Assessing the Side-Effects of the 'Exercise Pill': The Paradox of Physical Activity Health Promotion

Abstract

The *Exercise is Medicine* movement, centralised in Physical Activity Health Promotion (PAHP) policy, is illustrative of neoliberal health governance that acts to sustain the population's regular participation in physical activity (PA) through the logics of self-care, productivity, personal responsibility and choice. One way this is propagated is through the promotion of exercise as the 'best buy' (AMRC 2015) in modern medicine and a wonder 'pill' to good health (Sallis, 2009). However, the increasing reliance of PAHP policy on the *Exercise is Medicine* narrative to construct the healthy citizen typically conflates the categories of sport, exercise and PA, and fails to recognise the different social relations and risks each entails. Consequently the neoliberal logics central to this narrative are more likely to create actors inclined towards competitive sport and, therefore, PAHP places populations at risk of physical injury that entail both social and economic costs. Mobilising data from semi-structured interviews, the social and economic 'costs' of physical injury are documented to develop a critical evaluation of the paradoxical implications of these 'costs' for contemporary public health promotion such as the *Exercise is Medicine* movement.

Key words

Neoliberalism, physical activity health promotion policy, sport, injury

Introduction

There has been a wealth of research conducted in the last half-century documenting the relationship between exercise, physical activity (PA) and health. Research indicates that regular PA significantly reduces the risk of suffering from cardiometabolic disorders (e.g. coronary heart disease, stroke, respiratory disease). Indeed a recent 72 page extended review published in the *Scandinavian Journal of Medicine and Science in Sports* summarised the evidence for prescribing exercise as medicine for 26 different diseases (Petersen and Saltin 2015). The 'medicalisation' of the PA-health relationship is evident in popular western narratives of health (Lupton 1995, Sassatelli 2000), and concerns about a global obesity 'epidemic' (Campos 2004, Gard & Wright, 2005) and physical activity 'pandemic' (Kohl et al., 2012).

Such health benefits have been translated into concomitant economic savings effecting an economization of social life (Kenny 2015). This trend has been accelerated by the recent centrality of economic austerity and fiscal control in the policies of most Western governments (Titterton, 2013). For instance, the direct cost to the UK NHS as a result of *physical inactivity* among the population has been estimated to be £0.9 billion (Scarborough et al., 2011), while indirect costs (related, for instance, to work absenteeism) rise to an estimated £6.5bn (RCP, 2012). Consequently physical activity health promotion (PAHP) has become ubiquitous. For instance a review of national documents published in the 28 EU member states between 2000 and 2009 identified 112 which 'mentioned health-enhancing physical activity and contained overall goals on participation in sport and physical activity and/or on health promotion' (WHO 2011, p. 42). Exercise, moreover, is claimed to be 'today's best buy in public health' (AMRC 2015).

This policy shift is symptomatic of health governance in the context of neoliberalism (Miller and Rose, 2008), where the re-structuring of power relations mobilises practices to direct consumer 'choice', whilst encouraging citizens' propensity for self-governance that aligns with strategic policy objectives (Lemke, 2001, Rose, 1996). *Exercise is Medicine* (Sallis, 2009), the joint American Medical Association and American College of Sports Medicine initiative and established in 43 countries (Neville, 2013), epitomises this development. Its introduction was justified alongside the citation of a range of 'costs' associated with physical inactivity (e.g. 3.3 million deaths globally and $102bn direct cost to the US healthcare system per year) (Jonas and Philips 2009), it entailed the instruction of clinicians 'about how you can assist them [patients] in … making those changes and choices' (Jonas 2009, p. 1), and essentially individualized exercise as 'the one major factor affecting our health and longevity that is almost entirely under our control' (Sallis 2009a, p. 3). Moreover, the 'exercise pill', is claimed to have miraculous effects: 'If we had a pill that conferred all the confirmed health benefits of exercise would we not do everything humanly possible to see to it that everyone had access to this wonder drug?' (Sallis 2009a, p. 3; see Authors forthcoming for an extended discussion of these themes).

