Sport and physical activity habits, behaviours and barriers to participation in university students: an exploration by socio-economic group

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Sport and Physical Activity Habits, Behaviours and Barriers to Participation in University Students: An Exploration by Socio-Economic Group

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Abstract

There is some evidence that people from lower socio-economic groups (SEGs) are more likely to be either inactive or less active than those from higher SEGs. Currently, there is little evidence to indicate whether this trend is the same for the student population. This study aims to provide this insight to understand the habits and behaviours of university students in sport and physical activity whilst gaining an understanding of barriers to student participation.

A mixed methods approach was employed, including an online survey of 729 students from 20 different UK universities, plus qualitative research at one university which included 27 semi-structured interviews with students, four semi-structured interviews with university staff, and a focus group with student sports volunteers.

This paper supports previous findings around participation in sport and physical activity amongst different SEGs, finding that students from low SEGs were less active than those from higher SEGs. Key barriers preventing both groups participating in sport and physical activity included time (mainly due to academic commitments), cost and a lack of confidence, alongside some university-specific factors. A greater number of commuter students were in the low SEGs which also influenced behaviour in relation to sport and physical activity participation. Additionally, the research found that students that did not participate in sport and physical activity before university were also less likely to participate once they began university, and this was an important factor regardless of SEG.

The paper provides some considerations and implications for both further research in this area and the design of interventions to engage and sustain participation in university students.

Keywords: Sport and physical activity habits, sport and physical activity behaviour; university sports participation; barriers to participation; low socio-economic groups; mixed methodology

Introduction

There is an abundance of literature which highlights the range of influences on participation in sport and physical activity in general. These influences include internal factors, such as enjoyment and interests, or external factors, such as time, support from family, facilities, cost and availability of sport or exercise sessions, amongst many other factors (Deliens et al., 2015; Gomez-Lopez et al., 2010). Existing literature also examines the importance of a range of demographic factors which impact upon both internal and external influences, including age, gender, race and ethnicity, and socio-economic group (SEG). Indeed, it is consistently reported that people from higher SEGs are more likely than those from lower SEGs to participate in sport and physical activity:

> *'In all societies, it is people in high income, high education, and high status occupational groups that have the highest rates of active sports participation, attendance at sports events, and even watching sports on television.'* (Elmagd et al., 2016, p. 152)

Sport England's *Spotlight on Lower Socio-Economic Groups* (2017), uses data from the *Active Lives Adult Survey November 2016-17*, and reports that 12 million people in England are in low SEGs and that low SEGs are more likely to be inactive. Looking at the National Statistics Socio-economic Classification (NS-SEC) which categorises people according to employment status, 38% of people in NS-SEC 8 (those that have never worked, long-term unemployed, and including students) are inactive (less than 30 minutes activity per week), compared to 17% of people in NS-SEC 1-2 (employers, higher managerial and professional occupations). People from low SEGs are therefore a key target group for the delivery of interventions.

In addition to participation differences by SEG, a decline in sport participation with age is also well documented. The *Sport England 2015 Active People* research found that participation levels at age 14 were at 80% for boys and 70% for girls, but there was a sharp drop at age 18, to 60% for boys and 40% for girls. (Sport England, 2015). This suggests there is an important

role for universities to help maintain participation in students, and indeed Sport England's current strategy describes that:

> *'...there has been good progress in recent years in transforming the offer in Further and Higher Education which is of course welcome, but the key is for experiences there to now be better connected to the overall customer journey of young people through sport rather than just being good in each individual environment. This strategy is first and foremost about meeting the needs of the customer, understanding what they need at different stages in their life.'* (Sport England, 2015, p. 32)

This calls for an understanding of the habits and patterns of behaviours in sport and physical activity for students, in particular those who are least likely to participate. This study provides insight to understand the habits and behaviours of university students in sport and physical activity, with a focus on comparing low SEGs with students from all other SEGs. Our review of literature found little existing evidence to indicate whether the general trend in terms of SEG and physical activity participation is reflected amongst the student population. This therefore positions engagement in sport and physical activity in students from low SEGs as a topic requiring further exploration through empirical research.

