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Porter, Alice, Cawley, Elin, Chapman, Laura et al. (7 more authors) (2025) A qualitative study in UK secondary schools exploring how PE uniform policies influence body image attitudes and PE engagement among adolescent girls. *BMJ Open*. e099312. ISSN 2044-6055

<https://doi.org/10.1136/bmjopen-2025-099312>

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BMJ Open A qualitative study in UK secondary schools exploring how PE uniform policies influence body image attitudes and PE engagement among adolescent girls

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To cite: Porter A, Cawley E, Chapman L, *et al.* A qualitative study in UK secondary schools exploring how PE uniform policies influence body image attitudes and PE engagement among adolescent girls. *BMJ Open* 2025;**15**:e099312. doi:10.1136/bmjopen-2025-099312

► Prepublication history and additional supplemental material for this paper are available online. To view these files, please visit the journal online (<https://doi.org/10.1136/bmjopen-2025-099312>).

Received 14 January 2025
Accepted 19 June 2025



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ABSTRACT

Background Many adolescent girls experience body dissatisfaction and have low levels of physical activity. Secondary school physical education (PE) offers opportunities for girls to build self-confidence and stay active; however, PE uniforms can be a barrier to participation.

Objectives To explore how secondary school PE uniform policies influence body image attitudes and PE engagement (participation and enjoyment) among adolescent girls, and how these policies could be co-developed in future.

Design A qualitative study involving focus groups and interviews.

Participants and setting Forty-four 12–13 year-old girls and six PE staff members from six mixed-sex secondary schools in England.

Data collection and analysis Using topic guides and participatory activities to aid discussions, we explored PE uniform preferences and the influence on body image attitudes and PE engagement with adolescent girls, as well as the PE uniform policy development process with PE staff. Data were analysed using reflexive thematic analysis, supported by NVivo V.14.

Results Three themes were generated. Theme 1, 'Striking the right balance between choice, comfort and uniformity', describes the challenges of developing PE uniform policies that offer pupils choice to maximise comfort, while maintaining uniformity to ensure smartness, and to reduce social comparison. Theme 2, 'PE uniforms are "made for boys"' reflects that current policies can often provide unisex uniforms that do not fit the female body, or gendered options that limit girls' choices over style and fit. Theme 3, 'Self-confidence influences comfort in wearing PE uniform, and in turn PE engagement' suggests girls with high self-confidence may be less concerned about others' opinions and how they look, leading to greater PE enjoyment, whereas girls with lower self-confidence described feeling self-conscious, especially in communal changing rooms, which could impact their comfort and PE engagement.

STRENGTHS AND LIMITATIONS OF THIS STUDY

- ⇒ Our qualitative approach, using participatory activities to prompt discussions, enabled in-depth exploration into how physical education (PE) uniforms can influence body image attitudes and PE engagement among adolescent girls.
- ⇒ Data from adolescent girls and PE staff were triangulated to ensure PE uniform policy recommendations considered both pupil and staff perspectives.
- ⇒ Due to challenges with recruiting schools, our sample was made up of mixed-sex, mainly affluent schools in South West England only.
- ⇒ We had limited representation from pupils of ethnic minority backgrounds and those with low levels of PE enjoyment.

Conclusions Our findings suggest that developing PE uniform policies, which allow pupils to choose their own bottoms, wear additional layers and wear PE uniform all day may improve comfort and inclusivity among girls, facilitating better PE engagement.

INTRODUCTION

Adolescence is a critical period of vulnerability for the development of mental health problems.^{1 2} Physical and hormonal changes during adolescence, coupled with heightened social pressures and increased social media use, can contribute to poor body image and low self-esteem.^{3 4} Body image is a complex, multidimensional construct, for which there is currently no universally agreed definition. However, the cognitive behavioural framework conceptualises body image as 'how people experience their own embodiment, especially, but not exclusively, their physical appearance'.⁵ Body image, as it relates to physical appearance, is considered to include perceptual and attitudinal elements,

with body image attitudes (cognitions, emotions and behaviours) incorporating the importance of physical appearance for self-evaluation and evaluative beliefs about physical appearance and body satisfaction.⁵ Body dissatisfaction is characterised by negative cognitions and emotions regarding one's body, often stemming from a perceived discrepancy between one's own body and an 'ideal' body,⁶ and is associated with increased risks of anxiety, depression and the development of eating disorders, and is particularly prominent among adolescent girls.^{7–11}

Physical activity has multiple benefits, including improved mental health, well-being and self-esteem.^{12 13} Despite these benefits, adolescence also often coincides with a reduction in physical activity.^{14–16} Gender inequality in physical activity emerges as early as 2 years, with research suggesting girls engage in less outdoor play than boys.¹⁷ This gap also widens with age, as the decline in physical activity starts sooner and becomes steeper for girls than boys from childhood into adolescence.^{14 15 18–20} Research indicates that girls can experience multiple barriers to continuing to engage in physical activity, including low self-confidence, poor body image, gender stereotypes and norms, safety concerns, insufficient peer and family support and discomfort with available clothing options.^{21 22} It is therefore important to enable and promote the inclusivity of physical activity and sport for girls.

