

**‘It’s like feeling everyone will be looking at you, but in reality, no one cares.’ A
Qualitative Visual Methods Study Exploring Adolescent Males’ Relatedness in Physical
Activity.**

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Abstract

The basic psychological need of relatedness in physical activity is key to keeping adolescent males active into adulthood. This qualitative research study, framed by Self-Determination Theory, aimed to discover how relatedness affects adolescent males' motivations to be active, and how their masculine identities affect their perceived relatedness in physical activity spaces. Photo elicitation interviews (PEIs) were conducted with 13 adolescent males in two phases, (1) researcher-led PEIs and (2) participant-led PEIs. In Phase 1, the researcher shared photos of physical activity to initiate conversation, and in Phase 2, participants were encouraged to take photographs of what motivates or amotivates them to be active, which were discussed in the second PEIs. Reflexive thematic analysis produced five themes: 1) How positive peer relatedness affects adolescent males' motivations to be active, 2) How positive adult relatedness affects adolescent males' motivations to be active, 3) How negative peer relationships affect adolescent males' motivations to be active, 4) How adolescent males perceived relatedness in PA is affected by adolescence and masculine identities, and 5) How negative peer relationships of adolescent males leads to vulnerability in PA spaces. Social connections with peers were a key driver of intrinsic motivation to be active, whereas perceived peer judgement and poor relatedness triggered changes in or avoidance of physical activity. Participants experienced pressure to conform to hegemonic masculine traits and comparisons of physique and muscularity were common. To ensure all adolescent males experience relatedness in PA, we need to create inclusive and supportive environments which accept and celebrate all forms of masculine identity.

Keywords

Adolescent Males, Self Determination Theory, Relatedness, Physical Activity, Masculinity

Public Significance Statements

- 1 It is imperative that policymakers and healthcare providers acknowledge the low levels of
- 2 physical activity among adolescent males. Spaces for adolescent physical activity need to
- 3 reflect inclusive forms of masculinity and acknowledge the pressure placed on adolescent
- 4 males to conform to hegemonic masculine stereotypes and body image.

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Introduction

Relatedness, being socially connected to others and having a sense of belonging, is critical to feeling intrinsically motivated to commence and remain physically active (Teixeira et al., 2012; Xiang et al., 2017). Adolescent males' relatedness in physical activity (PA) is an under-researched area, particularly in terms of how relationships with parents/carers and peers affect their motivations to be active. Examining adolescent males' relatedness in PA needs to be set in the context of how contemporary society defines and views masculinity (White & Hobson, 2017). Masculinity, the social expectations of being a man, is not a single, static concept, but rather a constantly evolving construct shaped by social and historical factors (Wong & Wang, 2022). Adolescent males' perceived relatedness in PA is influenced by whether they conform to hegemonic, heteronormative, masculine stereotypes or to more multi-faceted forms of masculinity (e.g., race, sexual orientation, gender identity, and gender expression) that may feel marginalised in PA spaces (Tischler, 2011; Wong & Wang, 2022)). To ensure all adolescent males experience relatedness in PA, we need to create inclusive and supportive environments that accept and celebrate all forms of identity (Campbell et al., 2018). During adolescence (10-19 years), relatedness to significant others often changes, with the focus shifting from the parent/carer-child relationship towards the influence of peers (Steinberg & Morris, 2001; World Health Organization, 2018).

Adolescent males' PA can be affected by changes in their relationships with their parents/carers, teachers, coaches, teammates, and peers, influencing how active they are, where they participate in PA, and with whom they participate (Chu & Zhang, 2019; Lawler et al., 2022). Furthermore, adolescence is a time of rapid physical, cognitive, emotional, and behavioral change, and when potentially harmful health habits, such as physical inactivity, can become entrenched (Tohi et al., 2022; World Health Organization, 2018). To date, much research has focused on adolescent females' low levels of PA (Sturm et al., 2021; Thøgersen-

Ntoumani et al., 2022), yet adolescent males are failing to reach the World Health Organisation recommendation of 60 minutes of PA a day, with only 49.4% in the UK and 30.9% in the USA adequately active for a healthy lifestyle (Lin, 2022; Sport England, 2021). There is a need for in-depth, theoretically informed, qualitative research, to gain a greater understanding of how adolescent males' identity and relatedness to significant others influence their decision-making and motivation around PA (Telama et al., 2014).

Self Determination Theory

Self Determination Theory (SDT) has been found to be suitable for understanding the motivations and psychological needs of adolescents in PA (Kelso et al., 2020). SDT transcends the binary model of extrinsic and intrinsic motivations, outlining six types of regulation on a continuum ranging from amotivation, where a person lacks motivation, through to autonomous intrinsic motivation, where a person feels inherent satisfaction from the activity itself (Ryan & Deci, 2020). The self-determination continuum includes four types of extrinsic motivation; 1) external regulation, doing an activity for reward or punishment and feeling controlled by others, 2) introjected regulation, acting to avoid a sense of guilt or shame, 3) identified regulation, when a task has personal value, and 4) integrated regulation, where an activity is fully integrated into a person's identity (Ryan & Deci, 2020). SDT helps in assessing motivational patterns related to PA to enhance understanding of exercise behaviour, indicating the importance of developing autonomous self-regulation to enhance intrinsic motivation to be active.

A core component of SDT is our need to fulfil the three basic psychological needs (BPNs) of perceived autonomy, competency, and relatedness to achieve optimal functioning (Vansteenkiste et al., 2020). Autonomy can be defined as the need to feel you are initiating your own actions and have a choice, competency as perceiving you can interact effectively, and relatedness as a sense of belonging and connectedness (Ryan & Deci, 2020). When BPNs

of autonomy, competency and relatedness are met, a person will feel autonomously motivated, but if these needs feel thwarted or partially fulfilled, individuals tend to regulate their behaviour based on controlled motivations (Vansteenkiste et al., 2020). For adolescent males to commence and continue in PA they need to feel related to their peers, teammates, and adults in the PA environment, feel competent in front of their peers, and have a sense of autonomy where relationships are non-controlling and reciprocal (Xiang et al., 2017.)

Peer approval, acceptance and relatedness are particularly significant for adolescents and are an understudied area in relation to males' motivations to be active (Chu & Zhang, 2019; Lawler et al., 2022). Relatedness has two components, firstly, feeling connected to others and having a sense of belonging through social connectedness, trust, recognition, and kindness, and secondly, the avoidance of rejection, feeling insignificant, and social detachment from others (Vansteenkiste et al., 2020). Adolescent males' BPN of relatedness in PA spaces will be indicated by feelings of belonging via their social identity, feeling they are valued and a member of the team, class, or group (Fernández-Espínola et al., 2020).

Masculinities and Relatedness

Masculinities are defined as a combination of cultural and individual meanings attached to men and boys (Wong & Wang, 2022). In recent years self-identified gender has been embraced for diversity and inclusion (Messerschmidt, 2019). Individuals' gender masculinities are also viewed and measured against traditional masculine ideologies, cultural norms, and stereotypes, which can lead to behaviour regulation (Wong & Wang, 2022). A social constructivist view of masculinities examines how adolescent males perform masculinities in different situations. For example, adolescent males may act more aggressively and macho in an all-male domain such as a changing room or football match, as they think this is what is expected (Joy, 2021; Hill, 2013).

Within SDT individual identity is viewed as the set of characteristics, values and aspirations that define us, and BPN satisfaction ensures our self-identity is accepted and embraced in an environment (Vansteenkiste et al., 2020). Adolescence is a key time for identity formation and relatedness can be linked to the pressure on males to conform to the hegemonic male peer group behaviour associated with masculine physicality (Connell & Messerschmidt, 2005). Hegemonic masculine traits of strength, authority, competitiveness, and aggression can be dominant in PA settings, creating hierarchies of masculinity that result in adolescent males who do not live up to the masculine ideal feeling marginalised in these spaces (Connell & Messerschmidt, 2005; Hill, 2015). An alternative observation proposed by Inclusive Masculinity Theory (IMT) is that adolescent males in the US and UK are experiencing a greater acceptance of multiple forms of masculinity, rejecting homophobia and traditional gender stereotypes of gender expression and identity (Anderson & McCormack, 2018; Wong & Wang, 2022). There is a need to investigate the BPN of relatedness in PA settings for adolescent males to ensure all masculine identities are supported and celebrated (Campbell et al., 2018).