Our research questions were as follows:

1. What are the sport and physical activity habits and behaviours of university students?
2. Do students' habits and behaviours towards sport and physical activity change once they attend university?
3. What barriers to sport and physical activity participation do students experience at university?
4. Are there any differences in university student habits, behaviours and barriers to sport and physical activity by SEG?

Our paper begins with a synthesis of the existing literature relating to the participation of university students from low SEGs in sport and physical activity.

Review of Literature

General sport participation may be explained from a socio-economic perspective, based on Becker's economic theory of behaviour (1978, 1993, 1996), examining the impact of a combination of income, time and human capital on determining consumer choice to participate in sport. A socio-economic perspective argues that the economic situation of an individual is determined by both their income and the availability of time, and that these aspects are co-dependent. For example, if a person's salary were to increase, then money may become more important than time. Gratton and Taylor (2000) note that it might be predicted that participation is easier for those with higher incomes, because acceptable incomes could be maintained while committing more time to sport. Gratton and Tice (1991) describe a hierarchical structure of demands for those on lower incomes will focus less on leisure than on the priorities of food and housing, for example. The choice to participate is dependent upon perceptions of the costs and benefits of participation.

Alongside income and time, human capital is the third aspect of Becker's theory. Human capital refers to an individuals' capabilities to be productive and encompasses individual skills, capabilities and educational levels. It is often seen as an element developed in childhood through the influence of parents and school and is regarded as something which can be improved through training and education (Becker, 1993). In a similar way, 'leisure capital' or 'sporting capital' can be described as the skills and capabilities to succeed in sport and leisure pursuits, including an understanding of the benefits of sport and sports knowledge. Roberts (2012) stated that childhood and youth is the stage when people build up stocks of leisure capital, the skills and interests on which they base the rest of their leisure lives. Roberts argues

that whether individuals continue playing sport after their mid-teens depends on a combination of sporting ability, depth and breadth of socialisation into sport, and the sustainability of participation.

Similarly, Sport England research (2012) found that a strong personal interest in sport from age 11 to 16 is the most important driver of taking part as an adult. The type of sport played at school was less important – a passion for sport in general was found to be the key determining factor. This suggests that the foundations for sport participation at university may be developed at an earlier age, and it makes sense, therefore, to begin by exploring some of the literature around children's participation in relation to SEG.

Studies examining the participation of children have shown links between parental SEG and their childrens' physical activity levels, with those living in higher income households more likely to take part in physical activity and sport (for example, Canadian Fitness and Lifestyle Research Institute, 2014). In addition, research demonstrates that within low SEGs there is a diversity of needs, motivations and barriers. In particular, a common finding is that a combination of SEG and gender were associated with differing participation levels amongst children, with the literature commonly reporting that males from families of higher SEGs are most likely to be active, with females from low SEG families more likely to be sedentary (Dmitruk et al., 2014; Dollman and Lewis, 2010; Henning Brodersen et al., 2007; Martins et al., 2015; Nezhad et al., 2012).

However, whilst the literature demonstrates an association between SEG, gender, and participation amongst children, the existing literature does not tend to provide explanations as to the reasons for this association. As an exception, Dollman and Lewis (2010) do offer some limited explanation for these trends. They surveyed South Australian youth aged 10-15. Sport participation was higher amongst higher SEGs, and those from high SEGs reported fewer barriers to participation. Lower SEGs reported increased barriers and in particular girls from

lower SEGs reported that they had lower levels of support from parents to play. This support included instrumental support, such as providing transport to sessions and buying equipment, and emotional support such as encouragement and playing sports with their children. However, the reasons for reduced parental support for girls from low SEGs are not clear. Dollman and Lewis recommend that interventions should target low SEG girls, and in particular should consider provision of transport options or subsidised facilities, and emotional support, which would require a shift in culture and education.

In contrast to some of the evidence around the links between parental SEG and participation in their children, Shropshire and Carroll (1997) found that SEG did not have an impact on children's participation, and instead participation (of both boys and girls) was positively influenced by their fathers' own participation and also their belief as to whether their father valued physical activity. It was found that their mother's participation and values had no impact, although the reasons for this are not examined. However, whilst SEG was found to have no impact on children's participation, the authors do speculate that SEG is likely to have more impact with age, in particular as the costs of participation increase as children get older and wish to participate on a more formal level within sports clubs which require more costly entrance fees.

