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A SOCIO-ECOLOGICAL APPROACH TO UNDERSTANDING ADOLESCENT GIRLS' ENGAGEMENT AND EXPERIENCES IN THE PE ENVIRONMENT: A CASE STUDY DESIGN

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ABSTRACT

Adolescence is known to be a period of increased risk for the development of unhealthy behaviours such as physical inactivity (Currie et al., 2011). Low physical activity (PA) levels are especially noted in girls, who typically engage in less PA than boys throughout the teenage years (Whitehead and Biddle 2008). In Scotland, evidence suggests there is a significant decline in PA among adolescent girls, with only 41% of 13−15 year olds achieving the current recommendations, compared with 56% of 11−12 year olds (Scottish Executive, 2011). In addition, a proportion of girls are not engaging with school PE classes (Niven et al., 2014; Kirby et al., 2012). In order to understand more about how and why this decline exists, a sample of 20 'disengaged' 12−13-year-old girls (second year of secondary school) were recruited from four case study schools in Scotland. This study aims to explore the interaction between the social and physical environment, and how these affect disengaged girls' experiences and engagement in PE. Girls were categorised as 'disengaged' from PE if they did not participate regularly and reported negative emotions about the subject. Girls took part in in-depth interviews to explore their experiences and engagement in PE. The theoretical framework is based on Welks (1999) Youth Physical Activity Promotion model (YPAP), a socio-ecological approach which conceptualises the influential correlates of PA as: individual-level *predisposing* and *enabling factors,* including personal attributes and environmental variables and *reinforcing* (social) *factors*. This model was applied within a Scottish education context to understand the importance of each component and also the interaction between these and the influence that one may have on another. The results indicate that although the type of activity offered in PE is important, it appears that perceptions of competence and the social environment these were delivered in, such as single-sex classes, had more of an influence on girls' engagement in PE. For this group of Scottish adolescent girls, the wider psychosocial environment in which PE takes place may have a greater impact on levels of enjoyment and participation than the PA itself.

Keywords: Adolescent girls, physical education, physical activity, YPAP model

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INTRODUCTION

There is a growing body of literature demonstrating an age-related decline in physical activity (PA) participation among young people (Currie et al., 2012; Coleman et al., 2008). Longitudinal research consistently shows PA levels declining steeply during adolescence (Inchley et al., 2008; Aaron et al., 2002) with low levels of PA participation especially noted among girls (Whitehead & Biddle, 2008; Kimm et al., 2005). Furthermore, research has consistently shown a proportion of girls are not engaging with PE in school. While PE attendance is compulsory in Scotland from age 11−16, some girls disengage from the activities, displaying minimal interest and participation. This may result in a number of relatively inactive girls within the PE class (Niven et al., 2014; Mitchell et al., 2013; Kirby et al., 2012; Pate et al., 2011). Many researchers have identified a number of barriers for girls in the PE class (Wetton et al., 2013; Biddle et al., 2005; Mulvihill et al., 2000; Barr-Anderson et al., 2008; Robbins et al., 2003), with most of the work focusing on the importance of psychological, social and environmental factors with regard to PE participation.

Typically, the literature on psychological correlates of young peoples' PE has centred on variables relating to attitudes, perceived barriers, motivation and self-perceptions, including self-esteem or body image and physical self-perceptions (Inchley et al., 2011; Knowles et al., 2009; Welk & Eklund, 2005). Adolescent girls' perceptions of competence have also been studied extensively in the PE field, in relation to physical ability. Many studies show that individuals with high perceptions of physical ability will be more likely to take part in PA activity (Slingerland, 2014; Knowles et al., 2011; Taylor et al., 2010) and enjoy it more (Cairney et al., 2012) than those with low perceptions of competence. An important factor in young peoples' motivation to participate in sport and PA is their perceptions of competence compared to their peers. Comparing one's ability with peers is one of the core tenets of Achievement Goal Theory (Ames, 1992). This theory suggests that individuals approach learning tasks in two different ways depending on their view about the concept of ability. If perceptions of competence are self-referenced (task orientation) the individual does not distinguish effort from ability, and success or competence is defined by self-improvement or completion of a task. Alternatively, if comparisons are made with others' ability (ego orientation) then success is defined based on the performance of others. Evidence has shown that task orientation is associated with greater levels of persistence and maintenance of PA over time, whereas ego orientation is associated with higher levels of drop out (Pannekoek et al., 2013).

Many of the quantitative studies which have shown evidence of a relationship between perceived competence and participation in PE and PA have also shown gender disparities. Boys have been shown to have higher levels of perceived competence (Inchley et al., 2011; Kalaja et al., 2010; Lyu & Gill, 2010) and higher levels of enjoyment in PE than girls (Cairney et al., 2012; Prochaska, 2003; Carroll & Loumidis, 2007). Although it is useful to ascertain differences in gender, this type of research provides limited information about why such differences might exist. Qualitative researchers have therefore sought to understand why girls exhibit lower levels of perceived competence in PA and sport settings. Authors have suggested that a perceived lack of physical ability can lead to an avoidance of certain activities and can result in negative PE experiences (Flintoff & Scraton, 2001; Brooks & Magnusson, 2006; Finch & White, 1998; Mason, 1995). Evidently more information is

needed to understand *why* some girls may avoid certain activities and *how* specific PE contexts might influence perceptions of competence. This would provide critical insight into the reasons for disengagement in the PE class. Therefore, the current study aims to explore the interaction between the social and physical environment and how these might affect disengaged girls' experiences and engagement in PE.

Social context has also been shown to play an important role in adolescents' PE experiences, with peers and teachers as the primary influences (Carr et al., 2000; Weigand et al., 2001; Bailey et al., 2005; Knowles et al., 2013). Previous findings (Inchley et al., 2008; Flintoff & Scraton, 2001; Brooks & Magnusson, 2006; Bailey, 2005) have shown the PE teacher has a particularly important role in relation to girls' engagement with PE. Furthermore, research has shown the influence of peers to be critical in understanding young people's PA motivations (Biddle et al., 2005: Coakley & White, 1992; Cox et al., 2006; Brooks & Magnusson, 2007). Smith (1999) found that perceptions of peer acceptance and close friendship in the activity context contributed to the prediction of PA motivation and behaviour in young people, suggesting it is not just peer characteristics or reinforcement that are associated with youth PA but also the nature of the relationship. However, there has been relatively little qualitative research exploring the influence of girls' friendships in the PE environment, and therefore more is needed to further unravel the influence of peer relations on girls' engagement and experiences in PE.

The wider environment in which PE is delivered also needs to be considered. Physical (equipment, facilities) and structural (activity type, class composition) factors have the potential to impact on girls' experiences and engagement (Flintoff & Scraton, 2001). Class composition is another key environmental factor which has been shown to affect girls' PE experiences. Whilst some literature indicates that girls would rather participate in co-educational or mixed gender classes (Stidder, 2000; Derry, 2002; Hill & Cleven, 2005), the majority indicates that girls prefer single-sex PE (Mitchell et al., 2013; Jackson, 2010; Cockburn & Clarke, 2002). However, gender preferences are not necessarily as clear cut as some authors suggest. The multiple influencing factors that exist within a PE environment are vital to girls' decisions in relation to gender groupings. Understanding more about how these factors interact in different PE environments is crucial for understanding why some girls may be disengaged.