Previous Studies on Masculinities in PA Spaces

School Physical Education (PE) has historically been a PA space where gender performativity played a significant role in fostering the development of hegemonic masculinities (Tischler, 2011). In this study, all forms of PA are considered, however, the majority of previous studies focus primarily on PE spaces, excluding other forms of physical activity such as after-school clubs, active travel, and leisure activities. Often, status and value in secondary PE contexts are determined by the performance of proficient sporting bodies where muscularity, strength, and physical ability are highly regarded (Hill, 2015). Although some boys can resist the doctrines of hegemonic masculinity a hierarchy of masculinities is often perceived, where marginalization and peer teasing are still prevalent (Bramham, 2003).

Tischler's study (2011) found boys embodied different types of masculinities in PE and felt marginalised for having the wrong body shape or being less coordinated, slower, weaker, unfit, and more subdued. As a result of examining boys' relatedness using a hegemonic masculinity lens, it was found that negative peer cultures were tolerated, and marginalized boys were ridiculed (Tischler, 2011). To avoid physical, verbal, and emotional abuse as well as to protect their sense of self, marginalized masculinities tend to avoid PE classes and PA spaces, or isolate themselves during PA (Joy, 2021; Hill, 2013).

Similarly, Hickey (2008) found that PE cultures were marked by hyper-masculinities that were celebrated and allowed to flourish, which led to an ethos of entitlement. By internalizing negative stereotypes about masculinity and conforming to certain norms in PE classes, male adolescents internalized negative stereotypes about masculinity (Hickey, 2008). Moreover, it created an environment of exclusion and inequality for male adolescents, who were less able to conform to these norms (Hickey, 2008; Hill, 2015). As a result of developing a collective bond, a hyper-masculine sports code may foster an intolerant attitude towards outsiders perceived to be weak and inferior. Although many boys do not participate in hyper-masculine sports, they are still evaluated according to these types of masculinity (Hickey, 2008).

Aside from hegemonic masculinity being perceived as a matter of strength, muscle, and physical ability, adolescents' relatedness in PA must be explored concerning their gendered embodiments (Larsson et al., 2011; Joy et al., 2021) as well as their cultural background and ethnicity (Hill, 2015, Lawrence, 2016). An examination of gender in PE found that adolescent males wanted to be recognised as 'normal' straight boys presupposing a heteronormative masculine appearance to others (Larsson et al., 2011). A recent study of gendered bodies found that although adolescents were more aware of societal gender discourse, binary norms of male and female were still expected in PE spaces (Joy et al.,

2021). Alongside gender embodiment, it is imperative to examine the influence of ethnicity and culture on relatedness in PE and PA (Hill, 2015., Lawrence, 2016). Lawrence's research on idealized masculinities in health magazines depicted white male athletic bodies as the epitome and black male counterparts as aggressive and hyper-masculine (Lawrence 2016). Previous research using photo-elicitation found that Asian boys' bodies and sporting experiences were undervalued in PE as a result of their non-conformity to embodied Westernized masculinities (Hill, 2015).

For PA initiatives to succeed, programs must foster social inclusion and promote acceptance of multiple forms of masculinity (Hickey 2008, Tischler 2011). Educators and PE instructors have to recognise that adolescents can demonstrate gender identity in a variety of ways rather than treating them as homogeneous groups aligned with stereotypical perceptions of acceptable male activities and behaviours (Gerdin, 2015). Based on Butler's assertion that gender is performative, educators should create an environment in which adolescents can express their physical abilities and embodiment beyond binary gender stereotypes (Butler, 2011; Gerdin, 2015).

Previous Studies on Relatedness in PA

Quantitative studies have found the BPN of relatedness positively affects autonomous motivations to be active in PE and leisure PA settings for adolescents (Schulze et al., 2022; White et al., 2021). In PE, BPNs of autonomy and competency were affected more by the teaching environment, whereas relatedness was influenced by their peer group (Vasconcellos et al., 2020). SDT studies have found that leisure-time, non-organised PA with peers was particularly salient to adolescent males, and gender and social identity had not been adequately considered in PA interventions (Schulze et al., 2022). A qualitative inquiry of peer motivational climate in youth sport, using content analysis to examine topics such as

team competition and relatedness support, found more research was needed on the effect peers had on PA motivation (Vazou et al., 2005).

Researchers have primarily used questionnaires and researcher-derived deductive scales to study adolescent males' relatedness in PA (Pelletier et al., 2013). Qualitative research can provide a more complete and nuanced understanding of adolescent males' relatedness within a contemporary gender context (Campbell et al., 2018). Adolescent males can find qualitative semi-structured interviews intimidating due to the high level of operational thinking required to make complex evaluations and articulate abstract ideas (Duncan et al., 2009). Photo-elicitation interviews (PEIs) can help by using visual aids and reducing the power imbalance between adult researchers and adolescents (Duncan et al., 2009; MacPherson et al., 2016). The aim of the current study is to investigate how adolescent males' relatedness to PA environments influences the types, settings, and levels of PA they choose. This is the first qualitative research study to examine the following questions in depth:

- How does the basic psychological need for relatedness experienced by adolescent males affect their motivation to be physically active?
- How do adolescent males' individual and societal masculine identities affect their perceived relatedness in PA?

Methodology

Philosophical Assumptions and Reflexivity

Relativist ontological and socially constructivist epistemological perspectives were adopted to allow the adolescent males' individual, socially constructed lived experiences of PA to be recognised, whilst acknowledging the researchers' own biases, experiences, and contexts (Sparkes & Smith, 2013). The lead researcher identifies as a cisgender, heterosexual female (pronouns: she/her/hers) and is a mother of three children aged 14 (female), 16 and 18

(male), and this may have influenced the analysis due to her own and her children's experiences of PA. These philosophical assumptions have informed the research questions, methodology, interpretative analysis, and discussions of the findings (Poucher et al., 2020). This study is situated as part of a wider qualitative study and focuses specifically on relatedness by exploring in-depth how adolescent males' social connections in PA spaces affect the types, settings, and levels of PA they are choosing to take part in.

The authors' interest in the topic arose while conducting a systematic review entitled 'Adolescent Males' Motivations to be Physically Active: A Qualitative Systematic Review framed by Self Determination Theory' to examine what research had been conducted and identify gaps in knowledge (Beddoe et al., 2023). During the review, it was found that peer relatedness was critical to their motivation to be active, associated with both amotivation through peer comparison as well as increased intrinsic motivation for being active with friends and others of similar ability (Beddoe et al., 2023). The authors' expectations about the topic were influenced by the systematic review findings, however, the results indicated that participatory qualitative research was needed to determine if the traditional hegemonic concept of masculinity remains prevalent in PA (Beddoe et al., 2023). Recent studies have proposed an intersectional analysis of masculinity that examines social identity in context, situation, and interpersonal context (Christofidou, 2021; Connor et al., 2021). The authors were interested in exploring adolescent males' identity in PA from this pluralistic and nuanced perspective. As Western countries address gender and sexuality discourses and inequalities, many questions have arisen about how adolescent males are adapting to this evolving cultural context and how it affects relationships in PA spaces (Perry et al., 2019). Despite the fact that the study's findings did not contradict the authors' expectations resulting from the systematic review, the results emphasise the need to treat adolescent males as individuals with complex and diverse viewpoints, rather than as a homogenous population.

Recruitment and Participant Data

After securing institutional ethical approval, participants were recruited through their parent/carer via an advert on a public Instagram account, using a purposive maximum variation sampling strategy to ensure a variety of participants in terms of age, school, athleticism, and types of PA (Sparkes & Smith, 2013). Participants were in Southeast England, which has a higher socio-economic population living in rural or semi-rural locations and all the participants were from higher socio-economic families, as determined by their parent/carer(s)' occupation (ONS, 2010). Thirteen adolescent males from five schools/colleges were recruited, aged 12-17 years old, and their personal details were anonymised. In terms of race/ethnicity, two participants self-identified as British Chinese, two as British Pakistani, eight as White British, and one as White European (ONS, 2010). Voluntary questions revealed that 10 of the participants self-identified their sexual orientation as 'straight', one as 'bisexual' and two chose not to answer; 12 self-identified their sex at birth as 'male' and one chose not to answer; and 12 self-identified at the time of the interview as 'cisgender' and one chose not to answer (ONS, 2010).