There is a shortage of existing research specifically examining university students' SEG in relation to sport and physical activity participation. As with most of the literature relating to pre-university participation, the limited existing literature which is focused around university students does highlight some differences in participation rates across SEGs and demonstrates that low SEG students tend to have lower participation rates, as well as showing some gender differences with female students less likely to be active, regardless of SEG (Elmagd et al., 2016; Khalaf et al., 2013; Ulla Diez and Perez-Fortis, 2009). The literature also shows differences by ethnic group, for example there is evidence of a decline in participation amongst Muslim female

students, explained by a lack of provision and understanding of their needs (Miles and Benn, 2016).

Most existing research in this area examines overall participation levels, but does not distinguish between different types of sport, exercise or fitness activities. This is with the exception of Rintaugu (2003) who examined participation in different types of competitive sport amongst Kenyan students and found differences by parental SEG. Low and middle SEG students of both genders were more likely to participate in team sports which were described by the author as 'culture neutral', requiring simple facilities and less equipment (for example, handball, volleyball, football), and upper SEGs were more likely to participate in sports which were more 'culture intensive', requiring more expensive facilities, equipment and coaches (including table tennis, swimming, hockey and cricket). The research illustrates that there needs to be a differentiation between different modes of sport, physical activity and exercise.

There is also some literature which emphasises university specific factors as being important in determining student participation. These include Deliens et al. (2015), who conducted qualitative focus groups with a small sample of students in Belgium and categorised the wide range of determinants that were found under four areas: individual: including knowledge, attitudes, and values; social environment: parental influence, support, peers; physical environment: the availability of facilities, transport, accessibility; and finally macro environment: advertising, cultural norms and values. All four of these areas were influenced by university specific characteristics, for example the activities available, price, advertising, and flexibility - such as sports time within the curriculum. In addition, Groves et al. (2008) undertook research at three different types of university in the UK; a Redbrick university (in which 97% of students lived in campus); a former Polytechnic (43% lived on campus); and a much smaller university (16% lived on campus, and the population was mostly mature students). The findings demonstrated different attitudes towards sport and physical activity

amongst those at different institutions. The students at the former Polytechnic and smaller university were more likely to focus on their academic studies to boost their self-esteem, yet the Redbrick students' self-esteem was rooted in a sport and exercise-based identity. Thus, factors relating to the university itself may have an impact, however, neither of these studies breaks down the findings by SEG, and this further demonstrates the gap in existing research around SEG and student participation.

Methodology

The methodology was mixed method, incorporating quantitative research through an online survey, and qualitative research through interviews and a focus group. Our reasoning was that, by incorporating these methods, we could gain a more comprehensive picture. Our approach followed the definition provided by Creswell (2014: 219) of a *'convergent parallel mixed method'*, in which the quantitative and qualitative research and analysis were undertaken in parallel and the results compared.

Quantitative research

The purpose of the survey was to identify students' physical activity levels, preferences, and barriers to participation. A purposive sampling technique was used to select universities on their ability and willingness to distribute an online survey link to students. University Directors of Sport (or their equivalents) were invited to take part, and asked to cascade the survey randomly to students, reinforcing that it was a voluntary process. The National Student Survey (NSS), is the largest national student survey in the country gathering opinions from final-year students about their time in higher education. The NSS ran at the same time as our survey, which meant that some universities refused to distribute, as they required students to prioritise the NSS. In order to improve the response, it was suggested to universities that they could distribute to first and second-year students, who are not required to complete the NSS. This was successful in

boosting the response rate but does mean that the sample is based mainly on first and second-year students.

The survey was targeted at all students and captured home postcode data to enable us to segment students according to their SEG and compare low SEGs with all higher SEG groups.

