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Evidence of the impact of sport policies on physical activity and sport participation: a systematic mixed studies review

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ABSTRACT

Participation in sport contributes to increased physical activity (PA) levels. Increasing PA is a public health concern due to its recognised impact on health outcomes. International policy actors such as the Council of Europe, the World Health Organisation (WHO) and the International Society for Physical Activity and Health (ISPAH) have recommended that 'sport for all' is promoted both for public health and as a basic right. This review aims to evaluate sport related policies aimed at maximising the opportunity to participate in PA and sporting activity. Six electronic databases were systematically searched for quantitative, qualitative and review studies investigating how public sport policy affects PA outcomes. The scientific literature was screened according to predetermined eligibility criteria. Following study selection and data extraction, the quality was assessed using modified versions of existing quality assessment tools. Results were synthesised and the context in which policy actions occurred analysed using the Context and Implementation of Complex Interventions (CICI) framework. Database searches identified 3705 unique articles. A total of 93 full-text articles were assessed, with 22 meeting our inclusion criteria. Seven unique 'policy actions' were identified and were categorised into the 'policy areas' Facilities, Financial, Collaboration and Exhortation. Policy actions to promote PA and sport participation have demonstrated qualified success but there is limited evidence of success in engaging hard to reach groups. Therefore, policymakers utilising sport to increase PA should treat it as a complementary intervention alongside other policy actions based on a systems perspective.

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1. Introduction

Physical activity (PA) is associated with numerous positive health outcomes (World Health Organisation 2018). PA has been linked to reduced all-cause mortality (Ekelund *et al*. 2016, Strain

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et al. 2020), improve mental health outcomes (Biddle and Asare 2011, McDowell *et al*. 2018, 2019) and immune response (Chastin *et al*. 2021). The most important effect physical activity has on public health, however, is in reducing the burden of non-communicable diseases (Lee *et al*. 2012, Wahid *et al*. 2016, WHO, 2018). In recognition of the health benefits of PA, the World Health Organisation (WHO) has published guidelines specifying the minimum levels of PA required to realise health benefits (WHO, 2020). The WHO also notes that large numbers of people are not achieving these threshold levels of PA, in essence they are inactive (World Health Organisation 2018).

The relationship between sport participation and physical activity (PA) is supported by research (Eime *et al*. 2015, Hebert *et al*. 2015, Kokko *et al*. 2019). Stamm and Lambrecht (2005) state that sport is the most important contributor to overall physical activity levels in Switzerland. Further, a lack of sport related physical activity is often not compensated for by physical activity in other domains of life (Stamm and Lambrecht, 2005).

Since improved health is evidentially connected to the agenda of maximising state welfare (Heinemann 2005), it is not surprising that sport participation has received considerable attention as a public health intervention. The human rights organisation the Council of Europe recommended its member states pursue so-called 'Sport for all' policies (Council of Europe 1976) and in 2007 the European Commission issued a white paper on sport declaring a need to utilise the potential of sports to promote health-enhancing physical activity (HEPA) (European Commission 2007). The World Health Organisation (WHO) Regional Office for Europe published documents that recognise investment in sports (WHO 2011), while the International Society for Physical Activity and Health (ISPAH) identified sport and recreation for all as a policy priority in its *Eight Investments That Work for Physical Activity* (ISPAH 2020). In 2018, the WHO published the Global Action Plan on Physical Activity (GAPPA, WHO 2018) which articulated an ambitious goal of achieving a 15% relative reduction in the prevalence of inactivity by 2030 and linked the promotion of PA to the UN's Sustainable Development Goals (SDGs).

Despite the commitments made by European countries (Heinemann 2005) to pursue the Council of Europe's vision of 'Sport for all', there is evidence to suggest that increases in population levels of sport participation have stagnated since the mid-1990s in most European countries (van Bottenburg *et al*. 2005). The evidence shows that the proportion of the European population who never participate in sporting activity has increased from approximately 40% (van Bottenburg *et al*. 2005) to approximately 46% (European Commission 2018). Furthermore, studies of engagement with sport reveal persistent patterns of non-participation. Two patterns that are well recognised are that females are consistently reported to participate in sport at lower rates than males and that participation is consistently shown to decline with age (van Bottenburg *et al*. 2005, Downward 2007, Hovemann and Wicker 2009). Research on determinants of sport participation demonstrates that these patterns are not universal; age does not significantly predict participation in all European countries and females in some contexts participate significantly more than men (Hovemann and Wicker 2009).

