

BMJ Open Lessons learnt from the Bristol Girls Dance Project cluster RCT: implications for designing and implementing after-school physical activity interventions

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ABSTRACT

Objective: To consider implementation issues associated with the delivery of Bristol Girls Dance Project (BGDP) and to identify improvements that may aid the design of after-school physical activity (PA) interventions.

Design: Two-armed cluster randomised control trial. The BGDP was a 20-week school-based intervention, consisting of two 75 min after-school dance sessions per week, which aimed to support Year 7 girls to be more physically active.

Setting: 18 secondary schools (nine intervention, nine control) in the Greater Bristol area (as an indication of deprivation, children eligible for the pupil premium in participant schools ranged from 6.9 to 53.3%).

Participants: 571 Year 7 girls. This article reports on qualitative data collected from 59 girls in the intervention arm of the trial, 10 dance instructors and 9 school contacts involved in the delivering of the BGDP.

Methods: Data were obtained from nine focus groups with girls (one per intervention school), and interviews with dance instructors and school contacts. Focus groups sought views of girls' motivation to participate, teaching styles and experiences of the intervention. Interviews explored views on implementation and dissemination. Framework analysis was used to analyse data.

Results: Qualitative data elicited three themes associated with the delivery of BGDP that affected implementation: project design, session content and project organisation. 'Project design' found issues associated with recruitment, timetabling and session quantity to influence the effectiveness of BGDP. 'Session content' found that dance instructors delivered a range of content and that girls enjoyed a variety of dance. Themes within 'project organisation' suggested an 'open enrolment' policy and greater parental involvement may facilitate better attendance.

Conclusions: After-school PA interventions have potential for increasing PA levels among adolescent girls. There is a need to consider the context in which interventions are delivered and implement

Strengths and limitations of this study

- Relevance beyond after-school dance interventions for researchers and practitioners designing and delivering after-school interventions.
- Study focuses on the significance of the context in which the intervention is delivered.
- Data obtained from in-depth qualitative interviews with participants and key stakeholders.
- Large sample of participants (n=78) for the qualitative study and evidence of data saturation.
- Trial methodology limits generalisations.

them in ways that are appropriate to the needs of participants.

Trial registration number: ISRCTN52882523.

INTRODUCTION

Ensuring that all members of society are physically active is important for public health. Physical activity (PA) is associated with improved physical and mental well-being among children and young people.^{1–3} A number of studies have shown that large proportions of young people do not engage in the recommended hour of moderate-to-vigorous PA (MVPA) per day.^{4–5} Girls are often found to be less active than boys across childhood and adolescence and, as such, there is a need for interventions to encourage more PA in girls, particularly during the transition into adolescence when the decline in female PA is at its highest.^{6–8} Girls tend to be more sedentary and also engage in less MVPA than boys.⁹ A study examining barriers faced by girls to PA suggests that safety concerns, the competitive nature of many activities, inaccessible

facilities and body-image concerns are key perceived barriers to girls being active.¹⁰ Additionally, girls face more restrictions than boys in terms of their freedom to play outdoors.⁸ Dance is an activity that could resolve a number of these barriers and as such it is popular among adolescent girls in the UK, and could therefore be an appropriate activity to increase girls' PA.^{4 11–13}

Schools are a good place to target interventions as attendance is a legal requirement. PA interventions delivered during the school-day have had limited effect,^{7 8 12 14} suggesting a need to consider alternative school-based interventions.^{4 14 15} Pate and O'Neill¹⁴ suggest that the quest for academic excellence combined with resource limitations restricts opportunities for PA within the school day. Several systematic reviews have highlighted the potential of extracurricular PA interventions for young people, however, there is a lack of robust evaluations of these programmes.^{7 12} Incorporating dance into after-school activities could contribute to overall PA among girls failing to achieve the recommended UK PA guidelines.^{4 11} As such, the Bristol Girls Dance Project (BGDP) examined the potential of an after-school dance-based intervention targeted at increasing PA levels of Year 7 (age 11–12) girls.

A feasibility trial was conducted to assess the potential of a dance-based intervention.⁴ This formative work found that it was possible to recruit adolescent girls to an after-school dance intervention and that such an intervention could yield positive effects on their PA. The process evaluation reported fluctuating attendance and low perceived exertion levels within sessions. Additionally, post-intervention qualitative work suggested that a reduction in the time allocated for 'creative' tasks, better behaviour management guidance, and exposure to a wider range of dance styles would improve the intervention.⁴ The intervention was refined in light of these findings and tested in a fully powered cluster randomised controlled trial,¹⁶ on which the present paper reports.

BGDP was a 20-week school-based two-armed cluster randomised control trial. The intervention consisted of two 75 min after-school dance sessions per week for Year 7 (11–12 years) girls in the intervention arm. Intervention sessions were delivered by professional dance instructors who attended training led by study staff. The training introduced instructors to the study aims and rationale, the BGDP intervention sessions and the underpinning Self-Determination Theory (SDT).^{17 18} Session plans underpinning the BGDP sessions encouraged dance instructors to use a variety of dance styles throughout the course of the intervention (encouraging participant choice in this was strongly encouraged).

The BGDP aimed to increase autonomous motivation for dance and PA among participants. The dance instructor training and BGDP session plan manual were integral to this aim. The SDT-focused element of the training explored the practical application of the theory to dance sessions. Instructors were provided the

opportunity to use autonomy-supportive styles of instruction, seek clarification and obtain feedback from study staff. Behaviour management was discussed and further details included in the session plan manual. Halfway through the intervention period the instructors attended a half-day booster session that recapped study aims, the application of SDT in sessions, and provided a forum to discuss issues that arose during session delivery.

Full details of the trial protocol¹³ and results have been published elsewhere (R Jago, M J Edwards, S J Sebire, *et al.* Effect and cost of an after-school dance programme on the physical activity of 11–12 year old girls: the Bristol girls dance project school-based cluster randomised controlled trial. *Int J Behav Nutr Phys* Under review). Briefly however, there was no difference in PA levels between the intervention and control group girls during the last few weeks of the intervention or at 6-month follow-up. Findings reported elsewhere showed that intervention fidelity was generally good, with high levels of enjoyment among participants (S J Sebire, M J Edwards, J M Keston, *et al.* Process evaluation of the Bristol girls dance project. *BMC Public Health* Under review). However, session attendance was highly variable with only one-third of girls attending two-thirds of the sessions. Attendance also declined during the project.

Process evaluations are central to understanding how complex interventions work¹⁹ by focusing on the processes of intervention delivery, receipt and fidelity.^{19 20} When they are too narrowly focused, however, they can neglect to evaluate the broader contextual factors associated with individual agency, and the social context in which an intervention is delivered.²¹ It is important to understand how logistical arrangements, operations and implementation of intervention components contribute to intervention processes, and to also acknowledge the influence of dance instructors delivering the intervention in a specific context. Thus, there is a need to identify factors that enable effective intervention delivery and establish how these factors can be influenced. The aim of this paper is to use qualitative process evaluation data to document the lessons learnt from the BGDP and to identify key points for improvement that may increase attendance rates and improve overall delivery of future after-school school-based PA interventions.

METHODS

Eighteen schools participated in the study. All schools were located within 25 miles of Bristol city centre, and fell under the Bristol City, Bath and North East Somerset, or North Somerset Council areas. Schools were urban and suburban and in terms of deprivation they were slightly less deprived than the national average. Between 6.9% and 53.3% (average=26.2%) of pupils in study schools were eligible for the 'pupil premium', a form of governmental funding aimed at increasing the attainment of disadvantaged pupils

(higher percentage equals greater deprivation).²² The national average is 27.8% of secondary pupils. Four of the nine intervention schools had above average levels of deprivation.

All Year 7 girls eligible to take part in physical education were invited to participate (n=1877). There was space for 33 girls to take part in each school. Recruitment consisted of a 'taster' session that provided exposure to a typical intervention session, a briefing, and written information for girls and parents/guardians. Six hundred and thirty three girls returned parental consent forms, of which 571 were selected at random (due to the maximum limit of 33 girls per school). Participants completed four sets of measurements (accelerometer, psychosocial questionnaire and height and weight) at three time-points (baseline, T1 (end of intervention period), and T2 (baseline+52 weeks)). Girls received a £10 thank you voucher for completing each measurement stage. Schools were randomised to control (n=9) or intervention (n=9) arm after baseline measures, with 284 girls in the intervention and 287 in the control arm.

