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**Physical activity barriers in the workplace: an exploration of factors contributing to non-participation in a UK workplace physical activity intervention**

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## **International Journal of Workplace Health Management**

### **Research Paper**

#### **Title:**

Physical activity barriers in the workplace: An exploration of factors contributing to non-participation in a UK workplace physical activity intervention

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#### **Key words:**

Qualitative research, physical activity; workplace wellness; non-participation; exercise; barriers.

## **Abstract**

### **Purpose**

This study aimed to explore factors contributing to non-participation in a workplace physical activity intervention in a large UK call centre.

### **Methodology**

16 inactive individuals (9 male/7 female), aged  $27 \pm 9$  years, who had not taken part in the intervention were interviewed to explore their perceptions of physical activity, the intervention and factors which contributed to their non-participation. Transcripts were analysed using thematic analysis.

### **Findings**

Six superordinate themes were identified: Self-efficacy for exercise; attitudes towards PA; lack of time and energy; facilities and the physical environment; response to the physical activity programme and physical activity culture. Barriers occurred at multiple levels of influence, and support the use of ecological or multilevel models to help guide future programme design/delivery.

### **Limitations**

The 16 participants were not selected to be representative of the workplace gender or structure. Future intentions relating to physical activity participation were not considered and participants may have withheld negative opinions about the workplace or intervention despite use of an external researcher.

### **Practical implications**

In this group of employees education about the importance of physical activity for young adults and providing opportunities to gain social benefits from physical activity would increase perceived benefits and reduce perceived costs of physical activity. Workplace cultural norms with respect to physical activity must also be addressed to create a shift in physical activity participation.

### **Originality**

Employees' reasons for non-participation in workplace interventions remain poorly understood and infrequently studied. This study considers a relatively under-studied population of employed young adults, providing practical recommendations for future interventions.

## 1. Background

The potential for physical activity (PA) to reduce long and short term sickness absence and prevent accidents in the workplace is well recognized (National Institute for Health and Clinical Excellence, 2008) and current UK guidelines recommend that adults should participate in at least 30 minutes of at least moderate intensity PA on 5 or more days of the week to improve and maintain health (Department of Health, 2004). Despite widespread health improvement efforts, estimates suggest that 63% of men and 75% of women in England fail to meet guidelines for PA (Department of Health, 2006).

Individuals typically spend a third of their waking time and over 40 years of their lives at work and so it is an ideal place to target a large population of people to help modify PA behaviour (BUPA, 2009). The number of workplace programmes aimed at increasing PA has increased in recent decades and they have become popular in a wide variety of work settings (Dishman *et al.*, 1998). Recent reviews suggest that these workplace PA interventions have a positive impact on PA behaviour (Proper *et al.*, 2003, Dugdill *et al.*, 2008, Conn *et al.*, 2009), individual well-being (Dishman *et al.*, 1998), sickness absence and staff turnover (Pricewaterhouse Coopers, 2008). However, the direct impact of interventions on health inequalities within the workplace, e.g. extent of engagement with those most in need, is rarely discussed. There has been some suggestion that programmes are mostly attended by individuals who are already exercising or are highly motivated to do so (Marshall, 2004).

Participation levels in workplace health promotion programmes vary widely; uptake rates of between 10-64% with a median participation rate of 33% have been reported (Robroek *et al.*, 2009). Therefore the characteristics and barriers to participation in workplace PA programmes are of crucial interest if health benefits are to be extended throughout the workforce and the interaction between health behaviours and health inequalities is to be addressed in this setting. The few studies that consider engagement in workplace PA interventions suggest that non-participation is more common amongst younger, less educated or BME groups and that perceived barriers

are higher, and perceived benefits lower, amongst non-participants (Bull *et al.*, 2003, Chinn *et al.*, 2006, Lakerveld *et al.*, 2008), but research into this area is rare.