Mobilising data from qualitative interviews, this paper exposes the contradictions that lie at the heart of (neoliberal) PAHP narratives such as the *Exercise is Medicine* movement. Specifically, a fundamental flaw of this agenda and related policies is the conflation of PA, exercise and sport which stems from a failure to recognise the different social relations and health risks which each entail. The ideological commitments of PAHP advocates leads the comprehensive evaluation of participation outcomes to be disregarded and this, in turn, serves to obfuscate the net health cost-benefit associated with the respective activities. Uniquely perhaps amongst the primary targets of public health (i.e. reduced alcohol consumption, smoking cessation, safer sexual practices and healthier eating), PAHP has the capacity to

create population *ill*-health through what could charitably be depicted as *over*-consumption but perhaps more accurately described as the frequently experienced side-effects of this form of 'medication'. Moreover, the neoliberal rationalities which lead receptive citizens to undertake physical activity actually *increases* the propensity to exercise in ways which entail a relatively high risk of injury. The outcome of these processes is therefore twofold: individuals encounter specific, and in certain cases, extensive social and physical costs which threaten the sustainability of life-long physical activity; while Government health policies become self-defeating due to the weight of unintended outcomes they generate. This is the paradox of PAHP.

The paper begins by briefly sketching the relationship between PA, health and neoliberalism, before critically exploring the conflation of sport, exercise and PA in PAHP policies. Subsequently it focuses on how *Exercise is Medicine* public health messages are internalised by receptive populations which engage in self-governance through proscribed health practices. The paper is the first to empirically illustrate the motivations of individuals engaged in forms of sport and exercise and the subsequent physical and social 'costs' that can occur as a consequence of injury and it concludes with a critical evaluation of the implications these 'costs' which has potentially radical implications for the social and political economy in general and PAHP in particular.

Sport, PA and Public Health in a Neoliberal Climate

The public reception of PAHP messages is fundamentally framed by what Lupton (1995) terms the health imperative. Foucault's (1988, 1991) concepts of 'governmentality' and 'technologies of the self' are particularly relevant in the critical analysis of this. Governmentality designates the shift in power relations through the apparent 'rolling-back' of

the state in response to an increased individual autonomy, by 'supplying' a greater number of possibilities for individuals to actively participate and manage modes of subjectivity (Lemke, 2001). Action is therefore transformed into self-constituting practices and a reflexive 'problem' for the self as the responsibility for social issues shifts from the domain of government to the individual, with correlative emphasis on self-governance (Rose, 1996). As Lemke (2001, p. 201) argues,

> the strategy of rendering individual subjects 'responsible' (and also collectives, such as families, associations, etc.) entails shifting the responsibility for social risks such as illness, unemployment, poverty, etc., and for life in society into the domain for which the individual is responsible and transforming it into a problem of 'self-care'.

The increased emphasis on consumer 'choice' and the wider economy of expert knowledge play a crucial role in this transformation. They provide a market for 'risk-management', legitimised through the 'medicalisation' of the PA-health relationship, which encourages active consumerist participation and management of the self, demonstrating entrepreneurial values of social productivity (Lupton, 1995, Petersen, 2000). The management of 'lifestyle risk' (obesity, diabetes, etc.) is 'directed at the regulation of the body' (Lupton, 1999, p. 90) and performs a moral function. Risk promotes increasing awareness of self-responsibility, rational control, measurement and calculation that speaks directly to the entrepreneurial consumer but, importantly, also functions as a strategy to segregate, normalise, and give social distinction to the bodies of those who consume health-enhancing behaviours (Lupton, 1999). The neoliberal subject is therefore one who is responsible for managing social distinction and worth through entrepreneurial and consumerist action bound up in the process of 'self-care'. The self-management of 'social success or failure' is central to the neoliberal identity (Lemke, 2012, p. 47) and exercise has an authenticity that other body altering techniques lack. As Sassatelli (2000, p.408) notes,

'the idea of a fit body, useful to subjects in their daily lives and an immediate signal of self-control and adaptability, seems to have replaced the modest fatalistic hopes of health'.

PAHP should be conceived of as a tool to promote self-care which generates distinction for the neoliberal subject and encourages population responsibility of health. In the next section we illustrate how the terminological subtleties which frame PAHP discourse firstly supply a greater number of possibilities for self-management and secondly align with both the explicit and implicit neoliberal objectives of health policy (Rose, 1996).