The present study draws on interview data collected soon after the intervention ended from dance instructors (n=10) who delivered the intervention and school contacts (n=9) who facilitated intervention logistics in their school. School contacts were the study team's main point of contact with the school. These individuals were four physical education (PE) staff, one Year 7 teacher, three dance teachers and one drama teacher. Nine focus groups were conducted with girls that received the intervention (n=59, range=3–8). Ten girls from each intervention school, reflecting different tertiles of attendance, were invited. This was in order to capture a range of participant views. Girls who attended ≤ 3 sessions were not included as they would be unable to answer a significant proportion of the topic guide questions. Further details of participant sampling, recruitment and reasons for why children stopped attending intervention sessions are reported elsewhere (S J Sebire, *et al.* Under review). For dance instructors, interviews explored views on the implementation and dissemination of BGD. School contact interviews focused on how the intervention was delivered and areas for improvement. Focus groups among girls explored motivations to participate, dance instructor teaching style, and experiences of the intervention. Interview guides are included as online supplementary files 1–3 for participant focus groups, dance instructors and school contact interviews, respectively. School contact interviews and participant focus groups were conducted in schools and dance instructor interviews were conducted in convenient locations for participants (eg, cafes). All interviews and focus groups were audio recorded and transcribed verbatim. Transcripts were compared with the recordings and amended as necessary.

Ethical approval was obtained from the School for Policy Studies ethics and research committee at the

University of Bristol. Written parental consent was obtained for all children who participated in the study and informed consent was gained from the dance instructors and school contacts who participated. A CONSORT extension for Cluster Trials Checklist has been completed.

Analysis

A framework analysis was used.²³ The framework method is a seven stage procedure for analysing qualitative data, characterised by detailed line-by-line coding and the charting of data into a framework matrix.²³ Initial codes were created openly using NVivo (V.10, QSR International) to categorise transcripts into components that were of potential significance to the research objective. Codes were produced independently by four qualitative researchers (JMK, MJE, SJS and TM) who coded three transcripts each (one dance instructor, school contact and participant focus group). Initial codes formed a coding framework which was applied to the remaining transcripts. A predefined 'school context' code was included to identify differences in delivery between schools. Frameworks were subsequently triangulated to substantiate the relationships between all three informant groups. The qualitative research team met weekly to discuss and iteratively refine the codes, which led to the production of the three coding frameworks (one for each respondent group). Illustrative quotes capturing the essence of each theme were identified and agreed by the researchers. A COREQ checklist for reporting of qualitative studies is included (table 1).

We aimed to address issues that could be edited to improve future roll-out of similar interventions. Specifically, the issues addressed in this paper are:

- ▶ Why participants (school teachers, girls and dance instructors) took part in the study
- ▶ The acceptability of the design and content of the dance sessions
- ▶ Feedback on the intervention structure (eg, session quantity and duration)
- ▶ Views on the organisation of the study.

RESULTS

Three main themes associated with BGD delivery were identified in the qualitative analysis. These related to: (1) project design; (2) session content; and (3) project organisation. The findings are presented by theme, and the subthemes include illustrative quotes from the different participant groups.

Project design

Project design encompasses subthemes concerning BGD logistical arrangements, including participant recruitment, timetabling, session quantity and project duration.

Table 1 Consolidated criteria for reporting qualitative studies (COREQ): 32-item checklist

No	Item	Guide questions/description
<i>Domain 1: Research team and reflexivity</i>		
Personal characteristics		
1.	Interviewer/facilitator	Which author/s conducted the interview or focus group? JK, ME
2.	Credentials	What were the researcher's credentials? <i>For example, PhD, MD</i> PhD
3.	Occupation	What was their occupation at the time of the study? Research Associate
4.	Gender	Was the researcher male or female? Female (JK); Male (ME)
5.	Experience and training	What experience or training did the researcher have? Coverage of qualitative methodology and interview technique in PhD. Formal training on qualitative research methods from at BSc/BA and MSc.
Relationship with participants		
6.	Relationship established	Was a relationship established prior to study commencement? No
7.	Participant knowledge of the interviewer	What did the participants know about the researcher? <i>for example, personal goals, reasons for doing the research</i> Both JK and ME had met the interviewees on several occasions. ME recruited them to the study and JK conducted process evaluation while they were delivering the intervention.
8.	Interviewer characteristics	What characteristics were reported about the interviewer/facilitator? <i>for example, Bias, assumptions, reasons and interests in the research topic</i> None
<i>Domain 2: study design</i>		
Theoretical framework		
9.	Methodological orientation and Theory	What methodological orientation was stated to underpin the study? <i>for example, grounded theory, discourse analysis, ethnography, phenomenology, content analysis</i> Study was underpinned by self-determination theory. Qualitative analysis was conducted using a framework analysis
Participant selection		
10.	Sampling	How were participants selected? <i>for example, purposive, convenience, consecutive, snowball</i> Purposive sampling for qualitative focus groups. All dance instructors delivering the intervention and all school contacts were interviewed/
11.	Method of approach	How were participants approached? <i>for example, face-to-face, telephone, mail, email</i> Focus groups were conducted face to face Interviews with dance instructors conducted face to face One interview with a school contact was conducted via telephone. The remaining interviews were conducted face to face.
12.	Sample size	How many participants were in the study? Semi-structured interviews were conducted with all dance instructors who delivered the intervention (n=10) and school contacts (n=9) in intervention schools. A focus group (n=9) was conducted with girls who participated in each intervention school (n=59).
13.	Non-participation	How many people refused to participate or dropped out? Reasons? Twelve participants withdrew from the study. ▶ 6 no longer wanted to participate ▶ 4 had illness(es) ▶ 1 relocated ▶ 1 excluded from school

Continued

Table 1 Continued

No	Item	Guide questions/description
Setting		
14.	Setting of data collection	Where was the data collected? for example, <i>home, clinic, workplace</i> All focus groups conducted in schools. One school contact interview conducted via phone, all remaining conducted in school. Dance instructor interviews conducted in a range of settings.
15.	Presence of non-participants	Was anyone else present besides the participants and researchers? No
16.	Description of sample	What are the important characteristics of the sample? for example, <i>demographic data, date</i> Focus group: All Year 7 girls. Dance instructor interviews: All female School contacts: All teaching staff. One male, the remaining female.
Data collection		
17.	Interview guide	Were questions, prompts, guides provided by the authors? Was it pilot tested? Yes. No pilot conducted with final version of interview guide.
18.	Repeat interviews	Were repeat interviews carried out? If yes, how many? No
19.	Audio/visual recording	Did the research use audio or visual recording to collect the data? Audio recordings made for each interview/focus group.
20.	Field notes	Were field notes made during and/or after the interview or focus group? No.
21.	Duration	What was the duration of the interviews or focus group? Average length Focus group: average length=42.38 min (range=30.35–50.23 min) Dance instructor interviews: average length=67.20 min (range=41.35–91.36 min) School contact interviews: average length=29.35 min (range=22.07–38.41 min)
22.	Data saturation	Was data saturation discussed? Yes
23.	Transcripts returned	Were transcripts returned to participants for comment and/or correction? No

Recruitment

Different methods of recruitment were required for each participant group (ie, girls, dance instructors and school contacts).

School contacts

No expectations or requirements were expressed by the study team regarding what school contacts would need to do for the study, beyond a general breakdown of what the school's participation entails. Similarly, no school contact sought detailed instruction on what their role would necessitate. School contacts cited various reasons for their involvement in the project, with some describing a personal interest and others being asked by a colleague to act as a key contact.

I was asked by the Head of Year 7 because he had too much on his plate.

School contact 21

I think it was just sent generally to the school like a pack...there was quite a lot of information there so I just emailed 'em through.

School contact 72

Two school contacts embraced a type of 'research altruism'. One noted how their own degree meant they were familiar with research and were keen to engage with a research project:

I also liked that it was part of a research project as well. I've been doing a university degree myself and dissertations and [...] it's really important that these things are done to try and take things forward.

School contact 23

Dance instructors

Dance instructor involvement in the project was motivated by numerous reasons. The research aspect of the project appealed to some instructors who viewed the

project as an opportunity to disseminate their view of dance as a positive activity for young people:

I love to dance and I love to teach dance and to share my passion with as many people as possible. So any opportunity I'm interested in. I was really attracted to the project as a whole, the research that was involved.

Dance instructor 61

Dance instructors also viewed their involvement as an opportunity to develop teaching experience via the delivery of new dance styles:

The fact that we were delivering different styles of dance that was also really good for me because I haven't really done much else in terms of teaching, so it kind of pushed me to try different things which I did and then gained more confidence so I've gained more skills.

Dance instructor 61

Girls

For some girls, the opportunity to try a new activity and learn new dance styles motivated participation:

I kind of just decided myself because I wanted to go like start something that I hadn't done before.

Focus group 23

I'm not a fan of dance but because I wanted to try something new so I tried it.