The non-universality of these patterns supports the assertion by Van Bottenburg and colleagues (2005) that age and sex inequalities in sport participation are not fixed phenomena that cannot be changed. These patterns suggest that, despite the declarations of the desirability of making sport available to all, the opportunity to participate in sport is not equally distributed in Europe. Participation is hindered by variables such as financial constraints and social structure (Strandbu *et al*. 2019).

In 2019, the Policy Evaluation Network (PEN; www.jpi-pen.eu) was established to research policies that reduce physical inactivity, sedentary behaviour and unhealthy diets. One of the objectives of PEN is to gather evidence on the effectiveness of policy actions in the eight domains identified in ISPAHs best investment document (International Society for Physical Activity and Health). This information will be brought together into a list of evidence grounded policy indicators entitled the Physical Activity Environment Policy Index (PA EPI). This tool will then be utilised to benchmark

the extent to which public policy supports an environment that is conducive to PA as part of a cross sectoral systems-based approach.

It has been stated that policy interest in sport as a means to promote PA has outstripped research interest in this topic (Mansfield and Piggin 2016, Hoekman and Scheerder 2021). This **may** lead to a situation where policies of unclear effectiveness are promoted as a means to solve the problem of inactivity. To our knowledge, no review has collated evidence about the effectiveness of public policy in promoting sport participation to influence PA behaviour using evidence from different study designs. The purpose of this paper, therefore, is to evaluate the status of the evidence base for the impact of policy on PA outcomes within the Sport for All policy domain. In order to provide information about the context within which policy actions occurred and were evaluated the Context and Implementation of Complex Interventions (CICI) framework was utilised as a tool to extract information about contextual factors interacting with the policy action. The CICI framework was developed to embed context into public health interventions and hence is suited to the task of interpreting how policy effectiveness is influenced by these factors (Pfadenhauer *et al*. 2017). The context dimension of CICI provides a typology of seven categories of contextual factor which are considered throughout this discussion section of this review: geographical, epidemiological, socio-cultural, socio-economic, ethical, political and legal. Sport was defined broadly as any recreational activity identified as such in the literature. Hence the question with which this review concerns itself is: which sport related policy actions have demonstrated impact in advancing sport and PA participation in the general population?

2. Methods

2.1 Search details

This review adhered to an adaptation of a previously published PEN protocol (PROSPERO; CRD42020156630), which builds on a review of policies to promote PA in the school setting. A formal protocol, adhering to PRISMA reporting guidelines was published (Volf *et al*. 2021). A search of six electronic databases was conducted on the 28th of August 2020: MEDLINE (Ebsco), SportDiscus, Cinahl Complete, Cochrane Library, Web of Science and Scopus. The databases were selected to identify literature from both biomedical and social science journals. Search terms expressing 'policy' related keywords were used in combination with search terms related to PA, impact and sport. Details of the full search terms utilised are presented in Table S1 (supplemental). Following the screening of studies, the database search was supplemented by searching the reference lists of all papers included in the data synthesis for further studies.

2.2 Screening process

Records retrieved by the database search were screened utilising the online software Rayyan (Ouzzani *et al*. 2016). Duplicates were removed and titles and abstracts were screened by two independent reviewers (KV and LK) and disagreements were resolved by a third reviewer (EGB). Hence, retrieved items were screened by no less than two reviewers working independently. Three reviewers (KV, LK and BC) independently conducted an appraisal of the included full texts, consulting a fourth reviewer (EGB) to resolve disagreements.

2.3 Eligibility criteria

Only academic journal articles were considered for inclusion. Studies were excluded if they were unavailable in the English language, or if they consisted of editorials or commentaries.

