



This is a peer-reviewed, final published version of the following document and is licensed under Creative Commons: Attribution-Noncommercial 4.0 license:

Lewis, Kiara ORCID logoORCID: <https://orcid.org/0000-0002-0142-7351> (2014) Pupils' and teachers' experiences of school-based physical education: a qualitative study. *BMJ Open*, 4 (9). e005277. doi:10.1136/bmjopen-2014-005277

Official URL: <http://dx.doi.org/10.1136/bmjopen-2014-005277>

DOI: <http://dx.doi.org/10.1136/bmjopen-2014-005277>

EPrint URI: <https://eprints.glos.ac.uk/id/eprint/9740>

Disclaimer

The University of Gloucestershire has obtained warranties from all depositors as to their title in the material deposited and as to their right to deposit such material.

The University of Gloucestershire makes no representation or warranties of commercial utility, title, or fitness for a particular purpose or any other warranty, express or implied in respect of any material deposited.

The University of Gloucestershire makes no representation that the use of the materials will not infringe any patent, copyright, trademark or other property or proprietary rights.

The University of Gloucestershire accepts no liability for any infringement of intellectual property rights in any material deposited but will remove such material from public view pending investigation in the event of an allegation of any such infringement.

PLEASE SCROLL DOWN FOR TEXT.

BMJ Open Pupils' and teachers' experiences of school-based physical education: a qualitative study

Kiara Lewis

To cite: Lewis K. Pupils' and teachers' experiences of school-based physical education: a qualitative study. *BMJ Open* 2014;**4**:e005277. doi:10.1136/bmjopen-2014-005277

► Prepublication history and additional material is available. To view please visit the journal (<http://dx.doi.org/10.1136/bmjopen-2014-005277>).

Received 17 March 2014
Revised 18 August 2014
Accepted 19 August 2014

ABSTRACT

Objectives: To explore pupils' and teachers' experiences of physical education (PE).

Study design: A qualitative investigation employing semistructured interviews. Self Determination Theory was used as a guiding theory and Template Analysis was used to analyse the data.

Setting: A secondary school in the North East of England.

Participants: 14 pupils (aged 13 and 14, boys and girls) with a range of self-perceived competencies regarding PE and four PE teachers of the pupils (3 male, 1 female).

Primary and secondary outcomes: (1) Attitudes and perceptions of PE pupils regarding their experiences of compulsory school PE lessons. (2) PE teachers' experiences of teaching PE.

Results: Key results from pupils and teachers suggest pupils enjoy participation in PE when they feel competent, in control and supported by others. Feeling competent depended on (1) the activity within PE and (2) the pupils perceived physical capabilities/aptitude. Feeling in control related to (1) having a choice of activities, (2) being able to set exertion levels and (3) control over clothes worn while taking part. Relationships within pupil groups and between pupils and teachers were perceived as important. Teachers could positively influence their pupils' enjoyment by understanding and supporting their personal goals, as opposed to dictating and controlling what they did and for how long, and by promoting a non-threatening atmosphere between pupils.

Conclusions: Rising obesity levels and concerns over the fitness of children and young people has returned the focus of PE to its potential as a vehicle for promoting health. This study suggests schools and PE teachers in particular can positively influence the PE experience of both boys and girls by providing more choice of activities and letting pupils make their own decisions based on their personal needs.

INTRODUCTION

Children's and young people's cardio respiratory fitness (CRF) is declining globally by 4.3% per decade; in the UK, it is estimated that every year CRF declines by 0.8%.¹ This

Strengths and limitations of this study

- The main strength of this study is that it allowed both boys and girls to articulate their varied experiences of physical education. The inclusion of boys in the study suggested that many of the barriers to activity are not gender specific but are as a result of perceived competency.
- The study is limited by the sample size and while the interviews provide in-depth information it is not possible to generalise to other secondary aged pupils without further research, in particular with boys.
- The least competent pupils declined to be interviewed and different methods are required to engage with them.