As part of the national curriculum for education, secondary schools in the UK offer a space for adolescent girls to engage in physical activity through physical education (PE), which can be an opportunity to build competency in physical and social skills, increase self-confidence and establish long-term participation in physical activity.²³ However, research suggests many adolescent girls dislike PE due to the focus on competitive sport and feeling self-conscious in front of peers.²⁴ In addition, questionnaires show that many girls dislike and feel uncomfortable in their PE uniform.^{25–28} For example, the 2024 Youth Sports Trust Active Girls survey demonstrated that only 21% of adolescent girls in England were satisfied with their PE uniform, and only 47% felt comfortable wearing it.²⁵ A retrospective study that asked women to reflect on their experiences of PE in school suggested that PE uniforms were a significant barrier to physical activity and sport engagement and, for some, negatively impacted body image.²⁹ However, there is a lack of in-depth qualitative research exploring how PE uniforms may influence body image attitudes and PE engagement among adolescent girls. There is some evidence that for younger girls, wearing an 'active uniform' (a uniform that better enables physical activity) during primary school can increase physical activity.^{30 31} However, there is a lack of research on how physical activity enabling uniform policies may impact physical activity in secondary schools.

Government guidelines in England state that schools should 'choose a PE kit which is practical, comfortable, appropriate to the activity involved and affordable'.³²

Similar guidelines are provided in Scotland, Wales, Australia and New Zealand.^{33–36} These guidelines advocate for gender equality within school uniform policies; however, details about how this can be achieved, as well as specific recommendations for PE uniform items, are not provided. As Government guidelines in England allow secondary schools the freedom to determine their own PE uniform policies (including school branded items, colours, styles, when PE uniform can be worn),³² these are likely to vary greatly from school to school. Therefore, there is a need to develop more practical, evidence-based recommendations for school PE uniform policies to help schools improve the inclusivity of their PE uniforms. Therefore, the aims of this study were to:

- Explore how PE uniform policies might influence body image attitudes (such as body dissatisfaction), in line with the cognitive behavioural conceptualisation of body image.
- Explore whether and how secondary school PE uniform policies influence PE engagement (i.e., participation and enjoyment) among adolescent girls.
- Explore the feasibility and acceptability of co-developing new PE uniform policies with school staff and pupils.

METHODS

We conducted a qualitative study across six mixed-sex secondary schools in Bristol (urban city in South West England, approximate population of 472 500 (28.4% ethnic minority)) and South Gloucestershire (urban district in South West England, approximate population 290, 400 (8.8% ethnic minority))³⁷ via focus groups with year 8 pupils (12–13 years) and interviews with PE staff. Ethics approval was obtained from the Faculty of Health Sciences Ethics Committee at the University of Bristol, in February 2024 (reference 17624), and informed written parental consent was provided for all children and informed consent for all PE staff.³⁸ The study protocol was preregistered on the Open Science Framework (OSF) (<https://osf.io/krhg7>). We followed the Standards for Reporting Qualitative Research (SRQR) (online supplemental table 1).³⁹

Patient and public involvement and engagement (PPIE)

We conducted patient and public involvement and engagement (PPIE) with adolescent girls, their parents and secondary school stakeholders (teacher and Health and Education lead) to inform the development of topic guides and study documents, and the topic guide was piloted with the adolescent girls. Following PPIE feedback, some questions were removed from the pupil topic guide due to being difficult to understand or not age-appropriate, and suggestions were made to add interactive elements (see Study Procedures below). Additionally, study documents were refined to improve clarity.

Participants and recruitment

We aimed to recruit 6–8 schools selected using publicly available UK government data.⁴⁰ Recruitment focused on achieving diversity in school type (mixed-sex and single-sex, local authority and academy), school performance (based on Ofsted rating; single-word judgement given to schools following inspection, and attainment 8 score; measure of average academic performance across eight subjects) and pupil demographics (proportion of children from ethnic minority backgrounds, and free school meal eligibility (an indicator of deprivation)). Private schools were excluded.

The inclusion criteria for focus groups were Year 8 pupils (12–13 year-olds). Although the study was primarily focused on the experiences of girls, to promote inclusivity, we included pupils who identified as female or non-binary. We aimed to recruit pupils with varying PE enjoyment levels and from a range of ethnic backgrounds. PE staff with knowledge of the school PE uniform policy were included for interviews. Initial recruitment purposively targeted schools in Bristol/South Gloucestershire and Bradford, UK, based on the characteristics described above. However, due to low response rates (only one targeted school responded), recruitment was expanded to include all secondary schools in our recruitment areas.

Study procedures

A recruitment email and information sheet were sent to all schools. Staff expressing interest received a participant information sheet and were asked to disseminate study materials (study advert, participant information sheet and consent form) to eligible pupils and parents. Parental consent was obtained via an online form, which also collected demographic data on ethnicity, religion and family affluence (subjective proxy measure of income), and pupil-rated PE enjoyment level (one being low, five being high). To ensure all participants could contribute towards the discussion, we recruited a maximum of eight pupils per school. If more than eight pupils expressed interest, participants were purposively sampled based on PE enjoyment and ethnicity.

Six semi-structured face-to-face focus groups with pupils and six interviews with PE staff were conducted in schools between May and July 2024. To help pupils feel as comfortable as possible and able to discuss the topic openly, focus groups were conducted by two female researchers (EC and AP or LC) without staff present. The interactive activities within the focus groups were also used to help break the ice, build rapport between researchers and pupils and allow all pupils opportunities to voice their views. One staff interview was conducted online via Teams by EC. Focus groups lasted between 33 and 49 min while interviews lasted between 35 and 45 min and were audio-recorded using an encrypted device with participant consent. Pupils received a £20 gift voucher and staff received a £25 voucher as reimbursement for their time.

