WORKout Together @NHS: Closing the Intention-Behaviour Gap for Inclined Abstainers of Exercise

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Background

According to NatCen Social Research (2013), around a third of males and half of females in the United Kingdom (UK) are putting their health at risk due to a lack of physical activity (PA)[1]. In fact, the National Health Service reported that nowadays the UK population is 20 percent less active than in 1960, and the figure will drop to 35 percent by 2030 if the current trend continues (NHS Confederation, 2017). While daily PA may appear trivial, it is one of the easiest and cheapest ways to ensure a healthy population. PA can prevent the development of 20 chronic conditions as well as limit their symptoms (NHS Confederation, 2017). Much evidence has suggested that those who are physically active have a decreased risk of heart disease, cancer, stroke, or diabetes (NHS Confederation, 2017). Shockingly, physical inactivity takes responsibility for one in six deaths in the UK, and this percentage is expected to grow due to a predicted decrease in PA by 35 percentage points (NHS Confederation, 2017). Thus, PA can have an individual and collective impact on health and wellbeing, including the economy.

Individual Benefits of Exercise

Physical exercise can have numerous personal benefits, such as increased happiness and cognitive function. For example, research suggests that PA can boost the so-called "happy chemicals" (Elmagd, 2016, p. 24) including the neurotransmitters of serotonin, dopamine and endorphins; therefore, PA and happiness are positively correlated (Lathia, Sandstrom, Mascolo, & Rentfrow, 2017). Exercise has also been found to serve as a mental release for stress, to balance moods, and to be a self-esteem booster (Edmunds, Biggs, & Goldie, 2013). Moreover, physical activity can increase brain plasticity, thereby influencing cognition as well as memory (Fernandes, Arida, & Gomez-Pinilla, 2017). Increased happiness, cognitive strength, and wellbeing can have a spillover effect on family life, social relationships, and the workplace; therefore, the individual benefits of exercise can have broader positive impact on others.

[1] While physical activity is sometimes understood in a wide sense to encompass all activity involving purposeful movement (including e.g. walking up a staircase), our understanding is more in line with the notion of exercise, where movement is at the center of the activity (Biddle, Mutrie & Gorely, 2015).

Social Benefits of Exercise

There are many social benefits to good health as well. Yamey, Beyeler, Wadge, & Jamison (2016) found a healthy population to be more engaged and productive, thereby enhancing the country's economic success. Furthermore, it allows individuals to partake in social activities, such as clubs and groups (Jivraj, Nazroo, & Barnes, 2016), which can increase social cohesion. In addition, one must also consider the effect on family life when considering the social benefits of health. A healthy family member is better positioned to provide and support their family than an unhealthy member. This is not only important for a family's financial situation; studies have found parents to provide better emotional support for a child when they are in good health themselves (Waylen & Stewart-Brown, 2010).

Economic Benefits of Exercise

Not only are there individual and social benefits of a healthy population, but also immense economic benefits, especially for the National Health Service (NHS)[2]. Studies have found that those with poor health are more susceptible to lower income, work absence, and unemployment (Stansfeld, Clark, Caldwell, Rodgers, & Power, 2008). One must, however, note that there is a strong association between lower socioeconomic status and decreased participation in PA (Farrell, Hollingsworth, Propper, & Shields, 2013). Furthermore, every year, over 300,000 people stop working due to health-related problems and become reliant on the NHS, which is quite costly (Black & Frost, 2011). Additionally, sickness is estimated to account for 140 million lost working days, costing the UK economy a further £15 billion (Black & Frost, 2011).

Since its establishment, the expenditure of the NHS has exploded. While spending was £11.4 billion in 1948 in today's prices, it is now ten times that amount: £152.9 billion (Harker, 2019). These rising expenditures have put the NHS under severe financial pressure (Robertson, Wenzel, Thompson, & Charles, 2017), and there is no sign of this easing in the future. One way of dealing with this economic challenge has been for the NHS to focus on preventative measures, as it could drive down future costs.

[2] The NHS was founded in 1948 as the first non-insurance-based healthcare system in the world to provide free and high-quality medical care to all members of the UK public (Moskovitz, 2018).