steep decline in CRF has been mirrored by increases in childhood obesity with some suggestions that the reductions in CRF may be due to increased adiposity.² While obesity is attenuating in some populations it continues to rise in children with high levels of deprivation.³ Although national BMI levels are no longer rising, waist circumferences of school children continue to increase.⁴ In terms of children's health, CRF may be more important than body mass index (BMI), with CRF being inversely related to children's cardiac risk factors. CRF may also attenuate the impact of adiposity.⁵ Recent research suggests there is a 'dose-response' to physical activity and that the more active adolescents are, the more positive the health effects.⁶ The immediate health benefits, combined with improved psychological well-being,⁷ and the probability that childhood activity tracks into adult activity,⁸ suggests that the declining levels of fitness are of concern and more needs to be carried out to address children and young people's physical activity levels.

The school environment seems to be the obvious place to intervene in increasing children's physical activity (PA),⁹ but to date there have only been modest improvements.



CrossMark

Division of Health and Wellbeing, University of Huddersfield, Huddersfield, UK

Correspondence to
Dr Kiara Lewis;
kiara.lewis@hud.ac.uk



In a recent systematic review there was no evidence to support school interventions impacting significantly on adolescents' activity levels.¹⁰ One reason for this lack of success may be the paucity of research, in particular qualitative,¹¹ asking children and young people how *they* would improve school physical education (PE). While there are a few studies of teenage girls, the literature has under represented boys and overweight and obese young people. A review of research from 1950 to 2009¹² found only four qualitative studies asking overweight and obese children about their PE experiences. Instead of researching 'on' children it is important they are part of the research process and have a voice. By listening to children and young people's points of view it may be possible to provide an insight into what does and does not work for them, helping to inform future interventions. This is supported by the WHO who state that policymakers and practitioners should seek to identify what prevents and what motivates physical activity participation.¹³

Self-Determination Theory (SDT) suggests that there are three basic human needs that we all strive towards: autonomy, relatedness and competency.¹⁴ We persevere in behaviours that we perceive are under our own volition, which we are capable of and which we believe others support us in doing. The current PE experience within secondary school, for many young people, has the opposite effect.¹² PA becomes something they have to do despite a lack of confidence in their ability, where they may be mocked or humiliated in the process.¹⁵⁻¹⁷ It is of no surprise that many young people disengage with PE as they progress through school and, for some, participation is that of reluctant compliance. Once the activity no longer becomes compulsory it is likely to stop. The SDT has been tested in schools with promising results,¹⁸⁻¹⁹ however, this has been predominantly through quantitative research. The complexity of the PE environment makes it difficult to test all factors impacting on motivation. Qualitative research provides an opportunity to explore many aspects of the theory, rather than testing individual components. Although PE aims to provide pupils with the skills, knowledge and confidence to participate in physical activity in their leisure time,²⁰ activity levels continue to decline once young people leave school, suggesting PE has been ineffective. Recent UK Government interventions have been to increase the time made available and to reintroduce competitive team sports in an attempt to motivate pupils to be more active.²¹ However, in order to increase motivation, pupils' experience of PE needs to be understood. Ntoumanis (2002)²² suggests only a minority of pupils are intrinsically motivated to take part in PE and a majority are either externally motivated or amotivated (do not take part). What is needed is to identify which factors contribute to pupils' motivation (or lack of therein) towards PE. A study was conducted by Hassandra *et al*²³ which used a qualitative approach with PE pupils at two high schools in Greece. They

interviewed 16 pupils following the administration of a self-report questionnaire to identify pupils with differing motivation levels. They found a wide variety of social factors influenced motivation towards PE lessons. With those thoughts in mind this study aimed to understand the experience of PE from the perspective of both teachers as well as pupils, and to assess the extent to which the SDT can explain the differing levels of motivation within a mixed gender sample of English PE pupils.

METHODS

Study design

As adopted by Hassandra *et al*,²³ a qualitative approach was used to explore the experience of PE at a Secondary High School in the North East of England. The author has taken a 'subtle realist' approach to qualitative research. Within this position the researcher acknowledges that they cannot be certain about any knowledge claims and there is no way that the researcher can escape the social world in order to study it.²⁴ The objective, from a subtle realist perspective, is to search for knowledge about which we can be reasonably confident.