Topic guides (available in the protocol: <https://osf.io/krhg7>) were used for focus groups and interviews. School PE uniform policies, obtained via school websites prior to data collection, were used to aid discussion and are summarised in online supplemental table 2. Topic guides were developed iteratively by the research team and informed by PPIE. The questions were developed to obtain data specific to the impact of PE uniforms on body image attitudes and PE engagement, as well as data that could inform future development of PE uniform policies in UK secondary schools. Focus group discussions covered pupils' opinions on current PE uniform policies, their influence on PE engagement and how they felt about their bodies, and interest in changing PE uniforms. Two activities were used to facilitate discussions: writing likes/dislikes about the PE uniform on Post-it notes and attaching them to their PE uniform items, which they had brought to the session; and indicating their level of self-confidence wearing their PE uniform by sticking a t-shirt (made from paper) onto a scale ranging from self-conscious to self-confident. PE staff interviews covered views on current PE uniform policies, the policy development process, influence on pupil PE engagement and body image and the feasibility and acceptability of co-developing new policies with pupils.

Data analysis

Audio recordings were transcribed verbatim using a University-approved transcription service and anonymised. Data from focus group and interview transcripts, and Post-it notes from pupil activities were combined to form the data set. Data were combined to develop themes informed by the entire data set, and identifiers (pupil, staff and school) were used to allow for observation of similarities and differences within and between participants. We employed a reflexive thematic analysis (RTA)⁴¹ to interpret the data, supported by NVivo V.14.⁴²

The analysis process involved familiarisation with the data by anonymising, reading and rereading transcripts. This was followed by inductive coding to identify semantic (ie, explicit, surface-level) and latent (ie, underlying, interpretative) patterns of shared meaning across the data. To promote reflexivity, four researchers (AP, EC, LC and CC) independently coded four transcripts on two separate occasions (eight in total) and met to discuss their codes and interpretations of the data. The remaining transcripts were coded twice by AP and EC. Coding was iterative to support the theme generation process. Initial themes were generated using the codes, then reviewed and developed. These themes were refined through regular discussions between AP and EC and subsequently reviewed and discussed with the wider research team for further refinement. When developing themes, attention was given to where staff and pupils' views aligned and where they diverged to highlight the interplay between school policies and practices and pupil perspectives. Theme descriptions were produced, providing quotes from transcripts to support the themes. In addition to

Table 1 Academy* school characteristics (n=6)

Characteristic	Mean	Range
Ofsted rating†	2	1–3
Percentage of pupils eligible for free school meals‡	22	6.7–58
Percentage of pupils classified as White British ethnicity	67	42.4–82.2
Attainment 8 score§	48	29.3–60.8
School size (number of pupils)	1351	811–1825

*State-funded school that is independent from local authority.

†The Office for Standards in Education, Children's Services and Skills (Ofsted) ratings are a single-word judgement given to each education provider receiving a graded school inspection. These ratings help hold schools accountable for the education and care they provide to children. Ofsted ratings are represented as 1: outstanding; 2: good; 3: requires improvement; 4: unsatisfactory.

‡Eligibility for Free School Meals is an indicator of deprivation (higher percentage representing greater deprivation). Average is 24.6% in England.⁴⁰

§A measure of pupil's average academic performance across eight subjects. Average is 48.6 for girls in England.⁵⁵

RTA, the data were used to outline initial recommendations and key considerations for improving PE uniform policies for adolescent girls.

Positionality and reflexivity

All researchers involved in coding the data were White females, highly educated to Masters or PhD level, with an interest in women's health. AP, EC and LC had previous training and experience in qualitative analysis, and CC was new to qualitative analysis. Following the focus groups and interviews and alongside coding, researchers made reflexive notes, which were discussed during coding meetings to consider how researcher subjectivity may shape data analysis. The researchers discussed their own varied experiences of PE uniforms when younger, and how this may also shape data interpretation.

RESULTS

Sample

Six mixed-sex secondary schools (all urban, government-funded academies) in Bristol and South Gloucestershire were recruited, the majority of which were affluent schools with no religious character (one was Roman Catholic). **Table 1** presents the school characteristics. We had intended to recruit schools in Bradford, single-sex and local authority schools, as planned in our protocol; however, we were unable to due to lack of engagement from schools. The majority of schools did not respond to the study invitation; those that declined the invitation reported a lack of capacity as the reason for non-participation.

Across the six schools, 58 year 8 pupils (all female) expressed interest and 44 took part in focus groups (6–8 per school). **Table 2** presents pupil characteristics. The

Table 2 Characteristics of participating year 8 pupils (N=44)

Characteristic	N	%
Ethnicity*		
White or White British	29	66
Mixed or multiple ethnic group	2	5
Arab	1	2
Not reported	12	27
Religion		
Christian (Catholic, Protestant or any other Christian)	16	36
Muslim	2	5
No religion	21	48
Not reported	5	11
PE enjoyment level (one being low and five being high)		
1	1	2
2	4	9
3	10	23
4	12	27
5	17	39
Family affluence†		
1	0	0
2	3	7
3	23	52
4	11	25
5	0	0
*Ethnicity was self-reported and then categorised using the UK government consensus categories. ⁵⁶		
†Parents were asked 'Compared with other families in the UK, would you say your family income is: 1: far below average (much lower than most other families); 2: below average (lower than most other families); 3: average (about the same as most other families); 4: above average (more than most other families); 5: far above average (much more than most other families). ⁵⁷		
PE, physical education.		

majority of pupils were of White ethnicity (66%) and from families who perceived themselves as earning average or above average income (77%), which was representative of the wider school demographics, as shown in **table 1**. Six PE staff (3 PE teachers, 3 Heads of PE) took part in interviews (one per school), four were female and two were male. Staff had secondary education experience ranging from 7 to 29 years. A summary of the school PE uniform policies retrieved from school websites is presented in online supplemental table 2, including discrepancies with how PE uniform policies were implemented in practice (i.e., comparing to focus group and interview data). All schools in the sample required pupils to wear a mandated school PE uniform.