NHS

While the NHS expenditure for PA adherence has decreased in recent years, this effect is likely due to improvements in treatment rather than increased PA (Townsend & Foster, 2016). Thus, the solution to treating health has been optimized, yet the underlying root issue has not been addressed. Therefore, solutions that address PA have a potential for immense savings for the NHS (Townsend & Foster, 2016). Such approaches would be in line with the more recent efforts of the NHS that have focused on preventive medicine, with the 10-year plan being a prime example. Physical inactivity being not only avoidable but also one of the drivers of mental and physical illnesses would make exercise adherence a key feature in preventative medicine. Yet, the NHS´s 10-year Long-Term Plan, which encourages society to "take greater control over your own care" (May, 2019, n.p.), outlines very little preventative initiatives with regards to PA. Thus, there has been a shift in focus towards preventive measures, yet the implementation concerning physical exercise as a means for prevention leaves opportunities for improvement.

1. Introduction

A lack of physical activity (PA) imposes a significant health risk to both individuals and society as a whole in the United Kingdom (UK). While there may be widespread awareness of the importance of exercise (Ronda, Assema, & Brug, 2011), an intention-behaviour gap is widely observed regarding PA; an intention to exercise does not necessarily translate to PA behaviours (Rhodes & de Bruijn, 2013). Rhodes and de Bruijn (2013) report that 46 percent of individuals who intend to workout do not follow up with such behaviour. Furthermore, while general sign-up rates for gym memberships are rising across the country, so are the number of dropouts. Fifty percent of new members will drop out within the first six months (Dishman, Sallis, & Orenstein, 1985; Matsumoto & Takenaka, 2004). This group of people who have the motivation and desire to work out but have difficulties in following through with exercise are called "inclined abstainers" (Sheeran, 2002, p. 6). These inclined abstainers are a function of the intention-behaviour gap (Arnautovska, Fleig, O'Callaghan, & Hamilton, 2017; Rhodes & Dickau, 2012; Sheeran, 2002).

In this paper, we focus on inclined abstainers and aim to understand their shortcomings in engaging in physical activity. One of the most popular forms of exercise is to join a gym, fitness or health club (LeisureDB, 2019), so this problem often takes place in a gym-type context. We further propose an implementable solution to close the intention-behaviour gap for inclined abstainers across the UK. Moreover, our solution does not seek to solve overarching societal health problems, such as obesity or chronic hypoactivity; our scope is focused on increasing PA adherence in inclined abstainers.

The remainder of the paper is structured as follows. Section 2 explores the theoretical underpinnings of dual-process theory and habit formation to understand the problem and formulate the solution. Section 3 proposes a solution of diverse group-based PA within the NHS to close the intention-behaviour gap. Section 4 discusses the societal implications of the proposed solution, namely possible effects on health service provision and exercise opportunities for the public as well as concerns about alienation at work. Section 5 addresses implementation of the solution, and finally, Section 6 concludes the paper and discusses the limitations and future directions of the work presented.

2. Theoretical Underpinnings

2.1 Failure of the Theory of Planned Behaviour

For the past three decades, health-related behaviour such as PA has mainly been understood through the theory of planned behaviour (TPB) (Ajzen, 1991; Sniehotta, Presseau, & Araújo-Soares, 2014). The theory posits that it is an individual's intentions that determine behaviour. As highlighted in the introduction, there is increasing evidence of the intention-behaviour gap in relation to PA, which does not align with TPB (Rhodes & de Bruijn, 2013). TPB may be applicable to understand the conscious, analytical decision to sign up for a gym membership, but it cannot fully account for the subsequent lack of or decline in attendance. For inclined abstainers, we do not view low gym adherence as a failure of planning or intention (after all, they are "inclined" to exercise), but rather as a failure to choose attending the gym at the moment of decision. We, therefore, focus our analysis on this specific and crucial point in time.