Known barriers to PA across a range of settings include lack of time, lack of knowledge, poor self-efficacy, lack of social support and self-motivation (Troost *et al.*, 2002). Research on PA barriers specific to the workplace setting is limited. An organisational-wide survey of staff working in an inner city hospital in the U.S. investigated potential barriers to participation in a workplace PA intervention. Workload, concern for personal safety, no existing walking path and limited break time were of concern to potential participants (Phipps *et al.*, 2010). Time was also reported as the most common barrier to PA in a qualitative investigation of barriers for workplace PA programmes (Fletcher *et al.*, 2008). Neither of these two studies sampled individuals with low PA levels and as such may lack insight into the barriers for those with most to gain from behaviour change. Marcus *et al.* (2006) recommend the use of purposive sampling when evaluating workplace PA interventions in order to capture those who are less motivated to change at the outset and to explore reasons why people do not participate.

Although previous research has investigated the characteristics of non-participants it is still unclear from a qualitative perspective why employees choose not to participate in PA options offered in the workplace. Previous research has typically used quantitative methods to investigate PA barriers. Phipps *et al.* (2010) and Fletcher *et al.* (2008) did use qualitative methods but their sampling frames were non-focused and their participants discussed participation in future interventions which had not actually been offered. This present paper explores the reasons for non-participation in an ongoing workplace PA promotion programme among inactive employees.

## **2. Methods**

The study population was a young and highly ethnically diverse workforce of around 700, based in a large call centre in London. A workplace health promotion project aiming to improve health and well-being of the workforce by facilitating health behaviour change ran between January 2006 and December 2007. Interventions targeting PA included activity classes (e.g. aerobics, yoga), pedometer challenges, a

running club and support for active travel. The workplace included a free onsite gym, available to all staff. The project had been running for 18 months at the time the interviews took place.

Ethical approval for this qualitative study was granted by St Mary's University College ethics committee in May 2007 and permission to implement the study was obtained from the participating company and funding body.

### ***2a Participants***

Recruitment was conducted by project coordinators via email. Selection criteria were that individuals identified themselves as: a) participating in less than moderate intensity physical activity for 30 minutes on 5 days a week. Moderate intensity physical activity was defined as activity that makes you slightly out of breath and sweaty; and b) had not taken part in PA interventions offered by the project. In addition, participants were selected to include both males and females, both call centre and office based job roles (i.e. not answering the telephones) and a range of ages. Interviews were conducted with 16 individuals (9 male/ 7 female). Mean age was  $27 \pm 9$  years (minimum 22, maximum 51 years). 10 participants were call centre operatives and 6 were office based staff.

### ***2b Procedure and Interview Schedule***

Interviews were conducted in the workplace and during working hours in a quiet, private room. Each interview lasted approximately 40 minutes and was recorded. Participants provided informed consent prior to the interview and were assured of confidentiality and anonymity. The interviewer did not know any of the participants prior to the interviews and had not previously been associated with delivering the workplace health promotion project.

Interviews followed a semi-structured interview schedule which discussed a range of barriers to PA participation. The order of questions was not fixed and the schedule allowed participants to expand on issues which were particularly salient to them. Questions addressed: participant's daily PA patterns; perceptions of PA; perceptions of the intervention programme; and the factors which contributed to their non-participation in PA.

### **2c Analysis**

Interviews were transcribed verbatim and re-read by the interviewer for accuracy. A thematic approach based on the principles of grounded theory (Glaser, 1967) was used to analyse interview data. Through identifying themes common across individuals, this approach can be used to identify situational or social factors that influence behaviours across groups (Carter and Henderson, 2005). Themes were identified at three levels using a process of open coding (Gibbs, 2007) and constant comparative analysis (Willig, 2008). Level 1, or primary descriptive themes, emerged within individual interviews through a process of reading and rechecking transcripts, these themes were then examined to identify higher level categories that systematically integrated low-level categories into meaningful units or analytical categories (level 2 and 3 themes). Initial coding was conducted by the interviewer (S.E.) and checked for consistency and coherence by two further researchers who had been involved in the delivery of the workplace intervention. Discrepancies were discussed between the team to evolve existing themes.