Focus group 62

For some girls involvement was based on spending time with their peers:

I was looking at some [afterschool clubs] but I was only really going to do them if like someone, like a friend, did it with me.

Because I didn't really want to go on my own and everyone else knew each other and I just turned up.

Focus group 61

Girls were given a £10 gift voucher for completing each phase of data collection. In two schools gift vouchers were interpreted as incentives to attend dance sessions by some. Indeed, one girl noted that participants should not receive a voucher unless they attend dance sessions.

You get a voucher. People signed up because of that. But I don't think they really signed up because they wanted to do the dance.

Focus group 53

In one focus group, being part of BGDG was experienced as a privilege because others were denied the opportunity (due to the limit of 33 girls per school):

It was like a privilege to like get into it because quite a lot of people like wanted to join but only a few of us did.

School contact 32

Timetabling

Some schools arranged BGDG sessions at a similar time to other after-school clubs, this led to different clubs/activities competing for attendance. However, in some schools, the time between the end of the school day and the beginning of BGDG sessions was short, meaning participants struggled to arrive punctually. This resulted in some sessions being short:

Partly it is to do with the set up at the school [...] it's just a very annoying system that's in this school that because of the meetings that take place on a Tuesday and a Wednesday and we finish early on a Friday, Monday and Thursday are the only times available for any after school clubs. So all of the after school clubs run on a Monday and a Thursday. So you're all vying for kids.

School contact 62

After school finished we started five minutes later. That was not enough time. They needed ten minutes.

Dance instructor 51

Session quantity and project duration

School contacts suggested that the quantity of sessions (n=40) was too high to sustain attendance over the course of 20 weeks. Two sessions per week was also seen as a burden for girls by school contacts, especially when competing against other sporting events and social commitments:

I just feel that two sessions per week, and the length of time that it runs for, is possibly a bit too much to keep the attendance up.

School contact 72

I think possibly because it was so... on for such a long time they found it really hard to maintain their commitment because of other things that they like to do as well. I just feel that two sessions per week and the length of time that it runs for is possibly a bit too much to keep the attendance up.

School contact 72

Many dance instructors felt that two sessions per week was not typical for after-school clubs. One session per week was favoured for maintaining attendance. One school contact suggested that delivering the intervention

in short 'themed' sections may be beneficial for encouraging attendance and return to sessions.

They do things better in bite size...you'd have almost been better off breaking it down to five week projects and a meeting at the beginning of each one so everybody knew where they were.

School contact 62

Session content

Session content relates to themes concerned with the delivery of sessions, including variety in session content and group work.

Variety in session content

The BGDP was designed to incorporate numerous dance styles. Session variety, was seen to be important for maintaining interest. The majority of dance instructors gave girls a choice of dance styles, an approach which gained approval from the girls:

She [dance instructor] asked us what types of things we wanted to do. Some people said contemporary, some people said breakdancing, so that's what we did which was good.

Focus group 53

Group work

Generally, group work was viewed positively by instructors and girls. Dance instructors felt girls enjoyed group work and it encouraged them to take ownership of the project:

With tasks and things like that I kind of just gave them the choice in their groups so they just kind of got on with that.

Dance instructor 32

Girls found group work enjoyable and it appeared to help improve their dance and team working skills.

We like worked well in the group. There were like no arguments.

Focus group 53

Group work was seen to be beneficial to instructors and girls. Notably, it gave girls a sense of ownership over the project and developed their leadership skills. For dance instructors, it helped them manage the varied levels of competence within the group, and was perceived be a useful strategy for managing inconsistent attendance.

When it came to choreography and teaching other people that's when they took their ownership more so of the club.

Dance instructor 21 & 51

There was a tendency for instructors to allow participants to choose their own groups at the beginning of the project and then mix the groups once they felt comfortable with one another.

The first sessions I normally, if I'm doing group work, let them go with who they want to go [with] and then like when they feel more confident I kind of change it up a bit so they get to know new people.

Dance instructor 53

Project organisation

Project organisation relates to open enrolment, parental involvement, facilities and communication and management arrangements.

Open enrolment

All participant groups suggested that an 'open enrolment' policy, allowing girls to 'drop in' to sessions anytime during the 20 weeks would be a good way to maintain attendance. Teachers stressed the importance of friends in ensuring continued attendance.

So we say 'it's netball on Tuesday, anyone can come along. If you played for the primary school come along and see what it's like [...] bring your friends'. If only three year sevens turn up we'll say 'right, you're challenge is, next week you have to bring a partner'. And then when six turn up I say 'right, you have to bring a friend'. So that's how we kind of do it. 'Grab your friends, all come together' because it's very much a friendship thing.

School contact 42

Open enrolment was viewed as a feasible strategy as long as the project was mindful of new people joining and causing disruption to the existing group (and its progress).

Perhaps you might say 'you could join in after half term' or 'you can join in once we've finished this dance'. That's what I do at some schools.

Dance instructor 62

Parental involvement

School contacts suggested that increasing parental involvement in future after-school interventions may be beneficial. Generally it was recommended that increased parent awareness of the project may improve retention.

If you're going to roll it out, I think it has to be something a little bit more, towards the parents, like 'you have to commit to it'. I think, yeah, that maybe just writing to the parents and when the kids stop coming sending a letter to the parents and saying 'your child hasn't attended and I would really like them to come back'.

School contact 61

The advantage of increased parental involvement was outlined by some girls who described being encouraged to attend sessions by their parents.

Well when I said that I wanted to quit Active 7 she was like, 'it is healthy for you and you should think about going again and don't stop it'.

Focus group 51

Similarly, dance instructors somewhat attributed attendance to parental encouragement and one instructor thought girls appeared to be motivated to attend because their parents told them to.

I think their parents kind of told them to be there.

Dance instructor 21 & 51

Facilities

Pupils found having the dance sessions on school premises convenient. The school teaching space was appropriate because they did not have to travel.

It was always in the same room. Like say if we had to change rooms every single time I think that would have been a bit harder but I like it how it was just in one room.

Focus group 32

In some instances there were problems with the facilities. These included the room temperature and ventilation, access to toilets and changing facilities, and in one school a teaching space that had a viewing gallery. Having to change venue due to conflicting activities (eg, examinations) was also inconvenient and gave dance instructors the impression that their session was not as valued by the school as they wished.

There's a bit at the top [of the dance studio] [...] people used to stay here after school and they used to come in and like start watching [...] So everyone would have stopped because they got embarrassed.

Focus group 42

[Having to move venue] was always really confusing because you'd sometimes lose some girls because they couldn't find you or you'd lose time faffing around trying to figure out what room you were in.

Dance instructor 23

Communication and management arrangements

The majority of dance instructors described a good working relationship with their school contact. School contacts were seen to be supportive of the instructor and the study. In some cases, school contacts observed

dance sessions; this was viewed positively by dance instructors.

I emailed [the school contact] once about the level of noise the girls had, and then I saw him like a session or two later and he was like 'do you want me to have a quick pop in?' and I was like 'yes, that would be great'. So he was really up for it.

Dance instructor 21

One school contact was keen to learn from the dance instructor's teaching practices.

I just go down a couple of Tuesdays and join in with [dance instructor] because she's quite a good teacher and it's always good to learn some new stuff.

School contact 32

Conversely, in two schools dance instructors did not feel adequately supported by their school contact. This was largely attributed to poor communication and lack of knowledge of the year group.

Often I'd like ask her to come in, especially at the beginning, I said "can you come and sit in the lessons?" and she wouldn't reply to my emails.

Dance instructor 21 & 52

She didn't know any of the Year Sevens so that meant it was quite difficult for her to communicate with them about sessions.

Dance instructor 53

DISCUSSION

This study elicited three key themes that affected delivery of the BGDP. The recruitment process, session content and intervention organisation were identified as specific areas where improvements could be made. Each of these themes and the potential implications/solutions for them are presented in [table 2](#) and discussed below.