2.2 Dual Process Theory

While the problem of low participation in PA can be understood through various theoretical frameworks such as self-regulation (Hagger, Wood, Stiff, & Chatzisarantis, 2010) and sequential models such as Health Actions Process Approach (HAPA) (Schwarzer, 2008), the broad framework of dual-process theory is especially suited to analysing our problem (Ekkekakis, 2017). In fact, empirical studies in older adult populations lend support to the idea of understanding PA through a dual-process (Arnautovska et al., 2017; Maher & Conroy, 2016). While dual process theory has been explored by many academics in various areas of psychology, the core idea is that people use two different processes with which to analyse a situation, complete a task, or make a decision (Frankish, 2010). One process is “fast, automatic, and non-conscious,” (Frankish, 2010, p. 914) while the other is “slow, controlled, and conscious” (Frankish, 2010, p. 914). Kahneman (2011) termed these two processes as System 1 and System 2, respectively, and we will refer to these two processes using his terminology throughout the paper.

In general, the problem of low PA participation can be thought of as a failure of System 2, or domination of System 1 over System 2 (Ekkekakis, 2017). Furthermore, there are many

cognitive biases that result from this friction between System 1- and System 2- type processing. These cognitive biases, in turn, can be used to understand the intention-behaviour gap phenomenon in PA at both the point of planning and point of execution of PA. However, since we are interested in failures of execution of PA in inclined abstainers, we will only focus on present bias, which we deem as the most suitable to understand the problem.

2.2.1 Present Bias

Every time an inclined abstainer thinks about exercising, they make a decision about whether or not to carry it out at that moment. Research suggests that the activity of gym exercise (Ekkekakis, 2017; Rose & Parfitt, 2010) and its context itself may not evoke the same amount of pleasure for all and may even be displeasurable (Fisher, Berbary, & Misener, 2018; Rydeskog, Frändin, & Hansson Scherman, 2005; Williams, Hendry, France, Lewis, & Wilkinson, 2007). This will be factored into the exercise decision. Furthermore, there is an intertemporal element (Acland & Levy, 2015). If the person does not exercise, they can enjoy the more immediate benefits of doing activities they find more enjoyable than exercise. However, in the long-run, this behaviour can be detrimental to their health. On the other hand, if they do exercise now, it may be temporarily unpleasant, but they will be able to reap the long-term benefits in the future. Inclined abstainers tend to choose the first option. In other words, they overweight the near-term costs of exercising and underweight the long-term health benefits (Bhattacharya, Garber, & Goldhaber-Fiebert, 2015).

2.2.2 Affective Judgement

Not only cognitive biases but also affective judgement in relation to PA is useful in understanding the intention-behaviour gap in inclined abstainers. Affective judgement can be defined as "judgments about the overall pleasure/displeasure, enjoyment, and feeling states expected from enacting physical activity" (Rhodes, Fiala, & Conner, 2009, p. 181). This definition incorporates past performances and future expectations of PA as well as the affective judgement of PA in general (Rhodes et al., 2009).

Affective judgement can be understood through the dual-process theory framework as well. System 1 processing can result in negative affect associated with PA, whereas System 2

processing can generate positive reasoning in relation to PA (Ekkekakis, 2017). In people with poor physical health, which likely includes inclined abstainers, System 1 processing tends to act as default, potentially leading to chronic hypoactivity (Ekkekakis, 2017). In fact, "somatic cues like muscle acidosis, elevated core body temperature, or inflamed and painful joints collectively form a negatively laden 'somatic marker' associated with physical effort" (Ekkekakis, 2017, p. 86). Somatic markers are emotional reactions in the body that support decision making (Pauen, 2006). These negatively laden somatic markers generated from adverse experiences of PA create negative emotions in inclined abstainers, ultimately guiding their decision towards not adhering to PA.

Empirical evidence lends support to the idea that negative affect leads to low PA adherence. Early studies suggest a predictive relationship of affective response to PA adherence (Rhodes & Kates, 2015). Many middle-aged and older people view anticipated positive feelings as an enabling factor of exercise (McArthur, Dumas, Woodend, Beach, & Stacey, 2014), and many of those who start working out revert to hypoactivity because of experiences of displeasure or discomfort (Ekkekakis, 2017). Moreover, Rhodes et al. (2009) conducted a meta-analysis and demonstrated a medium size effect of affective judgements and PA in adult populations.