The Depiction of Sport, Exercise and PA in Public Health

It has long been recognised that there is a tendency in everyday speech and government policy to present sport and exercise as ontologically equivalent social practices (Waddington and Murphy, 1998) and more recently this has been extended to include PA (Bercovitz 2000). While exercise and sport should be considered sub-categories of PA, it is heuristically useful to recognise a sport-PA spectrum where different forms of exercise are distinguished by distinct forms of social relations. Briefly stated, inherent to sport is a greater degree of organisational structure and competition which requires participants to respond to the actions of others (changing pace or direction), while both sport and exercise frequently entail the fetishisation of the quantification of production (scores, times, distances). The practice of sport is further distinguished by the corporeal performance of specific identities that are bound up within their respective practices (Reischer, 2001). A fundamental problem with conflating sport, exercise and PA is that it implicitly suggests that people's motivations, and the health consequences, are similar or identical across a diverse range of activities.

Despite recognition of such conflation, these ideas continue to inform the neoliberal health narrative. For example, a recent UK PAHP iteration, *Moving More, Living More*, urges citizens to both increase PA by 'using stairs and walking', and/or take part in organised sporting events such as a *Park Run*, a 'locally-led, volunteer-run activity which is helping to attract people into (often vigorous) physical activity' (Cabinet Office, 2014, p.12). Yet while sport, exercise and PA all have potential health benefits, the seamless way the former is implied to equate to, or follow from, the latter is highly problematic. Despite epidemiological research indicating that 12.9% and 7.2% of London Olympic athletes respectively sought medical attention for a new injuries or an illness during the games (Engebretsen et al. 2013), then-Prime Minister David Cameron endorsed the policy as follows:

> The country was captured by the spirit of the 2012 Games, inspired by our sporting heroes and their many achievements. We now need to build on this, creating a nation that's physically active and improving their health for the longer term.

Similarly, while *Exercise is Medicine* documentation is concerned to raise all activity levels, it also recommends that people pursue more organised, competitive and therefore higher risk exercise activities in the belief that this will facilitate *continued* participation (Jonas 2009b).

While the sport/PA conflation has traditionally been projected as relatively benign, if flawed, the recent politicisation of PAHP threatens to have more significant and wide-ranging consequences. For instance, there is a significant proportion of the population who suffer sometimes prolonged physical injury which, in part, stems from complying with the neoliberal imperative of health through sport and exercise participation rather than, crucially, simply PA. Quantification of the incidence of sport-related injury (SRI) is wrought with methodological problems, but has been illustrated to be significant in a range of contexts. Estimations of the proportion of national populations incurring SRIs each year range from 3.1%

in Germany (Schneider *et al*. 2006), to 5.9% in Australia (Egger 1991), 8.1% in England and Wales (Nicholl *et al*., 1995), 10.1% in Canada (McCutchen et al. 1997) and 18% in the Netherlands (van der Sluis *et al*. 2003). The most comprehensive British study to date (in terms of sample size and survey design) concluded that in England and Wales there are 29.7 million SRIs per year. While the survey confirmed that the highest incidence of injury occurs in 'vigorous sports' that allow contact (such as football), almost 45% of SRIs are defined as 'intrinsic' (i.e. entailing no outside object or person) and frequently derive from exercise activities such as running, gym use and 'keep fit'. Twenty years ago the estimated direct cost of treating sports injuries was £420 million per year, or approximately 45% of the estimated cost of physical inactivity in the UK a decade later. Kisser and Bauer's (2012) analysis of Swiss and Austrian data similarly found that the *current* health costs of treating SRIs accounted for 41% and 53% respectively of the estimated potential savings of *society-wide* compliance to PAHP policies. It is therefore likely that if everybody exercised as PAHP policies recommend, the cost of treating SRIs would exceed the estimated healthcare savings.