The wider educational context in which PE is delivered may also have an impact on girls' experiences in school. Currently, PE in Scotland is still under scrutiny for too great a focus on competitive games in the curriculum (Gray et al., 2008). Authors have suggested that the Scottish sport-based PE curriculum, which consists of compartmentalised activity blocks lasting a short number of weeks, has little evidence of connective learning and may be a major reason why girls feel disengaged from PE at this age (Thorburn, 2009). For example, the PE review group (Scottish Executive, 2004) found students did not consider the traditional competitive games-based approaches relevant or meaningful, suggesting disengagement from PE and PA was related to the activities presented in the curriculum. It has therefore been questioned whether PE is the right environment for engaging girls in PA, as out-of-school PA is not necessarily mirrored by activity levels in school PE (Biddle et al., 2005). Indeed, some studies have shown that girls who avoid or opt out of school sport can actually be relatively active out of the school environment (Biddle et al., 2005). Consequently,

contrary to the assertion that adolescent girls do not like being active, this suggests that factors associated with the specific PE environment may have an important influence on levels of girls' engagement (Niven et al., 2014; Kirby et al., 2012). Not enough is known yet about the influences of environmental factors in comparison with psychological and social factors in determining PA levels (Biddle & Mutrie, 2008). Furthermore, there is a need to explore the interaction of these factors within a Scottish PE context as the curriculum and social context is likely to be distinct from Australasian and North American research, which dominates this field.

Moreover, a significant amount of the research undertaken on young people's engagement in PE, sport and PA has been carried out using large-scale surveys, thus employing a quantitative methodology, which some argue, positions students as 'objects' (Erikson & Shultz, 1992). While quantitative data enables identification of patterns of behaviour and factors associated with activity levels of particular groups of young people, it is more limited in determining how these variables influence behaviour or provide the underlying reasons for engaging, or not engaging, in PA at an individual level. The present study therefore adopted a qualitative in-depth approach to study the experiences and engagement of adolescent girls in PE classes. This allows for exploration of how and why disengagement occurs which could not be adequately understood by experimental and statistical-based evidence (Cresswell, 1994*;* Guba & Lincoln, 1994; Silverman, 2000). This approach also addresses the recent call for more research to understand the 'students as subjects' in PE research, and appreciate the student voice as a legitimate area of enquiry (Enright & O'Sullivan, 2010; Lee & MacDonald, 2010; Ennis,1999; Nelson et al., 2008).

Theoretical approaches to understanding girls' disengagement

In order to fully understand PA behaviour, physical, psychological and social factors must all be considered (Nelson et al., 2008). While socio-ecological models acknowledge the role of psychological/intrapersonal variables, they also emphasise the pervasive influence of 'behaviour settings' – clusters of socio- and physical-environmental factors that cue or reinforce behaviours. Therefore, they propose that multiple levels of influences determine individual behaviour (Sallis & Owen, 1999).

Welk's *Youth Physical Activity Promotion model (YPAP) (*Welk, 1999*;* Welk & Eklund, 2005) is a 'heuristic' model which aims to guide PA promotion programmes and bring together theory and practice. The model divides the influential correlates of PA into three domains: (1) the individual-level *predisposing factors*, comprising the cognitive and affective considerations, represented by the two components "is it worth it?" and "am I able?"; (2) the *enabling factors* that include personal attributes (e.g., skills and fitness) and environmental or access variables and (3) the *reinforcing factors* reflecting social influences such as family and peers. According to Welk (1999), there is a strong relationship between the components "is it worth it?" and "am I able?", because young people value what they are good at doing, and perceive this as worth doing, and likewise aim to become good at and pursue things they value. The enabling and reinforcing factors can directly influence PA levels because of their facilitating and stimulating effects.

Given that socio-ecological models focus heavily on the influence of the social and environmental context, employing a methodology that allows exploration of these

contexts is critical. One of the main strengths of a case study design is the researcher's in-depth view of participant experience within a socio-environmental context. Therefore, this design provides richness and detail into not only each school, but also into each girl's complex and lived experience in the PE environment. Therefore, applying a socio-ecological model within a case study design will allow exploration of how the social and environmental factors interact within each specific school context. For example, the value that schools place on competitive games in PE will likely impact on aspects of the physical and social environment (equipment used, teams for sports and awards for sport success) and subsequently on individuals' perceptions of their own competence and worth. Further discussion about these issues is reported elsewhere (see Mitchell et al., 2013).

The model is used mainly as a guiding framework for the current research and the relevance of its use with adolescent girls will be investigated. Drawing on the YPAP model as an overarching conceptual framework to guide the research questions and analytical strategy, the aim of this study was to investigate disengaged girls' experiences and engagement within the PE environment. As much of the literature has focused on students whose educational experiences and social contexts may be quite different to those experienced in Scotland, this paper adds to the literature by providing an insight into disengaged girls' experiences within the Scottish educational context. Specifically, this paper explores how individual/predisposing, social/reinforcing and environmental/enabling factors (and the interactions between these factors) influence disengaged girls' experiences in school PE.

As evidenced by the literature, the individual components or theoretical constructs of this model have been well researched within PA and PE environments, largely from a positivist perspective. Although it is useful to explore determinants and barriers that affect PA and PE motivation, less has been done to identify how these individual components may interact from a wider socio-ecological perspective. In particular, there has been little qualitative research exploring the relative influence of the psychosocial and physical environment, or the interaction of these factors, within the context of PE (Eime et al., 2010). In addition, Welk's model has not been applied to much of the research on engagement in youth PA (Dollman & Lewis, 2009; Cheung & Chow, 2010; Fairclough et al., 2012; Downs et al., 2013). Therefore, applying this model to a qualitative case study design is not only unique, it also contextualises why some girls may be disengaged in their own PE environment.

It is acknowledged that there may be some limitations in applying this model to an adolescent female population. For example, the YPAP model presumes that the social influences that facilitate young peoples' PA are primarily parents. Whilst there is no doubt that parents' attitudes and behaviours towards PA are important, as girls move into adolescence, PE teachers and peers are likely to play a major role in influencing adolescent girls' attitudes and PA behaviours. In addition, there is little attention paid to the consideration of negative influences that peers and the PE teacher might have on girls' PE experiences. Consequently, examining the relevance of this model with this population will be an important part of this study.