Methodological Approach

Each participant took part in two PEIs in their own homes at separate time points, with their parent/carer in the next-door room with the door open. PEIs can adopt researcher-led photos or participant-led photos, and this research utilised both approaches for different methodological purposes. PEIs helped participants feel involved in the research by meeting their BPNs of autonomy, competency, and relatedness and creating a non-judgemental and inclusive atmosphere (Leonard & McKnight, 2015; MacPherson et al., 2016).

In Phase 1, researcher-led PEIs were conducted lasting between 40 and 85 minutes, and participants were shown photos from the public domain of different forms of PA, body shapes, skills, emotions, spaces, coaches, parents, teammates, and leisure activities to initiate

conversation and create an interview structure (see supplementary material A). At the end of the first PEI, participants were asked to take their own photographs on their mobile phones of what motivated and amotivated them to be active using the Participant Brief for Photography for guidance (see supplementary material B). Their parent/carer reviewed the photographs to ensure safeguarding and sent them via a private WhatsApp message to the lead author. Photographs were securely transferred to an encrypted server.

In Phase 2, a participant-led PEI was conducted with each participant lasting between 25 and 50 minutes. The second PEI took place between 2 and 12 weeks after the first PEI, ensuring participants could take their photographs in their own time, taking into account school holidays, other commitments, and winter weather. The PEI began with follow-up questions to clarify any queries from the first interview and to build rapport with the participants. Participants were then asked about their photographs including why they took the images, what the images showed when they were taken, and how the photos made them feel (Blackbeard & Lindegger, 2015). This approach allowed for co-construction of research data and aligned with the constructivist paradigm of the research (MacPherson et al., 2016).

Data Analysis

An abductive methodological approach was taken, with an initial SDT framework, yet the unique lived experiences of the participants were explored without theoretical restrictions (Kovács & Spens, 2005). Using an abductive standpoint allowed for the co-construction of data with participants' views and beliefs on what affected their motivations to be active in being included despite not having previous knowledge of SDT and the BPNs. Abduction allowed continual reflective dialogue between the researchers, theory and data throughout data collection and analysis and for novel and unanticipated sub-themes, such as the preference to be alone during PA (Rinehart, 2021).

The PEIs were recorded, transcribed, and anonymised by the primary researcher. The six phases of Reflexive Thematic Analysis (RTA) were conducted (Braun & Clarke, 2019); 1) Familiarisation with the dataset, by transcribing and re-reading the interviews several times, 2) Coding, allowing detailed analysis of the adolescents' thoughts on their motivations to be active, 3) Generating themes and sub-themes, examining effects of relatedness on their motivations to be active, 4) Developing and reviewing themes, to allow more complex analysis concerning masculinity and identity to be formed, 5) Refining, defining, and naming themes, to ensure research questions were answered, and 6) Writing up, where themes were being reflexively discussed and presented as a narrative account (Sparkes & Smith, 2013).

Rigor and Trustworthiness

To enhance the rigor and trustworthiness of the research in line with our philosophical approach, a range of strategies appropriate to the research question and design were implemented. The researcher was reflexive about their position and minimised the power dynamic by ensuring the PEIs were enjoyable, conversational, and non-judgemental (Blackbeard & Lindegger, 2015). The researcher kept a reflexive diary throughout data collection to reflect on each PEI (Braun & Clarke, 2019). All the participants' views were encompassed in the results and naturalistic generalizability was felt to be reached through thick descriptions and rich interpretations (Smith, 2018). Regular contact and discussion were maintained between the lead researcher and critical friends (Braun & Clarke, 2019).

Data Representation

Approximately 20 hours of transcribed audio data and 180 participant photos were generated by the research. The results section presents direct quotes from the first and second PEIs to illustrate and demonstrate support for the themes (Sparkes & Smith, 2013). Appendix A comprises 11 participant photos with associated direct quotes to illustrate the stories behind the photographs. In Phase 2, the participants chose what, where, and when to take

photographs, meaning the content and dialogue of the second PEIs was participant-led (Blackbeard & Lindegger, 2015). The participants were asked about the meaning and representation of their photos in the second PEI and their words needed to be viewed alongside their photos, enabling them to both ‘tell’ and ‘show’ their stories of PA (Smith & Caddick, 2012). The participants' photographs were analysed alongside their words from the second PEI in the context of Reflexive Thematic Analysis (Braun & Clarke, 2017). Previous studies involving PEIs using Thematic Analysis found that engaging in conversations about their photographs allowed adolescents to reflect on how meaningful and unique their photographs were to them, rather than the perspective of an adult researcher (Smith et al., 2017). The researchers felt that without the second PEI and the participants' explanations, the photograph data may have been misinterpreted. A complete narrative analysis can only be achieved by examining participant photographs along with their words (Clark, 1999; Smith et al., 2017). As the participants were active agents in the research and contributed to the interpretation of their photos, an additional layer of meaning was established (Smith & Caddick, 2012). The visual and narrative data were analysed together to allow both the researchers’ and the participants’ interpretations to be explored (Reavey, 2020). With the help of critical friends, the researcher identified the relationship between self-determination theory themes to help explain and represent the phenomenon of interest to the research questions.

Results

Figure 1 demonstrates how RTA (Braun and Clarke 2019) was used to formulate three overarching themes, five themes and various subthemes on how relatedness affects adolescent males’ motivations to be active and the possible motivational outcomes that result from these positive and negative relationships.

[Insert Figure 1 around here]

How Positive Peer Relatedness Affects Adolescent Males' Motivations to be Active

Adolescent males feel more related in PA spaces with their close friends, leading to motivation, with Ethan talking about the gym, "I'd totally prefer if I went with friends, and it would also probably help me, like push me more." Liam has found a friendship group at the local sailing club saying, "I've gained a lot more friends" and Oliver prefers playing PA with the hockey team he knows better, "I don't find it as fun being part of a team when I don't know the people as well." Finley is currently injured so not going to his weekly cross-country practices and is missing it saying, "It's meeting with my friends that I don't see a lot of during school and the girls I don't see ... I get to catch up with them." Will (see Figure 2) at his weekly indoor football practice which he enjoys more than the weekend matches due to higher relatedness with his teammates: "It's just like there's less stress and there's less pressure, there's less chance of things going wrong. If I were to make a mistake... I know most people wouldn't care and it's all kind."

[Insert Figure 2 around here]

Participants were aware of the benefits of teammates supporting them in PA with Finley talking about his cross-country team- "You're always with people and supporting each other. So, when you get back from injury, you're always with people that can make you feel better and stuff." Liam said trying a new PA with friends was less pressured – "I think as long as you're doing it with people you know you won't be judged by, and even though you'll be terrible, you can just make a laugh out of it. I think that's a good environment to be in." Oliver (see Figure 3) enjoyed talking about the success his hockey team had and used "we" instead of "I" – "We won the county tournament, and now we're doing the regional tournament. We obviously didn't think that we were gonna win... and it turns out we managed to do well."

[Insert Figure 3 around here]

Ethan understood the benefits of team sports over individual ones due to his BPN of relatedness being met – “I think it develops you in a different way doing team sports; it's like working together for compromise and working for a team”. Aarav (see Figure 4) at his weekly football feels a greater sense of relatedness succeeding in PA with others than when he goes to the gym - “it's like a feeling you can't get anywhere else if that makes sense. Like scoring a goal in an important moment in football and the whole team celebrating is like the best thing.”

[Insert Figure 4 around here]

Ethan likes to be active with friends in unorganised PA like playing football, “Casually, more as a mess around with friends than anything serious,” and he took a photo of his badminton kit – “In the summer it's one that me and my friends play a lot in the garden.” Liam (see Figure 5) does not enjoy school team sports but has found a set of friends sailing who are a little bit older than him which fulfils his BPN of relatedness in PA, “It's not too big of an age difference, it feels like I'm learning from my friends as well, which can feel a lot better than learning from an adult who's just there to teach.”