Themes

Three themes were generated relating to how PE uniforms influence body image attitudes and PE engagement (enjoyment and participation) among female adolescents. These were (1) striking the right balance between choice, comfort and uniformity, (2) PE uniforms are 'made for boys' and (3) self-confidence influences comfort in wearing PE uniform, and in turn PE engagement.

Theme 1: striking the right balance between choice, comfort and uniformity

Findings highlighted the challenge of providing PE uniform policies that allow pupils choice in what they wear during PE lessons to maximise their comfort, while also maintaining a certain level of uniformity which ensures: (1) pupils look smart when representing their school; (2) the PE uniform can be worn by pupils of different gender identities (see link to theme 2) and (3) girls look similar to their peers and do not stand out, which could, for some, exacerbate negative thoughts and feelings about their bodies (see link to theme 3).

It's what's functional but also what looks smart, because they have to be comfortable in it. (Female PE staff, School 4)

Feeling comfortable in the PE uniform was most important to Year 8 girls. Comfort was alluded to in two ways: (1) the physical comfort of the material and fit (eg, thickness and type of material, not being restrictive) ('It's kind of like quite thick (the PE top material), so I normally wear like a thinner top and shorter type shorts because it's just more comfortable'. Pupil, School 6); and (2) psychological comfort ('Because people might feel better in something slim fit than they do baggy because they like feel confident about their self and their body' Pupil, School 1). It appeared that comfort was strongly influenced by level of choice, with a preference among the girls to 'be able to wear whatever we feel comfortable in' (Pupil, School 2). Allowing choice, particularly over the style, fit and length of bottoms (eg, leggings, shorts and joggers), and to wear additional layers (eg, jackets, coats and underlayers) seemed to facilitate greater comfort.

'cause we have such a good like amount of choice, I think it's easier to wear something you're more comfortable in one day if you don't really wanna wear something like that. (Pupil, School 4)

Looking good and being 'on trend' also appeared to matter to some pupils, alongside comfort. Many girls wanted the option to wear cycle shorts, although some PE staff felt these choices were influenced more by fashion and social media than comfort and practicality. While pupils valued having options for better comfort, some seemed to worry about standing out and being picked on for it, especially when choosing the type of bottoms to wear and choosing colours (e.g., for trainers), as well as when having to wear spare uniform (if uniform was forgotten). It was noted by some pupils and PE staff that

trends were set by the 'popular' or 'sporty' girls, which other girls may feel pressure to follow, even if they are less comfortable options (see links to theme 3).

if you decide to wear something that not everyone wears but it's still within uniform restriction, a lot of people tend to say something about it and then even if that thing is meant to be positive or meant to be a joke, it still can make people feel insecure. (Pupil, School 2)

say there was a skort, I feel like some people would wear the skort and then I'd feel bad for people who wear shorts because just knowing school in general. I feel like the popular ones would wear like skorts or something and then people would find it weird if you wore shorts. (Pupil, School 6)

I think social media has such a negative impact on what they deem as acceptable, you could literally go on Instagram now and type in sport, and there'd be girls walking around in next to nothing, sports bras and shorts. (Female PE Staff, School 5)

Pupils expressed that when their PE uniform was uncomfortable and ill-fitting, this could restrict their movement, reducing their level of participation in PE lessons. Additionally, some pupils described feeling either too cold (in winter) or too hot (in summer) in their uniform, which could also reduce levels of exertion and participation. Some PE staff described adapting the PE uniform policy in these circumstances to try to enhance pupil comfort.

The shorts are like ridiculously thick. Like I can barely breathe in these. (Pupil, School 2)

the shorts sometimes like go up and it like distracts you into making sure your shorts don't go up all the time. Because we have to like pull them down if they're like getting really short. (Pupil, School 6)

...in winter if we're outside and it's really cold they can wear a coat. They can bring gloves, they can wear a hat if they want to. I just want them to be comfortable. I want them to take part and that helps, definitely helps. (Male PE staff, School 1)

Although most PE staff appeared to value pupil choice and comfort, some also highlighted the importance of uniformity, with varying approaches to achieving this for PE uniforms across schools. Some schools offered unisex items (e.g., tops, shorts) to all pupils, to promote smartness and cater for diverse gender identities (see links to theme 2). Other schools mandated school-branded items or plain, non-branded items to reduce social comparison between pupils. Although pupils appeared to value comfort over smartness, some involved in competitions and extra-curricular sports highlighted that they would prefer a smarter uniform to stand out at fixtures against other schools.

They were just unisex shorts and I think it's all there and it's easier kit wise and actually when they go to

fixtures and different things they look quite smart. It's not a scruffy kind of PE kit. (Female PE staff, School 6)

...more students maybe in terms of gender and we just want to make everyone feel comfortable that they didn't have to pick one or the other. (Female PE staff, School 2)

the uniform is in place so that no one feels uncomfortable in terms of brands they've got and stuff, whereas if we're saying you can bring any jacket in, it's going to be a brand war of what they're allowed. (Female PE staff, School 4)

when you're doing competitions and stuff it's just we look like a bunch of other schools... I would also like a different top for the competitions. (Pupils, School 6)

Theme 2: PE uniforms are 'made for boys'

Schools in our sample varied in whether they provided a universal, unisex or gender-based PE uniform. It appeared that many of the schools that provided a universal, unisex PE uniform (e.g., top and shorts) did this to ensure it fitted pupils of all gender identities, which was valued by some pupils.

you just have it all that it fits boys, it fits girls and if you're non-binary you can choose what you wear and it's not like, 'Oh you're wearing a boys PE kit'. (Pupil, School 3)

there's two different types of joggers which are both unisex, the shorts are unisex, the t-shirts are unisex. So there's no boys' kit, girls' kit, it's just, 'There's our kit, pick and choose what you want to wear'. Again, you've got so many kids at the moment that are gender fluid, or transitioning, or doing what they want, so you don't want to be like, 'This is the girls, that's the boys'. (Female PE staff, School 5)