METHODS

Qualitative case study design

Much of the research carried out in the PE field has used quantitative measures to carry out research on participants (Erikson & Shultz, 1992). Often, large-scale studies are unable to capture the difference between school systems, infrastructure, environment and social norms. Thus they cannot provide detail about how and why different school environments may affect individuals differently. A qualitative approach which is sensitive to the contextual, social, economic and cultural factors that influence participation in PA and PE is therefore needed. As the focus was to explore girls' PE experiences and engagement, the school contexts in which these experiences took place are central. As Creswell (2007) and Pring (2000) note, understanding of any phenomenon or human activity can only be realised in context. Adopting a case study design allows the researcher to gain an in-depth view of participant experience within their context.

Four schools from four different local authorities in Scotland were selected in order to explore disengaged girls' experiences in the PE environment. The research also employed a *multiple case embedded design* which consists of multiple cases with multiple units of analysis (Borg & Gall, 1989). Yin (2009) suggests multiple embedded case study designs are more powerful, with a stronger effect compared to a single case study. Each school was a case in itself in terms of local authority, geographic setting, activity level, socio-economic profile, levels of participation, school environment and school ethos. Within each school, each participating 'disengaged' girl was also a single case. It is important to note that although each school is a case study (each has a different geographic location, socio-economic status, ethos etc.), there is no presumption that all disengaged girls within the same school will have similar experiences (Mitchell et al., 2013). It is important to recognise that adolescent girls are not a homogeneous population and one of the advantages of using single participants as distinct/unique cases is to illustrate the differences in perspectives and experiences that the individual girl might have, even within the same school. Recognising and understanding this diversity will help to inform future initiatives which aim to increase PA in adolescent girls.

Sampling was considered in three selection stages: 1) local authority (LA), 2) schools and 3) girls within each school. Since sampling is linked to the generalisability and validity of a piece of research (Borg & Gall, 1989), an appropriate sampling strategy is vital to get the best possible understanding of the phenomena being studied (Borg & Gall, 1989). In selecting local authorities, schools and girls, pre-determined criteria were used to ensure fair representation. The four local authorities were selected based on PA level, accessibility and geographic spread. Two 'low-active' authorities were chosen alongside two 'middle-active' authorities' as previously classified by sportscotland's area variation report[1] (Coalter & Dowers, 2006). This report was carried out to assess self-report PA and sport participation in adults across Scotland. Different parts of Scotland are variable in terms of socio-economic status, attitudes and sporting preferences. Therefore, this report provides information on activity levels and types of activities, for different regions in the country (e.g., the west of Scotland

[1] This report classifies regions of Scotland into 'high-', 'medium-' and 'low-' physical activity participation areas.

has amongst the lowest levels of activity and sport). While these results are descriptive and based on an adult population, there is no other published research which classifies geographic areas in this way. Therefore, this was used to ensure an appropriate sample of disengaged girls would be achieved for the qualitative research (i.e., the group of girls most likely to be inactive and therefore provide theoretical insights). This provided one local authority from the west of Scotland, one in central Scotland, one local authority in the east and one from the south east. Once LAs were identified, school selection was based on the following criteria: *1. School size:* school size was kept (roughly) constant across 'activity levels', *2. Accessibility:* being able to regularly access the school without extensive travelling and *3. Consent:* willingness of schools to participate in the research was required in all cases.

Table I - Information on the case study schools included in the research

	Local authority 'activity level'	**Urban/rural classification**	**School roll at start of research**	**School type**	**Other information**
School A	Middle active area	Accessible rural area*, East Scotland	729	Non-denominational and co-educational	
School B	Low active area	Large urban area, west of Scotland	883	Non- denominational and co-educational	High proportion of black and minority ethnic pupils (>= 20%)
School C	Low active area	Large urban area, central Scotland	1100	Roman Catholic, co-educational	
School D	Middle active area	Small town, South East Scotland	690	Non-denominational, co-educational	

*Scottish Government Classification http://www.scotland.gov.uk/Resource/Doc/933/0103167.pdf

Participant selection

Girls were selected from Secondary 2 (second year of secondary school; age 12/13) based on data collected by a short questionnaire. This was administered to all girls in S2 in each of the four schools (n= 318). Girls were asked about their participation levels, reasons for not participating in PE and feelings towards the subject. The term 'disengaged girls' is used to refer to girls who are detached in the PE class, that is, girls who reported that they don't enjoy PE, try to avoid taking part in PE and have negative feelings towards PE. Although PE at this age in Scotland is considered compulsory, students may participate without being engaged. For example, one might take part in a lesson but with minimal levels of involvement in activities and interaction with others in the class. Specifically, for the purposes of this research, girls were identified as being 'disengaged'[2] if they reported participating in PE 'some of the time' or 'none of the time' (rather than 'all of the time' or 'most of the time') according to their responses. This was in addition to reporting negative perceptions of the subject when asked: 'how do you feel when you take part in PE?' Negative responses

[2] It was not disclosed to the girls that selected girls are 'disengaged'. This was to avoid the girls feeling stigmatised or over identified.

included: bored, stupid, angry, embarrassed, worried, sad, agitated or nervous.[3] Girls were asked to tick the corresponding box which related to the emotions they felt when participating in PE.

One of the shortcomings of many studies with young people in schools is that often the teachers select the students for the research leading to inclusion of only the 'well represented' students. This illustrates the importance of presenting in-depth qualitative accounts of young women who are considered 'disengaged' and are not selected by teachers so that a more representative population of disengaged girls are given a voice about their experiences in PE. Asking girls to self-identify themselves as disengaged through a questionnaire aimed to address this issue. As a result of this process 20 of these girls subsequently participated in individual interviews. Disengaged girls were selected for an individual interview based on their responses to the questionnaire (selecting option 3 or 4 on Question 1 and reporting negative emotions) and their willingness to talk in more depth about their PE experiences. In order to protect the identity of the individuals concerned in this study, pseudonyms have been used throughout the paper. Informed consent was obtained from all of the participants and ethical approval was granted by the University of Edinburgh, School of Education Ethics Committee.

Data collection

This paper presents interview data from disengaged girls in four case study schools in Scotland. The four schools were all participating in a national programme, *Fit for Girls* (www.sportscotland.org.uk/ChannelNavigation/Topics/TopicNavigation/Fit+for+girls) which aimed to promote opportunities for increased participation in PE, sport and PA among girls in Scottish secondary schools. This research was undertaken in the context of a national evaluation which enabled the researcher to establish good relationships with the schools involved and the participating girls. Several visits were made to each school during the course of the evaluation for a range of purposes including: survey administration, meetings, focus groups with staff and observational research.

Epistemological reflexivity encourages researchers to reflect upon the assumptions (about the world, about knowledge) that we have made in the course of the research. It also helps us to think about the implications of such assumptions for the research and its findings. For example, in this study, a large agency for sport funded the first author's PhD. Generally, an evaluation which shows a project was effective in meeting its aims will be the best outcome for a funding body. Therefore, in some cases, project funders may exert some influence on the research. For example, they might suggest the researchers recruit from a particular sample or contribute to the design.