The Index of Multiple Deprivation (IMD) is a measure of relative deprivation for small areas (Lower Super Output Areas (LSOA)). It is a combined measure of deprivation based on a total of 37 separate indicators grouped into seven domains, each of which reflects a different aspect of deprivation experienced by individuals living in an area. Every LSOA in England is given a score for each of the domains and a combined score for the overall index. This score is used to rank all the LSOAs in England from the most to the least deprived, allowing users to identify how deprived areas are relative to others. For the purposes of this research and identifying the low SEGs, the list of LSOAs in England was placed in order and divided into equal parts called percentiles. The bottom 20% are the most deprived areas and were categorised as low SEG, and for the purpose of this research the remaining 80% were categorised as the higher SEGs. The IMD was used as a measure of SEG rather than other measures such as NS-SEC because the measure is based on postcode data, rather than household income or employment. As some students do not work whilst at university and live at multiple addresses, the most consistent measure was to use the home postcode where they lived prior to university. Students that live at home and travel to university were defined as commuter students and were asked to provide the postcode for the address where they currently reside. After much deliberation it was considered that this would be a more robust measure compared with asking students to provide household income or parental employment details, which would require a more detailed response requiring them to either gather information from their parents/guardian, or risk them estimating these answers. When reviewing existing literature in this area we found that, for those which include a measure of SEG, students were often asked aspects such as their parents'

income, educational levels and occupation which assumes the accuracy of self-reporting and knowledge of parents' financial situation and background, and previous studies were difficult to compare as they all use slightly different measures of SEG (for example, some focus on parental income, some on parental education, and others a combination of factors).

The survey data analysis included cross tabulation of results based upon those students that were defined as low SEG compared with high SEG, calculated from relevant IMD scores. Skewness is the measure of the asymmetry of an ideally symmetric probability distribution (Bevan, 2013). Analysis of the sample in relation to IMD scores showed that the data was skewed slightly towards the high SEGs , with a score of -0.30. This skewness is between -0.5 and 0.5, and therefore fairly symmetrical in relation to the mean value, when considering a normal distribution of 0. The sampling approach and online survey method used could have potentially skewed the sample towards participants that are more active, due to a number of factors including this cohort's readiness to complete a sport related survey. This may have influenced the proportion of low and high SEG students completing the survey.

Qualitative research

All interviews and focus groups were carried out at a single university to ensure a depth of understanding from multiple stakeholders. The university in question is a former Polytechnic, one of the UK's largest universities with over 30,000 students, based within a large diverse and multicultural city, with a large number of students living off campus and commuting to university. In total, 27 interviews were conducted with students, including 12 students who were categorised as being low SEG. Four interviews with university staff working within sport were conducted to identify perceptions around barriers and to understand what universities can do to support students to participate. A focus group with four student sport volunteers (sport leaders / committee members) took place to consider how the volunteers aimed to engage students in different sports activities and the barriers that exist to supporting low SEGs. This

enabled us to understand from a university perspective some of the barriers which prevent them from supporting students to be more active.

Thematic analysis was used to analyse the qualitative data from the interviews and the focus group discussions in order to group, analyse and interpret the findings, following the phased approach presented by Braun and Clarke (2006: 87). By reading, and then re-reading, the transcripts, we used this approach to organise the data firstly by the four research questions, and then within each research question by the most prevalent or notable themes.

Results

Participant characteristics

The survey was completed by 729 students from 20 universities. Almost 70% of responses were received by three universities, all of similar mission and diversity of student body. In total, 120 (16%) students from low SEGs completed the survey.

The majority of students that completed the survey were undergraduates (93%), studying full-time (98%) and in their first or second year of university (78%). The latter is unsurprising given that, as described earlier, first and second-year students were targeted by some universities as they were not required to complete the NSS that was running at the same time. Generally the academic profile for both low and high SEGs was similar although the low SEGs had a slightly lower proportion of postgraduate students as well as third and fourth year students which may have occurred due to the low sample size for this group.

A higher proportion of low SEG students (45%) commuted to university from their home address, compared with only 16% of the higher SEGs. Students from low SEGs are perhaps more likely to commute to a local university to reduce the costs associated with living away from home.

The gender breakdown of students was broadly similar to the national student picture (Higher Education Statistics Agency, 2017) with 66% of females completing the survey. Analysis by age reveals that 84% of respondents were aged between 18 and 22, which is comparable to the national undergraduate population of students under 24. There were no significant differences in age or gender between the low SEG and higher SEGs.