For the purposes of this review, the term 'general population' refers to the large number of persons who derive health benefit from increased participation in recreational sport. This includes

persons who have been identified as inactive or part of a subgroup which is identified as at risk of inactivity. It also includes persons whose level of activity is unspecified or unremarkable. Studies where the participants were described as highly proficient in sport, however, (for example: through the use of descriptors like 'athlete', 'semi-professional', or 'elite') were excluded. With regard to policy intervention, studies were excluded if there was no identifiable policy level action. Lakerveld and colleagues (2020), define policies as 'decisions, plans, and actions that are enforced by national or regional governments or their agencies (including at the local level) which may directly or indirectly achieve specific health goals within a society'. Direct policy refers to policies where the primary aim is improving the PA environment and increasing PA participation. 'Indirect' policy refers to policies where the primary aim is not to increase PA levels, but this may occur as a co-benefit of successful implementation. The practical implication of this definition of policy for this review is that, while evidence of a specific government document is not required for inclusion, the paper must include the evaluation of some action that is traceable to public bodies or organisations which are publicly owned or publicly sponsored. Weed (2016) presents a logic model for sport as a theoretically efficacious public health investment. In this model, sport participation is theorised to increase PA, which in turn is hypothesised to improve health outcomes. Hence sport participation is considered a reliable proxy for PA participation in this review. Outcome-based eligibility criteria limited inclusion to papers that reported on: changes in PA/Sport participation behaviour assessed by self-report, wearable device or observation, or change in features of the physical and social environment (e.g. facilities, equipment, programmes) hypothesised to lead directly or indirectly to changes in PA outcomes as a result of a policy intervention.

2.4 Data extraction and quality assessment

Studies included following full-text screening were subject to a data extraction process undertaken independently by KV and LK, which identified key features of the study. Data extraction was undertaken using a modified version of a data extraction form utilised in a previous study (Woods *et al*. 2021). The information identified from each paper included: study design and country in which the study took place, summary demographics of the sample used (including age and sex), policy description and issuer, evidence of impact and the timescale of study in months.

Quality was assessed for every paper included in data synthesis. The Downs and Black checklist (1998) was adopted as it can be easily adapted to assess the quality of a range of quantitative study designs. For qualitative studies, the CASP Qualitative studies checklist (Critical Appraisal Skills Programme 2019) was used to assess quality. The Mixed Methods Appraisal Tool (MMAT) (Hong *et al*. 2019) was used to assess the quality of studies using a mixed-methods design. Every included paper was assessed by at least one reviewer (KV, BC, EGB or CW). Assessment of the quality of each paper is incorporated into Table 1 (supplemental).

2.5 Data synthesis

The specific strategy for the data synthesis of quantitative studies draws upon a coding system used by Panter and Colleagues (2019) and Woods *et al*. 2021). For all quantitative studies, the policy action under study was summarised in a single sentence and codes were assigned. The codes were developed to indicate the effect and significance of the effect of a policy action on PA outcomes. The different types of codes were: positive and significant (+), negative and significant (-), non-significant (?) or no significance test was conducted (?). The number of codes provides an indication of how well-validated a policy action is, while the types of codes indicate whether the policy action was found to be effective. Policy actions were grouped into inductively generated 'policy areas' displayed in Table 1.

2.5 Interpretation of contextual factors

The seven categories of the CICI framework, as defined by Pfadenhauer and colleagues (2017), were utilised as a lens to extract data on the interactions of the contextual factors with the policy actions. Data on contextual factors identified from all the different study designs is reported in Table S4 (supplemental) and in the discussion. The contextual factors identified include the factors which sport policy actions can alter to improve the PA environment and factors that impact the effectiveness of sport policy.

3. Results

3.1 Search results

The database search identified 6,472 records, of which 3,705 were screened following the removal of duplicates. Following title and abstract and full-text screening seventeen studies from the database search were included in the final analysis. The complementary search of references yielded a further 5 studies. As part of a secondary search to retrieve eligible studies we may have missed through the database search, an additional study (Foley *et al*. 2021), was included after it was identified through a professional society website. This brought the total number of included papers to 22. The screening process is presented in Figure 1.

3.2 Study descriptors and characteristics

Amongst the included 22 papers, 10 studies were identified that used exclusively quantitative methods for analysis (Table S2.1). Eight of these studies used pre-post designs (Bullough *et al*. 2015, Kokolakakis *et al*. 2015, Verhoef *et al*. 2016, Weed 2016, Ishkineeva and Ozerova 2017, Higgerson *et al*. 2018, Ikramullah *et al*. 2018, Foley *et al*. 2021), while two used a cross-sectional design (Ståhl *et al*. 2002, Slater *et al*. 2014). No studies using randomised designs were identified.

Supplementing the quantitative papers, were three studies combining both quantitative and qualitative methods (Bolton and Martin 2013, Chen and Henry 2016, Cummins *et al*. 2018). These were also included in the quantitative synthesis displayed in Table 1.