Overall, dual-process theory proves to be an invaluable lens with which to analyse the problem. Next, a theory of habit formation will be applied.

2.3 Habit Formation

Habit formation is essential to maintaining a long-term pattern of physical activity. In fact, "habits predict physical activity when intentions are weak" (Rebar, Elavsky, Maher, Doerksen, & Conroy, 2014, p. 1). Wood and Neal (2016) proposed a two-factor approach of healthy habit formation that breaks current unhealthy habits while promoting new healthy ones. The aspect of healthy habit promotion is especially suited to our problem and will therefore be utilised in our analysis. The three key habit-forming principles are behavioural repetition, context and cues, and rewards.

2.3.1 Behavioural Repetition

Research has demonstrated that interventions over longer periods of time with many repetitions are most likely to yield a healthy habit (Wood & Neal, 2016). A habit such as exercise is a low effort and automatic process that is represented in associative memory. This automaticity, in turn, is a result of System 1-type processing (Rebar et al., 2014). Initially, the behaviour is controlled by goals, intentions, and rewards but through frequent repetition, this control transfers to the automatic processes (Hagger, 2019). Hence, successful habit interventions should enable frequent repetitions of the behaviour to enable automatic process development.

2.3.2 Context and Cues

In general, people overvalue willpower (motivation, energy, etc.) and underestimate the power of context. Cues and context have tremendous power in habit formation as well as determine the ease with which a behaviour can be performed. Furthermore, behaviours are tied to a specific environmental cue or context. For example, Tappe, Tarves, Oltarzewski and Frum (2013) found nearly 90 percent of regular exercisers to have a location or time to cue their physical activity. We are now going to consider three main variables of context and cues that have been shown to significantly affect exercise behaviour, namely physical proximity, scheduling demands and flexibility, and social support.

Physical Proximity

Physical proximity can facilitate habit formation. Dstillery (2017), for instance, found the length of travel to a gym to negatively impact gym attendance. Those who attended the gym once a month commuted a median distance greater than those with frequent weekly visits. This effect has also been demonstrated with quantitative studies of San Diego residents (Sallis et al., 1990) and college students (Reed & Phillips, 2005), as well as a qualitative study of type two diabetics (Casey, Civita, & Dasgupta, 2010). Overall, the literature seems to suggest a correlation between proximity and gym attendance.

Scheduling demands and flexibility

Family and work commitments make the scheduling of physical activity problematic in day-to-day life, thus impeding habit formation. In fact, McArthur et al. (2014) found the demands of home life and other relationships to be a barrier to exercise for middle-aged women. Additionally, a degree of control over and flexibility with scheduling are important factors. Larson, McFadden, McHugh, Berry, & Rodgers (2018) established low scheduling self-efficacy to lead to drop-out. Moreover, Beshears & Milkman (2017) found routines to be good for creating lasting habits, but overly rigid schedules may actually undermine habit formation, suggesting the need for flexibility.

Social support

Social support has been found to play a key role in promoting the health and well-being of individuals (Cohen, 2004; Mendonca, Cheng, Melo, & de Farias Junior, 2014). Social support refers to the diverse ways in which individuals (family, social network, etc.) help and assist each other. Social support can take two forms: emotional or instrumental (Seeman, 1996). Emotional support is usually non-tangible by nature and can boost a sense of self-worth and self-confidence by, for example, providing reassurance, empathy and positive feedback. Instrumental support entails material help by, for instance, providing help with financial aid or assistance with childcare. Both of these forms of social support can encourage individuals to develop a healthy habit, or in this case, to go to the gym and pursue a healthy lifestyle.

Larson et al. (2018) found social support to have a positive relationship with gym attendance, especially during the first three months of exercise (Rhodes, Martin, & Taunton, 2001). McArthur et al. (2014) found middle-aged women to see accountability to others as enabling adherence to exercise. Supervision, encouragement, and accountability, all being dimensions of social support, have also been found to have positive effects in gym attendance with type 2 diabetics (Casey et al., 2010) and obese patients undergoing exercise intervention (Hardcastle & Hagger, 2011).