The degree to which epidemiological studies fundamentally problematise the underlying assumptions of neoliberal PAHP policies (that physical activity entails no, or minimal, health costs), appears inversely proportional to the impact of this data on policy. PAHP documents, both in their text and visual images, instruct citizens to engage in a range of sports without taking into account the epidemiologically established injury risks. Indicatively, the UK PA guidelines for adults aged 19-24 identify the physical consequences of taking part in vigorous intensity PA (e.g. organised sport) compared to moderate intensity PA (e.g. brisk walking) as being that individuals will 'get warmer and breathe much harder and their hearts [will] beat more rapidly, making it more difficult to carry on a conversation' (DoH, 2011, p.1). They make no reference to the heightened statistical probability of incurring physical injury. *Exercise is Medicine* literature replicates these trends in either

explicitly ignoring or significantly underplaying the prevalence of SRI. For instance injury is described as the product of individual actions caused, e.g., by 'trying to go too far, too fast, too frequently' (Jonas 2009a, p. 11). Consequently injury is deemed largely avoidable and the recommendations for avoiding 'intrinsic injuries' (to muscles, tendons, etc.) 'is simply not to overdo it' while injuries caused by external events can be avoided by being 'aware of your surroundings' (Phillips et al. 2009a, p. 96).[i] This portrayal is a far cry from the relatively consistent pattern exhibited in the literature reviewed above which clearly indicates that, in a range of Western cultural settings, injuries are a significant and structural feature of exercise (and especially sport). It is, however, wholly consistent with the neoliberal positioning of health as a consequence of judicious, individual investment choices (Kenny 2015).

Finally it should be noted that the significance of these omissions is amplified by the effect such injuries have for the *generation* of 'inactive' populations. For example, research has demonstrated a low return to physical activity and sport following injury (between 40 and 65%) particularly amongst lower socio-economic groups (Andrew et al., 2014). Similarly, according to Sport England (2012) data, 42% of those who had ceased sports participation due to SRI stated that they were 'not at all' or 'not very' likely to participate in their sport again. Disregard of the epidemiology of sport injury within PAHP policy has direct implications for the success and sustainability of *Exercise is Medicine* policies.

Method

This paper utilises a qualitative methodology and an emergent research design derived from an interpretivist paradigmatic position and a transactional and constructionist epistemology whereby the interpretation of data will be based on hermeneutical techniques and grounded within the subjective experiences of participants' social worlds (Guba and Lincoln, 1994;

Denzin and Lincoln, 2000). In line with this approach, semi-structured interviews were utilised as the primary data collection tool.

Following appropriate ethical approval, 20 participants were recruited using purposive sampling techniques (Creswell, 2013). Sampling began with contacting local sports clubs with details of the study, placing study details on clubs' Facebook pages and/or club noticeboards. Further recruitment was made by visiting sports club on training evenings to speak directly to interested participants and via snowball sampling. The goal was to recruit study participants who engaged in a range of sport and/or exercise activities on a regular basis. Therefore, the study inclusion criteria were open-ended in regard to socio-economic background (occupation), gender, type of injury and sport played, but not age (with all participants required to be 18 years or older).

Whilst participants were spread across a variety of ages (20-56) and relatively evenly split between females and males (11:9), the sample exhibited a middle-class bias with many possessing higher education qualifications. This was perhaps not wholly unexpected given that the link between physical activity and socio-economic status is well-documented (Eime et al., 2015). Although the sample incorporates participants from a wide range of sports, notable absences include football and racket sports. This stemmed from a lack of co-operation by some volunteer sport clubs to respond to initial approaches, perhaps due to their administrative limitations. The demographic characteristics of interviewees are illustrated in Table 1.

[Table 1 about here]

Semi-structured interviews took place at mutually convenient locations with the majority taking place at participants' homes or coffee shops. Prior to interview, participants were given a further explanation of the study and made aware of their rights to anonymity

and withdrawal from the study, before signing a consent form. Interviews lasted from 20 to 120 minutes and were audio recorded to provide a professionally transcribed written (verbatim) record for analysis. Field notes were taken during the interview in order to adopt a reflexive positioning or self-awareness of interview dynamics in addition to noting interesting issues that emerged during the interview process (Finlay and Gough, 2003; Thomas and Magilvy, 2011).

Post-transcription, interview data was subject to a thematic analysis. Thematic analysis makes inferences from interview data to the contexts of their use based on a coding procedure that identifies dominant thematic categories from narrative units (Krippendorff, 2013). The coding procedure employed in the analysis of the interview data was based on thematic distinctions deductively informed by the research context. The process included the researchers' careful reading of the interview transcripts and a familiarisation the interview data. A dialogue then led to the development of broad conceptual tags under which thematic distinctions or units could be coded (Elo and Kyngäs, 2008). Following this, each interview transcript was taken individually and thematic distinctions were identified that typified salient meanings illustrative of the conceptual tags. Once complete, the thematic distinctions identified across all the interview transcripts were collected and ordered into a table format that displayed the data of each theme in one instance. This allowed for cross-checking of interview data in order to compare the representation of themes across the interview data. An independent colleague was utilised as a 'critical friend' in the analysis process to encourage theoretical reflection and consider alternative perspectives and interpretation of the salient meanings. The dominant themes relevant to the analysis presented here the (neoliberal) imperative of the social productivity of sport, and the injury experience (including sub-categories identified as social and economic costs of injury). Pseudonyms are used to report the data.