However, many girls and some PE staff expressed that unisex clothing often did not suit or fit female body shapes because it is *made for boys*, with unisex items being described as *baggy*, *elongated* and *not very flattering*. When given a choice, girls often opted for their own bottoms over the unisex options advertised on the school website. When unisex bottoms were compulsory, girls described needing to *roll* the shorts for a better fit (i.e., adjust the waistband). Some girls expressed that they disliked *matching with the boys* (Pupil, School 1) and wanted *some options for girls* (Pupil, School 6).

they're not very flattering at all and they don't fit me very well or they don't fit a lot of the girls that I know, very well. I feel like the shorts are made more for the boys than they are for the girls. (Pupil, School 2)

lots of the girls won't wear the shorts that we've got, because I don't think they're very flattering. (Female PE staff, School 5)

Everyone just rolls them anyway... I wear shorts underneath but say you didn't wear shorts underneath, if you don't roll them, I feel like if you sit down you're just going to flash everyone. (Pupils, School 6)

In schools with gender-based PE uniforms, items were typically advertised on uniform websites separately for boys and girls, despite some items being unisex. PE staff often described that their policy allowed pupils to choose any items. For example, the female PE staff in School 2 expressed, *if anyone wants to wear one or other kits, we're absolutely fine with that*. In contrast, girls often felt that the PE uniform rules meant that they were *not allowed* to wear items labelled for boys. Girls appeared to associate certain *boys* items (e.g., rugby tops) with particular sports, which they did not participate in and so felt they could not wear. Despite some girls feeling that *boys* items would be more practical, they described feeling self-conscious wearing something labelled for boys because it would be against the norm (see links to themes 1 and 3). For example, a pupil in School 2 expressed, 'I don't think some girls would be comfortable wearing the boys uniform... It's just the name, knowing it's boys uniform'. Instead of unisex or gender-based uniforms, it was suggested by pupils that 'people would like having options on what fit to wear' (Pupil, School 1).

Participant: there's only joggers for boys. There's none for the girls... Interviewer: You can't wear joggers? Participant: We can but it's only on the boys' website. So if you go onto the uniform website there's a boys' section and girls' section. In the boys' section there's joggers. In the girls' section there's just like skort and leggings. (Pupils, School 3)

And they mostly do rugby all the time and their rugby t-shirts are normal gym tops... We don't do rugby but the boys do rugby. (Pupils, School 1)

certainly the girls don't want to wear the rugby top at all. (Male PE staff, School 1)

Theme 3: self-confidence influences comfort in wearing PE uniform, and in turn PE engagement

PE staff suggested that low self-confidence (i.e., lack of belief in oneself and one's abilities) and difficulties related to body image were common issues among pupils, which became more noticeable with age. The Year 8 girls articulated varying levels of self-confidence and psychological comfort in their PE uniforms. Some girls expressed feeling self-conscious in their PE uniform, which led them to worry about how their appearance and ability would be perceived by others. In contrast, other girls were unconcerned with how they looked, allowing them to enjoy PE.

you see other people and they look better in their P.E. kit than you do... even if you're like good at sports and you enjoy sports and stuff, it's just the PE kit makes you feel like they can do it better than you or something. (Pupil, School 6)

Table 3 Factors influencing girls' psychological comfort in wearing PE uniform and associated quotes linked to theme 3 (self-confidence influences comfort wearing PE uniform, and in turn PE engagement)

Factors influencing psychological comfort in PE uniform	Associated quotes
Physical appearance-related concerns, including body hair and body size	in the summer I'm just like really insecure about my body, like my body hair. So in the summer when it's boiling hot I don't really wanna wear a really short skirt because I'm not really secure with that. (Pupil, School 3) if you don't think you look good it's not really good for your self-confidence... for me like my shorts are really tight and everyone else's is really baggy so like it just makes me feel like, oh my thighs are thicker than hers and that like doesn't make me feel very good about myself. (Pupil, School 6)
Sweatiness, appearance and sporting ability	I feel if you have the collar it makes you sweat more as well and then people feel more uncomfortable in their PE kits and then they're less active to do PE. (Pupil, School 1) lower sets girls who are less able within PE, are more conscious of their appearance as well, and trying to get them to do PE is very difficult. Trying to get them to push themselves, to try and get them to get out of breath, because they don't want to spoil their makeup, they don't want to get sweat in their hair'. (Female PE Staff, School 4) 'I feel confident in a lot of things I wear, I don't really mind what I look like and then because I enjoy PE as well so as long as I enjoy it I don't really mind what I look like in it'. (Pupil, School 6)
Fear of judgement	'I feel like the PE kit itself is like, okay and I think a lot of people would be confident and wouldn't really care if it wasn't for the comments that other people make... if people are making comments and rude stuff like, I think it just lowers your confidence and you're just not gonna like it (the PE uniform) yourself. (Pupil, School 4) we have to think about where the boys groups and girls groups are going to be because a lot of the girls are reluctant to sprint as hard as they can down the straight if the boys are near. (PE staff, School 1)
Communal changing rooms	I don't like changing clothes and like the changing room. I find that uncomfortable. (Pupil, School 6) They do not like changing in the changing rooms in front of other people, which is fine if they don't. They can go to the toilets. (Female PE staff, School 2) For me it's a much better system (referring to the all-day PE uniform policy) for many reasons. It's far more inclusive. You don't have issues with changing rooms and students who maybe don't feel so comfortable. (Male PE staff, School 3)
PE, physical education.	