2.3.3 Rewards

While the literature on rewards, motivation, and habit formation is multifaceted and complex, evidence suggests that people are more motivated to repeat a certain behaviour if the behaviour reaps a form of reward (Wood & Neal, 2016). Research on reward scheduling has established that uncertain rewards at random-interval schedules are best for habit formation. (DeRusso et al., 2010; Wood & Neal, 2016) Furthermore, extrinsic rewards have been found to be especially incentivising during the initiation phase (Charness & Gneezy, 2009; Mantzari et al., 2015; Wood & Neal, 2016). While motivation can initially be driven by such external incentives, it is essential that it becomes internalised to prevent crowding out and to guarantee successful habit formation (Chiu, 2009; Kuroda, Sato, Ishizaka, Yamakado, & Yamaguchi, 2012). Overall, such research suggests that habit formation should begin with incentivising extrinsically with random interval schedules (Wood & Neal, 2016) and that through repeated exercise, the motivation shifts towards an intrinsic one, which is key for long term maintenance (Kuroda et al., 2012). While the research presented here is a narrow focus of the reward and habit literature, it is particularly useful in constructing our solution to the intention-behaviour gap in PA among inclined abstainers.

3. Solution: WORKout Together @NHS

On the basis of these theoretical frameworks, it is our intent to propose a solution that allows inclined abstainers to maintain adherence to their exercise intentions. However, as will soon become apparent, the proposed intervention enlarges the perspective. Firstly, the understanding of exercise as an individual-focused workout in the gym is broadened to include a diverse range of physical activities. Secondly, while the solution is aimed at inclined abstainers, it may also appeal to other groups of individuals, namely "inclined actors," "disinclined actors," and "disinclined abstainers" (Sheeran, 2002, p. 6).

In essence, we propose to work together with the National Health Service (NHS) to offer a diverse range of regular group-based physical activities at or in close proximity to the workplaces of NHS employees, organised in their respective trusts and Clinical Commissioning Groups. NHS staff are able to partake in these activities during working hours free of charge and are being incentivised to do so, among other things, by a lottery-based incentive scheme which supports local social causes. Each of these facets will be considered and justified in detail below.

Before doing so, we illustrate briefly how our proposal intends to affect the inclined abstainer at the moment of the exercise decision. By choosing the NHS, the reduction of physical and scheduling barriers as well as the consistency of context and cues is thought to enable habit formation, thus increasing the likelihood of attendance by itself. Moreover, having experienced affectively positively laden group-based PA in the past is expected to leave the inclined abstainer with positive affective judgements towards attending while also instilling a feeling of sufficient social support. If the individual is still undecided about exercising, the lottery-based reward system is designed to minimise any present bias left that could lead to non-attendance. In sum, our solution aims to cover both longer-term determinants of PA attendance (habit) as well as determinants more potent in the moment (affective judgements, present bias).

3.1 Selection of the Work Context

We have selected the work context for our solution as it naturally allows for a reduction of barriers to PA and habit formation for inclined abstainers. Since people spend about 60 percent of their time at the workplace on a regular basis, it is sensible to make use of this place

and time commitment for PA improvement (Ni Mhurchu, Aston, & Jebb, 2010). This is of particular importance as the constancy of context and cues plays a significant role in the formation of habits (cf. section 2). Offering flexibly scheduled PA on-site or in close proximity to the workplace also reduces two barriers to regular exercise: physical distance and scheduling demands (cf. section 2). In order to accommodate the diverse activities to be offered, facilities need to include indoor and outdoor courts and a number of dance or fitness classrooms as well as changing rooms.

Besides the costs for providing the facilities and PA offerings, allowing workers to take off time during working hours to exercise may sound like another drawback to the employer at first sight. However, research has clearly shown the positive effects of workplace PA on employee performance and sickness absences, highlighting the value it can have for an organisation's performance (Brinkley, McDermott, & Munir, 2017; Pronk & Kottke, 2009).

3.2 Selection of the NHS

Having established the rationale for the programme to be situated in the work context, the NHS was selected as the specific setting for the intervention because we see both an intra-organisational need for increased PA as well as the extra-organisational potential for the project's promotion. Today, the NHS is Europe's largest employer with 1.3 million staff members of all educational and professional backgrounds (NHS Jobs, 2019) and is considered a national treasure in the UK (Moskovitz, 2018). Given this size and importance, we believe that our solution can become a flagship project that, if successful, can function as an aspirational goal and strategic blueprint for other employers throughout the UK and beyond.