Setting

The author approached all schools within one region of the North of England through the 'Heads of PE' forum. The teachers were given information regarding the proposed study and offered a report of the findings. Although a number of the PE teachers were keen to be involved in the study and wanted to know what they could do to increase motivation, the research was subsequently blocked by the head teachers who did not think it was worthwhile for pupils to miss lessons to take part in the study. One school did, however, respond positively and so formed the base for this study. Staff members were keen for us to speak to the pupils to try to find out what engaged them with PE. The teachers felt the children may be more forthright in their answers to us, as independent researchers, than they would be to them. The school went on to use the report provided as the basis for a review of PE in the school and as an example to 'Ofsted' as to how they were responding to students' needs. The area in which the school is located is one of high levels of deprivation and low levels of employment.²⁵

Ethics

The study was ethically approved and consent was gained from the head teacher (who acted 'in loco parentis'), the participating pupils and teachers. Pseudonyms were used for the presentation of findings. The local dialect has been maintained but explanations provided in parenthesis where necessary.

Phase 1

All pupils in year 9 (n=198) were asked to complete a short questionnaire asking them to rate their ability at

PE on a scale of 1 (low) to 10 (high; see online supplementary appendix 1) and to state if they were willing or not to take part in an interview. The questionnaire was adapted from Nicholls²⁶ competence scale and was designed to allow the interviews to be conducted with pupils with a range of perceived competencies, rather than as a robust measure of ability. Pupils (n=14) were then purposively sampled using maximum variation sampling to include both males as well as females, and a wide range of motivational levels. Selected participants were then invited to a semistructured interview, which took place within the school setting during class time in a communal area. The semistructured interview schedule was piloted with 2 year nine pupils, not involved in the study, and minor amendments were made to the wording in response to this process. The schedule was designed to explore why participants self-rated themselves at the given score and how this compared to their self-perceived rating at other PAs undertaken out of school (if applicable). A number of affective questions were included to allow pupils to discuss their feelings towards PE lessons and their PE teachers and how they would change PE if given the opportunity.

Phase 2

The interviewees were allowed into school for 1 day to interview pupils and staff. All PE staff (n=10) were invited to take part in semistructured interviews and four accepted the invitation (3 male, 1 female). The remaining teachers were not available due to teaching responsibilities or providing lunchtime cover on that day. These interviews also took place in the school setting and centred on the teachers' experience of PE, how they motivated less able pupils and what changes they might want to make to PE at the school. The semistructured interview schedule was piloted with an adult with previous teaching experiences and no changes were recommended following this process.

Data analysis

All interviews were audio recorded and transcribed verbatim. Template analysis²⁷ was used to analyse the interviews. This style of thematic analysis involves the development of an initial template from a subset of the data, which may include 'a priori' themes based on previous literature. This is then applied to further data and revised and reapplied until a final version is arrived at that incorporates all the themes emerging from the data. This template was used as the basis for organising the discussion of results. Template analysis works well within a 'subtle realist' framework since it does not differentiate between descriptive and interpretative coding as it assumes they cannot be separated.²⁸ The final template was discussed with another researcher, to allow the author to reflect and discuss the interpretations of the findings. This process is not to 'validate' the findings but to allow the researcher to reflect on the process and on how feelings towards the participants may have impacted

on the interpretation of the interviews. This process of reflexivity is a common method of quality checking utilised within qualitative analysis.

RESULTS

Pupils

Of the 198 pupils (age 13 and 14) in the year group, 124 filled in the initial questionnaire. Of these, 48 (39%) were willing to be interviewed; however, none of the eight pupils who rated themselves as three or below agreed to be interviewed. A purposive sample of pupils (half male, half female, with scores ranging from 4 to 10), were invited to be interviewed.

Staff

Four staff members (3 males, 1 female) agreed and were able to find time to be interviewed. Their experience ranged from 2 years to over 20 years as PE teachers.

Themes

Three themes based on the SDT, which were identified 'a priori' were supported by the analysis: perceived competence, perceived autonomy and relatedness. The sub-themes that contributed to the higher order themes are described below and provide more in-depth information as to how these concepts impacted on the children (illustrative quotes are provided in the accompanying tables).