I've never really thought about how I looked in the PE kit 'cause I've always thought about the actual PE... I personally like the skort and t-shirt and as long as I'm okay with it I just don't really care if other people look or if other people feel badly about it because I'm the one that's wearing it. (Pupil, School 2)

I just feel fine in my PE kit and it's really comfy and I don't feel like anybody's looking at me. (Pupil, School 4)

Psychological comfort in wearing the PE uniform appeared to be influenced by physical appearance-related concerns, judgement from others and communal changing rooms, as illustrated by the quotes presented in table 3. Some girls felt self-conscious in PE lessons due to concerns about their body hair and body size, leading them to want to cover up. It was suggested by pupils that many girls would avoid maximum exertion during PE because the PE uniform was uncomfortable when sweaty, but PE staff suggested this could be because getting sweaty would 'spoil' their appearance (e.g., make-up and hair). PE staff suggested girls with lower sporting abilities were more appearance-conscious and less likely to engage in PE, unlike girls who enjoyed PE and felt confident in

their ability. Fear of judgement about their appearance appeared to be a key concern for some girls, often heightened by negative comments, particularly from boys, which led some PE staff to keep boys and girls separate during PE. Self-consciousness appeared to be particularly exacerbated in communal changing rooms for some girls, with PE staff discretely allowing these pupils to change in other private places. In schools that allowed pupils to stay in their PE uniform all day, PE staff felt the policy had made a positive impact by eliminating the discomfort of changing in front of others.

Practical implications of changing PE uniform policies in secondary schools

PE staff agreed that evidence-based, national-level guidance on school PE uniform policies would be valuable, providing guidelines are broad and adaptable, to account for varying school contexts and approaches.

I think if there was a generic policy that supported schools who might need some guidelines, then it's gonna be a benefit isn't it. (Female PE staff, School 4)

Pupils and PE staff across the six schools discussed ways to improve PE uniforms, including offering several

options, especially for bottoms; allowing additional layers, such as underlayers and coats to be worn; avoiding the colour white for tops, as these can be see-through; avoiding collared tops for better comfort; considering cycle shorts rather than skorts and ensuring items are a breathable activewear material (i.e., not cotton). Online supplemental table 3 presents the suggestions from pupils and PE staff alongside the supporting qualitative evidence.

I think maybe just like three options and then all in the same colour or the same make, or the same logos like you have on shorts. But just you can pick so if you feel comfortable. (Pupil, School 6)

So we've said black or blue leggings is fine, whatever they want to wear on the bottom is fine, it's just that it has to be sportswear. (Female PE Staff, School 5)

we don't understand why we can't wear cycling shorts or like hoodies or something instead of a weird zip up thing. (Pupil, School 3)

As highlighted in theme 3, discomfort in communal changing rooms appeared to be an issue for many girls. Some PE staff also noted that 'girls can take ages to get changed' (Female PE staff, School 5), which reduced active time during PE lessons (as changing both in and out of PE uniform must happen during PE lessons). Some schools allowed pupils to wear their PE uniform all day (on PE lesson days) or come into or leave school in their PE uniform, reducing the need to change. This approach appeared to alleviate these issues, and the benefits and considerations discussed for adopting this policy are summarised in online supplemental table 4.

Pupils emphasised the importance of being involved in updating PE uniform policies, noting 'we're the ones wearing it, not them so they don't know how it feels' (Pupil, School 2). The PE staff agreed, with some describing previous ways of involving pupils, such as using school-wide voting systems and surveys. However, some staff preferred to involve a smaller 'select group', as involving all pupils could 'open up possible floodgates of like "We want this. We want that"' (Male PE staff, School 3). Additionally, PE staff discussed the involvement of other stakeholders, including parents, Senior Leadership Teams (SLT), uniform designers and distributors, and for some schools, governors. While some PE staff felt SLT were *supportive* of them making PE uniform changes, others felt they had limited influence in changing current policies. Online supplemental table 5 presents a summary of the data, outlining stakeholder involvement in the PE uniform development process across schools.

PE staff highlighted that uniform policy changes would require at least one academic year to co-ordinate with uniform distributors and gain school management approval. Both pupils and PE staff suggested implementing changes at the start of the academic year, introducing new mandatory PE items for Year 7 pupils only to minimise costs for older pupils.

it would be almost like a year long process... the new Year 7s coming in would have the new kit and then it would be open for the rest of the year groups to purchase if they wanted it. Rather than saying everyone's got to have the new kit now. So just gradually include it into the policy. (Male PE staff, School 1)

DISCUSSION

This qualitative study with Year 8 pupils and PE staff highlighted how PE uniforms can negatively influence body image attitudes and PE engagement among adolescent girls, through uncomfortable clothing that limits movement. The study highlights the potential benefits of allowing pupils to wear PE uniforms all day to increase physical activity and reduce concerns associated with changing and offers initial recommendations for re-designing PE uniform policies in UK secondary schools to improve girls' experiences.