However, it is not just this outward perspective that informs the decision to work together with the NHS. Over the last decade, the NHS has faced increasing budgetary and performance pressures which have led to immense dissatisfaction and high levels of stress among its staff (Robertson et al., 2017; Wilkinson, 2015). In light of the increasing role of preventive medicine for the NHS (Moskovitz, 2018; NHS, 2019a), we believe that the NHS should implement measures to aspire to this self-proclaimed aim by starting with their own workforce. In fact, there is plenty of evidence displaying the positive benefits of workplace PA for employees (e.g. lower levels of stress, higher job satisfaction; Brinkley et al., 2017; Pronk & Kottke, 2009). Moreover, an analysis of NHS staff surveys has shown that positive employee

experiences and well-being are linked to better performance and ultimately, patient satisfaction (Powell, Dawson, Topakas, Durose, & Fewtrell, 2014).

From an organisational perspective, we propose to implement the solution on the levels of NHS Trusts and Clinical Commissioning Groups (CCGs), two organisational units typically commissioned to geographical areas or distinct areas of expertise. In 2017, 207 CCGs and 251 trusts existed in England (NHS Confederation, 2017). We have selected these units as they are sufficiently large and diverse to enable the establishment and sustainment of a variety of PA groups. In addition, they possess existing organisational structures and infrastructure that can be used for implementing the programme.

3.3 Diverse group-based PA

While the problem at hand was initially conceived as a failure of inclined abstainers to go to the gym to work out regularly as individuals, the proposed solution grounds PA in a group setting. This entails positive effects on affective judgements, social support, and ultimately adherence. We propose to offer PA organised along the principles of group dynamics set out by Lewin (1997) and Carron (1993). The model proposes to modify group environment, processes and structure in ways that allow for attraction and integration of individuals on the task and social interaction level (Estabrooks, Harden, & Burke, 2012). Thus, instead of a group just forming the context of a PA, "it itself is an active ingredient" (Estabrooks et al., 2012, p. 21) of the activity. For instance, strategies include developing a group name and logo (group environment), partnered exercises (group processes), or assigning administrative and leadership roles (group structure) (Estabrooks et al., 2012). All of this rests on the idea of regularity, i.e. that group members maintain affiliation with a group and regularly attend their PA activities, which is also a prerequisite for habit formation (cf. section 2). Evidence suggests these group dynamics-based PA programmes to be superior to other forms in adherence and affective valence (Burke, Carron, Eys, Ntoumanis, & Estabrooks, 2006; Dunton, Liao, Intille, Huh, & Leventhal, 2015). Beyond these positive effects, setting up the worksite PA in group settings also strengthens social support and thus influences exercising behaviour. Social support is positively correlated with gym attendance (cf. section 2).

In a similar way, providing a broader and more diverse offering of PA is also intended to improve affective valence towards exercise. While inclined abstainers likely have negative affective judgements towards gym exercise or environment (cf. section 2), a different form of

exercise in a different setting might induce other affective judgements (Lower, Turner, & Petersen, 2013; Molanorouzi, Khoo, & Morris, 2015). Thus, our suggested programme entails a wide array of physical activities, including traditional team sports, dance and other expressive forms of PA, martial arts, and more classic group fitness instruction. All of these activities would be offered at different difficulty levels to allow for the participation of all NHS staff. Moreover, recognising that females report specific concerns (e.g. gendered expectations, negative effect of mirrors on feeling states and body image) with regards to their preferred forms of PA (Fisher et al., 2018; Martin Ginis, Burke, & Gauvin, 2007), the programme includes activities addressing these concerns and female-only classes. With this broadening of the conception of PA, we create opportunities for groups traditionally underrepresented or marginalised in the exercise context (e.g. expressive physical arts, physically unfit, etc.) to engage in PA. Similarly, giving each NHS staff member two (recommended in NHS, 2019b) hours of their working time per week to flexibly spend on PA also enables employees outside of the traditional 9-to-5 schedule (e.g. shift workers) to exercise. In order to accommodate these demands, the offerings have to be adjusted to the working routines of all NHS staff.