Perceived competence

The pupils enjoyed, and put effort into, activities they felt competent in. The feelings of competency were determined by the type of activity and the pupils' physical capabilities/apptitude.

Type of activity

Some pupils (ratings 9 and 10) felt competent in all activities on offer in PE; for others it depended on what the activity was. Almost all the low-middle (ratings 4 and 5/6) pupils identified an activity out of school they felt competent in and enjoyed, but these activities were not available in the PE timetable (eg, majorettes, skateboarding, biking; see [box 1](#)).

Physical capabilities and/or aptitude

Pupils who felt they were better at some sports than others typically put it down to their physical build (bigger children felt better at strength sports) or physical aptitude: poor flexibility meant some activities like gymnastics were harder and poor hand-eye skills and ability to catch led to a lack of enjoyment in ball sports. The children who described themselves as bigger, 'I'm not the skinniest', generally found running difficult and felt at a disadvantage in activities requiring speed or endurance.

The teachers talked about getting 'the challenge right' to have the pupils working at the right level. They

Box 1 Impact of the type of activity on pupils' motivation

'If it's Wednesday it's not too bad cos I've got something I like... but if it's athletics I'm like 'OMG' [Oh My God] cos I'm rubbish at it. Things I'm alreet [alright] at I like but if I'm not, I don't'.

(Female rating 5/6)

'..because, wiv art [without] sounding big headed, I know I'm good at it (majorettes) so then I put more effort into it like so...I enjoy it'.

(Female rating 9)

'It's easier to engage kids in tennis, badminton things like that. When you tend to have two teams it's hard to set differentiated tasks and things for when they're playing a game and so some can drift off and so it's harder. In the team games I think that the pupils who are more better and more engaged in it take to it more'

(Teacher B)

also expressed how this could be difficult in a mixed ability group; particularly in team games where the less able pupils were disengaged (see [box 2](#)).

Perceived autonomy

Feelings of control were important to pupils and teachers. Conflict arose when staff chose the activities on offer, when they tried to control how hard the pupils worked and when they chose what pupils wore during PE.

Control over activities

While the pupils rating themselves as high in PE ability were happy with the activities available in general, all the others complained about the activities that they 'had to take part in' and the lack of a voice in expressing what they would like to do was seen as a major disincentive to taking part.

Getting the activities right was seen as important by the teachers, whereas asking the pupils' opinions was not recognised as a way of getting it right. In year 9 new

Box 2 Impact of the pupils' physical capability and aptitude on their motivation

'probably the one I like best is rugby because it's the best sport I'm good at, probably cos of my build I'm quite strong...there's not one I particularly don't like um I'll do anything...err probably sports that involve running for a long time, like hundred metres and things, um I suppose I feel a little bit negative about but I still do it cos that's what I gotta do...it's just to be honest I don't like being beaten by people'.

(Male rating 5)

'I don't like if it's a ball game, like catching, like rounders, I'm not interested. I'm not good at catching, I might let the team down'.

(Female rating 6)

'I think a nurture group would help us, particularly nurture group at the bottom—for kids who are struggling with the basic skills—dyspraxia—different problems like that they've got'.

(Teacher C)

Box 3 Impact of control over participation in activities on motivation

'I dunt [don't] really like doing sport, well I do the sport but there are certain things I dunt like doing. I'm not keen on rounders and err netball cos I've done them like every year since I came to this school, sort of had enough of the'm.

(Female rating 6)

'...they can't be bothered 'kill me now' that's what they say, they're suicidal—it's only PE!'

(Female rating 5/6 describing how others in her PE class feel in the morning before a PE lesson).

'...if we got to choose because not everybody's comfortable with what subject they're doing and if someone's not comfortable then I don't see why they should do it'

(Female rating 9) L5

'They get to pick 7 of the 10 blocks in year 10 which works well for engagement obviously cos once you get to that point if they've done it for the fourth time—a sport they don't enjoy—cos they do it 7, 8, 9, they do it for a fourth time the engagement goes completely down, so by picking, generally our year 10 they're good lessons all the time—your 10 s and 11 s—because the kids want to be there and do it'

(Teacher B)

activities were introduced (trampolining, rock climbing), which were popular and in year 10 there were some options available, this was seen as having a positive impact but was not offered in the first 3 years of school (see [box 3](#)).

