minority ethnic background. The gender distribution, however, is typical of parenting programme
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22 attendees and, importantly, all demographic factors were controlled for in the analysis producing
23
24 valid comparisons. There was substantial loss of post-course data in the Parent Gym group, reducing
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26 this to 55% of the initial sample and was higher in the control group. Although similar losses are also
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28 found in large scale effectiveness and sustained implementation studies, for example 53.5% parents'
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30 post-course data were available in the Parenting Early Intervention Programme (Lindsay & Strand,
31
32 2013), these data losses limit the interpretation of results. In addition, no data on children's
33
34 behaviour were collected as the programme delivery organisation, Parent Gym, were concerned
35
36 that this additional measure was an unreasonable extra measure for parents and could adversely
37
38 affect recruitment and retention. Finally, no data were collected on group leaders, other than that
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40 they were all trained successfully to deliver Parent Gym. These various factors are common in
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42 community studies, with funded trials. Nevertheless, overall the study provided a valid comparison
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44 of the relative effects of the Parent Gym parenting programme against randomly selected parents
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46 who had not received the programme.
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52 53 **Conclusions**

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56 There is indicative evidence that a universal parenting programme, Parent Gym, which is delivered in
57
58 community settings was associated with large improvements in parenting self-efficacy and parenting
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3 satisfaction, and moderate gains in parents' mental well-being. The evidence supports its continued
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5 use in the community as a universal provision. Given the limitations, which are common to those
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7 found in studies of universal programmes delivered as part of a community service rather than a
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9 formal trial, care is required in interpreting these results. Further research is needed to examine
10
11 whether benefits from Parent Gym participation can be seen for other domains of parenting, such as
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13 parent-child relationship, and also other outcomes, including child behaviour and skills; and whether
14
15 the benefits are maintained over time.
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18 19 **Key messages**