3.4 Purpose-based lottery incentive scheme

Improving affective judgement toward PA already goes a long way towards increased exercise adherence (Ekkekakis, 2017; Rhodes et al., 2009). On top of this, the proposed solution also entails an incentive system in line with the suggestions laid out in Section 2 for minimising present bias and facilitating habit formation, namely a lottery-based reward system (John, Loewenstein, & Volpp, 2012). This system is contrary to its traditional conception with a prize awarded only to one or a few individuals. In this case, the lottery tickets randomly acquired with participations in a PA at the NHS go towards a social cause. Every quarter, each NHS Trust will democratically decide on a cause it would like to support. Then, at the end of the quarter, the prize money to be donated to that cause will be drawn with Trusts that have accumulated many lottery tickets having greater chances at winning. Each Trust's current lottery score can serve as a visible cue, displayed in heavily frequented areas in the workplace (e.g. canteen) and be regularly distributed in email newsletters. This system also allows for the option to vary incentives during holidays in order to avoid habit breaking (Williams et al., 2007). While the general attempt of this programme is to increase valence towards PA, the

proposed charity-based reward scheme also takes advantage of the martyrdom effect (Olivola & Shafir, 2013), in particular for those exercisers that still associate PA with pain.

4. Societal implications

The problem this paper tackles has been framed as one of individual failure to consistently follow up on set intentions to exercise with appropriate behaviour. Given the magnitude of our solution both in terms of aspiration and size, there clearly are implications that go beyond the individual inclined abstainer to a societal level. Not only will the proposed solution allow for exercise-willing NHS staff to adhere to their exercise intentions, the expected increase in NHS staff well-being is also associated with better care and service quality and patient satisfaction – an outcome affecting the public as a whole (Powell et al., 2014).

Moreover, as disease prevention has become one of the NHS's main objectives (NHS, 2019a), promoting PA may be an efficient way to achieve this goal (Molanorouzi et al., 2015). Research indicates, however, that health advice given by people who themselves appear to be suffering from health problems (e.g. obesity) has limited effects (Ni Mhurchu et al., 2010). Thus, advice given from NHS employees who exercise can be expected to be given more credibility by the patient they are caring for.

As the initial target group of the proposed programme is people who have already attempted to build a sustained gym workout regimen, a certain socioeconomic selection mechanism can be assumed. With an average yearly gym membership cost in the UK of $515 (Fitness Health, 2019), it can be questioned whether all NHS staff and the general public have the same access to this opportunity. Therefore, offering chances to partake in PA at work free of charge for all NHS employees becomes a matter of equality. What is more, if the programme proves to be successful, it can serve as a blueprint for other employers, thus enabling access for even bigger parts of the public. Similarly, one can even think about the NHS opening up its PA facilities to patients or the general public in the future.

All of this being said, one may argue that by only considering the programme's positive effects of exercising and healthy employees for the employer and the public, the individual employee is still left feeling alienated at work - a general critique prominently put forth by Karl Marx (1844). He posited that alienation at work stems from a lack of power and meaning for the worker. Later, anomie, i.e. isolation and the lack of social support, was also added as a third cause of alienation (Kanungo, 1979). We counter this critique by arguing that while we cannot change the nature of the work itself, we provide opportunities for the employee to actually escape the state of alienation. In fact, the programme gives NHS staff power over their time and body as they can decide themselves when, how, and with whom to exercise. Similarly, being engaged in PA with one's body is meaningful and empowering in itself (Allen-Collinson,

2009, p.; Liimakka, 2011). Lastly, working out in a group can reduce anomie by providing opportunities for meaningful social interactions (Mendonca et al., 2014). Thus, although work in Marx's critique is only a means to satisfy other needs, we contend that our programme allows for some parts of the work context, namely the PA, to actually satisfy needs (e.g. social needs, self-actualisation, cf. Luthans, 2011) directly.