Control over exertion

Pupils did not like physical pain; however, they liked a physical challenge and were happy to push themselves physically when it was an activity that they enjoyed. What they did not like was being pushed further than they wanted to be, not having an option of stopping or feeling under pressure through peer comparisons to keep going longer than they wanted to.

This was in contrast with activities they took part in out of school, where they felt they could control how much effort they put in (see [box 4](#)).

Control over uniform

Pupils did not like being made to wear the school PE uniform, which was described as 'bland', 'boring' and 'unfeminine' or that at certain times of the year they had to wear shorts. However, for the teachers wearing the correct uniform was of high importance. This led to disagreement between pupils and teachers, and provided a source of frustration to the teachers who felt annoyed by pupils not turning up in the appropriate kit (see [box 5](#)).

Relatedness

The relationship between pupils and teachers was seen as important by all involved and pupils were also concerned about their interactions with other pupils during PE lessons.

Box 4 Impact of control over exertion on motivation

'Basically PE teachers, not to me, to others they try and push them too far. They make them do things that they are not comfortable with. It's like if they don't really try (but) some people hate running, if they don't try they remove them from the lesson and that goes on their record. But, if they don't like running they don't like running basically'

(Female rating 6)

'I think they are quite pushy really, with like athletics...then if they did it like other subjects like cricket or hockey they'd not be as strict abah (about) it but they are really pushy with running and stuff'

Interviewer: 'So do you think being pushy works?'

'No cos then it makes them start to disagree with the teacher and then they weren't gonna do anything'

(Female rating 9)

'I don't feel under as much pressure (out of school) like at school they're like sometimes...I don't know like they won't force you to do it but they're like make you do it, there (majorettes) if you want a break you can have a break'

(Female rating 5)

'What I always say is you do not sit down—so they know that they're not sitting down in my lesson—especially the key stage 4 pupils that are less keen, cos it frustrates me when they just take themselves off and sit down, cos I'm like why are you doing that? You wouldn't just sit there in maths and say I'm not doing it.'

(Teacher D)

Teachers' approach to pupils

The pupils with higher ratings generally 'liked' the teachers and the approach they took. The better pupils felt they could 'have a laugh' with teachers and teachers also felt the more relaxed environment (in PE as compared to other subjects) meant it was easier to control pupils. Discipline and controlling behaviour seemed important to some teachers, for others the emphasis was less on discipline and more on understanding and building relationships.

The pupils also valued a good relationship with their teacher and felt this varied between teachers. They appreciated the more relaxed relationships in the after-school activities on offer (see [box 6](#)).

Pupils' relationship with each other

The pupils wanted to feel as though they were at a competitive level with their peers. If they felt they were at a lower level than others in their PE class there was a fear

Box 5 Impact of control over PE uniform on motivation

'instead of having a uniform I would prefer to just wear some shorts and a top—t-shirt and stuff like that'

(Male rating 4)

'So to be wearing baggy track suit bottoms when you're doing athletics is not good enough—I think there is a lot of me that is old fashioned and I want them to wear shorts'

(Teacher A)

Box 6 Impact of teachers' relationships with pupils on motivation

'... it's fun because you're doing it with a teacher that you like because they're making you laugh and stuff but then there's some teachers that if you dont understand it then they just don't give ya time of day at all they dont care'

(Female rating 9)

'I think you need to be someone who can show that you care for that student—and ensure that you want what's best for them, you can't just be focusing on the people who are doing...got to focus more on the ones that aren't doing as much, you need to try and get everybody'

(Teacher B)

of letting others down and being mocked or berated for this (by their peers). This was particularly the case in team sports but less of an issue in individual activities.

The atmosphere at trampolining was commented on by staff and pupils as being more relaxed and this activity attracted more participants in PE and in the after-school club as well (see [box 7](#)).