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22 1. The Parent Gym parenting programme is indicated to be an effective method for improving
23
24 parents' self-efficacy as a parent, parenting satisfaction and parents' mental well-being.
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- 26
27 2. The study increases the relatively limited evidence for universal parenting programmes
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29 being delivered in the community outside formal trials.
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- 31
32 3. Evaluation of universal parenting programmes is possible during community
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34 implementation but it is necessary to balance the needs of the research with the practical
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36 needs of the provider, e.g. demands on parents associated with number of measures.
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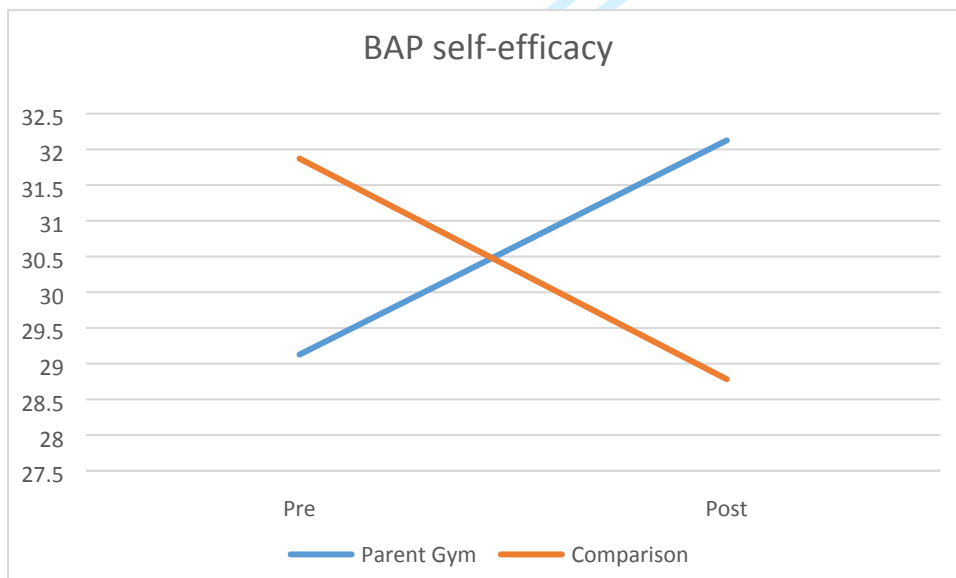
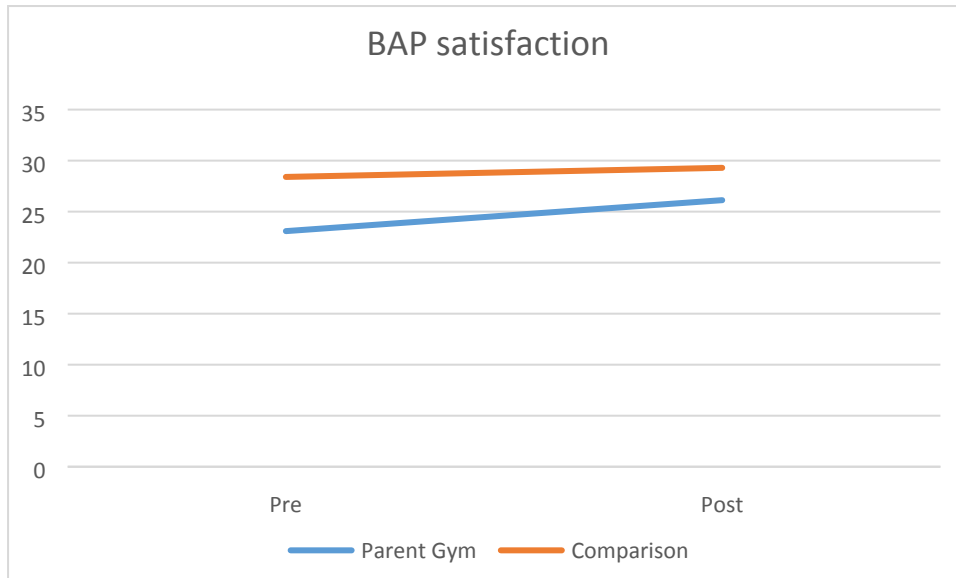
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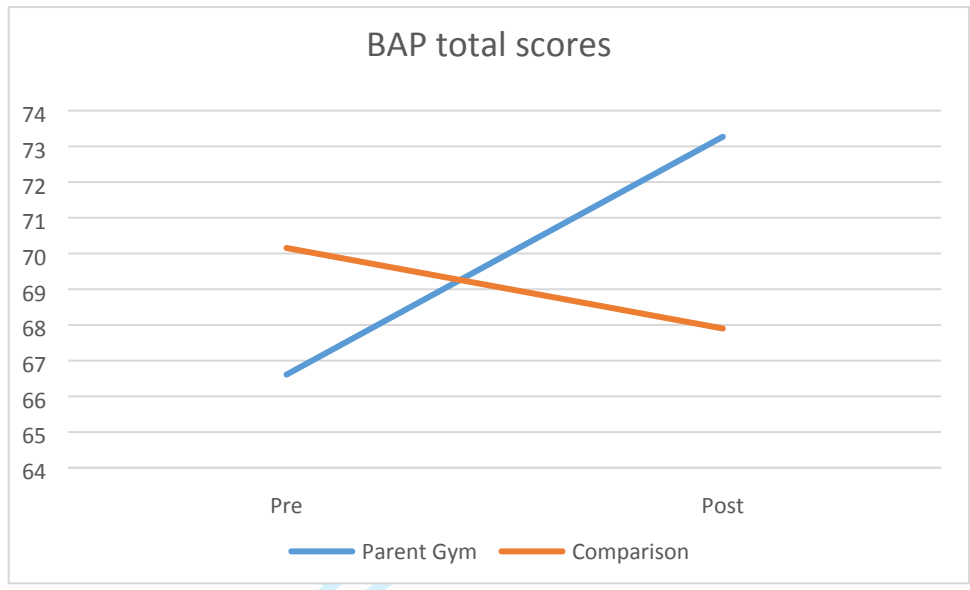
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Figure 1: Interaction effects for Being a Parent (BAP) pre- to post-course comparisons, after accounting for the effect of parental gender, age, educational qualifications, single family status, and ethnicity



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Table 1: Comparison of Parent Gym and comparison group pre- and post-course results

| | Parent Gym | | N | Comparison | | N | Effect Size* |
|---------------------------|-----------------|-----------------|-----|-----------------------------|-----------------------------|-------------------|--------------|
| | Pre-Mean (SD) | Post-Mean (SD) | | Pre-Mean (SD) | Post-Mean (SD) | | |
| BAP Satisfaction | 22.84 (5.75) | 26.02 (5.82) | 384 | 28.93 (6.48) | 29.51 (5.97) | 185 | .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 | .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 ¹ (8.79) | 50.7 ¹ (8.79) | 1749 ¹ | n/a |

Note: $p < .001$ in all cases

* 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)

¹ This is the standardisation sample of WEMWBS as reported by Tennant *et al.*, 2007.

Evaluating Parent Gym: a community implemented universal parenting programme

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We wish to thank all the parents who took part in this study, the schools where the programmes were run and the staff who facilitated data collection. The research was funded by Parent Gym. As a requirement for our full independence as researchers, it was made clear, and agreed by Parent Gym, that our research would be totally independent and that Parent Gym would have no control over the research design, implementation or the reporting through this paper.

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