Findings

Sport, PA and the Productive Self

The extent to which the 'politicisation' of PAHP discourse in the context of neoliberalism serves to (re-)position the responsibility for health as an issue for the self is particularly evident in the motivations for participation in sport/PA that individuals described. As illustrated in PAHP policy narratives, there is a clear health ideology that both reflects the 'medicalisation' of PA, typically through the normative equation of health and weight (Campos, 2004, Gard and Wright, 2005), and centrally positions sport/PA as a 'solution'. For PAHP advocates, this narrative provides a governance strategy that 'piggybacks' on the more widely established discursive construction of unhealthy bodies as socially problematic - risky and immoral, framing them as 'fat', 'lazy and not willing to commit to change' (Murray, 2005, p.154-155) - by adding 'inactive' to the nexus of problematic behaviours. For instance, Daniel claimed: 'I do enjoy the physical side of things and keeping myself trim. It helps to keep the pounds off and things like that. I keep myself motivated rather than being a couch potato at home'.

The view that sport/PA participation is determined by personal motivation (and therefore the self) and the comparative categorisation of non-active individuals as inherently lazy and by extension immoral (insinuated via the pejorative use of 'couch potato'), illustrates the extent neoliberal health governance permeates the consciousness of the physically active. Specifically, Daniel's claim illustrates inactivity as an issue of personal responsibility (Foucault, 1988) which becomes of tangible social distinction through the apparently self-controlled, 'trim', socially valued body. Through the sport-health ideology (the idea that sports participation is unequivocally health-promoting; see Waddington and

Murphy, 1998), PAHP policy explicitly endorses sport/PA as the 'true, permitted, and desirable' health choice (Rose, 1996, p.153), and cajoles the population with promises of an improved self that concomitantly gains 'huge social and economic benefits' (Cabinet Office, 2014). This includes, not simply a focus on body aesthetics, but the projection of 'increased energy levels', 'workplace productivity' and reduced absence from work (PHE, 2014). This form of 'self-care' promoted through the neoliberal logic of enhanced productivity reflected in PAHP rhetoric fundamentally shapes individuals' relationships with sport/PA. For instance, Mike, who participates in road cycling and goes to a gym revealed this in his reference to the broader impact of these activities, referring to participation as 'training' and inferring a progressive improvement of the self:

> I feel good when I train and I think there is a strong link between good physical health and good mental health and I feel that benefits me in lots of ways really, especially with general life and work. (Mike)

The perceived holistic benefit is echoed in Amy's view of her relationship with sport/PA:

> I'm the type of person that … always likes being on the go anyway and I always find like … doing exercise especially going for a run, I just think it makes you feel really good, you feel like you've achieved something in the day. I was a member at the gym and I'd go early in the morning, you know, have a really good workout in the morning and then have a shower and crack on with the day and feel like, you know, more set up for the day. (Amy)

Explicit in interviewees' accounts were both the striving for achievable (but illusive) goals, and the explicit comparison with work practices and cultures:

> I'm used to setting goals in my exercise…I set myself goals for work as well… and I just wasn't as focused and wasn't as productive [with injury] because I couldn't do the activities I normally do. (Jessica)

Thus forms of 'self-care' shape sport/PA into a moral social practice that reflects the individual's enterprising corporeal conduct. For this group of individuals, participation in sporting activities, particularly those that can provide a form of quantification (e.g. running), becomes a benchmark for 'achievement', the attainment of which creates the expectation of future improvement and facilitates resilience when such promise is (inevitably) unfulfilled.