Our findings suggested that uncomfortable PE uniforms, such as those that fit poorly (e.g., unisex designs) or expose too much skin, can heighten feelings of self-consciousness and amplify appearance-related insecurities, such as those in relation to body, hair and shape, as can communal changing rooms. These insecurities may negatively impact PE engagement. Self-confidence appeared to play an important role in the relationship between girls' views about their PE uniform and their body image attitudes. Girls with low self-confidence appeared more vulnerable to the effects of PE uniforms on how they felt about their bodies, suggesting evaluative beliefs (i.e., comparing their physical appearance to others), which reduced motivation and participation in PE. Whereas self-confident girls appeared less affected by how they would be perceived by others and would participate regardless. Our findings align with previous qualitative research identifying poor body image and inappropriate sportswear as major barriers to participation among female adolescent athletes.⁴³ Furthermore, previous research highlights links between low self-esteem and body dissatisfaction among young females, particularly when wearing tight, revealing sportswear compared with comfier baggy sportswear.⁴⁴ Designing PE uniforms that promote self-confidence, particularly for girls who struggle with it, may be key to ensuring PE is enjoyable and inclusive for all girls. In addition, broader sociocultural influences, such as exercise and fitness content on image-based social media (e.g., Instagram, Tik Tok), may exacerbate body dissatisfaction and low self-esteem among adolescent girls by promoting social comparison and unattainable female body ideals,^{4 45 46} which could negatively impact mental well-being and contribute to disordered eating.⁴⁷⁻⁵⁰ Our findings suggested that female activewear fashion trends may influence girls' clothing choices when allowed to wear their own clothes for PE. Therefore, striking the right balance between offering choice to promote psychological comfort, while

minimising the focus on appearance and social comparison, may be important for fostering positive body image and enhancing PE engagement among girls.

Our findings showed that although PE staff perceived having one unisex PE uniform for all pupils may be more practical and inclusive, many girls disliked unisex clothing, as they felt the style and fit was tailored for male rather than female bodies, and could contribute to feelings of discomfort. Therefore, providing several non-gendered options for style and fit was suggested to reduce discomfort, while also promoting gender inclusivity. This highlights the nuances of gendered sportswear that schools need to consider when developing PE uniform policies. In addition, our findings align with research drawing from young women's experiences of PE uniforms, which highlight the need for gender-neutral uniforms that reduce gender differences when playing sport but also fit female body shapes to better enable participation.²⁹

Our findings highlighted that PE uniforms that fit poorly, are too short, restrictive and not weather appropriate (e.g., short skirts, tight collars and thin jackets) can discourage PE participation due to limiting movement, feeling too self-conscious and either too cold or too hot to participate fully. These findings align with questionnaire-based research showing dissatisfaction among 14–16-year-old girls with PE uniform length and warmth,²⁶ with 20% reporting PE uniform as a barrier to PE participation.²⁵ Although limited and mixed, there is some quantitative evidence suggesting activity-enabling uniforms may improve physical activity levels. Using an ecological study design, comparing school-aged children's physical activity levels across 135 countries/regions, Ryan *et al* (2024)⁵¹ found that while school uniforms had no overall association with activity levels globally, they were associated with greater female gender inequalities in high-income countries (including the UK). Experimental studies in Australia comparing active versus traditional school uniforms in primary schools, collecting device-measured physical activity, found mixed results. One study reported increased activity for girls during break time,³⁰ and the other found minimal effects.³¹ In addition, qualitative research with adolescent girls in New Zealand found that not having an activity-enabling uniform was a barrier to cycling to school,⁵² and in a large survey, 72% of Australian adolescent girls reported that they would prefer to wear their sports uniform every day, with 65% believing this would increase their physical activity during school.⁵³ Further research is required to determine whether redesigning secondary school PE uniforms can improve girls' PE engagement and incidental activity outside of PE lessons (e.g., at breaktimes, travelling to school).

Implications for policy and future research

Governments advocate for gender-inclusive school and sports uniforms;^{32–36} however, they lack specific recommendations for secondary schools in England. Informed by our findings, table 4 provides initial recommendations for improving secondary school PE uniform policies

for adolescent girls. Our data suggest that recommendations should include offering a range of appropriate options for bottoms (e.g., shorts, leggings and joggers), providing various fits and styles without gender labels, allowing additional layers, and permitting pupils to wear PE uniform throughout the day on PE lesson days. These recommendations align with studies from Canada and New Zealand involving young active females, which also highlight the importance of flexibility, choice, inclusive sizing, comfortable materials, and styles designed for the female body.^{27 43}

Future research is needed with pupils, parents, PE and senior school staff to further develop and refine these recommendations to ensure they are fit for purpose. It is also important to consider the environmental safety of redesigning PE uniforms to ensure that pupils are protected from excess UV exposure and heat, as well as being visible in the dark.⁵⁴ The findings also highlight a need to develop a national-level process by which schools can assess their current PE uniform policies, access evidence-based guidelines for improving comfort and inclusivity and implement necessary changes. Once this is developed, it would be important to evaluate the impact on pupils' body image attitudes and engagement in PE.

Strengths and limitations

By incorporating perspectives from both female pupils and PE staff and using activities to facilitate discussions, this qualitative methodology enabled us to explore beyond surface-level preferences for PE uniforms and understand in more depth how PE uniforms may influence girls' body image attitudes and PE engagement. However, challenges in recruiting secondary schools resulted in a less diverse sample than planned, particularly with limited representation from schools in more deprived areas and pupils from ethnic minority backgrounds, also resulting in a sample which may not have been representative of the study areas. While attempts were made through our methods and reflexivity to consider and mitigate the power dynamics among researchers and pupils, the focus groups were conducted within the school setting, and researchers had not built up previous rapport with the pupils or met them previously to enable them to develop an understanding of their group dynamics. Hierarchy among the pupils, and power imbalance with the researchers, may have influenced the views they shared. In addition, the positionality of the researchers analysing the data (all White, highly educated females) may have shaped data interpretation. While our initial PE uniform policy recommendations were developed using the data, only perspectives from Year 8 girls and PE staff in six mixed-sex academy schools were captured. Further research is required to ensure that these recommendations are inclusive for all pupils, including those with different gender identities, Special Education Needs and Disabilities (SEND) and from ethnic minority backgrounds, as well as environmentally safe (e.g., sun exposure). Additionally, most girls in our sample reported high levels of PE enjoyment,