[Insert Figure 5 around here]

Adolescent males who were thinking about going to the gym were influenced by friends with Charlie saying, “I've got a friend who says, I really didn't want to go, I went, and now can't stop going. Because it's actually really fun. And once you go, you know you'll feel better about yourself, and it'll be great.” Alex had just started going to the gym after talking to friends about it, “(I) saw my friends do it and I just like I dunno I want to be involved with them, I guess. I want to be with them.”

How Positive Adult Relatedness Affects Adolescent Males' Motivations to be Active

Participants had mainly positive experiences of adults in their PA environments across the 5 schools, with Josh saying, “Coaches and PE teachers are very helpful,” and Kai

and Ben both agreeing they have “No pressure” or “Problems with them”. The only exception was Jack who did not enjoy PE – “The PE teachers are like you can’t just not participate, you’ve got to work as a team. It’s just like why? I’m not enjoying myself.” Some of the adolescent males who participated at a higher level of sport were aware of a certain amount of pressure from coaches with Josh saying about his cross-country, “I do feel pressure from them, but not too much. They kind of expect a sort of result, but they won’t necessarily be annoyed if you don’t, but you want to do it for them,” and Oliver comments about his hockey coach, “He’s quite hard on us because he really wants us to get much better and it’s really good training.” Parents were seen as facilitators to PA, and participants appreciated the support such as Will saying, “If my family wasn’t as active, or my father wasn’t, or even my friends weren’t as active then I don’t think I would have been as active,” and Josh said, “They drive me to events and stuff, so it’s quite far away and I want to do my best to make it worth it.” Many of the participants enjoyed spectator sports with family and took photographs, and it sometimes led to participating themselves, for example, Charlie’s trip to see Steph Curry’s team (see Figure 6) – “I went to go see that team in the winter, and even though he wasn’t playing, he was injured, it was still very good. That’s kind of what got me into basketball.”

[Insert Figure 6 around here]

How Negative Peer Relationships Affect Adolescent Males’ Motivations to be Active

Adolescent males who have experienced negative peer relationships in PA spaces are amotivated to be there and will either find other PA environments where they sense relatedness from their peers or cease being active. Charlie has played rugby for a local club and had stopped playing as the other players – “They weren’t really my friends. They, like I got on well with them for those two hours, I had no problems with them, but it’s not like I messaged them when I was at home.” Kai had previously taken karate classes and said, “I

1 started getting bored of it, and so did my brother. So, we dropped it. I did have friends who
2 did karate with me, but we all just dropped it at about the same time.” Ben said:

3 I think sports I enjoyed are the ones I enjoyed usually because I'm playing with
4 friends because I think that plays a key role - when I was doing swimming, I wasn't
5 really around anyone I knew, but with badminton, table tennis and karate there were
6 people I was friends with in the classes, so it was it was actually more enjoyable.

7 (Ben)

8 Adolescent males' perceived relatedness in PA was negatively affected due to their
9 perceptions they were going to make a mistake in front of their peers. Kai was aware of this
10 saying, “I do get embarrassed if I muck up in front of my team. Because (of) team pressure
11 ... the pressure to not fail.” Kai is talking about team games such as football and rugby when
12 he said, “You could get some really horrible people, and then they could throw you over and
13 then muck it up for everyone else because you know when (you) go into the goal and then
14 people question why you didn't save the goal when it was just being passed in.” Jim felt the
15 same in team games saying, “That attitude of “Oh no, you've accidentally not passed the ball”
16 ... So that means we've lost now.” Liam was aware that for some people team environments
17 could be supportive but, “It's just not something that I have experienced in my time playing
18 team sports in PE.” Ben recognised that more competent players may dominate the game:
19 If you have a really large difference (skill level), even if you're with your friends, it may seem
20 less fun because I think a small group of people mainly dominate the field, and I'll sort of
21 feel that I'm not really involved, so I'm sort of sitting on the side-lines of it. (Ben)

22 Alex was also aware of the pressure from teammates, “I just didn't like the routine and the
23 competitiveness of being a footballer. There was too much pressure. Because if you've got
24 the ball, everyone's staring at you, hoping you're doing something well, and if you mess up, it

feels like everyone's annoyed at you. Angry.” Charlie (see Figure 7) plays football at home but does not play at school as he does not feel related to the teams:

I could make a team, I’m like fit enough to do it, but it’s like whether I want to.

They’re fine, I get on with pretty much everyone, but they’re more the people you’d see around with vapes and stuff, that kind of people. (Charlie)

[Insert Figure 7 around here]

Adolescent males could feel self-conscious in new PA spaces with Aarav saying the first time he went to the gym, “I was definitely like, intimidated. I didn’t want to do it all. But then you just realise they are just nice people.” Adam also felt he would be “quite scared” going to the gym - “There might be this thing that like you're being judged by your friends or something because you're not doing the same weights that they are.” Finley (see Figure 8) prefers not to interact with people at the gym and took a screenshot of his music playlist – “I just kind of go by myself... I’ve got my music.”

[Insert Figure 8 around here]

Alex (see Figure 9) has started going to the gym but chooses a gym further away from his school because:

If I run into someone, because I'm not on good times with everyone in my local place... Some people are just like, you know, the popular kids in school that will be there and they're just sort of like, not very nice. So, I'll just go to my own one (a gym) far away that no one goes to. At the end of the day, nothing would happen. But I just prefer to be on my own... It's like feeling everyone will be looking at you and stuff or just thinking about you, but in reality, no one cares. (Alex)

[Insert Figure 9 around here]

How Adolescent Males Perceived Relatedness in PA is Affected by Adolescence and Masculine Identities

Adolescent males are still experiencing pressure to conform to hegemonic masculine traits of “manning up” and not showing fear or pain in front of peers. Jack had experienced this in PE, “But like when you do hurt yourself, it's kind of like you just got to try your best to pretend like you're not hurt or just (it) seems like weaker. It almost feels like this primitive like lion-pack type situation. They've got to be the alpha - no pain, no emotion.” Adam was also aware of the need to not show weakness in front of the peer group:

I think there's definitely a thing about not crying. I think that's definitely seen as quite weak in the year or whatever. And it's like you should just ‘man up’ and try and like deal with it basically, especially with a team thing. (Adam)

Alex was surprised by the question and thought it was the norm saying, “There's always those expectations and I think they're still around obviously... you're not going to complain or whine if you're in like a sport or just like crying and stuff because it's just, it's not what you do.” Liam had experienced school coaches expecting hegemonic masculine traits:

The one place where it really happens where people are just like “man up” is with teachers, which is a bit of an obnoxious environment, forcing this masculine ideology of “manning up” and having more expectations just because you are a man. (Liam)

Liam (see Figure 10) now chooses PA such as paddleboarding and swimming where he does not need to be hyper-masculine and can relate to the adolescents he is with – “It was really fun and although we spent the whole time completely messing about, at the same time you are actually doing some exercise.”

[Insert Figure 10 around here]

Jack had experienced hyper-masculine behavior from his peer group saying that at 14 or 15 “They start to learn about societal expectations... sometimes it just devolves into misogyny, or as toxic masculinity around like sexuality. “You do this you're gay”. Jack also observed that he thinks adolescent females are enjoying PE more than males, “They’ve got

1 this culture of one-upping each other. I definitely see them always competing and just being
 2 aggressive with each other almost, but the girls (are) just having fun.” Comparing
 3 muscularity is normal amongst adolescent males with Liam saying, “They’re about 16 or 17
 4 and they’re looking at their muscles and go “Look at me!” Ben was also aware of this
 5 masculine persona, but had realised he could relate to them saying:

6 I used to have this misconception of sporty people because I used to think they are
 7 very, very boastful of their physical body, but I’ve gotten to know them and they’re all
 8 quite nice actually, and even if you’re not that good, that will encourage you to do
 9 better. (Ben)

10 Alex is aware of a “hierarchy in the school”:

11 If you saw someone like more popular at the gym, you could think they’re always
 12 looking at you and like thinking badly of you. But in reality, I don’t think they care.
 13 They probably would look at you and laugh for a minute... If you are more low down
 14 (in the hierarchy), you can think it’s like almost intimidating to be... seen. (Alex)

15 Alex sees this “hierarchy” as linked to muscularity, “Yes if they are laughing at you
 16 for being weak... they’re judging you on your physical shape rather than your popularity.”
 17 Aarav (see Figure 11) has been a regular gym goer for two years and took a screenshot of his
 18 media feed to show what he shares with his friends to whom he can relate, “Maybe like the
 19 stigma is reduced (to compare bodies), but also, I think as it gets more popular to go to the
 20 gym, it’s kind of hard to not talk about that stuff... it gets more normalised.”