DISCUSSION**Principal findings**

An emerging finding from this study is that many young adolescents enjoy PA participation when it is under their control. This suggests that, for some children and young people, it is not physical activity 'per se' that they do not engage with, but the controlling manner in which it is enforced through schools, which they object to. For many of the pupils interviewed, PE was reducing, not increasing, their motivation to be physically active. This was in part due to the narrow range of activities offered, which only suits the skills of a minority of pupils, but largely due to the controlling behaviour of some of the PE teachers. In attempting to make pupils take part and work at a desirable intensity, the teachers are in fact undermining the pupils' feelings of autonomy and motivation to take part. These same teachers are less controlling in after-school activities, when there is reduced pressure to meet levels or achieve standards

Box 7 Impact of pupils' relationships with each other on motivation

'Like in a team if someone does it wrong they're like 'why did you do it like that—stupid'. I feel sorry for them'

(Female rating 5/6)

'You're not relying on other people you're doing it yourself. Like in a team if you do it wrong they're like 'why did you do it like that?' Like trampolining you're doing it for yourself. Working in a team is good but if it's a big team then some people get left out so it's not right fair on them. Trampolining its just 2 trampolines and one goes on and one goes off'

(Female rating 5).



and in individual activities (except running) where a more relaxed atmosphere is provided in comparison to traditional team sports. The finding that a number of the pupils not engaged with PE are active out of school was unexpected; previous research has found that those who are more active in PE are generally also more active out of school.²⁹ The expectation that being active in school will lead to more activity out of school has resulted in numerous attempts to make pupils more active—in the hope they will continue afterward.³⁰ The pressure to increase activity levels may, however, have led to a clash between teachers and pupils. The outcomes from this study suggest that pupils who do not have the skills or aptitude in traditional team sports and ball games, often favoured by PE departments, have disengaged with PE. Pupils, far from feeling motivated, leave feeling embarrassed or humiliated and future participation is reluctant compliance rather positive engagement.

Support for SDT

This study suggests that pupils need to enjoy the activity if they are to be motivated to continue. Although enjoyment of activity has been consistently recognised as a factor in participation in physical activity, there has been little investigation into what makes activity enjoyable from a young person's perspective. This study suggests that perceptions of competency combined with control over activities, exertion and uniform are important to young adolescents' enjoyment of activity. These findings are congruent with SDT theory that postulates that individuals need to feel self-determined, competent and related to others.

Implications for PE

The PE teachers recognised that the pupils enjoyed activity more in after-school clubs but they felt compelled to work differently in school time. This is probably in part due to their perceptions of what a PE class should provide. While some teachers highly rated discipline within lessons, other teachers identified a need to understand and build relationships with pupils to help them reach their personal goals. Evidence, linked to SDT, suggests that this approach would be more effective in engaging pupils³¹ and is supported by the findings in this study. Prusak *et al*³² suggest that the 'health club model', which involves providing a variety of opportunities that allow for personal interest and individual differences, rather than traditional team games, may be more effective. This includes offering sport, recreational activities, fitness and nutritional sessions and activity that is available before, during and after school. The study presented here also suggests that this would be an effective approach for the pupils interviewed. In order to promote lifelong engagement in PA, PE needs to be personally and socially relevant to the pupils' needs.³³ This requires designing curricula based on the views and opinions of the pupils involved. This approach was taken by

the school concerned, which used the results of this study to inform future provision.

Strengths and limitations

Pupils were recruited from one school in the North East of England and may not represent pupils from all school PE lessons; however, the findings may be of interest to other teachers who experience similar problems with disengagement from PE and frustration with pupils who opt out. It would have been interesting to actually speak to the pupils with the lowest rating levels but they were not willing to engage with the process and a different approach may be needed to find out their views. The impact of ethnicity is another aspect that could have been explored further.

The main strength of the study is the in-depth analysis of student's perceptions of PE from across the range of competencies and from boys as well as girls. This combined with the interviews with the PE teachers allows a more comprehensive understanding of what PE is like for those involved within one school. The findings from this investigation could be used to test the importance of the elements of the SDT in other schools.

