A weight management programme for fathers of children aged 4–11 years: cultural adaptation and the Healthy Dads, Healthy Kids UK feasibility RCT

Kate Jolly,[1*] Tania Griffin,[1] Manbinder Sidhu,[2] Peymane Adab,[1] Adrienne Burgess,[3] Clare Collins,[4] Amanda Daley,[5] Andrew Entwistle,[6] Emma Frew,[1] Pollyanna Hardy,[7] Kiya Hurley,[1] Laura Jones,[1] Eleanor McGee,[8] Miranda Pallan,[1] Yongzhong Sun,[7] Myles Young[9] and Philip Morgan[9]

[1]Institute of Applied Health Research, University of Birmingham, Birmingham, UK
[2]Health Services Management Centre, University of Birmingham, Birmingham, UK
[3]The Fatherhood Institute, London, UK
[4]School of Health Sciences, Faculty of Health and Medicine, and Priority Research Centre for Physical Activity and Nutrition, University of Newcastle, Newcastle, NSW, Australia
[5]School of Sport, Exercise and Health Sciences, University of Loughborough, Loughborough, UK
[6]Leamington Spa, UK
[7]Birmingham Clinical Trials Unit, Institute of Applied Health Research, University of Birmingham, Birmingham, UK
[8]Birmingham Community Health Care NHS Foundation Trust, Birmingham, UK
[9]School of Education, and Priority Research Centre for Physical Activity and Nutrition, University of Newcastle, Newcastle, NSW, Australia

*Corresponding author c.b.jolly@bham.ac.uk

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Scientific summary

The Healthy Dads, Healthy Kids UK feasibility RCT

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Scientific summary

Background

Overweight and obesity are major public health challenges and are associated with a range of long-term health consequences, including diabetes, heart disease and some cancers. The proportion of men in the UK with overweight or obesity increases from 56% of those aged 25–34 years to a peak of 79% of men aged 55–64 years. Despite 46% of men aged 35–44 years wanting to lose weight, few engage in formal weight management programmes.

Healthy Dads, Healthy Kids is a successful Australian weight management and behavioural change programme for fathers and their primary school-aged children. Behavioural interventions do not always transfer directly between different settings and contexts, so there was a need to adapt the Healthy Dads, Healthy Kids programme to an ethnically diverse UK setting and to evaluate the feasibility of a future trial of its effectiveness in addressing men's weight loss.

Objectives

This study was undertaken in three phases: programme adaptation (phase 1a) and testing of the adapted programme (phase 1b), and a randomised feasibility trial (phase 2). The objectives of phase 1a were to:

- explore cultural (ethnic, religious, socioeconomic) acceptability of the programme elements and proposed questionnaires with fathers from a range of ethnic, religious and socioeconomic groups
- increase the cultural acceptability of the programme using theoretically informed adaptations so that it was acceptable and accessible to a UK population with ethnic, religious and socioeconomic diversity.

The objectives of phase 1b were to assess:

- the feasibility of delivering the adapted intervention and the feasibility of recruitment and follow-up
- the acceptability of the Healthy Dads, Healthy Kids UK programme in an ethnically diverse population and make refinements to the programme based on the facilitators' and participants' feedback.

The objectives of the feasibility study in phase 2 were to:

- assess the acceptability of an adapted weight management and healthy lifestyle programme in an ethnically diverse population in the UK and make refinements to the programme based on the facilitator and participant feedback
- determine the levels of participant adherence to the programme through attendance and engagement
- assess the fidelity of intervention delivery and feedback from facilitators and modify the facilitator training programme if required
- assess whether or not participants are willing to be randomised
- assess whether or not the expected recruitment rate for a subsequent full-scale randomised controlled trial is feasible and to identify successful recruitment strategies
- explore the feasibility of obtaining educational attainment data for children
- explore participants' and facilitators' perceptions of the intervention, trial participation and processes
- provide estimates of the variability in the primary outcome
- test the components of the proposed randomised controlled trial to determine the feasibility of the protocol.

Phase 1a: adaptation of the Healthy Dads, Healthy Kids programme

A qualitative study was undertaken with fathers and family members from black and minority ethnic groups and/or socioeconomically deprived localities ($n = 30$) to explore the cultural acceptability of the Healthy Dads, Healthy Kids programme; the fathers' and children's dietary and physical activity behaviours; and the fathers' experiences of parenting. Researchers undertook interviews ($n = 19$) and focus groups ($n = 2$) in the preferred language of the participants, 15 of whom were fathers. The data were analysed thematically using a typology of cultural adaptations of interventions and study processes [Liu J, Davidson E, Bhopal R, White M, Johnson M, Netto G, *et al.* Adapting health promotion interventions to meet the needs of ethnic minority groups: mixed-methods evidence synthesis. *Health Technol Assess* 2012;**16**(44)]. Key messages from the data were logistic considerations affecting attendance (timing, location); the need to avoid advertising the programme as weight management for fathers, but to highlight the opportunity for father–child time for fun physical activity; the need to ensure that culturally relevant foods were discussed; and the need to ensure that images in the materials reflected the diversity of the UK. Cultural issues also included gender-related considerations. For example, the importance of the facilitator delivering fathers' sessions being male and preferably a father. There were also concerns around acceptability of fathers and daughters engaging in activities such as 'rough and tumble' together or for older girls to be mixing with boys in group settings. However, a need for ethnic homogeneity among participants or ethnic concordance between fathers and facilitators was explicitly rejected.