Different methods of recruitment were required for each stakeholder group. Familiarity with participants taking part was important among school contacts providing the link between schools, dance instructors and the research team. This suggestion is pertinent given the complexities many school contacts faced when 'chasing' research participants to encourage attendance (a task exacerbated by an unfamiliarity with the students). In future, it would be helpful to specify in detail what the role of school contact entails, highlighting the time needed for individual tasks and when they need to be completed (although over-burdening the contact with information should be treated with caution). Asking school contacts to allocate time for liaison with study staff/intervention deliverers may better prepare them

Table 2 Recommendations for future physical activity (PA) programmes delivered during the extracurricular period

Issue	Problem (or potential problem) encountered	Potential solution
Recruitment	<p><i>School contacts:</i> Many contacts were not familiar with the participants (as they had not taught them yet) which made data collection (particularly the return of accelerometers) difficult</p> <p>School contacts not communicating with dance instructors (over intervention issues) and the study team (over data collection)</p> <p><i>Dance instructors:</i> It was difficult to recruit appropriate intervention deliverers for the requirements of participants (may specialise in one form of dance, teach different age groups/genders/abilities etc)</p> <p>Intervention deliverers unable to deliver all intervention sessions</p> <p><i>Girls:</i> Confusion of receipt of voucher for participation in measurements with being paid to attend the intervention sessions.</p> <p>Friend involvement is an important factor influencing the recruitment of participants</p>	<p>To facilitate data collection, future recruitment of school contacts that are familiar with the participants (eg, Head of their year group) is recommended</p> <p>A calendar of tasks and requirements—with details on estimated time input—for school contacts may better prepare them for the role. A protected time allocation (weekly or monthly) for school contacts would ensure they can communicate with intervention deliverers and study staff, thus better equipping them for the time demands of the role and giving more time to resolve any problems</p> <p>Endorsements from other dance instructors, schools, and dance agencies are useful for recruitment. Recruitment workshops, whereby the project can be introduced to dance instructors, are also recommended. Observation of intervention deliverers before recruitment is desirable but time and cost dependant</p> <p>Reserve deliverers should be recruited to cover absences and in the event of deliverers withdrawing from the study, these can be called on as replacements</p> <p>Participants must be explicitly told (verbally and in writing) of the exact purpose of incentives to participate in data collection and what they will be received for</p> <p>Our results suggest that recruiting existing friendship groups and promoting the importance and esteem of the university-led research in the participants' schools may help to achieve a greater buy-in from potential participants. Avoiding recruiting children in the first few weeks of term may be beneficial as they are likely to be more 'settled' into their friendship groups by this time</p>
Timetabling	<p>Clash of timing of school activities and intervention sessions</p> <p>Children require sufficient time to get changed and arrive punctually for the scheduled intervention start time</p>	<p>A calendar of after-school events, extracurricular activities, and the requirements of participants (including factoring in time to reach sessions from previous classes) should be sought to reduce overlap of activities. School contacts should be encouraged to avoid scheduling intervention sessions on days that other activities run (or are likely to run in future—based on previous years' scheduling)</p>
Session quantity	Two sessions per week was seen as too great a commitment for some participants. The total number of sessions (n=40) was also considered too many for some	<p>The delivery of interventions in 'blocks' of sessions—covering different themes—should be considered ahead of future delivery</p> <p>The frequency of sessions and the overall number of sessions must be thoughtfully considered in light of the participants (age, existing ability and any other potentially important variables), achieving sufficient exposure to the intervention in order to achieve behaviour changes, and the timetable of schools</p>
Session variety	Participants want to cover different material/activities. Activity choice should reflect participants' desires while being achievable under the deliverer's skill set and capability	Offer participants genuine 'choice' over activities such as dance styles, and provide context-specific approaches to delivery, tailored to the needs and the requirements of the specific school
Group work	Group work is liked by participants	Embedding group work into interventions is likely to be helpful and may improve participants' sense of ownership if they are able to select their own groups
Open enrolment	One phase of participant enrolment (prebaseline measurements) may unnaturally restrict participation	Open enrolment, whereby participants can 'drop in' to sessions anytime, rather than signing up to the intervention at the onset only, should be considered to mirror usual school provision. Allowing participants to join midway through the intervention period may improve retention, increase diversity, and give more people exposure to the intervention. In a trial setting this may be difficult logistically unless <i>all</i> potential participants take part in baseline measures

Continued

Table 2 Continued

Issue	Problem (or potential problem) encountered	Potential solution
Parental involvement	Parents are an important influence over children and are likely to (or have the potential to) affect attendance	Developing strategies for parental support for extracurricular PA programmes should be incorporated into intervention design. Increased parental awareness of study aims and commitments may improve recruitment rates and attendance
Facilities	School-based interventions are limited by the facilities a school has	The ability to respond to participant desires regarding adaptable facilities (ie, heating, drinks provision, changing facilities) and act on them is encouraged in the future delivery of PA interventions. Choice over when windows/doors are opened, heating turned on, or whether a session is conducted outside (if feasible) should be discussed with participants School facilities are used for different purposes at different times of the year (ie, for school productions at Christmas and examinations in the summer). Attempts to protect the use of facilities for intervention sessions should be considered, but is likely to be difficult
Communication/management	Poor communication between any two stakeholders (study team, school contact and intervention deliverer) can have negative consequences for sessions	Recruiting school contacts who want to be involved rather than being pressurised may foster better communication (however, this would be difficult to achieve in reality, other than targeting relevant subject staff). Writing formal guidelines on regular updates between dance instructor and school contact/study team may resolve ongoing problems and/or re-engage children who have stopped attending. Any added burden on those delivering the intervention or school contacts should be given extensive consideration and avoided if possible

for the role and improve delivery. For girls, targeting peer groups was considered sensible and a realistic method for attracting participants. Our findings also suggest that espousing the credentials of the project to instil a type of project 'privilege' may provide a further incentive for participation. This finding is consistent with previous research that suggests it is useful to identify and garner the support of influential 'opinion makers' to create a 'buzz' around the study.²⁴ Such recruitment campaigns should be considered as part of the design of future after-school PA interventions.²⁴ Assigning self-employed dance instructors to schools can be logistically difficult as many work on short-term contracts and continuously bid for work. This makes attending two sessions per week over a 20-week period a difficult commitment. Indeed, one instructor had to be replaced mid-way through the intervention. We would advise recruiting a bank of reserve instructors to ensure cover is always available.

School contacts selected the days and start/end times for intervention sessions. Dance instructors were assigned to schools to proximity and availability on session days. Subsequently, however, many schools had competing after-school activities on the same day as intervention sessions. Additionally, some children and dance instructors reported about sessions starting too soon after the school day ends. As such, greater consideration needs to be given to the scheduling of sessions, with the study manager and school contacting working

through a set of potentialities to find a convenient and protected time.

A number of participants suggested that the intervention intensity, both in terms of the number of sessions per week and the duration of the intervention period, may have been too great a commitment to sustain attendance and was somewhat discordant with usual school provision. One solution suggested by a school contact, was to implement the project in 5 week modules where different dance styles are implemented in each block. As such, future projects may wish to employ structures that mimic usual school provision, and ensure intervention implementers and school staff deliver after-school interventions via this approach.

Open-enrolment was highlighted as an approach that may improve attendance and fluidity of delivery. However, it was noted that this would require dance instructors to carefully manage the dynamics of introducing new participants to the existing group, including the potential disruption this could cause. This suggestion is reasonable for mainstream delivery of the project, but the use of this strategy in a trial setting raises a problem in that participants receiving the intervention would change during the intervention period and, as such, intention-to-treat analyses would not be possible. This issue is therefore a reflection of broader debates in relation to the internal and external validity of public health interventions.^{25–27} Although measures that maintain the rigour of a trial, such as limiting recruitment

numbers, may increase internal validity, it may limit the external validity. Hence, although restricting the number of participants to those who signed up at baseline was a necessity, it may not reflect usual practice, whereby children are able to attend or 'drop-in' to after-school clubs at times convenient to them. Further work examining the use of modified intervention design for real-world public health interventions may be warranted.^{27–29}

Future delivery of after-school PA interventions may benefit from a greater awareness of existing school events. Study staff may wish to ask schools for the current and previous year's schedule of activities and check this against the planned intervention sessions, in the hope of identifying any current or future overlaps. While this will not stop all withdrawals, it may reduce instances of children signing-up when they are likely to drop out at a later date (thus leaving space for children who may follow the intervention through to the end). Identifying prospective timings convenient to girls is significant, given the multiple challenges already associated with implementing PA interventions during school hours.^{7 30 31}

The call for greater variety (eg, a preference for differences in dance styles) in session content highlights the complexities of implementing interventions in distinct settings. Settings-based approaches to PA interventions have been highlighted elsewhere.^{32 33} These findings support the need for a more 'context based approach not only during data collection, but also for defining basic research constructs and questions'.³⁴ Findings highlight the significance of ensuring variety in session content and for influencing participation and attendance across schools. Different dance styles appealed to different girls. While the programme set out to offer girls input into dance styles, music and pace of progression, the effectiveness of this approach relies on employing dance instructors who are willing and able to teach a range of dance styles. While this was largely the case in the BGD, it is important that the recruitment of intervention deliverers ensures that their skills allow them to deliver the planned content *and* be flexible to input from the participant group. The group work component of the intervention was valued by participants and dance instructors as it fostered ownership of the project, helped the instructor cope with various levels of competence within the group, developed girls' leadership skills and mitigated against inconsistent attendance. This finding is consistent with the broader literature associated with the principle of relatedness within Self Determination Theory.³⁵

Parents were identified as an important source of support for behaviour change that was not utilised in this study. This finding is consistent with previous work which has identified parents as a potentially important feature of PA behaviour change.^{36–41} Parents represent a potential 'lever' that can be used to influence the PA levels of children, and as such work that specifically

focuses on how to engage parents in providing positive support for extracurricular PA programmes is warranted.