A proportional difference was noted in the ethnicity of the two groups. Respondents from the higher SEG were predominantly 'White - English' (88%), compared with 58% reported in the low SEG. A higher number of 'Asian' (24%) and 'Black' (12%) respondents were reported in the low SEG compared with only 6% 'Asian' and 3% 'Black' in the higher SEG. In total, 'non-white' groups made up only 11% of the higher SEG compared with 39% of the low SEG.

The number of respondents with a physical or mental health condition was slightly less for low SEG (11%) compared with the higher SEG (17%) and similar to the national average. Of note was that 62% of low SEG respondents that had a physical or mental health condition or illness were disadvantaged in that their condition had a substantial effect on their ability to do normal daily activities compared with the population of higher SEG (49%).

From the 27 student interviews, we were able to identify the SEG for 22 students. Of those we did not identify, three were international students, and therefore information on SEG by postcode was not available, and two declined to provide their postcode. We decided to keep the data from these five interviews within the sample because they did provide some useful insight, even though we could not explore this by SEG. Of the 22 students where we could identify their SEG, 11 of these (50%) were from low SEGs and the majority of these were commuter students. The remaining 11 were categorised as being in the higher SEG.

In the following sections, we present the results in terms of the first three research questions outlined earlier; habits and behaviours of university students; changes in habits and behaviours when beginning university; and barriers to participation. We address the fourth research

question, providing comparison between low SEG students and the remaining student population, within each of these three sections.

What are the sport and physical activity habits and behaviours of university students?

Students were asked to select how many days of at least 30 minutes of physical activity they did on a weekly basis which was enough to raise their breathing rate (Sport England Active Lives Survey, 2020). The results displayed in Figure 1 indicate that both the low SEG and higher SEG were relatively active groups when compared with the national average overall and a subset of those aged 16-24 nationally. Adult inactivity is defined by Sport England as people that participate in moderate intensity activity for less than 30 minutes per week. Only 3% of the higher SEG were defined as inactive although there was a slightly higher percentage (6%) of low SEG participants.

[Figure 1 here]

On average, the number of days students spent doing physical activity, displayed in Figure 2, was slightly lower (3.3 days) for the low SEG compared with the higher SEG (3.9 days). Generally the majority of both groups would be defined as either being at least 'fairly active'. At least 80% of the higher SEG were active for equal to or more than three days per week, compared with 68% of the low SEG. The low SEG were less likely to participate for four or more days per week.

[Figure 2 here]

Students were asked to select the main sport or physical activity in which they participate. Over 60% of both groups dedicate upwards of three days to their main activity. The most popular activities for low SEG groups were going to the gym (17%), followed by walking (14%), basketball (8%) and football (6%). Similarly, the gym (13%) was the most popular for the higher SEG, followed by netball (8%), football (5%) and lacrosse (6%).

Do students' habits and behaviours towards sport and physical activity change once they attend university?

The survey found that generally, a high proportion from both groups were active before attending university. Figure 3 displays the range of activities students participated in prior to joining university.. Overall, 98% of the higher SEG took part in at least one activity compared with 96% of the low SEG. In terms of activity preference, it was a similar picture across both groups with walking (lasting at least ten minutes) being the most popular, followed by sport, fitness and recreational activity.

The spread of participation was broadly similar across both groups although the higher SEG were more likely to engage in sport related activities either through participating in sport, attending live sports events, other performances or festivals or going on a cycle ride. This evidence is further reinforced when removing gardening and walking from the analysis as the participation figure for organised activities drops 12% to (from 98% to 86%) for the higher SEG with a more significant decrease of 28% reported for the low SEG (from 96% to 68%).

[Figure 3 here]

In examining current participation, Figure 4 shows that for the higher SEG, there was a 5% increase in the number of students that participate in sport, fitness or recreation activity and a decrease in cycling of 14%, compared to pre-university participation. The low SEG followed a similar trend with a 7% increase in sport, fitness or recreation and 7% decrease in cycling. The decrease in cycling could be because students may not have taken their bikes with them to university due to issues with transport or storage of bikes in their accommodation at university.