The qualitative data, together with findings from another cultural adaptation study of a children's weight management intervention [Child weigHt mANaGement for Ethnically diverse communities (CHANGE); Pallan M, Griffin T, Hurley KL, Lancashire E, Blissett J, Frew E, *et al.* Cultural adaptation of an existing children's weight management programme: the CHANGE intervention and feasibility RCT. *Health Technol Assess* 2019;**23**(33)] undertaken in the local area, and the experience of an intervention for fathers and their daughters, were used to inform the adaptation of the Healthy Dads, Healthy Kids programme and the study processes.

The resulting adapted Healthy Dads, Healthy Kids UK programme comprised weekly 90-minute sessions delivered to fathers and their children (aged 4–11 years) over 9 weeks. Key adaptations were simplifying the language and concepts in the Healthy Dads, Healthy Kids materials; ensuring that the materials were adapted to the UK with removal of Australian terminology and had images to reflect the diversity and dietary practices of the local population; training facilitators to be sensitive to what individual families may consider acceptable play according to age, ability and culture, both within and outside the programme; and limiting the extent of didactic presentation and ensuring that there was a participative approach to group-based learning.

Phases 1b (uncontrolled) and 2 (randomised controlled) feasibility studies

Design and setting

Phases 1b and 2 were undertaken in two areas in the West Midlands in the UK (hereafter referred to as sites A and B). Both areas are ranked to be within the 20% most deprived authorities in England, with a lower life expectancy than the national average and around one-third of children living with families on low income. Phase 1b was an uncontrolled feasibility study with two Healthy Dads, Healthy Kids UK programmes delivered and phase 2 was a randomised controlled feasibility trial with four programmes delivered across the two sites. Participants were randomly allocated 2 : 1 to the intervention or comparator group.

Participants

Participants were eligible to take part if they were men aged 18–65 years with a body mass index of ≥ 25 kg/m^2 (23 kg/m^2 for minority ethnic groups) and/or a waist circumference of ≥ 94 cm (37 inches); were fathers/father figures of primary school-aged children (aged 4–11 years); and were willing to lose

weight. Fathers did not have to be co-resident with their child(ren). Fathers were excluded if they had cardiovascular or musculoskeletal conditions that would be a barrier to participating in physical activity, had lost 3 kg in the previous 3 months or were unable to speak English. Children were asked to give their assent to take part.

The aim was to recruit 30 fathers and their children in phase 1b and 90 fathers in phase 2.

Intervention and comparator

The adapted Healthy Dads, Healthy Kids UK programme was delivered to the intervention group; the control group was given a voucher for a free family swim or hire of a badminton court at a local leisure (sports) centre. The Healthy Dads, Healthy Kids UK programme consisted of nine sessions of 90 minutes' duration, which commenced with a 15-minute discussion about homework tasks, activities in the previous week and an opportunity for fathers to weigh themselves. This was followed by fathers attending interactive sessions on healthy eating, physical activity or parenting (30 minutes), while their children (aged 4–11 years) participated in sessions learning about health behaviours and were tasked with supporting their dads to be more active and eat healthily. This was followed by 45 minutes of physical activity together, which consisted of 'rough-and-tumble' play (i.e. physical play wrestling games), fitness activities and fundamental movement skill development in the children.

Facilitator recruitment and training

The choice of facilitators was constrained by the commissioning local authorities' financial circumstances and other organisations offering physical activity to schools locally. In site A, we trained local authority 'healthy lifestyles' staff and an independent physical activity facilitator, whereas in site B we trained staff from a local leisure centre and an organisation that provided child physical activity sessions, referred to hereafter as 'coaching organisation'. Training was delivered over 3 days by the Fatherhood Institute, which had originally received training from the Healthy Dads, Healthy Kids Australian research team and then by one member of the UK research team to facilitators who joined the delivery team after this training.

Programme venues and timing

Programmes were delivered in a primary school, youth community venue, leisure centres and community centre starting after school, early evening, Saturday mornings and Sunday early afternoon.

Evaluation of programme acceptability and feasibility of implementation

The acceptability and feasibility of Healthy Dads, Healthy Kids UK programme delivery were assessed using several methods: direct observations of sessions by the research team, feedback forms from fathers and from facilitators at the end of each session and interviews with fathers and facilitators after completion of the study intervention period.