### **3. Results**

Six superordinate (level 3) themes emerged from the interviews (see Table 1). Respondents are numbered to maintain anonymity. Gender (M/F) and job role (call centre (C) or office based (O)) are included for each quote to add context to the data.

Table 1: Table showing the relationship between level 2 and level 3 themes

Level 3 Themes	Level 2 Themes
a) Self-efficacy for exercise	Low exercise confidence
	Overcoming low exercise confidence through social support
b) Attitudes towards PA	PA not a priority
	Social experience
	Memory of previously active self
c) Lack of time and energy	Job strain
	Commuting
	Low control over working hours
d) Facilities/physical environment	Facilities/physical environment
e) Response to PA programme	Receptiveness to information about PA
	Appropriateness of employer promoting PA
f) PA culture in the workplace	PA culture in the workplace

### 3a Self-efficacy for exercise

#### *i) Low exercise confidence*

Low confidence to exercise was described as a barrier by many of the respondents. Particular reference was made to lack of confidence to use the onsite gym with several respondents (both gender) explaining they did not know how to use the gym equipment correctly and had low stamina which made exercising in front of other users embarrassing.

Several of the female respondents also described fear of one's body being negatively evaluated by others, i.e. social physique anxiety, as a reason for not exercising in the onsite gym. This was heightened by a perception that the gym was predominantly used by male colleagues:

*“it’s mainly always just guys, whereas I would tend go to women’s night where you’re all like doing the same thing and getting on with it whereas if it was just*

*guys I would be like oh gosh I don't want to come out in my cycling shorts or something, I would just feel conscious, especially at work so you're always around the people so that I think would affect my decision." (P12/F/O)*

Confidence was a barrier to participation in other exercise situations too, including playing football and squash and attending exercise classes run as part of the workplace intervention. Classes were referred to as “*intimidating*” to join due to concerns that such activities would be populated by “*exercise freaks*” (P16/F/C).

#### *ii) Overcoming low exercise confidence through social support*

Respondents considered increased social support to be a potential means of overcoming the barrier of low exercise confidence and the associated worry of negative evaluation by others in an exercise environment. Several respondents perceived it would be important to have this social support prior to entering an exercise environment as well as during a workout:

*“I don't have any people from my circle in that project at the moment, so that's why, that's what hinders me its like I'm not very open to new people to be honest with you. I'm not a cold person, or unapproachable, but I'm not, I just don't fit in immediately I'm not the type of person just can go and be part of something, I need someone to walk in with me.” (P1/M/C)*

### **3b Attitudes towards PA**

#### *i) Exercise not a priority*

The respondents felt that they were capable of PA and that they made a personal choice not to do it either because they found it ‘*boring*’ or because they prioritised other things. The gym especially was described as boring. Other activities that were prioritized included quiet time:

*“Well usually I go and have a meal and lie down or sit down on the couch. I'm very much a couch potato cause that's what I enjoy doing, not a lot.” (P6/M/C)*

*“So, it’s not that work has a situation where walking is impossible, it’s not demanding of me to walk to work but it’s just that as I said I would rather relax and spend some time just sitting at home in the morning and just enjoying breakfast, digesting it all, than getting up and rushing to work.” (P1/M/C)*

Also hobbies such as drumming and reading, socializing with friends, and spending time with a partner were prioritised over physical activity. Furthermore there was a perception that one’s twenties, was a time of life when PA was not essential to maintaining health:

*“I think it’s an in-between stage here there’s no-one really young who’s always doing physical activity all the time, and there’s no-one who’s older like in their forties or fifties who are at the stage where they’re trying to do it to keep their health up.” (P4/M/O)*

#### *ii) Memory of previously active self*

The respondents were inactive but most talked about having been active previously. Memories of being active were typically positive:

*“I think if I had another outlet like exercise, cause I found that was really good back home [Australia], it makes you feel good so you want to do it” (P10/F/C)*

This sub-theme contrasts somewhat with the sub-theme of PA as not a priority for the respondents. However, memories of having been active were from school, university, periods of unemployment, or employment which incorporated more activity than their current sedentary job. Changing patterns of daily life and increasing demands on time seem likely to have resulted in reduced PA levels rather than a change in beliefs about the positive impact of PA.