School culture impacts on the intervention delivery

Through our extensive engagement with school contacts, dance instructors, and girls, we observed (but did not formally assess) an implicit school 'ethos' or 'culture' which affected the intervention delivery and may have influenced the themes discussed above. The main school culture factors that appeared to affect the acceptability of the study were the school's organisational structure and communication between staff, the school's expectations of pupil behaviour and attendance, and the role of the school contact. When approaching schools to recruit participants, differences in attitudes were discernible from the outset, with some schools having a room booked and time set aside, and others forgetting the meeting had been arranged. Intervention logistics were also affected by distinct school cultures. Prior to recruitment, schools specified the days that intervention sessions would run so at the point of recruitment all girls knew the time and days on which they would receive dance sessions. In one case the school contact changed the days on which sessions ran. This school had the lowest average attendance, in part because many participants were not able to attend on the rescheduled day. Additionally, the same school contact set up a competing after-school club on the same day as the revised sessions. On paper, all schools encouraged consistent attendance, but in reality the expectations on girls varied widely between schools (Personal communication, S J Sebire, *et al*, 2016). Some school contacts expected girls to attend and were proactive in their approach in supporting them to do so. Others felt that their lack of familiarity with the girls made it difficult for them to encourage them, resulting in fewer, more ineffective attempts. All issues discussed above are reflective of the heterogeneity in the ethos of the participant schools. The findings highlight the fundamental importance of being aware of, and accounting for, the diversity of schools' needs in planning after-school PA interventions.⁴²

We encourage researchers to give greater consideration to the 'school context'.²¹ Determining what contextual factors are important for a given study are difficult to establish preintervention and any formal assessment of the impact of school context will be difficult. Researchers should keep field notes of interactions with school and record issues that facilitate or hinder the study and intervention. Such a pool of knowledge from different studies and contexts may be the foundations on which more formal assessments of school context can in the future be made.

STRENGTHS AND LIMITATIONS

This study provides new information on factors which affect the delivery of after-school PA intervention.

Although data used in this study are primarily focused on dance, we hope the findings will have future utility for researchers or practitioners operating within the broader field of PA interventions. A major strength of this research lies in the in-depth exploration of qualitative data obtained from a range of stakeholders. Data analysis was conducted by a team of researchers experienced in qualitative research. Two researchers participated only in the analysis stage of the process evaluation, and hence afforded a degree of objectivity, untainted by previous involvement in data collection. The total number of participants (n=78) is large, and there was evidence of data saturation. It should be noted that the findings represent issues associated with trial implementation, rather than the actual experiences of after-school PA interventions. Hence, they should not be considered a checklist for challenges associated with PA interventions. A limitation is that the issues that we report are grounded only in the experiences of stakeholders involved in one intervention, which was delivered to girls only in a relatively small area of the South West. As such, while many issues are applicable to the planning and implementation of broader after-school PA interventions it is possible that other interventions would reach different conclusions. We encourage other intervention planners and delivers to conduct detailed and reflective process evaluations and further contribute to the knowledge base for which school-based interventions can be improved.

CONCLUSIONS

This study provides information on factors associated with BGDp delivery and identifies lessons which may be applied to future after-school PA interventions. Although after-school PA interventions hold promise in increasing PA levels among adolescent girls, there is a need to implement them in ways that are appropriate to the needs and requirements of schools and girls. Our findings suggest that implementation processes need to be contextually specific and the recommendations proposed in this study may have utility in achieving this objective.

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REFERENCES

- Strong WB, Malina RM, Blimkie CJ, *et al.* Evidence based physical activity for school-age youth. *J Pediatr* 2005;146:732–7.
- Parfitt G, Eston R. The relationship between children's habitual activity level and psychological well-being. *Acta Paediatr* 2005;94:1791–7.
- Department of Health PA, Health Improvement and Prevention. *At least five a week: evidence of the impact of physical activity and its relationship to health: a report from the Chief Medical Officer*. London: Department of Health, Physical Activity, Health Improvement and Prevention, 2004: i–vi.
- Jago R, Sebire SJ, Cooper AR, *et al.* Bristol girls dance project feasibility trial: outcome and process evaluation results. *Int J Behav Nutr Phys Act* 2012;9:83.
- Riddoch C, Mattocks C, Deere K, *et al.* Objective measurement of levels and patterns of physical activity. *Arch Dis Child* 2007;92:963–9.
- Janssen I, Leblanc AG. Systematic review of the health benefits of physical activity and fitness in school-aged children and youth. *Int J Behav Nutr Phys Act* 2010;7:40.
- van Sluijs EM, McMinn AM, Griffin SJ. Effectiveness of interventions to promote physical activity in children and adolescents: systematic review of controlled trials. *BMJ* 2007;335:703.
- Lee H, Tamminen KA, Clark AM, *et al.* A meta-study of qualitative research examining determinants of children's independent active free play. *Int J Behav Nutr Phys Act* 2015;12:5.
- Griffiths LJ, Cortina-Borja M, Sera F, *et al.* How active are our children? Findings from the Millennium Cohort Study. *BMJ open* 2013;3:e002893.
- Dwyer JJ, Allison KR, Goldenberg ER, *et al.* Adolescent girls' perceived barriers to participation in physical activity. *Adolescence* 2006;41:75–89.
- Connolly K, Quin E, Redding E. Dance 4 your life: exploring the health and well-being implications of a contemporary dance intervention for female adolescents. *Res Dance Educ* 2011;12:53–66.
- Burkhardt J, Brennan C. The effects of recreational dance interventions on the health and well-being of children and young people: a systematic review. *Arts Health* 2012;4:148–61.
- Jago R, Edwards M, Sebire S, *et al.* Bristol girls dance project (BGDP): protocol for a cluster randomised controlled trial of an after-school dance programme to increase physical activity among 11–12 year old girls. *BMC Public Health* 2013;13:1003.
- Pate RR, O'Neill JR. After-school interventions to increase physical activity among youth. *Br J Sports Med* 2009;43:14–18.