Collection of outcome data

Outcome data were collected from fathers and children through home visits and sessions at the programme delivery sites at three time points: baseline, and after 3 and 6 months. Outcome data collection from fathers included weight, height, waist circumference and percentage of body fat. Questionnaire measures included dietary practices, self-reported physical activity, health-related quality of life, capability, father–child relationship, parenting for physical activity and use of health services. Outcome data from children included anthropometric measurements and questionnaire measures on family nutrition and physical activity practices, child dietary practices, health-related quality of life, strengths and difficulties, and use of health services. Fathers and their eldest child had objective physical activity measurements taken using wrist-worn accelerometers.

Results

Phase 1b

We initially recruited two primary schools and 17 fathers, but faced difficulties in the delivery of the intervention. At site A, the facilitators who were originally trained did not have appropriate physical activity coaching experience and there was delay while we recruited and trained someone with suitable skills. At site B, owing to the facilitators from the coaching organisation leaving and a change in manager, there were delays in organising further training, and concerns were raised about the programme content and required skills of the facilitators. These delays led to a loss of interest by the recruited participants and the schools withdrawing their co-operation. New venues were found (primary school and leisure centre), more training organised and two programmes commenced. Eight participants commenced the programme, but, because of low participant numbers at site A, the programmes were merged after four sessions; two participants completed the programme. Further required adaptations to the programme were identified, particularly the need to reduce the amount of content in the fathers-only educational session, the need to simplify language and the high level of sports coaching skill required to deliver the physical activity component.

Phase 2

The programme was feasible to deliver; four programmes were delivered: on a weekday evening at a leisure (sports) centre by staff from the leisure centre (×2), on a Saturday morning at a community centre by a coaching organisation and early afternoon on Sunday at a youth centre by local authority health and lifestyles staff and an independent physical activity facilitator. There were challenges to some facilitators attending training by the Fatherhood Institute owing to staff turnover in the partner organisations, so training had to take a more flexible approach. The research team undertook training with a combination of joint delivery, observation of facilitator-led sessions and the provision of feedback. The programme was delivered with fidelity, which was assessed by observations made by the research team using a checklist and feedback forms completed by facilitators and fathers after each session. Challenges to delivery included keeping to the 30-minute time allotted for the fathers-only educational component.

We employed a wide range of recruitment strategies including through primary schools, workplaces, children's out-of-school activities, places of worship, shopping centres and social media, but recruited only 43 fathers and their children ($n = 61$), which was only 48% of the target of 90 fathers. The mean body mass index of the fathers was 30.2 kg/m^2 (standard deviation 5.1 kg/m^2); 23 (53.5%) resided in localities in the bottom quintile of socioeconomic deprivation; and 26 (60.5%) were from a black, Asian or minority ethnic group. All fathers were co-resident with their children. The children had a mean age of 7.7 years (range 4–11 years).

Of the 29 families allocated to the Healthy Dads, Healthy Kids UK intervention, 20 (69%) attended at least once and 15 (52%) attended at least five sessions (completed). However, of the 20 families who attended once, 15 (75%) attended at least five sessions. Recruitment and organisation of baseline assessments was logistically challenging, with fathers needing an evening or weekend appointment for the anthropomorphic measures to be completed. Study attrition was a significant issue despite offering follow-up appointments at home and in the facilities where the intervention was delivered. Only 27 (63%) families were followed up at 6 months. Thirteen interviews were completed with 12 fathers and all six facilitators were interviewed.

Based on both qualitative and quantitative results, the programme was highly acceptable to fathers who attended and to the facilitators. Participants enjoyed attending the sessions and reported positively on both the father education sessions and the joint child-and-father physical activity sessions. This was triangulated by the facilitator feedback and observations. The youngest children, aged 4 years, sometimes struggled with following instructions and were not able to complete all the tasks in the children's

educational session, which required the facilitators to be adaptable. When interviewed at 6 months, fathers described longer-term changes in their and their children's dietary and physical activity behaviours.

Outcome data collection was feasible on the whole, but home visits and facility-based follow-up sessions were resource intensive, with high rates of families not attending despite confirming the time and date. The questionnaires were acceptable to the participants with low/moderate numbers of missing data; the accelerometry was acceptable with 38 (88%) fathers providing usable data at baseline. The mean weight loss of the 17 fathers from the intervention group who completed follow-up at 6 months was 2.9 kg (standard deviation 4.1 kg). Per-family cost ranged substantially, dependent on the number of families per group, from £150 (15 families) to £235 (8 families), excluding training.

Conclusions

We successfully adapted the existing Australian Healthy Dads, Healthy Kids programme to a UK context using a framework to guide the cultural adaptation. The programme was highly acceptable to fathers and their children who took part in the intervention and was delivered with acceptable fidelity by facilitators. We were able to recruit a high proportion of participants from socioeconomically deprived localities and 60% were from a black, Asian or ethnic minority group. However, owing to a low recruitment rate and implementation challenges, we conclude that it would not be feasible to progress to a full-scale randomised controlled trial of the Healthy Dads, Healthy Kids UK programme for overweight/obese men at this time.

Trial registration

This trial is registered as ISRCTN16724454.

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