However, the problem with implicating the uptake of sport/PA in such forms of self-care is that it leads to a misalignment between individual's motivations for participation in sport and the health goals of PAHP. For instance, the desire to 'achieve' and 'better oneself', illustrated in Mike and Amy's claims (below), makes the personal competition, quantification or measurement of progress inherent to sport highly attractive relative to the largely invisible health benefits of physical activity. Unlike sport and exercise, 'using stairs and walking' (Cabinet Office, 2014), involves little opportunity for tangible productivity or visible return on one's health investments. At most, it provides distantly deferred evidence of a neoliberal 'self-care'. Accounts given by participants across the sample were reflective of this:

> But it's all competitive so we're all like I can beat you and all that sort of stuff… it's about actually finishing it, being able to compete and finish it. I am competitive so deep down I'm thinking I don't want to let myself down. (Lucy)

> I can start building it up [running] but it takes me a while. For example if I use the 5K Park Run as a benchmark, my best ever time was 26 minutes. Last month I got it down to 28 after being out [injured]. (Mark)

> It's challenging and that's what I kind of like it….you have to be able to do 25 laps in 5 minutes and it gives you something to aim for (Danielle)

Another participant described buying a cycle machine to use in the home during busy periods at work, allowing him to keep, what he perceived as, a 'measurement' of his fitness through the quantification of power output the cycle machine provided. John described

> The reason my wife let me get the turbo (cycle) in the front room was so I could and actually start seeing the increase in power…and I have to say that was so satisfying to actually just see the output.

Where sport and exercise provided competition or a demonstrable challenge/improvement it facilitated a means to social distinction. Claims to 'not letting myself down' reflect the importance of the entrepreneurial action bound up in a 'self-care' that drives the focus of social success. The converse could be found in comments which relayed the guilt of being 'sat around for a couple of days … [when I] didn't actually feel ill' (Thomas), and turning into 'a bit of a slob' as enforced inactivity leads to weight gain (Laura). This positioning of failure alongside personal accountability is central to participants' motivations, strengthening and constituting the importance of this neoliberal practice (Lemke, 2001). This is evident in Mark's explicit reference to the importance of the means to measure performance and thus to provide a 'benchmark' against which future self-improvement can be assessed.

The attitudes interviewees expressed towards health illustrate the extent PAHP policy embodies 'self-care', the mobilisation of neoliberal logics, and the ubiquity of these ideas in both wider health discourse and the *Exercise is Medicine* narrative in particular. Because sport, rather than PA, aligns with ideologies of productivity, the 'responsible' neoliberal citizen is particularly likely to be predisposed towards the former. It may be that awareness of

this continually shapes the sport/PA conflation in PAHP, but adherence to this approach may simply and unthinkingly stem from and perpetuate the longstanding sport-health ideology (Waddington and Murphy, 1998). Either way, this reproduction provides a much wider social and economic problem for individuals receptive to PAHP discourse because the risk of sustaining physical injury is considerably higher in more vigorous, physically exhausting or competitive activities; This leads us directly to consider the 'side-effects' experienced when people use exercise in this medicinal sense.

Sport, PA and Injury Experience

The propensity for sport/PA to lead to injury outcomes, and the far-reaching consequences of such injuries, were widely illustrated in the interview data. The most common social 'cost' incurred by participants was the experience of what has broadly been termed biographical disruption (Bury 1982), manifest in the inability to maintain the neoliberal identity of a good, moral and healthy citizen in the face of physical injury. With social and moral distinction of this identity logically dependent on the negative categorisation of other, non-active, 'unhealthy' bodies, any *in*ability to exercise impacts far beyond the immediate manifestations of discomfort, disturbance and social dislocation. Mike revealed the self-perpetuating decline manifest in the experience of the injured self in the context of the neoliberal health imperative:

> It's frustrating… you find yourself in a little bit of a spiral, I mean in the evenings I slump on the sofa, you know I feel rubbish… I have put weight on. You eat all wrong and as I say, I think getting into a little bit of a spiral. (Mike)

This was further illustrated by Sophie whose injury restricted her from exercising, resulting in a decreased sense of self-worth and governance over her physical appearance.