#### *iii) Social experience*

Respondents expressed low motivation to participate in activities to promote health per se, which were perceived as boring, whereas they had greater motivation towards activities that were social and competitive. When asked whether there were any PA options that they would participate in respondents identified team activities

such as football and netball and novel group activities such as dance classes, kickboxing and roller-skating. These social activities were perceived as opportunities for fun:

*“if it was a volleyball match or something that could be fun yeah stuff like that would be quite cool if it was teams it would be more like a social thing rather than exercise, so it takes the focus away from that” (P12/F/O).*

Respondents also suggested that committing to be part of a team or group would strengthen their motivation to attend exercise sessions because others would have an expectation that they would be there:

*“If you’re doing something with a team you’ve got to go for them as well, because if you don’t go, especially if it’s 5 a side, because there’s only 5 of you, if one of you don’t go you’re letting everyone else down as well.” (P5/M/C)*

### **3c Lack of Time and Energy**

Respondents described perceived lack of time and perceived lack of energy as important, interacting barriers to PA.

#### *i) Job Strain*

Work was reported as stressful and tiring by the majority of participants such that they felt “mentally drained” (P8) after a day at work and preferred to go home to relax rather than make time and find the energy for PA:

*“I get really tired from work and by the time I get home from work I just want to chill and relax” (P16/F/C)*

#### *ii) Commuting*

Commuting was by public transport (for all but 1 participant). This meant that commuting involved short periods of PA, e.g. walking to a bus stop. When respondents were asked about their daily PA patterns they typically responded by recounting their journey to work:

*“I get up and either walk to the tube station or the bus stop which is what are we talking a maximum a two or three minute walk if I get the bus probably about a minute if I get the tube probably about three. Tube to work, it’s probably about the same distance if I get the bus, it’s about a thirty second walk from the tube station to here.” (P5/M/C)*

Respondents reported no other regular PA during the week outside of that during their commute. The nature of public transport is such that respondents accumulated more PA than if they had travelled by car, however commuting was rarely seen as an opportunity for PA (e.g. through walking some of the journey). On the contrary, commuting was generally seen as a barrier to regular exercise due to the duration of the journey (up to 4 hours per day) and associated tiredness:

*“It’s just the fact that how far I travel, it’s not the furthest I mean it’s not that bad, but compared to where I used to work it is a big change and the reason I don’t go to these classes is because I’m tired, I’m here enough, I just want to go home when I finish work” (P13/F/O).*

In addition respondents described their commute as stressful and that this reduced motivation for PA once home:

*“I leave here and I’m mentally tired and I have to go on the tube and it makes me stressed and tired, and I’ll get home and I just cannot be bothered to do anything, so I think that’s a big decisive factor” (P4/M/O).*

### *iii) Low control over working hours*

Respondents working in the call centre reported their roles to be inactive with fixed, short and strictly monitored breaks which left no time available for PA:

*“When you go on you lunch you just have enough time to sit down and eat it by the time you finish eating it you’ve got to go back and do your work” (P4/M/O).*

In addition shift patterns were reported to change from week to week and respondents had little or no control over the shifts they worked. This was a barrier to PA because it prevented respondents from developing an exercise routine, be it classes or gym attendance:

*“It’s a bit different now cause before, at my other job I’ve always had a routine whereas you do shifts here so it’s different every week, so before when I did go to the gym I used to go, say, on a Tuesday and a Thursday night, whereas I can’t really do that now, well I could but it would change every week if you know what I mean” (P5/M/C).*

### **3d Facilities/physical environment**

The free onsite gym was considered a positive feature of the workplace by the respondents, even though they never, or rarely, used it. Reasons for not using the facility included the gym’s physical layout, one particularly salient feature was the mirrored walls which were described as “scary” and “to be avoided at all costs” (P10/F/C). The gym equipment was described as “not state of the art” (P8/M/C) and “falling apart” (P15/F/C) and the lack of exercise classes was a disappointment, these perceptions reduced respondents’ enthusiasm for using the gym.