CONCLUSIONS AND RECOMMENDATIONS

School PE teachers, with an interpersonal style and pedagogical approach that positively influences the PE climate, can help motivate pupils to take part. The SDT suggests that teachers can support autonomy through providing a range of activities to choose from and promoting personal goals. They can develop perceived competency through setting appropriate challenges related to the young person's physical capabilities and aptitudes.³⁴

Teachers may also influence, positively or negatively, the relatedness factor through the quality of the relationship established with young people. Flintoff and Scratton's³⁴ research with girls suggests a teaching style that is 'hierarchical, discipline based and relies on traditional curricula and pedagogy' (p.17) is unlikely to lead to a learning environment that supports girls who are not already competent and confident in their PE abilities. This study suggests this may also be true for boys.

The students who did not want to take part in this study need further investigation and other methods, rather than face-to-face interaction, may be required in order to engage with them. The use of technology and interactive web sites where responses can be anonymous, yet familiar, may prove useful.

Once the views and opinions of children and young people have been sought more needs to be carried out to put them into practice. Some of the findings from this study replicate those found in other studies (on adolescent girls) yet there has been little change in policy or practice to accommodate these findings.

The results of this study have been used by the school involved to inform future provision and to aid teachers

in increasing pupils' motivation towards PE. This practice needs to be replicated in other schools and those factors that are consistent across gender, ethnicity and socioeconomic status, need to be acknowledged and acted on by policymakers.

Acknowledgements The author would like to thank the participants who volunteered their time to take part in the study and Louisa Horner and Max McLean for their contributions.

Funding This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None.

Ethics approval Provided by the School Research and Ethics Panel, University of Huddersfield. All participants consented to their participation in the study.

Provenance and peer review Not commissioned; externally peer reviewed.

Data sharing statement No additional data are available.

Open Access This is an Open Access article distributed in accordance with the Creative Commons Attribution Non Commercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited and the use is non-commercial. See: <http://creativecommons.org/licenses/by-nc/4.0/>