15. Vizcaino V, Aguilar F, Gutiérrez R, *et al.* Assessment of an after-school physical activity program to prevent obesity among 9- to 10-year-old children: a cluster randomized trial. *Int J Obesity* 2008;32:12–22.
16. Jago R, Edwards MJ, Sebire SJ, *et al.* Bristol girls dance project (BGDP): protocol for a cluster randomised controlled trial of an after-school dance programme to increase physical activity among 11–12year old girls. *BMC Public Health* 2013;13:1003.
17. Deci EL, Ryan RM. The “what” and “why” of goal pursuits: human needs and the self-determination of behavior. *Psychol Inquiry* 2000;11:227–68.
18. Ryan RM, Deci EL. Active human nature: self-determination theory and the promotion and maintenance of sport, exercise and health. In: Hagger MS, Chatzisarantis NLD, eds. *Intrinsic motivation and self-determination in exercise and sport*. Champaign, IL: Human Kinetics, 2007:1–19.
19. Craig P, Dieppe P, Macintyre S, *et al.* Developing and evaluating complex interventions: the new Medical Research Council guidance. *BMJ* 2008;337:a1655.
20. Oakley A, Strange V, Bonell C, *et al.* Process evaluation in randomised controlled trials of complex interventions. *BMJ* 2006;332:413–16.
21. Moore G, Audrey S, Barker M, *et al.* Process evaluation of complex interventions. UK Medical Research Council (MRC) guidance. *BMJ* 2015;350:h1258.
22. Gov.UK. *Pupil premium final allocations 2015 to 2016 by school in England. Pupil premium: funding allocations 2015 to 2016*. London, 2015.
23. Gale N, Heath G, Cameron E, *et al.* Using the framework method for the analysis of qualitative data in multi-disciplinary health research. *BMC Med Res Methodol* 2013;13:117.
24. Jago R, Davis L, McNeill J, *et al.* Adolescent girls' and parents' views on recruiting and retaining girls into an after-school dance intervention: Implications for extra-curricular physical activity provision. *Int J Behav Nutr Phys Act* 2011;8:91.
25. Victora CG, Habicht J-P, Bryce J. Evidence-based public health: moving beyond randomized trials. *Am J Public Health* 2004;94:400–5.
26. Glasgow RE, Lichtenstein E, Marcus AC. Why don't we see more translation of health promotion research to practice? rethinking the efficacy-to-effectiveness transition. *Am J Public Health* 2003;93:1261–7.
27. Glasgow R, Klesges L, Dziewaltowski D, *et al.* The future of health behavior change research: What is needed to improve translation of research into health promotion practice? *Ann Behav Med* 2004;27:3–12.
28. Pawson R, Greenhalgh T, Harvey G, *et al.* Realist review--a new method of systematic review designed for complex policy interventions. *J Health Serv Res Policy* 2005;10(Suppl 1):21–34.
29. Glasgow RE, Vogt TM, Boles SM. Evaluating the public health impact of health promotion interventions: the RE-AIM framework. *Am J Public Health* 1999;89:1322–7.
30. Jago R, Baranowski T. Non-curricular approaches for increasing physical activity in youth: a review. *Prev Med* 2004;39:157–63.
31. Kipping RR, Howe LD, Jago R, *et al.* Effect of intervention aimed at increasing physical activity, reducing sedentary behaviour, and increasing fruit and vegetable consumption in children: active for Life Year 5 (AFLY5) school based cluster randomised controlled trial. *BMJ* 2014;348:g3256.
32. Heath GW, Parra DC, Sarmiento OL, *et al.* Evidence-based intervention in physical activity: lessons from around the world. *Lancet* 2012;380:272–81.
33. Bauman AE, Reis RS, Sallis JF, *et al.* Correlates of physical activity: why are some people physically active and others not? *Lancet* 2012;380:258–71.
34. Salvo D, Reis RS, Sarmiento OL, *et al.* Overcoming the challenges of conducting physical activity and built environment research in latin america: ipen latin america. *Prev Med* 2014;69(Suppl 1): S86–92.
35. Ryan R, Deci E. Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *Am Psychol* 2000;55:68–78.
36. Raudsepp L, Viira R. Influence of parents' and siblings' physical activity on activity levels of adolescents. *Eur J Phys Educ* 2000;5:169–78.
37. Gustafson S, Rhodes R. Parental correlates of physical activity in children and early adolescents. *Sports Med* 2006;36:79–97.
38. Jago R, Fox K, Page A, *et al.* Parent and child physical activity and sedentary time: Do active parents foster active children? *BMC Public Health* 2010;10:194.
39. Davison K, Cutting T, Birch L. Parents' activity-related parenting practices predict girls' physical activity. *Med Sci Sports Exerc* 2003;35:1589–95.
40. Davison KK, Jago R. Change in parent and peer support across ages 9 to 15 yr and adolescent girls' physical activity. *Med Sci Sports Exerc* 2009;41:1816–25.
41. Davison KK, Jurkowski JM, Li K, *et al.* A childhood obesity intervention developed by families for families: results from a pilot study. *Int J Behav Nutr Phys Act* 2013;10:3.
42. Wechsler H, Devereaux RS, Davis M, *et al.* Using the school environment to promote physical activity and healthy eating. *Prev Med* 2000;31:S121–S37.

PARTICIPANT FOCUS GROUP EXIT INTERVIEW GUIDE

Section	Questions	Timings
Introduction	<p>Explain purpose of the interview:</p> <p><i>The reason we want to talk to you is because we think that you will be able to help us improve Active7 for the future and we value your opinions. We are going to talk about your experience of taking part in Active7 and your views on promoting Active7 to other schools.</i></p> <p>Explain audio recording and data storage procedures:</p> <p><i>Before we get started, I'd like to tell you that I will be recording the conversation. The recording is to help us remember what we talked about. You can ask for the recording to be stopped at any time. The recording will be written up and we will remove any personal information like names, place names, school names etc. At this point the audio files will be deleted; so none of the information that is written down and recorded can be connected to you in any way.</i></p> <p>Explain group guidelines and confidentiality:</p> <p><i>We have got some group guidelines for us all to follow. (<u>Display and read out guidelines</u>). Lastly, we want everyone to be able to talk freely so it is important that everything that is said today stays in this room. This means that what is said is confidential.</i></p> <p>Answer any questions</p> <p>Commence audio recording</p>	2-3 mins
Icebreaker	<p><i>Can we go round the group one at a time and say our name and a word or two to describe what it was like being part of Active7? I'll go first – Jo and exciting.</i></p>	~1 min
Barriers and facilitators of participation	<p><i>Now I'd like us to start by finishing off some sentences. I will go through each sentence and I'd like you to individually write down how you would finish the sentence on these post-it notes and stick it onto the question. If you have more than one way to finish the sentence you can write another post-it note. We will then discuss each answer in more detail.</i></p> <ul style="list-style-type: none"> • <i>I enjoyed or liked being part of Active7 because...</i> • <i>I didn't enjoy or like being part of Active7 because...</i> 	~7 mins

	<ul style="list-style-type: none"> • <i>I found it easy to come to Active7 sessions because...</i> • <i>I found it difficult to come to Active7 sessions because...</i> <p>More in-depth exploration of the above:</p> <ul style="list-style-type: none"> • X can you tell me a little bit more about why you enjoyed/ didn't enjoy Y? • Does anyone agree/disagree with X? • X can you tell me a little bit more about why you found it easy to come to the Active7 sessions because of Y? • Does anyone agree/disagree with X? <p>*Specific examples of success stories or challenges.*</p> <p>PROMPTS (in case the following are not covered in the post-it note task):</p> <ul style="list-style-type: none"> • What did everyone think about X? • Did anyone like/dislike X? • Cost (did this make it easier to attend?) • Dance styles • Opportunity to perform • Types of music • Dance diaries • Days on which Active7 ran • Activities/events which affected sessions i.e., school camp, other clubs, sports days etc. • Number of sessions each week • Length of sessions 	
Session experiences	<p>Relatedness</p> <ul style="list-style-type: none"> • Did you all know each other before you started the dance sessions? • Did your relationships with one another change as the weeks went on? • Was everyone supportive of each other? <p>*Specific examples of success stories or challenges.*</p> <p>Competence</p> <ul style="list-style-type: none"> • How did you find the dance sessions physically? (E.g. did they make you feel hot, sweaty or out of breath?) <p>PROMPT: Did the sessions become easier (physically) over time?</p> <ul style="list-style-type: none"> • How difficult or complicated did you find the dance steps or routines? <p>PROMPT: Did the sessions feel like they became less complicated over time?</p>	~7 mins

	<ul style="list-style-type: none"> • What do you think you have learnt (if anything) from being part of Active7? <p>PROMPTS:</p> <ul style="list-style-type: none"> • New/improved dance skills? • What can you do now that you couldn't do before? • Change in amount of physical activity? • Change in confidence? <p>*Specific examples of success stories or challenges.*</p> <p>Attendance</p> <ul style="list-style-type: none"> • How would you describe the attendance (number of people who came to the sessions) at the dance sessions? (E.g. high, low, variable?) • Did it change over the 20 weeks? • Do you have any idea why attendance was like it was? • Why do you think some girls stopped coming to Active7? • (For those girls who continued to attend) How did it make you feel as the numbers declined? 	
Dance instructor	<p>Overall impressions</p> <ul style="list-style-type: none"> • What did you think about your dance instructor in general? Why? • Is there anything you would change about your dance instructor's teaching style? If yes, what? • Did your instructor give you choices? E.g. dance steps, music, choreographing own routines. • What did you think about being given choice? • What did you think of the creative tasks (where you were allowed to make up your own sections of dance) throughout the sessions? • Do you think you had some control over what you did? <p>*Specific examples of success stories or challenges.*</p> <p>PROMPTS:</p> <ul style="list-style-type: none"> • Things liked/ liked less • Things liked less: <ul style="list-style-type: none"> - Why do you think the instructor may have done X,Y or Z. i.e., making injured people join in / refusing water breaks. Can you think of any reason why she did that? - Is this different in other classes they go to? If so, how? If not, why do they think/want A7 to be different? 	~10 mins