The physical environment around the workplace was built up with little green space nearby, it was described as discouraging of PA during the day:

*“You can’t go out and walk anywhere around here, it’s horrible. It’s definitely an area with nothing, no parks, nothing to go and sit in, nowhere to go for a walk, outside it’s industrial estates, it’s unpleasant.” (P2/M/O)*

A further barrier was the distance from the workplace to local sports facilities, e.g. football pitches or running track. Due to using public transport and the time taken to commute between home and work respondents were disinclined to add the further journeys into their day which would be required to access sports facilities. Respondents who had previously been active reflected that this had coincided with convenient sports facilities:

*“In South Africa I was part of a sports club and I was close to the facilities and it was just a matter of me, it was convenient, and I haven’t really found any clubs or anything like that, and most of the facilities were quite close to where I live, and I had transport.” (P1/M/C)*

### **3e Response to PA programme**

#### *i) Receptiveness to information about PA*

Despite not having participated in any of the PA opportunities offered, all respondents had noticed at least one of the project activities and a number of the respondents had a good awareness of the project’s aims and the activities offered. Personal preferences for mode of communication about the activities varied widely. Respondents also talked about how timing of communication, e.g. time of day, affected their *“frame of mind”* (P3/M/O) and resulting likelihood of participating.

Respondents discussed the type of information that would engage them. There were varied suggestions including: case studies of people similar to themselves; information about local exercise facilities; and the health benefits of PA. Detailed and targeted information was perceived as more motivating than general public health messages which they felt they already knew:

*“I think they had lots of little leaflets but not enough comprehensive you know, I remember reading it and thinking well every lay person knows this already, it wasn’t really giving me any motivation or saying you know if you do this you will work off like a mars bar, or I think people need almost like a guilt trip to push them to be able to see its going to have an effect not like you should walk everyone knows that.” (P15/F/C)*

The use of eye-catching and novel marketing approaches was also recommended.

#### *ii) Appropriateness of employer promoting PA*

Even though none of the respondents had participated in the PA opportunities, they all perceived PA promotion to be a positive feature of the workplace, both as a perk and as a responsibility of the employer due to the sedentary and stressful work:

*"I would say it was a good idea I think it really is a good idea I think it's important that companies try and promote fitness and help their employees and I think it's really important." (P8/M/C)*

*"It's just being in this type of environment anything to help people understand their health better because this is not natural to sit down for seven hours a day, it's not natural the only people who sit down for this amount of time is if you cannot get up you know what I mean we're all physically able to move around, and I think anything that helps you to get yourself motivated, and even outside of work to be motivated, is a great help." (P7/F/C)*

### **3f) PA culture in the workplace**

Despite personal awareness of the programme respondents perceived their colleagues to have little or no interest in it; this perception was perpetuated by a lack of discussion about the PA options available:

*"I assume that there's not really much interest from the rest of the team in my department in these things, you never see anyone mention it [PA programme], no one really takes notice of it." (P1/M/C)*

Respondents described this culture of ambivalence towards the programme as inhibiting them from taking part in the PA options that were available. For example a female respondent described being deterred by both her colleagues' lack of motivation and the thought of behaving differently from the rest of the group:

*"Well if like my team were actually motivated to do it as well then it would be like something that we are all involved in so you can talk about it, and you know get motivated to actually get you and go to participate, but because I think no one is really aware of it or bothered about it for whatever reason it makes it like I'll be the only one, so that's kind of I don't want to be the only one saying oh I've got to go and do this now, or so that is kind of a downfall." (P12/F/O)*

Another respondent explained that he had been personally interested in a team pedometer challenge that was offered but had not managed to engage a group of interested peers:

*“When I tried to get some people to do the pedometer thing there was only one other person who said that would be a good idea other than that I didn’t want to go speaking to people on the other teams.” (P4/M/O)*

So the culture within teams with respect to PA was a barrier to respondents’ participation. Team leaders were described as uninterested or unaware of the PA programme. However, it was suggested that one way to raise awareness and promote discussion about the programme would be for team leaders to talk about upcoming activities in team meetings.