[Figure 4 here]

Once students arrive at university, they have a choice as to whether they engage in physical activity within the university or in the local community. From the survey, 63% of the higher SEG are members of a university sport or fitness club whilst 30% are members of community

sports or fitness clubs. In comparison, the figure is only 34% for low SEGs that have university membership and 19% for community clubs. Overall, there is a significantly greater percentage of higher SEG members of sports and fitness clubs although the difference is less marked when comparing low SEG students that are members of a community club. This is likely due to the higher proportion of low SEG students that commute to university and therefore their previous activity habits are maintained.

The interviews with students provided a more detailed insight into their habits and behaviours, which were more marked by differences in SEG as well as their previous participation habits. For the students that were interviewed, those from low SEGs were less likely to participate in physical activity both before and whilst at university. Those from the higher SEG group were more likely to have participated prior to university and maintained their pre-existing levels of activity. From their responses, the students interviewed were categorised into three groups. Firstly, there were four students that did not participate in any sport or physical activity at all before starting university, and who still did not participate whilst at university. Three of these students were low SEG (for one, their SEG was unknown). Secondly, there were 13 students who participated in some sport and physical activity prior to university, but since starting university their participation levels have either declined, or they have stopped altogether. Of these, six were low SEG, four were higher SEG and for three the SEG is unknown. Finally, there were 10 students who did participate in some sport and physical activity prior to university and who have continued to participate at the same level, duration or frequency. Only one of these students was from a low SEG, and in contrast, eight of these students were from the higher SEG, and one SEG was unknown. Most of these had continued with the same activities that they did previously, but there were some students that had taken up different activities since starting university. For these students, this was due to their change in circumstances since beginning university.

It should be noted that there were no students interviewed who had increased their participation levels since starting university.

Reasons for a change in activity types varied but included, for those students who had moved away from home, losing contact with friends or teammates, and fewer opportunities to participate in the same activity. For example, a student (higher SEG) that skied regularly prior to starting university, stopped due to a lack of opportunities at university. He had stopped skiing and since taken up ice hockey and lacrosse. Those commuter students who had continued to live at home and lived locally found it easier to continue with their existing activities. For example, one third year student (low SEG) had played football for a local league team prior to university and had continued to play for the same team throughout his time at university. He also did some paid football coaching and refereeing for his old school, which he would not have had the opportunity to do, had he moved away for university. Several commuter students continued to be members of a gym that they had been attending prior to university.

What barriers to sport and physical activity participation do students experience at university?

The survey results show that, positively, the majority of inactive students from the low SEG (75%) and higher SEG (70%) would like to take part in sport and physical activity in the future. Clearly there are barriers which prevent these students from currently participating. The key barrier to participation described by just over 60% of students in both groups was lack of time, particularly due to course commitments. Ten students that were interviewed also reported that they had a lack of time for physical activity and sport due to their studies, including five low SEG students and five from the higher SEG. In addition, for some there was a challenge of balancing a part time job whilst at university.

[Figure 5 here]

As might be anticipated, a further barrier to participation was described as the financial cost of being active, which may include gym membership or travel to facilities. This was reported by 33% of students from the low SEG and half of the higher SEG in the survey, which suggests that financial constraint is more prevalent here for the higher SEG students. We should note that as the sample of inactive students was quite small this could have skewed the results in favour of the higher SEG. During the interviews, cost was reported as a barrier by five students, who were all low SEG. These students in particular reported that the cost of university gym facilities was high.

The staff interviews suggested that they believed cost to be an important factor explaining non-participation, and even with subsidised university sport facilities, they stated that cost was still an issue for many students. How many of these students were from a low SEG background, however, was unknown, due to sports staff not having insight into SEG, and these comments were therefore mostly anecdotal.

> *'I think that the cost is probably the main barrier to this group because although they want to access it, can they actually access it is another question.'* (Sports Staff)

It was also described that the cost of sport is a barrier because there are a number of additional costs associated with sport participation at university on top of membership costs and session fees, including transport, food and drink, plus social events such as going out on Wednesday nights with the sports team. These social aspects were deemed important in developing feelings of belonging and community through sport but the financial cost of these were difficult for some students.

> *'Everything ramps up. I think that's the issue involved in sport. It is fair enough you can pay and play, I think that's fine with people, but you don't feel a part of that club until you integrate wholly.'* (Sports Staff)

If a student has not participated in sport or physical activity prior to joining university then the financial barrier may be less penetrable, as described by the student sport volunteers.