21 [Insert Figure 11 around here]

22 However, other adolescent males do not want to be more muscular with Liam saying:
 23 It’s really a waste of time, in my opinion, they are just muscles, you don’t need to constantly
 24 be topless just to show everyone what they look like. I know one of my friends who has

1 started to definitely put on that sort of “gym persona”, which hasn't been the most pleasant
2 thing to deal with, but what can I do? (Liam)

3 Kai (see Figure 12) was aware he could not conform to this masculine presentation:
4 I felt like I do not fit! I mean, I'm not saying I don't fit in, but it's just not like with the
5 muscular aesthetics of them. I guess the same mindset applies to everyone else like
6 going to the gym and becoming muscular. Because I don't prioritise that being a
7 musician. (Kai)

8 [Insert Figure 12 around here]

9 Less active participants had come to terms with their identity and were happy with
10 who they were, with Ben commenting, “Me not having that athletic skill has allowed me to
11 like make friends with loads of people,” and Alex stated happily, “I'm known as like, the
12 gamer, the kid that stays at home.” Jack had decided on his friends – “I’ve never really
13 clicked (with) like super sporty types of people”, but he has his own friends outside of PA.

14 **How negative peer relationships of adolescent males leads to vulnerability in PA spaces**

15 The less active participants could feel uncomfortable or vulnerable in PA spaces such
16 as changing rooms and had avoidance strategies. Liam said “Do I really want to be in a semi-
17 vulnerable environment with some of my clothes off around people I dislike? I don't!” and
18 Jack commented, “I don't want to be shoved in with a bunch of half-naked boys who are like
19 whipping each other with towels and like harassing each other and yelling.” They had
20 developed avoidance strategies with Jack saying, “I was always late because I'd wait until
21 everyone's gone and then quickly change, or most people have gone, and I'd go in a corner”,
22 whilst Liam said, “If I get there early, I change early and I won't see anybody else there, so I
23 just speed change and race to lunch.” Kai had recently experienced an uncomfortable
24 moment before a PE lesson in the gym where 3 people in his class were talking about their
25 bodies and “How large their biceps and triceps of their arms are and then also thighs and

1 basically how muscular they are. And then I was just there...”. Ben feels embarrassed in front
2 of his peers when he must wear less clothing for PE:

3 There’s probably a bit of insecurity coming from it, because, like, typically, if you
4 wear shorts and a T-shirt, if you’ve got like a bit of fat from your butt, your calves,
5 and you know, fat from your thighs, or you’ve got a bit of arm fat, when you run it
6 sort of jiggles around. So, you sort of have a little bit of embarrassment from it. (Ben)

7 Ben now avoids more physical types of PA, “So, I think that might actually be the
8 reason why I’m reluctant to go running, because you saw, there’s too much movement for my
9 comfort.” Banter and teasing about physical body shapes are common in PA spaces and
10 normalised by adolescent males, with Adam stating:

11 People say like their backs really big, or their biceps are really big or whatever.

12 That’s obviously positive. But sometimes, and this is in a joking way, but obviously,
13 it might not be ultimately perceived by a person in a joking way. I don’t know. But
14 sometimes people will “self say” that they think they’re really skinny and then other
15 people will go “Yeah, yeah, you are - maybe you should go to the gym!”. (Adam)

16 Other participants did not enjoy this banter and teasing with Jack saying “This weird
17 culture of teasing each other and having to hit each other and just name calling. I hate it all!”,
18 and Liam commenting, “That’s the time when innuendos are made and (they) can make some
19 very inappropriate comments which just really aren’t necessary. We just kind of stay in one
20 corner, meanwhile we have all of the other ones in our year just in one corner talking about
21 very weird stuff.” The adolescent males consider this banter and teasing to be a stage in
22 adolescence with Liam observing, “When you’re in year seven, you’ll make a lot of comments
23 so that the other boys can get a cheap laugh out of it and you think “Oh yeah, I’m part of this
24 group”.” Jack is now 17 and does not have to do PE or games at school anymore, saying, “So

1 it's just a bunch of teenage boys trying to prove who's more masculine in an enclosed space
2 with no outside staff to intervene. Gross. And I'm so glad that I'm not doing it anymore.”
3 Adolescent males who felt vulnerable in PA spaces often now avoid PA with Jack stating:
4 I'd get excited for the actual sport because it's just a break from lessons, I could chat with all
5 my friends who I haven't seen in lessons, but the having to change in the changing rooms.
6 The culture, just in front of everyone else I always hated, and it would make me not look
7 forward to it. (Jack)

8 **Discussion**

9 The findings from this qualitative study contribute to our understanding of how
10 relatedness impacts adolescent males' PA, extending our knowledge beyond previous
11 quantitative research to explore the nuanced and complex factors involved. The study results
12 support previous findings that relatedness in PA spaces is key to adolescent males'
13 motivations to be active, with social connections and positive relationships predictors of well-
14 being and intrinsic motivation (Vansteenkiste et al., 2020). The study found participants often
15 focus on relatability with their peer group, both close friends and adolescent cliques, but they
16 have experienced positive relationships with coaches and PE teachers. Physical abilities and
17 enthusiasm to participate in PA varied among participants. Peer relatedness is a significant
18 factor in autonomous motivation for all adolescent males, who chose to engage in PA with
19 close friends or teammates whenever possible. The study demonstrates how leisure PA in
20 sports clubs, gyms, and outdoor spaces becomes critical for those without peer-relatedness in
21 PE or traditional team sports (Symons Downs et al., 2013).

22 The study results found that adolescent males' relatedness is negatively affected by
23 their peer group if they did not have friends in the PA space or perceived the wider peer
24 group as a negative imaginary audience, who were critical of their beliefs or behaviour. The
25 study supports the concept of an imaginary audience where as part of adolescents'

egocentrism, boys cannot distinguish between what their peers' thoughts are and their own fixations and insecurities (Richter et al., 1982). The male participants who felt other adolescents were watching them and would make a judgement about their PA competency, masculinity, or body image, would go to great lengths to avoid these situations. Consistent with previous studies the adolescent males in the study who did not fit the hegemonic, heteronormative masculinity identity felt marginalised and vulnerable in PA spaces (Hill, 2015; Tischler, 2011). Participants in this study elaborated on previous research by providing examples of coping mechanisms they employ if they could not relate to their peer group, such as limiting the amount of time they were in environments such as changing rooms or avoidance of certain peer cliques they could not relate to (Joy, 2021; Hill, 2013). This study aims to better understand how adolescent males respond to feeling marginalised in PA environments, by finding alternative PA spaces in which they felt more comfortable or how it led them to be amotivated to be active.

The study supports previous findings that adolescent males are experiencing pressure to conform to hegemonic masculine traits of 'manning up' and not showing fear or pain in front of their peer group (Messerschmidt, 2019; Tischler, 2011). As found in former studies participants who do not like the gendered expectations of accepting pain, physical toughness, and stoicism in PA such as rugby, football and judo feel 'othered' and different from the adolescent males who enjoy them (Hickey, 2008; Tischler, 2011). Consistent with previous studies participants reported masculine hierarchies in traditional contact sports, and these social structures negatively impact engagement by adolescent males who do not fit in (Campbell et al., 2018; Hill, 2015).