#### **4. Discussion**

In a group of inactive employees, barriers to participation existed alongside an awareness of factors that would facilitate PA. These findings support previous studies of reported barriers to PA in the workplace (Schwetschenau *et al.*, 2008, Fletcher *et al.*, 2008, Kruger *et al.*, 2007, Kouvonen *et al.*, 2005) and facilitating factors (Fletcher *et al.*, 2008, Tavares and Plotnikoff, 2008). The in-depth nature of the interviews in this study provided further insight into how and why these factors influenced uptake of PA options.

Lack of time has been cited as the most significant barrier to PA in workplace settings (Kruger *et al.*, 2007, Fletcher *et al.*, 2008), more specifically workload (Phipps *et al.*, 2010), no time during the work day (Kruger *et al.*, 2007, Fletcher *et al.*, 2008), and shift patterns (Fletcher *et al.*, 2008) have been identified. For our respondents inability to be active during the day at work and long commute times meant that time available for PA was limited. Rather than simply stating that they had no time for PA respondents focused on the interaction between lack of time and lack of energy, such that when their energy levels were low they prioritised quiet time and sedentary leisure activities over activity outside of work hours. Shift patterns have

been described as a barrier to workplace PA for manual workers (Fletcher *et al.*, 2008). Working hours were also very important for our sample, although more in terms of the impact of changing shift patterns than the total hours spent at work. Finding that office workers' PA participation is also impacted by shift work is important as from a public health perspective sedentary non-manual workers may represent a target population in which greater change is needed.

Both negative and positive attitudes towards PA were described. PA was seen as a low priority compared to other activities possibly due to health outcomes not being seen as an immediate benefit of PA for these young adults. Davies *et al.* (1995) also found young adults had low motivation to do PA for health reasons. Positive attitudes included believing exercise could improve mood, be enjoyable and provide social opportunities. This supports previous research which has found fun and enjoyment to be reported more often as predictors of participation than perceived health benefits (Allender *et al.*, 2006), and social motives to be especially salient to young men (Salguero *et al.*, 2006). Decisional balance theory (Marcus *et al.*, 1994) states that individuals generate a cost to benefit analysis of engaging in an action based on its expected outcomes. If perceived benefits of engaging in an action are increased or costs decreased the individual is more likely to decide to engage in that activity (Janis and Mann, 1977). As the respondents were a low active group it is likely that they perceived more negative outcomes to exercise than positive ones.

The more complex theme of PA culture which emerged from the present analysis has not been identified by quantitative, studies of barriers to workplace PA interventions. Tavares and Plotnikoff (2008) did describe the PA culture of the workplace impacting on women's PA. The women felt a supportive and encouraging corporate culture for PA was essential and ongoing programmes were seen as geared towards the 'aggressive male personality' (p.274). Findings from the current study indicate that a workplace culture which does not support or value PA is a barrier for men as well as women. In the current workplace PA culture appears to be a complex overarching social environmental factor which interacts with several more discreet factors such as self-efficacy for exercise, attitudes towards PA and social support, to negatively influence uptake of PA options. Following a review of workplace PA intervention studies (Marshall, 2004) it was suggested that incorporating issues relating to

workplace culture into intervention programmes may enhance these programmes but no further details of how this could be operationalized were given. In community settings it has also been suggested that attention to social environmental factors, such as social networks and cultural norms, is a necessary next step in research into PA (McNeill *et al.*, 2006).