> *'I think that, unless you have played before Uni, you aren't going to really want to join a team, pay the fees, sign up for a game, if you've never done it before. If you haven't played before and are from a low economic background, you would find it very intimidating, the sports fair itself, and then being asked for that money. It's all quite a lot in one go.'* (Student Sports Volunteer)

Staff also believed that the increase in university tuition fees had an impact on sports participation, for the opportunities to play sport have to be funded by students and this additional expense is difficult to contemplate given the tuition fees that students already pay.

A lack of confidence was the third most reported barrier to participation from the survey, followed by competing work or volunteering commitments as well as competing preferences for other non-sporting activities such as socialising. In addition, five students that were interviewed reported that they were either not interested in sport and physical activity, or that since starting university, their interests had changed. For example, for three students, since attending university their participation had declined as their social life had taken up more time.

> *'I chose, you know, to get hammered every night if I'm being brutally honest. I don't really regret it, I just wish I done a bit of both. It's strange because obviously you know every weekend with the lads when I lived in a house of five lads we always watched Match of the Day, we always kept up with, you know, the Champions League, we always watched everything, so we kept up with all the sport in terms of following it…we just didn't play it.'* (Low SEG student)

The main survey finding when comparing the low SEG and higher SEG was that a higher number of high SEG students (+22%) described 'lack of confidence' as being a barrier. Moreover, 28% of students also responded that they did not feel like they 'belong within a

sporting / physical activity environment'. These feelings may also be attributable to a lack of confidence but more widely demonstrates that work is needed in universities to change student perceptions and provide an inclusive environment for all students. Other comments referred to poor mental health and anxiety as a potential barrier which further demonstrates that students may need support to improve self-esteem to the extent where they feel confident and able to participate.

When comparing students that are active the results displayed are similar for both the low SEG and higher SEG. Positively, over 60% of students that are currently active also want to participate more than they currently do. The main challenges were the same as the low SEG with academic commitments followed by a lack of time, financial reasons and timetabling popular reasons for students not being able to do more than they already do.

[Figure 6 here]

Discussion and Conclusions

Overall, the two groups in the survey sample are relatively similar with some subtle differences which appear to impact on their habits and behaviour. The demographics of the sample beyond SEG are broadly similar, although there are a greater number of BAME students in the low SEG. Proportionally there was a broad geographical spread with clusters of respondents mainly around inner-city areas. There are a greater number of commuter students in the low SEG which appears to influence student behaviour in relation to sport and physical activity. This is partly because of the time it takes to commute to and from university, but also because they are engaged in their local community and therefore their habits may not necessarily change as much when compared to students that live on or close by to campus. This was also reflected in the interview data, as those low SEG students that were active tended to be commuter students who continued to participate in their pre-existing activities.

Evidence from the existing literature suggests that the foundations for participation in sport and physical activity are set as children, and participation at a young age develops 'sporting capital' or *'sporting habits for life'* (Sport England, 2012). Indeed, our research shows that whether or not individuals have participated in sport and physical activity prior to university has an impact on their participation, and significantly, this was an important factor for both SEGs. We found that students either maintained their existing levels of participation, or their participation declined. There were no students whose participation levels increased when beginning university. In addition, the survey found that the type of activities that people participate in before university are similar to those they enjoy when at university. It was stated by Roberts (2012) that it is rare for entirely new interests to be taken up in adulthood and later life, but whilst remaining in education it is easier for young people to remain involved. The focus group with sport volunteers suggested that new students are unlikely to take up a sport that they have not done before, and even more so as they enter their second or third years of university, as they become more focused on their studies, and also as their confidence to try new activities declines with age. Both groups responding to the survey were active cohorts although there were also a small proportion of inactive groups within each subset. As the survey relied on Directors of Sport to distribute the survey, there is a possibility that the survey may have been targeted at, or appealed more to, students that are already active. In contrast, the results from the interviews showed greater differences by SEG, and those interviewees from low SEGs were less likely to participate in physical activity both before university and whilst at university.