Table 4 Initial recommendations for secondary school PE uniform policies

PE uniform policy category	Initial recommendations
Sizing	<ul style="list-style-type: none"> ► Offer a large range of sizes for school branded items, and consider offering various styles (eg, regular, fitted, baggy) to enable optimal comfort.
Cost and affordability for parents	<ul style="list-style-type: none"> ► Limit mandatory school branded items to the PE top only. ► Make it clear to pupils and parents from Year 7 which items are mandatory and must be school-branded, and which items pupils have the choice to wear their own clothing. ► Consider limiting branding allowed on own clothing to reduce cost, and pressure to buy 'trendy' items. ► Choose durable materials so uniform will not need to be replaced regularly. ► Consider collecting second-hand uniform from leavers and offering pre-loved items at a reduced price to support low-income parents.
Top	<ul style="list-style-type: none"> ► The PE top should be the only mandatory PE uniform item and include a small school logo. ► Choose a neutral colour that is durable and can accommodate change in weather and temperature. Avoid black in the summer as this can be too hot. Avoid white as this can be see-through. Schools may wish to incorporate the school colour(s). ► Choose a round neck t-shirt without a collar that is not too tight nor too baggy around the neck. ► Choose durable, breathable, activewear material, avoiding mesh fabric (closely spaced holes) and too many seams. ► Choose a top that is comfortable and practical for physical activity rather than formal. ► Provide fitted and baggy options, alongside a regular unisex top for pupils to choose from, ensuring options are not labelled based on gender.
Bottoms	<ul style="list-style-type: none"> ► School-branded bottoms should not be mandatory. ► Provide pupils with a choice, including for example, shorts, leggings and tracksuit bottoms/joggers. Preferably allow pupils to wear their own bottoms. This will enable optimal comfort, style and fit. ► Consider providing rules or recommendations to pupils and parents about appropriate branding. Schools may wish not to allow branded items (e.g., Nike). ► Remove the option of skorts. Consider offering cycling shorts, but ensuring rules on appropriate length is mandated. ► Allow plain black bottoms, which is the easiest colour to find. ► Consider providing rules or recommendations to pupils and parents about appropriate activewear material for physical activity.
Additional layers	<ul style="list-style-type: none"> ► Allow all pupils the option to wear underlayers/skins to cover their skin. Schools may wish to provide rules or guidance on appropriate colours and branding. ► Consider allowing pupils to wear their own jackets and coats. Schools may wish to provide rules or guidance on appropriate colours, styles and branding. ► Consider offering optional school branded hoodies or for pupils to wear their own hoodies for outdoor activities. ► Allow pupils to wear additional layers and religious clothing for religious reasons. Schools may also wish to provide rules or guidance on appropriate colours.
Sports bras	<ul style="list-style-type: none"> ► Wearing a sports bra should be a personal choice. Consider providing guidance on the importance of, and when pupils may need to start wearing, sports bras.
Trainers and footwear	<ul style="list-style-type: none"> ► Provide guidance on appropriate styles and colours. ► Consider limiting the need for additional mandatory footwear, which is not regularly required during PE lessons (e.g., football boots), to reduce cost to parents.
Spare uniform	<ul style="list-style-type: none"> ► If possible, offer spare uniform that looks similar to the PE uniform, and ensure it is washed regularly.

PE, physical education.

highlighting the need to ensure future recommendations are suitable for girls with low PE engagement.

Conclusion

This qualitative study highlights the importance of having secondary school PE uniform policies that promote comfort and self-confidence among adolescent girls to facilitate better PE engagement. Our findings suggest that it is important to balance offering pupils choice over

PE uniform items to facilitate better comfort, while also maintaining uniformity to reduce social comparison and ensure that items are appropriate for pupils of different gender identities. Girls who lack self-confidence may be more self-conscious about how they look in their PE uniform, which may reduce PE engagement. As well as offering unisex items, schools should consider offering a variety of styles and sizes without gender labels to ensure

uniforms fit female bodies, as well as allowing pupils to wear their own bottoms and additional layers to help improve self-confidence.

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Acknowledgements We would like to thank the participants for taking part in the study. We would also like to thank patient and public involvement and engagement (PPIE) members for their input into study development.

Contributors AP, LC, CC, RW, SB, IP-V, ASA, RJ and HB were responsible for study conceptualisation. AP and EC were responsible for project administration. AP and EC were responsible for recruitment. AP, EC and LC were responsible for data collection. AP, EC, LC and CC were responsible for data analysis. AP wrote the first draft of the manuscript. All authors contributed to and approved the final manuscript. AP is guarantor.

Funding This work was funded by The National Institute for Health and Care Research, Bristol Biomedical Research Centre, grant number NIHR203315. The views and opinions expressed are those of the authors and do not necessarily reflect those of NIHR or the Department of Health and Social Care. This work is independent research supported by the National Institute for Health and Care Research Yorkshire and Humber Applied Research Collaboration. The views expressed in this publication are those of the author(s) and not necessarily those of the National Institute for Health and Care Research or the Department of Health and Social Care.

Competing interests None declared.

Patient and public involvement Patients and/or the public were involved in the design, or conduct, or reporting or dissemination plans of this research. Refer to the Methods section for further details.

Patient consent for publication Not applicable.

Ethics approval This study involves human participants and was approved by The Faculty of Health Sciences Ethics Committee at the University of Bristol (Reference 17624). Participants gave informed consent to participate in the study before taking part.

Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement Data are available in a public, open access repository. Anonymised transcripts have been made available on the University of Bristol Data Repository under the restricted access data policy: <https://www.bristol.ac.uk/staff/researchers/data/accessing-research-data/>.

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