	<ul style="list-style-type: none"> Teaching style (E.g. encouraging / motivational / enthusiastic / good knowledge of dance / left pupils out/ went too fast/ too slow/ made it too hard/didn't know our names/wasn't interested in us). 	
Signposting	<ul style="list-style-type: none"> What did you think of the information we gave to you about local dance opportunities? (E.g. helpful?) TAKE EXAMPLE Is anyone thinking of starting a new dance class now that Active7 has finished? Has anybody already started a new dance class? Did your dance teacher advise you on other local dance sessions / clubs in the area? 	2-3 mins
Dissemination (creative or sorting task)	<p>Introduction</p> <p><i>We are thinking about doing Active7 again in more schools. After the last 20 weeks, you are now experts in what it is like to be a part of Active7 so the last part of our discussion will look at how we might improve Active7 for other girls your age. Using the post-it notes from the first task I'd like you to work together to put them in order of importance, (so what's the most important thing to you about Active7, what is the main reason you come along etc.). And as we do this task I'd like us to talk about how we could change the more negative things or improve the positive things if we did the project in more schools.</i></p> <p>(THIS WAS USED TWICE AND SUBSEQUENTLY THE FOLLOWING TEXT WAS USED):</p> <p><i>After the last twenty weeks you are now experts in what it's like to be part of Active7 so what I'd like to know is what you would change or what you think we should change if we were to do the project again?</i></p> <p>Cost</p> <ul style="list-style-type: none"> If we were to run the programme again would you be willing to pay to attend? How much would you be willing to pay? <p>PROMPT: £5 per week (2 sessions) and then £1 per session.</p> <p>E.g.</p> <p><i>'For number 1 you have chosen...'</i></p> <p>1. Fun (interviewer probe – <i>how could we make it more fun if we did this project again?</i>)</p>	~10 mins

	2. Making up own routines (interviewer probe – <i>What is it about making up routines that you particularly enjoyed?</i>)	
8. Closing	<p>Thank the participants</p> <p><i>That's all the questions I have for you today. You have helped me a lot and we will use your input to improve Active7 in the future.</i></p> <p>Provide opportunity for participants to add any additional information</p> <p><i>Before we finish could we go round the group and each say one thing that could help improve Active7 in the future?</i></p> <p>Provide opportunity for participant to ask questions</p> <p><i>Do you have any questions for me?</i></p> <p><i>Thank you very much for your time and attention. I appreciate you sharing your thoughts and opinions with me!</i></p>	2-3 mins

DANCE SPECIALIST EXIT INTERVIEW QUESTIONS

Section	Questions (prioritise questions in yellow)	Timings
Introduction	<p>Explain purpose of the interview</p> <ul style="list-style-type: none"> Understand experiences of delivering the Active7 dance sessions Discuss elements of Active7 that worked well Identify potential improvements to the project Discuss factors that might affect how we take the Active7 project from here and run it on a larger scale. <p>Explain audio recording and data storage procedures <i>Before we get started, I'd like to tell you that I will be recording the conversation to help us remember what we discussed. You can ask for the recording to be stopped at any time. After the interview, the recording will be written up and we will remove any identifiable information like names, place names, school names etc. At this point the audio files will be deleted; so none of the information that is written down and recorded can be connected to you in any way.</i></p> <p>Position interviewee as the experts of their experience <i>There are no right or wrong answers we are trying to understand your views on how the Active7 project worked, after all you are the expert! Please be as honest as possible.</i></p> <p>Answer any questions Complete consent form Commence audio recording</p>	2-3mins
Ice breaker	To start us thinking about your involvement in Active7 can you tell me what attracted you to the Active7 project?	~1 min
Instructor induction day (N.B. Stress that this is concerned with only the intervention induction not taster induction)	<p>Overall impressions</p> <ul style="list-style-type: none"> Did the December induction day prepare you adequately to deliver the Active7 sessions? How did you find working with the other dance instructors? Were you able to make any new connections as a result of working on the project? Were there any elements of the induction session that could have been improved? <p>PROMPTS:</p> <ul style="list-style-type: none"> Length of time Structure <ul style="list-style-type: none"> Balance of theory (SDT and evaluation description) and practical 	~7mins

	<ul style="list-style-type: none"> • Would you have liked more role play for dealing with difficult situations? 	
Booster session	<ul style="list-style-type: none"> • How did you find the April booster session? • Did you change anything as a result of the booster session? 	~2mins
Dance session delivery	<p>Session plan manual (<u>Use session plans as a prompt</u>)</p> <ul style="list-style-type: none"> • What did you think of the session plans in the manual? <p>PROMPT: Things liked/ liked less/Improvements</p> <ul style="list-style-type: none"> • How did you use the session plan manual? <p>PROMPT: Did you adapt the session plans? Examples?</p> <ul style="list-style-type: none"> • Were you able to adapt the session plans to the girls' ability/differentiate depending on girls ability? <u>If so, how?</u> • Do you think the manual could be improved in any way? <p>Session delivery</p> <ul style="list-style-type: none"> • Could you give me an example of a particular success story you had in working with the girls in your school? • Can you give an example of where delivery was challenging? <p>PROMPTS:</p> <ul style="list-style-type: none"> • Length of the sessions • Number of pupils per class • Suitability of the dance space • Rooms being double booked/occupied for exams • What did you think of the number of sessions per week? • What dance styles did you cover? • How comfortable/confident did you feel teaching the different dance styles? • How did you decide on the dance styles you used? <p>Covered sessions</p>	~20mins

	<ul style="list-style-type: none"> • Did you need to cancel or find cover for any of your sessions? • If yes, • How did this process work? (I.e. what did you have to do?) • How well do you think the process of covering sessions worked? • How did the girls react to having a session covered by someone else? • Did you cover any sessions in other schools? • If yes, how did you find covering another instructor's session? • How did the girls react to having a session covered by someone else? <p>Active7 hand-over (two Dis only only)</p> <ul style="list-style-type: none"> • How did the process of handing the sessions over to X work? • Do you think this process went smoothly? • Is there any way we could make this transition smoother if the project was carried out in more schools on a larger scale? <p>Self-Determination Theory <i>At the induction Simon presented some ideas about motivation and how to motivate the girls, including supporting their choice and ownership, sense of belonging and sense of improved skills.</i></p> <p>Overall</p> <ul style="list-style-type: none"> • Were you able to include any of the motivational ideas that we included in the manual and induction day into the Active7 sessions you delivered? How? And were they useful? (TAKE MANUAL AS PROMPT) • How similar do you think these motivational ideas were to your own delivery/instruction style? • What did you do in order to try and sustain the pupils' engagement in dance and physical activity? • Did you see the girls' motivation change throughout the course of the sessions? (E.g., did their reasons for coming seem to change) <p>Autonomy</p> <ul style="list-style-type: none"> • Were you able to offer children choices during the Active7 sessions? How? If challenging – why? 	
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	<ul style="list-style-type: none"> • Did the girls have a sense of ownership over the dance sessions? How did they respond to this? • Can you give an example of where supporting the girls' choice and ownership was challenging? <p>Relatedness</p> <ul style="list-style-type: none"> • What was your relationship with the girls like? Did it change? How? • Can you give me an example of this relationship? • How did the girls get on as a group? Were they supportive of each other? Example? • Did they clash? Example? • Did you see the group evolve over time? <p>Competence</p> <ul style="list-style-type: none"> • How do you think the girls views of their dance ability changed? • How did you deal with the varied level of skill that the girls had? • Can you tell me about a particular example of a challenge a girl had? How did you try to help them overcome this challenge? 	
Pupils response to intervention	<ul style="list-style-type: none"> • How did the girls respond to: <ul style="list-style-type: none"> • Twice weekly lessons • Length of sessions • Dance styles/ skills • Performance opportunity • Do you think the girls feel different about being active now, compared to when the sessions started? Example? • Did you see any personality or physical changes in the girls over the course of the intervention? • Did you see any change in the girls in relation to: <ul style="list-style-type: none"> ○ Confidence/Self-perceptions ○ Have you heard things from teachers / parents about any spill-over effects Active7 has had on the girls outside the sessions (e.g., academics)? 	5-10mins

	<ul style="list-style-type: none"> ○ What more information/ support could the Active7 team provide to maintain and or increase participation once the intervention has finished? ● Did you experience any behavioural issues? Examples? ● What impact did these behavioural issues have on the sessions/ other girls? ● What coping strategies did you use to cope with behavioural issues? ● How effective do you think these coping strategies were? Examples... ● How useful were the behavioural guidelines? (Use manual as prompt) Examples... ● How supportive was the school contact when behavioural issues arose? Examples... <p>Attendance and drop out</p> <ul style="list-style-type: none"> ● What did you think of the level of attendance at the dance sessions? Expected/unexpected? ● <i>If attendance was low -</i> ● Do you have any feel for why attendance may have been low/high? PROMPT: Was attendance affected by other events/activities such as school camp, other clubs, sports day etc.? ● Did you have any girls drop out? Reasons why? 	
Roll out of the programme	<p>Introduction</p> <p><i>At the end of the project we may consider running Active7 on a larger scale, for example in more schools around the country. On a larger scale instructors would still receive the training and booster sessions and this would likely be run by experts in local areas.</i></p> <p>General</p> <ul style="list-style-type: none"> ● Do you think running this project on a larger scale would work? Yes/no ask for reasons... ● How would the instructor training work best? (It could be the same as 	~10 mins