Male puberty occurs across a broad age range, changing their muscularity, body shape and height, and the study supports the belief that this directly affects their physical embodied experience in a PA environment (Baker et al., 2019). As found in previous studies collective

1 bonds with hyper-masculine sports codes were reported by participants, which appear to
 2 foster an intolerance towards adolescent males who do not meet the hegemonic sporting
 3 ideals, creating a hierarchy of masculinity (Hickey, 2008). The study participants reported
 4 body comparisons between peers, particularly in terms of muscularity, weight, and height.
 5 Previous research has found that as individuals internalise social ideals of appearance, they
 6 are more likely to compare their physical appearance to others and to experience body
 7 dissatisfaction (Barbierik, 2023). The results of this study show an array of views
 8 determining whether body comparison is harmful or not; with some participants regarding it
 9 as harmless banter, whilst others found it made them feel uncomfortable and wanted to avoid
 10 it. While the participants in our study did not always feel pressure to perform in a hyper-
 11 masculine PA, such as weight training, it is felt that their masculine identity is still being
 12 evaluated against the hegemonic hierarchy reported in previous studies (Bramham, 2003;
 13 Hickey, 2008). The results show a negative peer culture still exists as previously found, and
 14 at best this culture is tolerated by others, and at worst it can make others feel marginalised
 15 and their masculinity less valued (Tischler, 2011). The study found the concept of increasing
 16 muscularity by going to the gym and working out is also polarising, with gym goers pleased
 17 with the changes in their body, whereas others feel being muscular is futile and meaningless,
 18 creating a division in peer groups by the value placed on their physique. The study findings
 19 support the view that masculine embodiment in PA was once grounded in body performance
 20 with sporting prowess and athleticism being coveted by the hegemonic male group, but a new
 21 salience of bodily capital as an aesthetic commodity is now held in high esteem (Baker et al.,
 22 2019). The study participants were aware of a hegemonic 'hierarchy' of acceptance and
 23 approval in the wider peer group based on physique, with muscularity being admired above
 24 other body shapes, yet less active adolescent males were often comfortable with their own
 25 identity and had made friendships away from PA. It is felt that although not all the

participants felt pressure to create this muscular masculine identity, their masculinity is still being measured and appraised against this hegemonic ideal as reported in previous research (Bramham, 2003; Hickey, 2008).

The results confirm former studies that adolescent males' experiences of peer relatedness in PA spaces are central to ensuring they stay active into adulthood (Pulido et al., 2021). The study expands our knowledge of how multiple masculinities need to be acknowledged, valued, and accommodated in PA spaces to ensure adolescent males who do not fit the hegemonic, hypermasculine stereotype are included, accounting for all ethnicities, sexual orientations, gender identities, and gender expression (Larsson, 2011; Wong & Wang, 2022). The study found adolescent males who enjoy competitive team PA such as cricket, football and rugby are often better catered to in school than those who would prefer relatedness in leisure PA environments where there is less team pressure, such as mountain biking, lunchtime football with friends, garden games, water sports, or walking.

Previous research reported adolescent males can find interview environments intimidating and it difficult to articulate abstract ideas (Duncan et al., 2009; Leonard & McKnight, 2015). The researchers had concerns beforehand that the adolescent males would not disclose their emotional thoughts about how they relate to their peers in PA spaces, particularly if they were negative. This was unfounded in the research process, and by providing a perceived safe space in their homes in one-to-one interviews and with photographs to facilitate self-disclosure, the participants were able to provide complex and enlightening thoughts on their peer relationships in PA. Reflexivity is key to photo-elicitation research and by using a combination of researcher-led photos in the first PEI, and participant-led photos in the second PEI, the researcher and participants reflexively co-constructed and interpreted important in-depth knowledge on what motivates adolescent males to be active.

Limitations and Future Studies

This study needs to be viewed in the context of the fact that this cohort of participants had their PA disrupted by COVID-19 restrictions between 2020 and 2022 (Ng et al., 2020). The study's participants were from higher socioeconomic groups who lived in small towns and rural areas, and it is necessary to conduct future research on adolescent males living in lower socioeconomic groups and urban areas (Leonard and McKnight, 2015). Future research may include perspectives from a wider range of sexual orientations and gender identities, such as non-binary and transgender individuals. Participants were asked voluntary questions about their sexual orientation and self-identified gender, which 2 participants did not wish to answer. Researchers were aware that the hesitancy to answer these questions could be due to a variety of reasons, including uncertainty about sexuality and gender at this age, as well as concerns over privacy (Smith et al., 2017). Participants were happier discussing LGBTQ+ and gender discourse in general terms than their own experiences specifically. It is hoped that future research will facilitate an open dialogue between researcher and participant regarding how the self-identified gender and sexual orientation of the participants affect their relationships in PA (Larsson et al., 2011; Smith et al., 2017). Despite collecting data on self-identified ethnicity, it was not adequately explored during interviews in terms of its impact on PA-relatedness. Again, participants felt unsure about discussing how their ethnicity and culture may affect their PA. In prior studies, focus groups were used in conjunction with individual PEIs and should be considered for future studies when discussing complex socio-cultural issues with adolescents (Hill, 2015).

Conclusion

This visual method study on the BPN of relatedness contributes to our understanding of adolescent males' motivation to be active, using PEIs at two points in time. The study found that positive adult and peer-relatedness play a fundamental role in motivating adolescent males to remain active, and negative peer-relatedness led to avoidance and

amotivation. Policymakers, health professionals and practitioners need to provide targeted PA interventions which appeal to inclusive types of masculinities who do not meet the hegemonic masculinity traits that are often expected in traditional PE team sports of football, rugby, and athletics (Anderson & McCormack, 2018; Muellmann et al., 2017). The results of this study indicate that not all adolescents feel pressure to exhibit hegemonic masculine characteristics. This study contributes to previous research by exploring participants' complex and nuanced feelings and beliefs about masculinity. Despite not opting for the hegemonic route, adolescent males' masculine identity is still being evaluated by others according to this hierarchy (Hickey, 2008). This study supports previous findings that body comparison has become normalized among adolescent males (Barbierik, 2023). In comparison to previous research (Barbierik, 2023), the study findings explain the multifaceted beliefs of adolescent males regarding body comparisons and body dissatisfaction. However, what the participants view as harmless banter can still be considered to be an attempt to establish a masculine hierarchy by evaluating and judging those who do not conform to the muscular appearance. This study supports previous findings that alongside physical sporting ability being a valued commodity among adolescent males, muscularity is now also an admired quality and although not all boys want to be muscular, their body shape will be evaluated and judged by others within this hegemonic hierarchy (Larsson et al., 2011; Joy et al., 2021).

As found in previous studies the participants had a heightened sense of peer group judgement and wanted to be physically active in spaces where they feel they have friends of a similar ability and have a sense of belonging (Richter et al., 1982). Supporting previous studies, the results found adolescent males who do not enjoy competitive team sports and PE, due to the pressure felt by their peers, need to be offered alternative ways of being active and encouraged to seek unusual, unconventional PA, either on their own or with close friends (Xiang et al., 2017). Further co-constructed research using photo-elicitation is needed with

1 adolescent males who currently feel unrelated and marginalised in PA spaces to assess how
 2 we can reduce perceived barriers to being active. If we are to define gender as a performative
 3 construct, then there needs to be an environment where adolescents can express their physical
 4 abilities and embodiment in ways that transcend binary stereotypes of gender (Butler, 2011;
 5 Gerdin, 2015).