The results around barriers to participation indicate some agreement with Becker's socio-economic perspective, which emphasises the combination of income, time and human capital as determining a choice to participate. We found that the main factors influencing participation were time (due to academic commitments and part time working, as well as social life taking precedence), financial costs of participation, and human capital (or 'sporting capital', in terms

of prior knowledge of and participation in sport and physical activity before university, with participation prior to university being an important factor for both SEGs). However, in addition to these factors from Becker's model, there are other aspects that should be considered. Some university specific aspects were clearly important, such as facilities available and accessibility, as well as whether or not students live on campus, local to university or commute some distance, which will also impact on whether or not they are able to participate in university-run sessions. Indeed, as was found by Groves et al., (2008), attitudes towards sport and physical activity differed amongst students at different types of university. Finally, although the scope of this research did not allow us to explore this in detail, a wider range of demographic factors, alongside SEG, are shown by the literature to be of importance in determining participation.

Implications

The findings of this research lead us to make some recommendations for both further research and aspects for consideration in future interventions. Universities have a key role in both maintaining existing participation, particularly in light of the decline in participation levels as young people reach university age (Sport England, 2015), and in engaging and sustaining participation in potential new participants. The design of interventions that aim to increase participation in sport and physical activity amongst students needs careful consideration and all new interventions should be tested to ensure appropriateness for their target audience. Detailed work is needed at the planning stage of any intervention to understand the audience - who are the target groups, and what is important to them, what activities do they want, and what would enable them to participate more, including external factors, internal factors and also aspects which are university specific. The key barriers that the research found that students face, including lack of time, cost and human capital, including issues of confidence (including lack of confidence to start new sports that they have not done before) are factors which should be

considered by new interventions, and the research suggests that addressing these aspects may help to enable students of all SEGs to participate. There is a need to consider existing participation levels in new students entering university. It needs to be clear whether the target audience of an intervention is current participants (students entering university as existing participants) or new participants (students that have not participated before starting university), as different approaches and strategies will be required. Universities could work with schools or local communities to look at ways in which they could help to develop sporting habits at an earlier age. In addition, for those that do enter university as existing participants, there is a need to ensure that they have the right opportunities, support and encouragement to be able to continue to participate. Exploring or developing links with local community clubs may also be a useful strategy to enable participation to be sustained amongst existing participants.

A further consideration is the impact of the COVID-19 pandemic and how this might affect Universities' ability to engage students in sport and physical activity. At the time of writing, this impact is unclear, however we might speculate that guidelines around social distancing may reduce the capacity of sports clubs and sessions, reducing the numbers of students able to participate, and also may have further impact on the ability of students to engage in the social side of being members of university sport clubs.

Finally, there is a need to acknowledge the diversity of low SEGs. Whilst there is evidence to show that the group as a whole are more likely to be inactive, people classed as low SEG should not be treated as one homogenous group. Rather, different demographic factors (including for example age, gender, disability, race and ethnicity), as well as a range of external influences, internal influences, and university specific factors, will also be important for individuals within this group. Interventions should consider the wide range of influences on individual decisions as to whether or not to participate in sport and physical activity, and work to identify different influences and barriers for different subgroups. Indeed, the literature review found a number of

papers which showed gender differences and suggests that female low SEG students may be a particular target group. Thus, further work to identify and understand the influencing factors for female low SEG students may be important. In addition, our research found a greater number of BAME students within the low SEG survey sample. Whilst it was not within the scope of this research to explore the impact of ethnicity, further research is recommended to look specifically at different demographic aspects, acknowledging the importance of other factors alongside SEG.

Research Limitations

The survey sample is based mainly on first and second-year students. As the NSS was also being run at the same time as our survey, this meant that some universities refused to approve distribution of the survey because they required students to prioritise completion of the NSS. This limited the response to the survey reducing the number of universities able to participate and therefore the statistical significance of the results. It was suggested to universities that they could distribute to first and second year students, who are not required to complete the NSS survey, which boosted the response rate, but therefore means that we were unable to fully capture the feedback from students further along in their studies.

In addition, the use of a single university for the qualitative research allows for an examination of the factors relating to that university, from a range of stakeholders, however it should not necessarily be seen as representative of other types of university, for example campus universities that have a much smaller number of commuter students.

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