In this study, the researchers were rigorous with their evaluation approach and while friendly, tried to remain as external to the funders as possible to avoid influence. Therefore, when carrying out this type of work, it is important that researchers engage in personal reflexivity (Longdridge, 2007). This involves reflecting upon the

[3] These emotions were selected based on the words girls used to convey their experiences of school dance, in the Y-Dance questionnaire (Muldoon & Inchley, 2008), as these were girls of similar ages and population.

ways in which our own values, experiences, interests, beliefs, political commitments, wider aims in life and social identities might have shaped the research.

The topics for interviews were structured around Welk's (1999) model components. The interviews were exploratory and so although questions and subject areas were identified, these were not adhered to in a strict order. Three individual interviews were undertaken with each participating girl over a period of 18 months to explore their experiences of PE in more depth. The data presented in this paper are from the first set of interviews only. This data captured girls' experiences of PE before the Fit for Girls intervention was implemented and so are most appropriate for understanding the barriers relating to girls' experiences. The data collected in interviews 2 and 3 which capture changes in experiences and engagement over time have been published elsewhere (Mitchell et al., 2013). Each interview lasted around 20-25 minutes and encompassed the following areas: PE participation, out-of-school sport and PA participation, the activities liked/disliked in school PE, experiences and opinions of primary school PE, comparisons of primary and secondary PE, and influences on PE participation.

Data analysis

Interviews were recorded, transcribed verbatim and analysed using N-Vivo version 7. Some suggest using computer software to analyse qualitative data may distance the researcher from the data, however as this research was carried out as part of a PhD thesis, the researcher was working closely with all aspects of the data collection and analysis over a 3-year period. The data were sorted by thematic analysis, which involves searching *across* a data set – be that a number of interviews, or a range of texts – to find repeated patterns of meaning. The thematic framework used for the analysis of data is based on the steps suggested by Braun & Clarke (2006). This process included;

1. Familiarisation with the data by re-reading the transcripts many times in an *active* way − searching for meanings, patterns in the data.
2. Generating initial codes before searching for themes.
3. Searching for themes. For example, some of the codes identified were: ability/competence, lack of interest, lack of enjoyment, friends in the class, etc. Broader themes were then identified from these (individual/predisposing, social/reinforcing and environmental/enabling influences) for comparison across the data set. In this sense a 'theoretical' thematic analysis driven by the researcher's theoretical or analytic interest in the area was carried out. The key themes were identified by the number of instances they were articulated by different girls and also by the emphasis used.
4. Review and refinement of the themes in two stages. Firstly, by reading all of the collated extracts for each theme and deciding if they formed a coherent pattern. Secondly, by omitting themes which were not perceived to be an accurate representation. For example, facilities/equipment suggested by some girls in one school was not consistent with what other girls in the same school reported. Finally, each theme was named.

It is acknowledged that those involved in the research may have some influence over the data collected. Therefore, in order to ensure 'trustworthiness' of the data, Lincoln & Guba's (1985) guidelines on collection and analysis of qualitative data were followed.

DISCUSSION OF RESULTS

Am I able?

An overview of the literature indicates that perceived competence is a major factor in participation and engagement in PE and forms the 'am I able?' component of Welk's (1999) YPAP Model. The importance of this construct was evident in the current study, with all the disengaged girls reporting low levels of competence in PE. These girls generally made distinctions between 'us' (the 'non-sporty') and 'them' (the 'sporty') girls in the PE class, with girls displaying a similar level of ability to themselves being preferred. When 'sporty girls' were present, disengagement increased, with many feeling they couldn't 'match up' to their level of skill.

> *"There are some girls in my class that don't do PE, they just kind of stand there. There's others that when we are doing trampolining they are doing backflips and that, and so we are just standing looking at them and don't know what to do or how they do it." Sarah - School C*

The data provides insights into how the girls felt when in an environment where they were unable to do specific activities in PE and reported feeling 'different' from those who were perceived to be more competent. This comparison of their own ability with others in the class can be further understood by Achievement Goal Theory (Ames, 1992), the premise of which is that individuals strive to demonstrate competence and avoid demonstrating low ability when they are placed in achievement settings (Isoard-Gautheura, 2013). This theory suggests that individuals approach learning tasks in two ways, either task involved or ego involved. When individuals are task involved in learning, they define success or competence in self-referenced terms, for example, greater mastery and improvement. In contrast, those individuals who are ego involved define success in norm-referenced terms and are therefore more likely to critique their own performance relative to others. Critically, task involvement is associated with persistence in learning whereas those who are ego involved are more likely to drop out of an activity if they do not feel they 'match up' to others. The disengaged girls in this study appeared to adopt an ego approach, comparing themselves to others in the class.

This 'ego' approach was further supported by one of the girls suggesting that PE would be better if classes were grouped by ability, to reduce the disparity between the skilled and less skilled.

> *"That em, you'd have to be with the right group of people. I am kind of… I don't love PE or anything but I don't hate it. I am in between. So maybe if I was with people who had the same sort of attitude and were at the same level. Like, people that still tried but we wouldn't go over the top and wouldn't push ourselves to do amazing gymnastics or something... Just have a neutral attitude and effort." Becky - School B*

The notion of the 'right group of people' was discussed, often in reference to friends, highlighting the importance of the social context. In the interviews, many of the girls disclosed their negative experiences of PE when they did not have many or any friends in their class.

> *"Yeah, if you're with your friends it makes you more confident, but if you're in with people you don't get along with it can really put you off. Like everyone is the same sort of level in my class, there are girls that are better, but it's OK. But when they put the two classes together like if we're doing gymnastics, then that's not so good as there are people you don't really know." Mairi - School B*

Many of the girls said they found it difficult to do PE with other girls they didn't know. For many, the fear of getting things wrong was a barrier to engagement. It was also evident that there were some girls who would bully others in the class, which also had a negative impact on those who were subjected to this kind of behaviour:

> *"I remember I think we were doing gymnastics, and there was this girl, I think I did a cartwheel or something and she started going crazy because apparently it was the same thing she did. I think she started calling me names as well." Mairi - School B*

These 'other' girls or 'other groups of girls' were seen to be intimidating and could form cliques, particularly 'sporty girls' who could make remarks at the less able. Some girls described feeling alienated when other girls formed large groups in the class, leaving them on the outside, feeling unwelcome to join. These findings echo those of Hills (2007) and Slater & Tiggeman (2010) who found that cliques in the PE class could increase exclusion, resulting in negative experiences of PE. These insights contribute to our understanding of perceived competence and illustrate the importance of the social context for understanding girls' participation. Furthermore, they suggest that boundaries of competence and popularity are intertwined and reinforced in the PE and wider school environment. Evidently, there is a complex relationship between competence and peer influences, which needs to be further understood. Whilst Welks' model is useful in distinguishing between the influences that may affect participation, there seems to be no consideration of the interaction between these factors. As these interactions appear to be central to understanding why girls are disengaged, this is a recognised limitation of the model when applied to this population.

Is it worth it?