6

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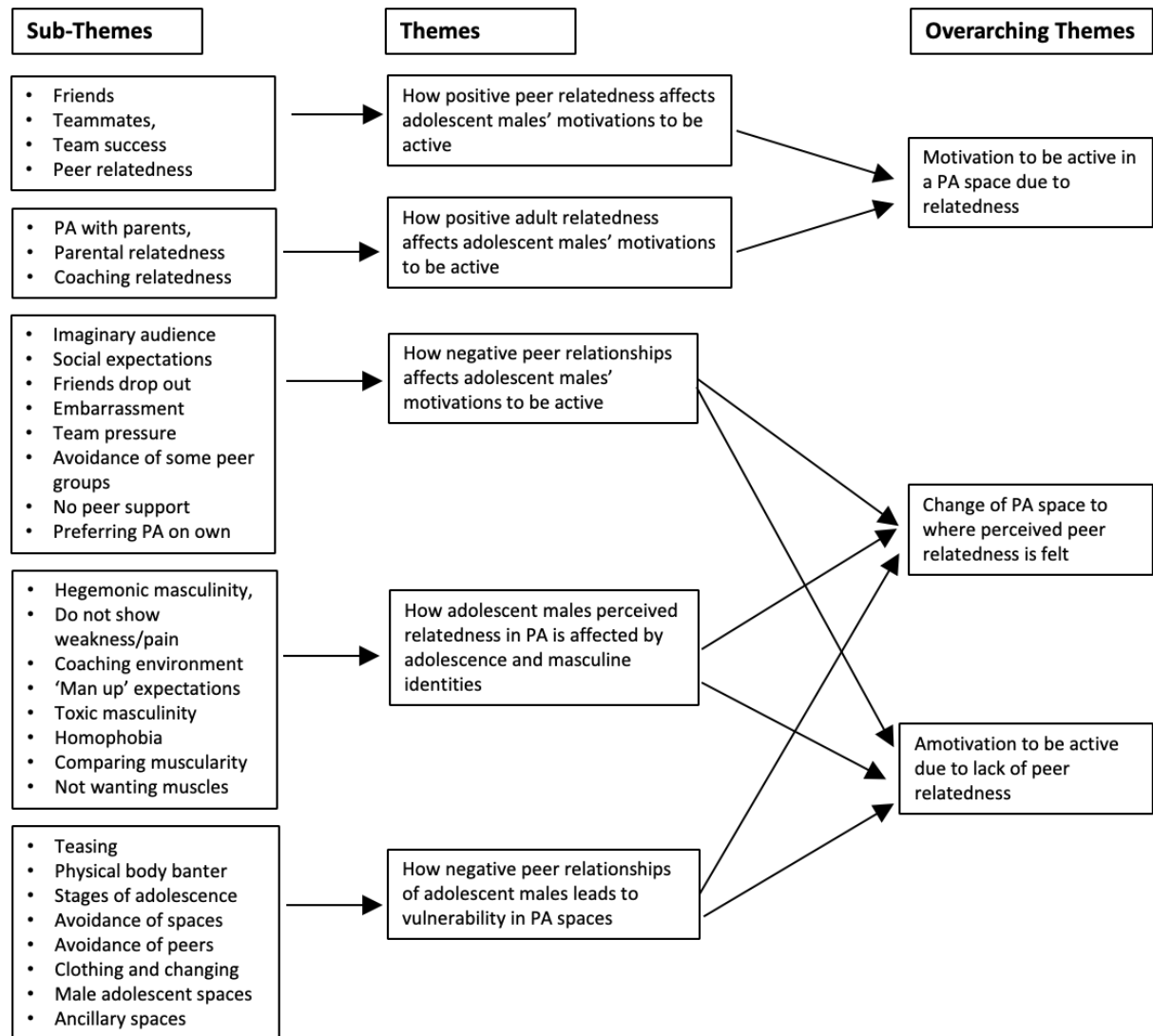
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13

Figure 1

Thematic Structure of What Motivates and Amotivates Adolescent Males' to be Active



1 **Figure 2**

2 *Will at his weekly indoor football practice which he enjoys more than the weekend matches*

3 *due to higher relatedness with his teammates*



4

5 *Note: “It’s just like there’s less stress and there’s less pressure, there’s less chance of things*

6 *going wrong. If I were to make a mistake.... I know most people wouldn’t care and it’s all*

7 *kind”.*

1 **Figure 3**

2 *Oliver enjoyed talking about the success his hockey team had and used “we” instead of “I”*



3

4 *Note: “We won the county tournament, and now we’re doing the regional tournament. We*
 5 *obviously didn’t think that we were gonna win... and it turns out we managed to do well.”*

6

1 **Figure 4**

2 *Aarav, taking a picture at his weekly football where he feels a greater sense of relatedness*

3 *succeeding in PA with others than when he goes to the gym*



4

5 *Note: “It's like a feeling you can't get anywhere else if that makes sense. Like scoring a goal*

6 *in an important moment in football and the whole team celebrating is like the best thing.”*

7

1 **Figure 5**

2 *Liam does not enjoy school team sports but has found a set of friends at his sailing club who*
 3 *are a little bit older than him which fulfils his relatedness in PA.*



4
 5 *Note: “it's not too big of an age difference, it feels like I'm learning from my friends as well,*
 6 *which can feel a lot better than learning from an adult who's just there to teach.”*

7

1 **Figure 6**

2 *Charlie's family trip to see Steph Curry's basketball team motivated him to play basketball*



3

4 *Note: "I went to go see that team in the winter, even though he wasn't playing, he was*
 5 *injured, but it was still very good. So that's kind of what got me into basketball."*

6

1 **Figure 7**

2 *Charlie plays football at home but does not play at school as he does not feel related to the*
 3 *teams*

4



5 *Note:*

6 I could make a team, I'm like fit enough to do it, but it's like whether I want to.

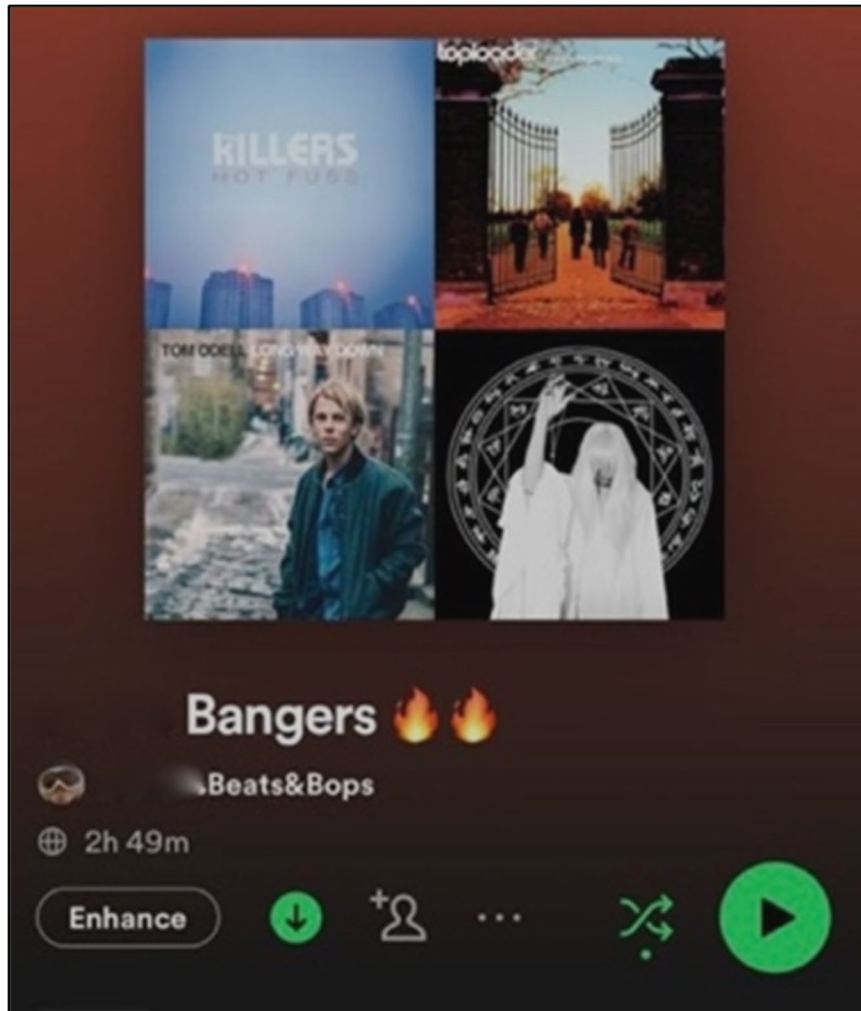
7 They're fine I get on with pretty much everyone, but they're more the people you'd
 8 see around with vapes and stuff, that kind of people. (Charlie aged 16)

9

1 **Figure 8**

2 *Finley prefers not to interact with people at the gym and took a screenshot of his music*

3 *playlist*



4 *Note: “I just kind of go by myself... I’ve got my music.”*

1 **Figure 9**

2 *Alex has started going to the gym, but chooses a gym further away from his school*