> I became far snappier with everybody because I couldn't channel anything. I was going from exercising four times a week to absolutely nothing. I was quite upset that I was so restricted. It did affect a lot of things like being conscious of my body. (Sophie)

Consequently interviewees had frequently attempted to continue exercising even when they were aware that to do so entailed heightened risk of further injury. For instance Sarah, who had been running for many years, recalled, 'the week before I tore my calf muscle I felt a bit of pain in my knee … but as usual, that's what I normally do if I felt pain or aching and you just don't think about it much - "just keep going" - and I did'. For many the seasonal nature of their activities temporally compressed competitive (i.e. meaningful, productive) opportunities and led enforced cessation to be inconceivable. The most desperate (those who couldn't simply carrying on by taking painkillers, etc.), were proactive in prognosis- if not treatment-shopping, extolling various healthcare workers to sanction their intentions to resume sports participation, or getting cortisol injections as a 'short term fix' to enable them to 'continue to play'. Re-injury or injury exacerbation was therefore a frequent occurrence: 'Every week I seem to tweak or just tear my hamstring … [I'm having] constant problems with my legs that are just getting nowhere fast at the moment' (Mark). But when doctors and other healthcare providers recommended taking twelve weeks off from sport, the response was that this was 'just not practical' (James).

For individuals who suffer with more severe or chronic injury, the social and economic costs can feed into each other in problematic ways and a 'spiral' of behaviours can often result in more extensive problems to the individuals' social well-being. In these instances, individuals described the emotional labour of sports injury. For example, Matthew sustained a musculoskeletal injury while playing cricket that led to complications including deep vein thrombosis: 'I just generally feel down and depressed. I'm an anxious person, but I was quite anxious because I wasn't sure what was going to happen ... I was in hospital every

third day … it takes over your life' (Matthew). In cases such as Matthew's, where injury is initially acute but becomes chronic when compounded by medical complications, identity disruption is exacerbated by the inability to take part in any form of exercise. Often these forms of injury lead to disability for a relatively brief period of time, prolonged physical restrictions for some time after, and an even longer period of diminished participation in sport. Daniel epitomised the sense of desperation this could create.

> It was immense frustration the fact that I couldn't do even the simple things to build the strength up to keep ticking over. If you can't do one sport, fine. You could aqua jog if you can't run. Do you know what I mean? There's ways of doing something but to find I couldn't even flipping bike, I couldn't run, I couldn't swim. I couldn't really do anything. (Daniel)

Sustaining sports injury not only has damaging effects for the well-being of those who are heavily invested in the neoliberal quest for health but leaves individuals' physically incapable of sport participation and, epidemiological data show, disinterested in alternative forms of exercise (Andrew et al., 2014). This was reflected by the participants physically constrained from taking part in sport/PA through injury actively choosing to withdraw from exercise entirely. For example, Sophie said, 'I have ditched going to the gym with my ankle, I couldn't get the most out of the membership, so I kind of stopped it'. Injury entailed both physical impairment and a decline in health-promoting activity.

Moreover, and ironically given the centrality of reduced work absenteeism to the rationale of PAHP (e.g. PHE, 2014), sports injury could have a major impact on both attendance and performance at work. Injury sustained from sport not only resulted in physical limitations and social costs, but economic costs due to workplace absence or reduced

workplace productivity. The physical demands of her occupation left it impossible for Lisa to work for a significant period of time:

> I had 12 weeks off work and I only had started this job … in November. I couldn't get there as I couldn't drive for 3 months so it was really affecting work. When I went back the problem was being able to stand on it during the day, they [work] said if you work half an hour and sit down for some time that's fine… its eight hours a day on your feet so you can't really get round it. (Lisa)

While the economic costs incurred due to injury could be significant - for example, Lena's injury led her to have 10 months off work during which she, 'didn't even get 6 months' pay. I think I got four of five week's pay and it was statutory after that, so it was tough financially' - perhaps most significant of all was the way these injuries impacted upon the *identity* of those receptive to the neoliberal PAHP agenda. For Matthew injury posed a threat to the career to which he was already heavily invested. The occupational health testing to which he was subject as an airline pilot left him facing a potentially catastrophic economic cost: 'It's been a nightmare the whole thing. I lost my medical and at one stage at Christmas I wasn't going to get my medical back ever and that would have been my career gone as an airline pilot' (Matthew).