Many of the girls spoke about PE as not being worth the hassle, with the "*time it takes to get changed"* and "*being sweaty for the rest of the day"* being offered as common reasons for avoiding it. This relates to the 'is it worth it?' component of the YPAP model.

> *"You go away from PE feeling quite sweaty and stuff, uncomfortable. You don't want to feel all uncomfortable and things... After it you'll be thinking 'why did I do that'?" Becky - School B*

> *"When I get PE, I have got maths after or I've got science on the top floor so I am trying to rush to get my jeans on and jeans are crap especially if you are all sweaty and stuff and you go upstairs and you are exhausted and you feel crap. You don't feel ready for work..." Claire - School B*

Feeling uncomfortable after participating in PE was discussed by many of the girls. Although working showers were provided in all the schools this was deemed a more embarrassing and uncomfortable alternative. Taking your clothes off in front of others and potentially being ridiculed for your body was the main reason that this was avoided. In addition, some girls felt that PE was not worth the hassle as they risked being mocked for physical (in)ability. Cathy described the exhaustion and negative emotions she experienced in one particular PE class:

> *"The feeling of looking really stupid, the feeling of coming last, like I did in cross country, I was the last to finish. Everyone else stopped running and I still had a lap to go and like, just the feeling of your friends going past you and you're trying to keep up with them but you can't and you're just like oh god... I'm like, what's the point in putting yourself through all that and that's just one period." Cathy - School D*

The interaction of individual/predisposing factors (perceived competence) and social/ reinforcing factors (looking bad in front of friends) are clearly evident here. Although Cathy may have felt bad about not running as fast as others, the embarrassment of looking bad in front of her friends was the critical factor in her perception of the subject. This further re-enforces the importance of the PE context in influencing girls' engagement and experiences.

Social environment − the PE teacher

Another important element of the social context in terms of reinforcing behaviour was the PE teacher. For example, if girls disliked their teacher this was a significant barrier to their engagement in the subject. This was often due to the lack of attention they received compared to 'sporty' girls. Across the four schools, girls often described certain teachers as 'having favourites'. These were typically the girls who were considered more able. As many of the girls in the current study considered themselves to be less able and competent at PE, they described having less motivation to try as they felt their efforts were not recognised. This perception that teachers focused their attention mainly on the sporty girls could be detrimental to PE engagement, both in terms of avoiding certain teachers and certain activities which were dominated by 'sporty' girls' who would capture the teacher's attention.

> *"I do think they [teachers] favour the good ones and the ones that took standard grade, 'cause the teachers know them better, 'cause they've got PE four times a week. So they believe they are better than the other girls that didn't take PE". Lorna − School D*

Teachers treating girls and boys differently was also an issue that came up for many of the girls in the current study and is an issue that has been identified in previous research on girls' experiences in PE (Azzarito et al., 2006; Fisette 2011; Oliver et al., 2009). The current research shows that the girls often felt their teachers favoured the boys as they were seen as more competent. The interaction of competence and teacher/peer relationships is also evident here, strengthening the argument that influences within the PE context are overlapping and multifaceted.

Social environment − mixed classes

All the girls participating in this research were in co-educational or mixed classes for their first and second year of high school PE (although this depended somewhat on which activity was delivered, as often classes were split up for specific activities, for example, girls for netball and boys for basketball). Many of the girls had experienced some PE activities as girls-only and some as co-educational, so were able to reflect on the differences between these.

In general, the girls in this study preferred single-sex classes, with many reporting a heightened sense of embarrassment when boys were present. This was particularly true if they did not think they were 'good' at PE, as they felt they could not 'match up' to the force and skill level the boys played with. Saima spoke about the boys being much better at PE as they played with more strength and power than the girls:

> *"Yes, I probably enjoy it more when it is just girls. Because when it's the guys, especially for things like dodge ball, you can just hear them… you can hear how hard they play, you can hear the ball smacking off the wall and you feel like 'oh my god, if I was in there I would get properly hurt'..." Saima − School B*

This again re-iterates the complexity of influences that can affect engagement and experiences in the subject. Boys were often reported as being 'too rough', 'dominating the activities' and 'not taking the girls seriously'. Indeed previous research has shown that girls can feel boys are a barrier to their engagement and enjoyment in PE classes (e.g., Fisette 2011; Azzarito et al., 2006; Derry 2002; Garrett 2004; Oliver et al., 2009). The results in this study also confirm work by Jackson (2010), Biddle et al. (2005), Cockburn & Clarke (2002) and Flintoff & Scraton (2001) indicating that many girls prefer single-sex to co-educational PE classes. Boys were also seen to be more intimidating and threatening when they were grouped together, perhaps to impress other boys in the class. Similar views were represented by the girls in the current study:

> *"Like see the boys that boss you about, they only do it when their pals are there. But like see when they're on their own, they just like agree with you and have a laugh with you..." Nicola − School C*

Generally, the girls in this study felt embarrassed in front of the boys in relation to their perceived ability in PE classes, and also felt intimidated by the competitiveness and force with which the boys played. The presence of boys in the PE class was therefore a significant barrier to many of the girls' engagement. This again highlights the importance of the social context in which PE is delivered in contributing to girls' disengagement in PE.

PE environment − activities offered

Many of the girls in the current study felt restricted in their ability to participate in the early years of secondary school PE as they were given competitive games-based activities to suit mixed classes. This is reflected in the literature as PE in the UK is still under scrutiny for too great a focus on competitive games in the curriculum (Fairclough et al., 2002). Fitness-based activities were generally preferred to competitive games as girls felt these did not require them to be 'good at PE' to participate:

> *"It's* [fitness activities] *not really, it is hard, but it's not, you don't really need to be good at anything to do it." Claire − School B*

Previous research has highlighted the complexity of decision-making processes in relation to activity choice in PE (Mitchell et al., 2013; Fisette, 2013; Azzarito et al., 2006; Enright & O'Sullivan, 2010). Whilst many girls may chose fitness-based activities over competitive games, choice is likely to be based largely on socio-environmental factors, such as how competence for the activity is viewed. For example, the girls in this research who preferred fitness-based activities did so because they felt they were not 'letting the team down' if they did not have the necessary skills to perform well. A few expressed a preference for competitive games-based activities as they were considered to be fun, as long as they were not taken too seriously. Others felt less visible in games-based activities where they could hide their ability more than in other individual activities such as running:

> *"I don't think it's that bad, maybe it's 'cause I'm better at badminton than I am at running, but I don't feel that embarrassed doing that kind of sports. 'Cause it's not like in running where you can actually see the person running away with you, people can see the gap spreading, but in games you don't really notice. So you don't look so stupid." Cathy − School D*

This research therefore challenges the contention that disengaged girls do not like competitive sports. Furthermore, it increases our understanding as to *how and why* some girls may prefer certain types of activities. Understanding why some girls may prefer a specific activity type is important when working to engage girls in PE classes. Understanding the factors that contribute to disengagement is central to increasing PA in adolescent girls.