Five studies using exclusively qualitative methods (Wang and Theodoraki 2007, Flintoff 2008, Eime and Payne 2009, Makinen *et al*. 2016, Dashper *et al*. 2019), and four review studies (Priest *et al*. 2008, Weed *et al*. 2012, 2015, Lindsey and Bacon 2016) were set aside to provide contextual information that illuminates the findings of the quantitative studies. Details of these studies are provided in table S2.3, S2.4 and S2.5.

Studies were conducted most commonly in the United Kingdom (UK), which accounted for 10 of the 13 papers in the quantitative synthesis (77%) (Bolton and Martin 2013, Bullough *et al*. 2015, Kokolakakis *et al*. 2015; Chen et al., Verhoef *et al*. 2016, Weed 2016, Cummins *et al*. 2018, Higgerson *et al*. 2018, Ikramullah *et al*. 2018). Other countries in which studies of the impact of sport policies were identified were Finland, the United States of America, Germany, and Russia. The most commonly utilised data was from visits to swimming or leisure centres and data from the Active People Survey (APS) which collected data on sport participation from 2005 and to 2016 in the UK.

3.3 Quantitative data synthesis

Seven distinct policy actions with supporting evidence were identified. These were grouped into four 'policy areas' inductively generated (Table 1). The four policy areas were 'Facilities (1 action), 'Financial' (2 actions), 'Collaboration' (2 actions) and 'Exhortation' (2 actions). The evidence for effectiveness of policy on PA outcomes is presented by 14 evidence codes distributed across the seven policy actions. The direction of effects for all studies that reported results based on quantitative data are summarised in Table 1.