REFERENCES

- Tomkinson G, Global changes in anaerobic fitness test performance of children and adolescents (1958–2003). *Scand J Med Sci Sports* 2007;17:497–507.
- Sandercock G, Voss C, McConnell D, *et al*. Ten year secular declines in the cardiorespiratory fitness of affluent English children are largely independent of changes in body mass index. *Arch Dis Child* 2010;95:46–7.
- National Obesity Observatory. <http://www.noo.org.uk/>
- Griffiths C, Gatley P, Marchant P, *et al*. A five year longitudinal study investigating the prevalence of childhood obesity: comparison of BMI and waist circumference. *Public Health* 2013;27:1090–6.
- Stratton G, Canoy D, Boddy LM, *et al*. Cardiorespiratory fitness and body mass index of 9–11 year-old English children: a serial cross-sectional study from 1998–2003. *Int J Obes (Lond)* 2007;31:1172–8.
- Galan I, Boix R, Medrano MJ, *et al*. Physical activity and self-reported health status among adolescents: a cross sectional population-based study. *BMJ Open* 2013;3:e002644.
- Ortega FB, Ruiz JR, Castillo MJ, *et al*. Physical fitness in childhood and adolescence: a powerful marker of health. *Int J Obes (Lond)* 2008;32:1–11.
- Conroy MB, Cook NR, Manson JE, *et al*. Past physical activity, current physical activity and risk of coronary heart disease. *Med Sci Sports Exerc* 2005;37:1251–6.
- National Institute for Health and Clinical Excellence (NICE). Promoting physical activity, active play and sport for pre-school and school-age children and young people in family, pre-school, school and community settings. 2009. <http://www.nice.org.uk/PH17> (accessed Nov 2013).
- Dobbins M, DeCorby K, Robeson P, *et al*. School-based physical activity programs for promoting physical activity and fitness in children and adolescents aged 6–18. *Cochrane Database Syst Rev* 2013;(2):CD007651.
- Peeters C, Marchland H, Tulloch H, *et al*. Perceived facilitators, barriers and changes in a randomized exercise trial for obese youth: a qualitative inquiry. *J Phys Act Health* 2012;9:650–60.
- Stankov I, Olds T, Cargo M. Overweight and obese adolescents: what turns them off physical activity? *Int J Behav Nutr Phys Act* 2012;9:53.
- Currie C, Zanotti C, Morgan A. Social determinants of health and well-being among young people. Health Behaviour in school-aged children (HBSC) study: international report from the 2009/10 survey. Copenhagen: EHO Regional office for Europe; 2012, Health Policy for Children and Adolescents, No.6.
- Deci EL, Ryan RM. Facilitating optimal motivation and psychological well-being across life's domains. *Can Psychol* 2008;1:14–23.
- Rukavania PB, Li W. School physical activity interventions: do not forget about obesity bias. *Obes Rev* 2007;9:67–75.
- Women's Sports and Fitness Foundation. *Changing the Game for Girls*. 2012; http://wsff.org.uk/sites/wsff.org.uk/files/Changing_The_Game_For_Girls_Final_0.pdf (accessed Nov 2013).
- Department of Culture, Arts and Leisure (DCAL). Young People and Sport 2010. Findings from the 2010 young persons' behavior and attitude survey (YPBAS). 2012. http://www.dclani.gov.uk/ypbas_2010_sports_bulletin.pdf (accessed Nov 2013).
- Ntoumanis N. A self determination approach to the understanding of motivation in physical education. *Br J Educ Psychol* 2001;71:225–42.
- Taylor IM, Ntoumanis N, Standage M, *et al*. Motivational predictors of physical education students' effort, exercise intentions and leisure-time physical activity: a multilevel linear growth analysis. *J Sport Exerc Psychol* 2010;32:99–120.
- Fairclough S, Stratton G, Baldwin G. The contribution of secondary school physical education to lifetime physical activity. *Eur Phys Educ Rev* 2002;8:69–84.
- Department of Culture Media and Sport (DCMS). Beyond 2012—The London 2012 Legacy Story. 2012. <http://www.culture.gov.uk/publications/8945.aspx> (accessed Nov 2013).
- Ntoumanis N. Motivational clusters in a sample of British physical education classes. *Psychol Sport Exerc* 2002;3:177–94.
- Hassandra M, Goudas M, Chroni S. Examining factors associated with intrinsic motivation in physical education: a qualitative approach. *Psychol Sport Exerc* 2003;4:211–23.
- Hammersley M, Atkinson P. *Ethnography: principles in practice*. London: Routledge, 1995.
- Health Protection Agency. <http://www.hpa.org.uk/web/HPAweb&Page&HPAwebAutoListDate/Page/1278943979953> (accessed Nov 2013).
- Nicholls JG. *The competitive ethos and democratic education*. Cambridge, MA: Harvard University Press, 1989.
- King N. Using template in the thematic analysis of text. In: Cassell C, Symon G. *Essential guide to qualitative methods in organisational research*. London: Sage, 2004:256–70
- King N, Horrocks C. *Interviews in qualitative research*. London: Sage, 2010.
- Mallum KM, Metcalf BS, Kirkby J, *et al*. Contribution of timetabled physical education to total physical activity in primary school children: cross sectional study. *BMJ* 2003;327:592.
- Salmon J, Boch MJ, Phongsavan P, *et al*. Promoting physical activity participation among children and adolescents. *Epidemiol Rev* 2007;29:144–59.
- Katartzi E, Vlachopoulos S. Motivating children with developmental coordination disorder in school physical education: the self-determination theory approach. *Res Dev Disabil* 2011;32:2674–82.
- Prusak K, Graser SV, Pennington T, *et al*. A critical look at PE what must be done to address obesity issues? *J PE Recreation Dance* 2011;82:39–46.
- Belton S, O'Brien W, Meegan S, *et al*. Youth-physical activity towards health: evidence and background to the development of the Y-Path physical activity intervention for adolescents. *BMC Public Health* 2014;14:122–34.
- Flintoff A, Scraton S. Stepping into active leisure? Young women's perceptions of active lifestyles and their experiences of school physical education. *Sport Educ Soc* 2010;6:5–21.