CONCLUSION

There is deliberation in the literature about the causes of girls' low levels of activity in PE, with the girls themselves often identified to be 'the problem' (Flintoff & Scraton, 2001; Wright, 1996; Rich, 2003; Rich, 2004). However, the current findings show that girls' disengagement in PE is a multi-factorial issue which encompasses individual characteristics and perceptions, the social context as well as physical and structural elements of the PE environment. In addition, it suggests the Scottish curriculum which focuses mainly on organised sport marginalises fitness-based activities and dance, which are often preferred activities for females. This research therefore supports the contention that the 'problem' may lie within the curriculum structure and pedagogic approach rather than the girls themselves (Ennis et al., 1997; Flintoff & Scraton, 2006; Sandford & Rich, 2006; Griggs, 2008).

From a socio-ecological perspective, although the type of activity was important, it appears that perceptions of competence and the social environment, in which PE was delivered, such as single-sex classes, had a greater influence on girls' (dis)engagement. This paper enhances understanding of the barriers to girls' participation in PE, by applying a relatively under-used model of PA behaviour to this key target group. By exploring the importance of each of the components of the

YPAP model within a broader socio-ecological perspective, the relative influence of personal, social and physical environmental factors is highlighted. Furthermore, the interaction between these components and the influence that one may have on another is illustrated. The use of YPAP is therefore advocated as a useful framework for understanding adolescent girls' motivations and behaviour. Although an implicit premise of this model is that determinants of PA behaviour are likely to be context specific, girls' experiences in PE are more complex than the model suggests. Adaptations which focus on the interactions between factors may be one step forward in improving the model's application within this population.

Whilst it was not the aim of the study to provide solutions and new statements of 'what works' for delivering girls' PE, it highlights some important factors which can be addressed in the PE class to provide a more inclusive and enjoyable experience for girls. For example, practitioners delivering sport and PE need to take into account the wider socio-cultural influences which may promote and support girls' interest in certain activities/sports and capitalise on these. Teachers may also benefit by utilising the strengths of girls' networks to enhance enjoyment and engagement. Importantly, however, girls-only PE classes are not always emotionally secure, with examples in this research showing that, along with support and encouragement, girls can also tease, marginalise and exclude their same-sex peers. If teachers are able to facilitate the inclusion, co-operation and motivation to participate and create a supportive PE environment, this may potentially result in more positive PE experiences. Student affective experiences in PE might also be improved if teachers provide supportive environments, recognise the different aspirations and motivations of their students, and ensure there is equity in opportunity for all students regardless of gender or skill level (Garcia, 1994). Accordingly, it is suggested that a more supportive PE environment, which addresses some of the issues identified would be a positive step towards increasing girls' engagement in PE and participation in PA.

Finally, Scottish policy and curriculum documentation indicates that PE teachers are to have an increasing role in health promotion (Scottish Executive, 2004; 2006). This research indicates that PE teachers may have to adopt a broader view and understanding to tackle the issue of disengaged girls in the PE environment, recognising that the 'problem' may not exist at the level of the individual but may instead be a symptom of wider organisational and cultural factors. It is hoped that this paper may create opportunities for discussion that may illuminate, challenge and disrupt theories and understanding of why girls may be disengaged in the PE environment. Furthermore, it adds to the body of literature which recognises the importance of developing and understanding how disengagement in girls can be, across different contexts, overcome, addressed or at least acknowledged.

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First Author's Biography
The first author is now working as a postdoctoral researcher on a PA intervention study, at the University of Glasgow. The research included in this paper was carried out as part of her PhD thesis, awarded by the University of Edinburgh in 2012. The data was collected in 2009/2010.

REFERENCES

Aaron D.J., Storti K.L., Robertson R.J., Kriska A.M., & La Porte R.E. (2002) Longitudinal study of the number & choice of leisure time physical activities from mid to late adolescence: Implications for school curricula & community recreation programs. *Archives of Paediatric Adolescent Medicine*, *156* (11), 1075-1080.

Ames C. (1992) Classrooms: Goals, structures, and student motivation. *Journal of Educational Psychology*, *84*, 261–271.

Azzarito L., Solomon M.A., & Harrison L. (2006) If I had a choice I would…": A feminist poststructuralist perspective on girls in physical education. *Research Quarterly for Exercise and Sport*, *77*(2), 222–239.

Bailey R., Wellard I., & Dishmore H. (2005) Girls & physical activities: A summary review. *Education & Health*, *23* (1), 3-5.

Barr-Anderson D.J, Neumark-Sztainer D., Schmitz K.H, Ward D.S., Conway T. L., & Pratt C. (2008) But I like PE: Factors associated with enjoyment of physical education class in middle school girls. *Research Quarterly for Exercise & Sport*, 79 (1), 18-27.

Biddle S., Coalter F., O'Donovan T., MacBeth J., Nevill M., & Whitehead S. (2005) *Increasing demand for sport & physical activity by girls: Research report no.100*. Edinburgh: sportscotland.

Biddle S., & Mutrie N. (2008) *Psychology of physical activity determinants, wellbeing & programme.* London: Routledge.

Borg W.R., & Gall M.D. (1989) *Educational research: An introduction.* New York: Longman.

Braun V., & Clarke V. (2006) Using Thematic analysis in psychology. *Qualitative Research in Pyschology*; *3* (2), 77-101.

Brooks F., & Magnusson J. (2006) Taking part counts: Adolescents' experiences of the transition from inactivity to active participation in school-based physical education. *Health Education Research*, *21* (6), 872-883.

Brooks F., & Magnusson J. (2007) Physical activity as leisure: The meaning of physical activity for the health and well-being of adolescent women. *Health Care Women International*, *28* (1), 69-87.

Cairney J., Kwan M., Velduizen S., Hay J., Bray S., & Faught B. (2012) Gender, perceived competence and the enjoyment of physical education in children: A longitudinal examination. *International Journal of Behavioral Nutrition and Physical Activity*, 9, 26.

Carr S., Weigand D.A., & Jones J. (2000) The relative influence of parents, peers & sporting heroes on goal orientations of children & adolescents in sport. *Journal of Sport Pedagogy, 6*, 34-55.

Carroll B., & Loumidis J. (2007) Children's perceived competence and enjoyment of physical education and physical activity outside school. *European Physical Education Review*, *7*, 24-43.

Cheung P.Y., & Chow B. (2010) Parental mediatory role in children's physical activity participation. *Health Education*, *110* (5), 351-366.

Coakley J., & White A. (1992) Making decisions: Gender and sport participation among British adolescents*. Sociology of Sport Journal, 9* (1), 20-35.

Coalter F., & Dowers S. (2006) *An analysis of regional variations in sports participation in Scotland: Research Report 105*. Edinburgh: sportscotland.

Cockburn C., & Clarke G. (2002) "Everybody's looking at you!" Girls negotiating the "femininity deficit" they incur in physical education. *Women's Studies International Forum*, *25*, 651-655.

Coleman L., Cox L., & Roker D. (2008) Girls & young women's participation in physical activity: Psychological & social influences*. Health Education Research, 23* (4), 633-647.