While the physical conditions that interviewees experienced could rarely be classified as catastrophic (perhaps only for Edward and Lucy who fractured vertebrae and a pelvis respectively), across the sample the sense that sports injury entailed a potentially permanent withdrawal from exercise and a fundamental re-assessment of the self:

> I just think I'm limited, I just, I need to accept I will be limited forever and still feel pain on it. (Lisa)

> It affects absolutely everything and there's a chance that it will never be 100%. I can't go for a run, I can't ever cycle. (James)

> At the moment I can't see a point in the future where I'm going to be 100% fit. I think I'm always going to carry an injury at least like somewhere in my legs ... I just don't see any light at the end of the tunnel. (Daniel)

The depth of feeling and the lack of alternatives or coping strategies stemmed from the broader neoliberal health imperative. These individuals, injured as a result of sport participation, were emotionally invested, actively aligned and experientially engaged with the symbolically privileged identity of the healthy citizen venerated in PAHP. Just as the benefits of sport, exercise and PA are portrayed as holistically impacting on 'general life and work', so injury has a holistically negative impact on life per se. As Marcus put it, 'I just lost everything – I lost the routine and didn't really know what to do with myself'. Sophie described her experience of trying to maintain elements of her previous exercise schedule by attending training sessions as normal, but doing her rehabilitative exercises rather than participating in full:

> Everyone was amazing. All the girls were super supportive … [but] whilst I was doing my little exercises and they were playing volleyball just next to me … I had thoughts such as 'I hate you all' and 'you don't know how lucky you are because you can jump, and you can run, and you can move' … all that loneliness, it was all in my head. (Sophie)

Injury was experienced as particularly traumatic because it (frequently) necessarily rendered a previously achieved social worth fundamentally unobtainable, potentially forever and the social networks in which exercisers had previously been enmeshed, made this apparent 'failure' abundantly clear. The depth of feeling was not simply indicative of enforced changes

to leisure time – or as Martha stated 'Everything I enjoy doing I just couldn't do' – but because one's prescription for a healthy life had been withdrawn.

Conclusion

The social costs of injury are highly problematic for both contemporary governments and the wider social commitment to the *Exercise is Medicine* paradigm. Whilst sport-PA spectrum is viewed as a means to reduce healthcare costs and boost workplace productivity, the questionable conflation of activities, and the ideological commitment to the view that all sport is unequivocally health-promoting, means that the potential for and experiences of individuals to subsequently encounter injuries are almost entirely absent in the broader PAHP narrative. Moreover, such neoliberal forms of self-care lead individuals to value a type of productivity (self-care) which can better be achieved through participation in sport and exercise (which can be quantified and measured) rather than PA, but in turn places individuals at a much greater risk of physical, sometimes chronic, injury. Consequently, the neoliberal rationale that positions sport/PA participation as having significant economic benefits remains unproven as the evidence base: a) foregrounds the benefits whilst obscuring the economic, social and emotional costs; and b) ignores the self-defeating role of PAHP in limiting the capability of citizens to comply. The resultant exercise cessation and workplace absenteeism represent unintended outcomes – the side effects of the 'exercise pill' - which makes such policies ultimately unsustainable. If the entire population adhered to PAHP messages, and sport and exercise participation grew proportionately, the cost of treating sports injuries could potentially (likely even) exceed predicted savings.

A political solution is, as Pollock and Kirkwood (2008) suggest, that PAHP should be accompanied by a parallel strategy for the prevention and treatment of injury, which is

sensitive to social structural differences in the distribution of the burden of illness/injury. Two factors in particular inhibit this. First, neoliberal governments tend to be disinterested in injuries that impact on sports participation because such injuries do not translate to an observable and easily measurable cost (Finch, 2012). Second, and perhaps more significantly, such policies are fundamentally at odds with the neoliberal logic that underpins PAHP. If the ideological underpinnings of *Exercise is Medicine* is to shift the costs of healthcare from the state to the individual and (re-)locate the responsibility for health in the realms of self-management, strategies for dealing with sports injuries are not only counter-productive, but are predicated on the (unpalatable) acknowledgement that the demands for healthcare are contoured by social structural factors which lie beyond the control of the individual. In the meantime, a relatively invisible but significant and potentially expanding population remain questioning their social worth due to the unintended and largely obscured health-harming consequences of responsibly aligning behaviour with the neoliberal health imperative.

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[i] The exception is in relation to cardiac complications and in this respect a large proportion of potential exercisers are deemed to require medical or fitness professional supervision.