5. Implementation

Given the size and magnitude of the proposed initiative, it is out of the scope of this paper to develop a detailed plan of implementation. However, we would like to outline the basic theoretical underpinnings as well as propose starting points for the implementation. Programme planning and the corresponding organisational change have both been singled out as important determinants of a health promotion initiative's success (Heward, Hutchins, & Keleher, 2007; Mullen, Green, & Persinger, 1985). Despite this finding, little evidence exists on best change practices in the health context (Heward et al., 2007).

In general, existing organisational change theories agree on the general conception of change as a process of stages (Heward et al., 2007). Lewin (1951) conceptualises change as moving from a stage of unfreezing the organisation to moving it to a new state which is then refrozen. As unfreezing involves eliciting and communicating unhappiness with the status quo and a sense of urgency (Batras, Duff, & Smith, 2014), it can be argued that the current pressures faced by the NHS have already led to this state, as has become apparent in NHS staff surveys and other research (cf. section 3). Hence, while further systematic unfreezing would be necessary, we believe the NHS to be ready to begin proceeding into the moving phase.

In complex systems like the NHS, moving the organisation, in particular around health promotion, has been described as being located in the "zone of complexity" (Heward et al., 2007, p. 174; cf. Speller, 2001), with initiatives lacking in both general agreement and certainty of success. For these cases, it is proposed to work to increase certainty and agreement simultaneously, ideally in a process that is both top-down and bottom-up (Heward et al., 2007). In an attempt to do the former, we propose to start with one "pilot site" (Batras et al., 2014, p. 238), i.e. one NHS trust, for an initial rollout of the programme. Given the costs and time associated with building or updating existing NHS facilities to meet the needs of the programme, we contend that initially existing facilities run by sports clubs or community organisations near the workplace should be used. This allows for "quick wins" (Batras et al., 2014, p. 239) that then can be communicated to increase certainty and agreement among staff and stakeholders (Schein, 2010). Iteratively testing the programme at one site also decreases the costs of learning and failure and facilitates quick modification before a more thorough rollout.

Taking a more bottom-up approach, it is our desire to engage NHS staff in designing the PA to be offered in the pilot. Making use of the expertise already present among employees (e.g. physiotherapists, doctors, etc.) does not only decrease need for external consultation, it is

also meant to increase agreement and identification with the initiative as it gives staff agency in its conception and implementation (Brown & Cregan, 2008; Hussain et al., 2018).

Although the rollout to all 458 trusts and CCGs will take time and require adaptation as contexts at the individual sites differ, Lewin (1951, 1997) stresses the need to refreeze once established change in order for it to continue having an impact. Thus, once the PA offering has been put in place at a site and has attracted initial sustained interest, it ought to be made part of the organisational culture and practice (Batras et al., 2014).

6. Conclusion

Overall, the problem this paper addresses is that individuals who have the desire to work out at the gym consistently often fail to do so. Approached from the perspective of dual-process theory, this intention-behaviour gap can be understood as both a function of an individual's present bias and their negative affective judgements towards exercise and/or the gym. In addition, these inclined abstainers often lack sufficiently stable PA habits. Our solution of implementing regular, diverse, group-based PA in the NHS intends to address all of these behavioural determinants: Firstly, in proposing to embed PA in the work context, habit formation is facilitated. Secondly, broadening the conception of exercise beyond individual gym workouts to diverse group-based offerings of PA improves affective valence and social support. Lastly, present bias in the moment of decision for PA is reduced by employing a lottery-based reward system which supports a local social cause.

We have selected the NHS as the target organisation for its size, role in the UK and impact potential. Consequently, if successful, we see possibilities of the proposed programme to be expanded beyond the NHS. However, we are also aware of the limitations. Given the magnitude of the NHS, implementation will pose a challenge (cf. section 5). It is also to be noted that while observing others enjoying the benefits of PA may lead to exercise (Trost, Owen, Bauman, Sallis, & Brown, 2002), we do not explicitly address the group of individuals that have no desire to work out. In other words, inspiring disinclined abstainers to exercise is not in the scope of this programme, although it could be a positive externality. That being said, with the offering and necessary infrastructure in place, it would require only little adaptation to modify it for this group of individuals - be it within the NHS or beyond.

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