Cox M., Schofield G., Greasley N., & Kolt G. (2006) Pedometer steps in primary school-aged children: A comparison of school-based & out of school activity. *Journal of Science & Medicine in Sport*, *9* (1-2), 91-97.

Cresswell J. (1994) *Research design: Qualitative and quantitative approaches*. London: Sage.

Creswell J. (2007) *Qualitative inquiry & research design: Choosing among five approaches*. London: Sage.

Currie C., Zanotti C., Morgan A., Currie D., De Looze M., Roberts C., Samdal O., Smith O., & Barnekow V. (2012) Social determinants of health and well-being among young people. HBSC international report from the 2009/2010 Survey. Health Policy for Children and Adolescents No. 6, WHO Regional Office for Europe, Copenhagen, Denmark.

Currie C., Levin K., Kirby J., Currie D., Van Der Sluij W., & Inchley J. (2011) Health Behaviour in School-aged Children. National Report. Findings from the 2010 HBSE survey in Scotland.

Derry J. (2002) Single-sex & co-educational physical education: perspectives of adolescent girls & female education teachers. *Melpomene Journal*, *21* (3), 21-28.

Dollman J., & Lewis N.L. (2009) Interactions of socioeconomic position with psychosocial & environmental correlates of children's physical activity: An observational study of South Australian families. *International Journal of Behavioural Nutrition & Physical Activity*, *6*, 56.

Downs S.J., Boddy L.M., Knowles Z.R., Fairclough S.J., & Stratton G. (2013) Exploring opportunities available and perceived barriers to physical activity engagement in children and young people with Down syndrome. *European Journal of Special Needs Education*, *28* (3), 270-287.

Eime R.M., Payne W.R., Casey M.M., & Harvey J.T. (2010) Transition in participation in sport and unstructured physical activity for rural living adolescent girls. *Health Education Research*, *25* (2), 282–293.

Ennis C. (1999) Creating a Culturally Relevant Curriculum for disengaged girls. *Sport, Education and Society*, *4* (1), 21-49.

Ennis C., Cohran D., Davidson K., Loftus S., Owens L., Swanson L., & Hopsicker P. (1997) Implementing a curriculum within a context of fear & disengagement. *Journal of Teaching in Physical Education*, *17* (1), 52-71.

Enright E., & O'Sullivan M. (2010) 'Can I do it in my pyjamas?': Negotiating a physical education curriculum with teenage girls. *European Physical Education Review*, *16* (3), 203-222.

Erikson S., & Shultz J. (1992) *Students' experience of curriculum: Handbook of research and curriculum.* New York: Macmillan.

Fairclough S., Hilland T., & Stratton G. (2012) 'Am I able? Is it worth it?' Adolescent girls' motivational predispositions to school physical education: Associations with health-enhancing physical activity. *European Physical Education Review*, *18* (2), 147-158.

Fairclough S., Stratton G., & Baldwin G. (2002) The contribution of secondary school physical education to lifetime physical activity. *European Physical Education Review*, *8* (1), 69-84.

Finch H., & White C. (1998) *Physical activity 'What we think': Qualitative research among women aged 16 to 24.* London: Health Education Authority.

Fisette J. (2013) 'Are you listening?': adolescent girls voice how they negotiate self-identified barriers to their success and survival in physical education, *Physical Education and Sport Pedagogy, 18* (2), 184-283.

Fisette J.L. (2011) "Negotiating Power within High School Girls' Exploratory Projects in Physical Education." *Women in Sport and Physical Activity Journal* , 20 (2), 73 – 90Flintoff A., & Scraton S. (2001) Stepping into active leisure? Young women's perceptions of active lifestyles & their experiences of school physical education. *Sport, Education & Society*, *6* (1), 5-21.

Flintoff A., & Scraton S. (2006) Girls and PE. In: Kirk D, O'Sullivan M, Wright J (eds). *An International Handbook on Research in Physical Education.* London: Sage.

Garcia C. (1994) Gender differences in young children's interactions when learning fundamental motor skills. *Research Quarterly for Exercise and Sport*, *65* (3), 213-225.

Garrett R. (2004) Negotiating a physical identity: Girls, bodies and physical education. *Sport, Education and Society*, *9* (2), 223-337.

Gordon-Larsen P., Adair L.S., Nelson M.C., et al. (2004) Five-year obesity incidence in the transition period between adolescence and adulthood: the National Longitudinal Study of Adolescent Health. *American Journal Clinical Nutrition*, *80*, 569–575.

Gray S., Sproule J., & Wang J. (2008) Students' perceptions of & experiences in team invasion games: A case study of a Scottish secondary school & its three feeder primary schools. *European Physical Education Review*; *14*, 179.

Griggs G. (2008) A new curriculum for girls' PE [online] Available at http://www.teachingexpertise.com/articles/new-curriculum-girls-pe-4969 [Accessed May 2010]

Guba E.G., & Lincoln Y. S. (1994) Competing paradigms in qualitative research. In: Denzin NK, Lincoln Y.S. (eds). *Handbook of qualitative research.* California: Sage,105-117.

Hill G., & Cleven B. (2005) A comparison of 9th grade male & female physical education activity preferences & support for co-educational groupings. *The British Physical Educator*, *62* (4), 187-198.

Hills L. (2007) Friendship, physicality, & physical education: An exploration of the social & embodied dynamics of girls' physical education experiences. *Sport, Education & Society*, *12* (3), 317-336.

Inchley J., Kirby J., & Currie C. (2008) *Physical activity among adolescents in Scotland: Final report of the pass study.* Edinburgh: University of Edinburgh Child & Adolescent Health Research Unit.

Inchley J., Kirby J., & Currie C (2011) Longitudinal changes in physical self-perceptions & associations with physical activity during adolescence. *Paediatric Exercise Science*, *23* (2), 237-249.

Isoard-Gautheura S., Guillet-Descasa, E., & Duda J. (2013) How to achieve in elite training centers without burning out? An achievement goal theory perspective. *Psychology of Sport and Exercise*, *14* (1), 72–83.

Jackson C. (2010) The importance of gender as an aspect of identity at key transition points in compulsory education. *British Education Research Journal*, *26* (3), 375-391.

Kalaja S., Jaakkola A., Watt A., et al. (2010) The associations between seventh grade Finnish students' motivational climate, perceived competence, self-determined motivation, and fundamental movement skills. *European Physical Education Review*, *15* (3), 315–335.

Kimm S.Y, Glynn N.W, Obarzanek E., Kriska A.M, Daniels S.R, Barton B.A, *et al*. (2005) Relation between the changes in physical activity and body-mass index during adolescence: A multicentre longitudinal study. *Lancet*; *366* (9482), 301-307.

Kirby J., Levin K., & Inchley J. (2012) Associations between the school environment and adolescent girls' physical activity. *Health Education Research*, *27* (1), 101-114.