3 *Note:*

4 If I run into someone, because I'm not on good times with everyone in my local
 5 place... Some people are just like, you know, the popular kids in school that will be
 6 there and they're just sort of like, not very nice. So, I'll just go to my own one (a gym)
 7 far away that no one goes to. At the end of the day, nothing would happen. But I just
 8 prefer to be on my own... It's like feeling everyone will be looking at you and stuff or
 9 just thinking about you, but in reality, no one cares. (Alex, aged 14)

10

1 **Figure 10**

- 2 *Liam now chooses PA such as paddleboarding where he does not need to be hyper-masculine*
 3 *and can relate to the adolescents he is with*



- 4
 5 *Note: “It was really fun and although we spent the whole time completely messing about, at*
 6 *the same time you are actually doing some exercise.”*

1 **Figure 11**

2 *Aarav's media feed, which he shares with his friends*



3

4 *Note: “Maybe like the stigma is reduced, but also, I think as it gets more popular to go to the*

5 *gym, it's kind of hard to not talk about that stuff... it gets more normalised.”*

1 **Figure 12**

2 *Kai playing his piano*



3
4 *Note:*

5 I felt like I do not fit! I mean, I'm not saying I don't fit in, but it's just not like with the
6 muscular aesthetics of them. And I guess the same mindset applies for everyone else
7 like going to the gym and becoming muscular. That sort of stuff. Because I don't
8 really prioritise that being a musician. (Kai, aged 15)

9

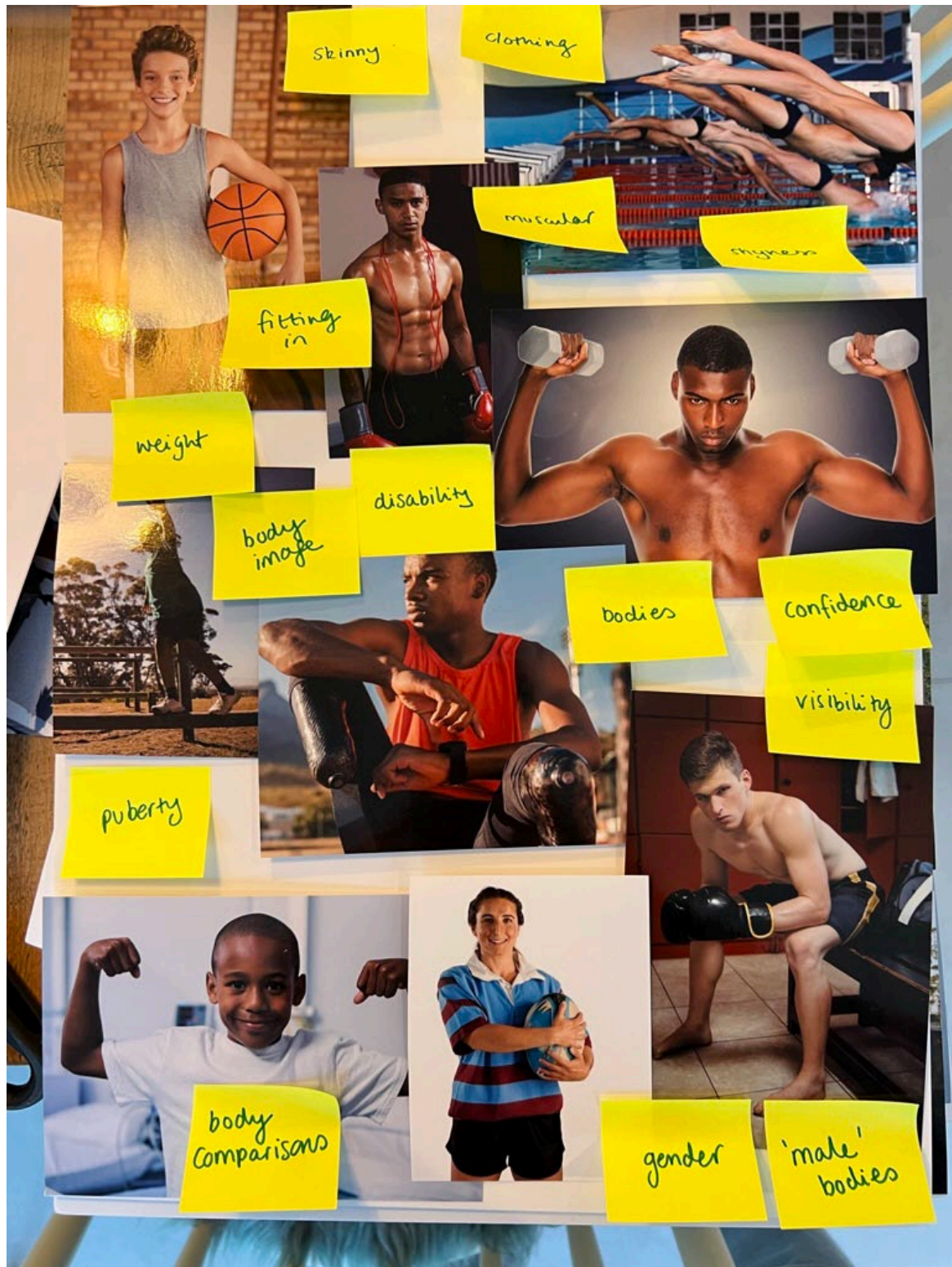
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11

Supplementary Material A

Researcher-Led Photos

The following photos were shown to all the participants in the first PEIs to aid the discussion of what PA is and what motivates and amotivates the participants to be active.



1



2















1
2
3
4

Supplementary Material B

Participant Brief for Photography

The following Participant Brief for Photography was read through and explained to the participants and their parent/carer at the end of the first PEI. Participants and parent/carer were able to ask questions.

WHAT MOTIVATES ADOLESCENT BOYS TO BE ACTIVE

APPROVAL HAS BEEN GRANTED FOR THIS STUDY TO BE CARRIED OUT BETWEEN
12/09/2022 AND 30/06/2023

Participant Brief for Photography

- Please take some photos on your mobile phone or tablet. My suggestion is to limit it to under 20 (less is fine), so we have time to discuss them when we meet.
- When we meet at the next interview, we will discuss the photos you have taken.
- Take photos of people, places, occasions, and objects which represent what motivates or demotivates you to be physically active.
- The photos are to encourage conversation like the ones we've had today. It will also give you some time to think about what we have talked about and see if you have anything else you want to talk about next time.
- Take the photos in your normal life, at home, in the park, on pavements, rather than looking for exotic different locations. I want to see your everyday physical activity, not on holiday.
- You can use photos which you have taken before the research project started.
- Do not take pictures in locations which are private property and require permission. This includes your school, college and inside sports clubs. Parks and sport fields are fine. If you are unsure, ask someone in authority before you take them.
- Do not take photos in private spaces such as changing rooms, bedrooms, or bathrooms.
- Do not take photos of yourself or anyone else which are explicit or wearing little clothing.

- 1 - If you think the clothing on a body would be considered too explicit (e.g., Swimming trunks) you
- 2 could focus on the activity as opposed to the participants, such as taking photos of the space you do the
- 3 sport in, the sports equipment you use, or photograph the clothes you wear (not on a body).
- 4 - If you can't take a picture in a physical activity environment, perhaps think of a way of taking a
- 5 picture which represents it. For example, a picture of you at the door to your leisure centre swimming
- 6 pool.
- 7 - You can include other people in your photos if you ask their permission. For your safety only take
- 8 photos of people you know.
- 9 - People in the background of photos do not need to be asked for permission if they are unidentifiable,
- 10 meaning you cannot see their face clearly.
- 11 - All your photos must be shown to your parent/carer who will give them to the researcher. No photos
- 12 must be sent directly to the researcher.
- 13 - Your parent/carer will be asked to send me the photos via WhatsApp. They will also be stored on the
- 14 Brunel password-protected network only.
- 15 - What photos you choose to show are entirely up to you and if you feel at all uncomfortable about
- 16 anything you have taken do not include it.
- 17 - We will then arrange another interview in a month's time, where you can show me your photos and
- 18 we can discuss what they mean to you.
- 19 - The photos will have faces, identifying logos and place names removed after the second interview,
- 20 making them anonymous. The photos may be used in my thesis and publications, but all identifying
- 21 information will be removed.

22

23

24