Discussion of respondents' perceptions about the PA programme showed all were aware of its existence, its objectives and the main PA options offered, so lack of knowledge per se was not a barrier to participation in the programme. Respondents varied in their preferences for mode and type of communication but a common view was that targeted messages which provided new information would be more motivating than general health messages. This is in line with the finding that personal and detailed feedback is more effective at changing attitudes to PA than generalized feedback (Langille *et al.*, 2009).

The barriers which emerged from the present analysis can be conceptualized using an ecological approach to understanding PA behaviour (Sallis and Owen, 1997, McLeroy *et al.*, 1988). This approach suggests an interactive relationship between individual, interpersonal, environmental and cultural/organisational factors influencing behaviour. As a result it emphasizes the need to address behavior at multiple levels of influence (McNeill *et al.*, 2006). Workplace health promotion interventions which incorporate multilevel strategies (e.g. employee attitudes towards PA, social support, onsite PA facilities, marketing and management support) are not common but result in an increase in PA programme participation levels (Warren *et al.*, 2010, Campbell *et al.*, 2002, Crump *et al.*, 1996). All four levels of influence emerged as barriers to PA participation in the current study thus further supporting the use of a multilevel approach when designing and delivering workplace PA interventions.

The limitations of the present study should be acknowledged. Firstly, the study looked in depth at a small number of individuals' beliefs and perceptions concerning PA behaviour and the workplace PA intervention. In doing so it did not use a representative sample covering all job types within the workplace and time constraints meant that a relatively small number of individuals were recruited. The present sample included both individuals who had no intention to become more

active and people who intended to become more active relatively soon. We were not able to compare between these groups in the analysis due to small numbers and a lack of self-reported stage of change for PA data (Reed *et al.*, 1997), however doing so may help to provide more detailed understanding of the barriers and facilitators to PA in future studies. The interviewer had not been previously associated with the workplace or the workplace health intervention which was running there at the time of the interviews, however, it is possible that participants withheld negative opinions about either the intervention or the workplace.

## **5. Practical Implications**

Fitness centres in the workplace have been rated as highly desirable by employees (Kruger *et al.*, 2007). In the workplace studied a free onsite gym facility was provided but respondents chose not to use it. Low self-efficacy for exercise was a barrier because respondents were worried about feeling embarrassed to exercise in front of colleagues, either due to low exercise ability, little knowledge of how to use specific equipment or physique concerns. Providing ongoing instruction on use of the gym equipment and female only gym sessions could reduce these barriers. Removing mirrors from the areas where cardiovascular equipment are located may also be effective as embarrassment can be related to frequent exposure to such stimuli (Morin, 1997). Keeping the gym equipment up to date and in good repair is likely to increase motivation to attend. Exercise buddies were suggested by respondents as a means of overcoming the fear attached to attending the gym or an exercise class for the first time. Gym managers or HR departments could facilitate employees finding someone to exercise with for example through providing a suitable application on the local intranet.

Results showed that this group of mainly young adults saw PA as a low priority in their lives; it came second to quiet time, hobbies and socializing. As discussed previously decisional balance theory (Marcus *et al.*, 1994) suggests interventions should aim to reduce perceived costs of PA and increase perceived benefits. Interventions to reduce costs could include: education about the health risks of inactivity in ones twenties; or promoting ways of incorporating PA into ones daily routine without taking up extra time, for example by getting off the bus or tube a few

stops early on ones journey to work. A number of the respondents expressed a desire to participate in PA for the social opportunities it would provide; promoting PA as an opportunity for socialising may help these employees perceive it as a benefit to them rather than a cost.

Finally the PA culture of the workplace was highlighted as negatively influencing participation. With this in mind interventions should aim to extend beyond simply offering exercise classes or promoting gym membership. If workplace cultural norms and employer support are not addressed then shifts in PA participation are unlikely to occur (Tavares and Plotnikoff, 2008). Engaging line managers and using them to communicate messages about PA options available to their teams of employees is one way in which this culture change could begin to be addressed as part of a multilevel PA intervention.

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