Knowles A.M, Niven A., & Fawkner S. (2011) A qualitative examination of factors related to the decrease in physical activity behaviour in adolescent girls during the transition from primary to secondary school. *Journal of Physical Activity and Health*, *8* (8),1084-1091.

Knowles A.M., Niven A., & Fawkner S. (2013) 'Once upon a time I used to be active': Adopting a narrative approach to understanding physical activity behaviour in adolescent girls. *Qualitative Research in Sport, Exercise and Health*, *6 (1) 62-76* .

Knowles A.M, Niven A., Fawkner S., & Henretty J.M. (2009) A longitudinal examination of the influence of maturation on physical self-perceptions and the relationship with physical activity in early adolescent girls. *Journal of Adolescence*, *32* (3), 555–566.

Lee J., & MacDonald D. (2010) Are they just checking our obesity or what?' The healthism discourse and rural young women. *Sport, Education and Society*, *15* (2), 203-219.

Lincoln Y., & Guba E. (1985) *Naturalistic inquiry.* London: Sage.

Longdridge, D. (2007) *Phenomenological Psychology: theory, research and method. New York*: Prentice Hill.

Lyu M., & Gill D. (2011) Perceived physical competence, enjoyment and effort in same-sex and coeducational physical education classes. *Educational Psychology, 31* (2), 247–260.

Mason V. (1995) *Young people and sport in England. The views of teachers and children. A report on in-depth interviews carried out by social survey division of OPCS, on behalf of the sports council*. London: The Sports Council.

Mitchell F., Gray S., & Inchley J. (2013) "This choice thing really works ... ": Changes in experiences and engagement of adolescent girls in physical education classes, during a school-based physical activity programme. *Physical Education and Sport Pedagogy, 18 (1) 1-19*.

Mitchell F (2012). "Changes in experiences and engagement of adolescent girls in Physical Education classes, during a school-based physical activity programme: A qualitative longitudinal study." PhD thesis, University of Edinburgh.

Muldoon J., & Inchley J. (2008) *The Y Dance 'Dance-in-Schools Initiative' (DISI): Final Evaluation Report*. Edinburgh: University of Edinburgh Child & Adolescent Health Research Unit.

Mulvihill C., Rivers K., & Aggleton P. (2000) *Physical activity 'at our time'. Qualitative research among young people aged 5 to 15 years & parents.* London: Health Education Authority.

Nelson N.M., Wright A., Lowry R., & Mutrie N. (2008) Where is the theoretical basis for understanding & measuring the environment for physical activity? *Environmental Health Insights*, *2*, 111-116.

Niven A., Henretty J., & Fawkner S. (2014) 'It's too crowded': A qualitative study of the physical environment factors that adolescent girls perceive to be important and influential on their PE experience*. European Physical Education Review,*20 (3) 335- 348.

Oliver K.,M. Hamzeh N., & McCaughtry N (2009) "The Body, Physical Activity and Inequity." In Young People's Voices in Physical Education and Youth Sport, edited by M. O'Sullivan and A. MacPhail, 31–48. London: Routledge.

Pannekoek L., Piek J., & Hagger M. (2013) Motivation for physical activity in children: A moving matter in need for study*. Human Movement Science, 32* (5), 1097-1115.

Pate, R., O'Neill, J.R.,& McIver K.L. (2011) Physical activity and health: does physical education matter? *Quest*, *63*, 19–35.

Pring R. (2000) *Philosophy of Educational Research.* London: Continuum.

Prochaska J.J., Sallis J.F., Slymen D., & McKenzie T.L. (2003) A longitudinal study of children's enjoyment of physical education. *Pediatric Exercise Science*, *15*, 170-178.

Rich E. (2003) 'The problem with girls': Liberal feminism, 'equal opportunities' and gender inequality in physical education. *The British Journal of Physical Education*, *34* (1), 46-49.
Rich E. (2004) Exploring teachers' biographies and perceptions of girls' participation in physical education. *European Physical Education Review*, *10* (2), 215-240.
Robbins L.B., Pender N.J., & Kazanis A.S. (2003) Barriers to physical activity perceived by adolescent girls. *Journal of Midwifery & Womens Health*, *48*, 206-212.
Sallis J., & Owen N. (1999) *Physical activity & behavioural medicine.* London: Sage.
Sandford R., & Rich E. (2006) Learners & Popular Culture. In: Kirk D, O'Sullivan M, Macdonald D (eds). *Handbook of Physical Education.* London: Sage, 275-291.
Scottish Executive. (2011) *Scottish Health Survey. Full report 1*. Scottish Executive, Edinburgh.
Scottish Executive. (2009) *Scottish Health Survey. Full report 1*. Scottish Executive, Edinburgh.
Scottish Executive. (2006) A Curriculum for Excellence building the curriculum 3-18 (1) (Edinburgh: HMSO).
Scottish Executive. (2004) The report of the review group on physical education HMSO. Edinburgh.
Silverman D. (2000) *Doing qualitative research.* London: Sage.
Slater A., & Tiggeman M. (2010) Gender differences in adolescent sport participation, teasing, self-objectification and body image concerns. *Journal of Adolescence*, *34*, 455–63.
Slingerland, M., Haerens, L., Cardon, G., & Borghouts, L. (2014) Differences in perceived competence and physical activity levels during single-gender modified basketball game play in middle school physical education. *European Physical Education Review, 20 (1), 20-35.*
Smith A.L. (1999). Perceptions of peer relationships and physical activity participation in early adolescence. *Journal of Sport and Exercise Psychology*, *21*, 329-350.
Stidder G. (2000) Does sex matter? Student perceptions of physical education in mixed & single sex secondary schools. *The British Journal of Teaching PE*, *31* (3), 40-43.
Taylor I.M., Ntoumanis N., Standage M., et al. (2010) Motivational predictors of physical education students' effort, exercise intentions, and leisure-time physical activity: A multilevel linear growth analysis. *Journal of Sport and Exercise Psychology, 32* (1), 99–120.
Weigand D.A., Carr S., Petherick C., & Taylor A. (2001) Motivational climate in sport & physical education: The role of significant others. *European Journal of Sport Science*, *1* (4), 1-13.
Welk, G. (1999) The youth physical activity promotion model: A conceptual bridge between theory & practice. *Quest, 51*, 5-23.
Welk G., & Eklund B. (2005) Validation of the children & youth physical self perceptions profile for young children. *Psychology of Sport & Exercise*, *6* (1): 51-65.
Wetton A.R., Radley R., Jones A.R., & Pearce, M (2013) What are the barriers which discourage 15-16-year-old girls from participating in team sports and how can we overcome them? *BioMeResearch International*.2013,1-8
Whitehead S., & Biddle S. (2008) Adolescent girls' perceptions of physical activity: A focus group study. *European Physical Education Review*, *14* (2), 243-262.
Wright J. (1996) The Construction of Complementarity in Physical Education. *Gender Education*, *8* (1), 61-80.
Yin R.K. (2009) *Case Study Research, design & methods.* London: Sage.