	<p>it is now but run by a different local expert).</p> <ul style="list-style-type: none"> • How can we attract the best dance instructors in different areas? <p>Extending the programme length:</p> <p><i>The current programme was aimed at Year 7 girls and was limited to 40 sessions.</i></p> <ul style="list-style-type: none"> • What changes would be needed to keep the girls interested beyond the 40 sessions – perhaps when the girls have moved into year 8? • What strategies do you use to motivate girls to continue attending dance sessions in classes you run elsewhere? <p>Open enrollment</p> <p><i>In the study we had to limit who could participate to the girls who provided consent and data when we first visited schools (Sept/Oct 2013).</i></p> <ul style="list-style-type: none"> • If this programme were to run outside of a research context would you allow girls to join once the programme had started? If so, would you allow girls to join at any time or only at set landmarks, such as the start of a term? <p>Previous after-school experience:</p> <ul style="list-style-type: none"> • Have you run after-school dance sessions before? If so, are there any lessons that you could bring from those experiences that could be used to improve the Active-7 after-school programme? • In other work you have done in schools, who paid for your time? School, council, arts charity or the parents? If the parents what was the cost per child per session? <p>Views on payment</p> <ul style="list-style-type: none"> • Was the per-session payment you received in-line with what you are used to? • Would you be less likely to attend a training/induction session if you did not receive payment? 	
Communication	<p>School communication</p> <ul style="list-style-type: none"> • How did you find working within your school? • Did you have much contact with the school? • Did you find the school supportive? 	~5mins

	<ul style="list-style-type: none"> • Could you give me an example of a particular success story you had in working with your school? • Can you give an example of where working with your school was challenging? • Was there anything that could have been done by project staff to improve the relationship you had with the school? <p>Active7 team communication</p> <ul style="list-style-type: none"> • How did you find working with the study team throughout the project? <p>PROMPTS: Resolving any issues / problems which arose</p> <ul style="list-style-type: none"> • How did you find being involved with the evaluation measures/visits from the research team? <p>PROMPTS: Frequency of visits</p> <p>PROMPTS: Impact on teaching from instructor observations and child completed questionnaires</p>	
Closing	<p>Finally, is there anything that we have not discussed today that you think could have been done to improve the Active7 intervention?</p> <p>Thank participant</p> <p>Provide opportunity for participant to add any additional information</p> <p><i>That's all the questions I have for you today.</i></p> <p><i>Is there anything else you'd like to tell us about the things we talked about today or the four week programme?</i></p> <p>Provide opportunity for participant to ask questions</p> <p><i>Do you have any questions for me?</i></p>	2-3mins

SCHOOL CONTACT EXIT INTERVIEW GUIDE

Section	Questions	Timings
Introduction	<p><i>Explain purpose of the interview</i></p> <ul style="list-style-type: none"> ▪ Discuss elements of the intervention that worked well ▪ Potential improvements ▪ Factors that might affect how we take the Active7 project from here and run it on a larger scale. <p>Explain audio recording and data storage procedures</p> <p><i>Before we get started, I'd like to tell you that I will be recording the conversation to help us remember what we discussed. You can ask for the recording to be stopped at any time. The recording will be written up and we will remove any identifying information (names, place names, school names etc). At this point the audio files will be deleted; so none of the information that is written down and recorded can be connected to you in any way.</i></p> <p>Answer any questions Complete consent form Commence audio recording</p>	2-3 mins
Background/ice-breaker questions	<ul style="list-style-type: none"> • What is your role within the school? • How did you come to be involved in Active7? • What was the incentive for you to participate? • How involved have you been? (E.g. what did your role as the contact involve etc.)? 	2 mins
Communication	<p>Communication with dance instructor</p> <ul style="list-style-type: none"> • What involvements with the dance instructor(s) did you have? • How did you find working with the dance instructor throughout the programme? • How could communication with the dance instructor have been improved? <p>PROMPTS:</p> <ul style="list-style-type: none"> • Resolving any issues / problems which arose in relation 	

	<p>to the dance project (e.g. arranging the dance sessions)</p> <p>Communication with study team</p> <ul style="list-style-type: none"> • How did you find working with study manager and the other Active7 team throughout the programme? • How could working with the study team be improved? <p>PROMPTS:</p> <ul style="list-style-type: none"> • Resolving any issues / problems which arose in relation to the research or dance sessions (e.g. arranging data collection visits) 	
Logistical issues	<p>General</p> <ul style="list-style-type: none"> • Logistically, how did you find Active7 ran in your school? • Were there any issues or problems? If yes, what type of issues or problems arose? <ul style="list-style-type: none"> • Are these problems common to other extra-curricular activities? • Potential improvements which could have resolved these problems? • Were there any behavioural issues related to Active7? • What did you think of the level of attendance at the dance sessions? <p>PROMPTS</p> <ul style="list-style-type: none"> • Expected/unexpected? • Do you have any feel for what factors may have contributed towards the level of attendance? • Was attendance affected by other events/activities such as school camp, other clubs, sports day etc.? • How could attendance have been increased? • What did you think about the length of the sessions (1 hour and a quarter)? • What did you think about the number of sessions per week (2 per week)? • Were there any problems with room bookings? 	~10 mins

	<p>*Specific examples of success stories or challenges.*</p> <p>Questions for school contact in school where two instructors were used</p> <ul style="list-style-type: none"> • How did you feel about having a new instructor? • How did the process of handing the sessions over to X work? • Could this process be improved? • Do you think having more than one instructor deliver the project could work if the project was rolled out? • Looking back is there anything the Active7 team could have done to help hand the sessions over between the instructors? <p>Data collection</p> <ul style="list-style-type: none"> • What were your experiences of the data collection process? (Arranging and the actual process of collecting data from the girls) • How could the process of data collection be improved? <p>*Specific examples of success stories or challenges.*</p>	
Impact	<ul style="list-style-type: none"> • What impact do you think the dance programme had on the girls taking part? (E.g. physical, dance-specific, socially?) <ul style="list-style-type: none"> - Did they seem excited by it? - Was there a difference in their behaviour/confidence during the project? <p>*Specific examples of success stories or challenges.*</p>	~2 mins
Sustainability	<p>What information/ support could we provide to maintain or increase dance participation now the dance sessions have finished?</p>	1-2 mins
Roll out of programme	<p>Introduction</p> <p><i>At the end of the project we may consider running Active7 on a larger scale, for example in more schools around the country. The difference between Active7 now and the rolled out project</i></p>	~10 mins

is that there would not be any research components, for example we would not need to do data collection and it would be run by a not-for-profit company not researchers.

General

- Do you think running this project on a larger scale would work? Yes/no ask for reasons...
- Would there be any school barriers/ facilitators for a larger roll out?

Extending the programme length:

The current programme was aimed at Year 7 girls and was limited to 40 sessions.

- What changes would be needed to keep the girls interested beyond the 40 sessions – perhaps when the girls move into year 8?
- What strategies do you use to motivate girls to continue attending optional after-school activities?

Open enrolment

In the study we had to limit who could participate to the 33 girls who provided consent and data when we first visited schools (Sept/Oct 2013).

- If the programme was run outside of a research context would instructors be allowed to add new pupils into their sessions if they drop out?
- If so, how would this work? (e.g. reserve list?)
- Would you allow girls to join at any time or only at set landmarks, such as the start of a term?
- Does this happen in other extra-curricular activities in your school?

Logistics

- If Active7 wasn't part of a research project, how would the girls be recruited?

PROMPT

- By the school only or would the taster session be useful?
- How would you usually recruit to extracurricular

	<p>activities?</p> <p>Cost</p> <ul style="list-style-type: none"> • In other after-school activities you have in your schools, who pays for the instructors time? School, council, arts charity or the parents? If the parents what was the cost per child per session? • If there was no focus on measuring PA, would this make a difference to recruitment of girls? • Would your school be willing to offer Active7 again? • Is your school planning to continue offering after-school dance next term? If not, why not? • Who would be the best person to approach in school about a larger project? • Which year group would you recommend we target with this larger project? • Is a dance project for other years needed for Active7 to feed into? • Would the involvement with the school contact be less or more in a larger project? 	
Closing	<p>Thank participant</p> <ul style="list-style-type: none"> • Thank you so much for taking the time to speak to me and for your help co-ordinating Active7 so far. <p>Provide opportunity for participant to add any additional information</p> <ul style="list-style-type: none"> • That's all the questions I have for you today. • Is there anything else you'd like to tell me about the things we talked about today? <p>Provide opportunity for participant to ask questions</p> <ul style="list-style-type: none"> • Do you have any questions for me? 	1-2 mins