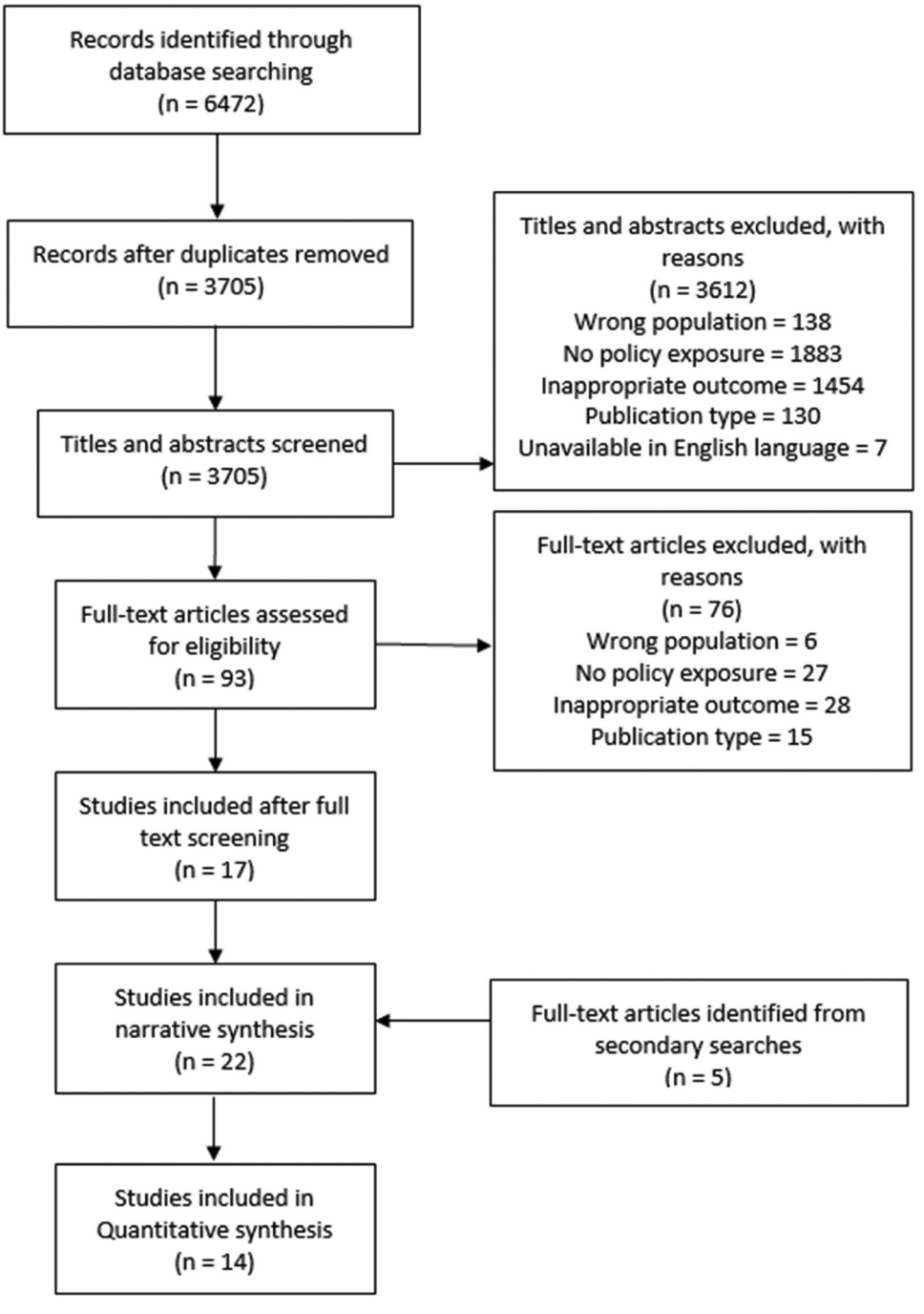

Figure 1. Flow chart.

3.3.1 *Facilities*

Within this policy area evidence for a single policy action 'build sport facilities' with four evidence codes (36%) was found. Significant positive evidence of effect was reported by three studies (Ståhl *et al*. 2002, Ishkineeva and Ozerova 2017, Cummins *et al*. 2018) and one study (Weed 2016) reported outcomes for a time series analysis without a significance test.

Table 1. Data synthesis.

			QR:
FACILITIES			
Build multipurpose sport infrastructure and facilities	+	Ishkineeva and Ozerova 2017	29%
		Stahl et al., 2002	73%
		Cummins *et al*. 2018	86%
	?	Weed 2016	56%
FINANCIAL			
Provide free access for identified target groups (under 16s and over 60s or people on benefits)	+	Higgerson *et al*. 2018	75%
	?	Bullough *et al*. 2015	33%
		Verhoef *et al*. 2016Bolton and Martin 2013	77% 59%
	-	Kokolakakis *et al*. 2015	57%
Provide a voucher programme subsidising structured PA and sports	+	Foley *et al*. 2021	
COLLABORATION			
Fund programmes that collaborate with county sports partnerships to increase sport participation in hard-to-reach groups	?	Ikramullah *et al*. 2018	43%
Promote detailed shared use agreements	+	Slater *et al*. 2014	83%
EXHORTATION			
Combine free access with outreach measures	+	Higgerson *et al*. 2018	75%
Leverage sporting mega-events to promote physical activity	?	Chen and Henry 2016	53%

Codes: + = statistically positive effect, ? = no significance test, – significantly negative effect

3.3.2 Financial

Accounting for 6 of the 14 codes (43%), the most frequently studied policies were attempts to promote sport participation by manipulating the financial barriers to entry. In this policy area, three distinct policy actions were identified, including the highly studied action 'Provide free access for identified target groups' (5 codes). The evidence for this action was equivocal with one study declaring that the intervention increased PA in hard-to-reach or disadvantaged groups (Higgerson *et al*. 2018) and one study asserting that the policy had an overall negative effect on adult participation arguing that the programme led to a displacement of regular attendees, who exhibited a greater level of engagement (Kokolakakis *et al*. 2015). A further three studies investigated the provision of free swimming opportunities without a significance test associated with changes in participation or PA behaviour. However, one study identified free swimming as a cost-effective policy action from a health system perspective due to the health benefits caused by increased PA behaviour (Verhoef *et al*. 2016). A further study declared an increase in participation from baseline (Bolton and Martin 2013) while one study found that a free-swimming initiative increased attendance by existing members but did not result in increased participation of new swimmers (Bullough *et al*. 2015).

A study by Foley and colleagues (2021) investigated the state action of providing vouchers to subsidise structured PA including sport to children and adolescents. The vouchers were valued at up to 100 Australian Dollars. The study found a significant positive effect of the intervention over 6 months but concluded that more work is required to reduce inequities in participation.

3.3.3 Collaboration

There were two policy actions within this policy area each with a single evidence code (14% of all evidence codes). One study (Ikramullah *et al*. 2018) reported on the success of the 'Sportivate' policy in the UK. The Sportivate initiative was aimed at increasing participation by funding community sports partnerships to focus on key target demographics in certain key target demographics, young people, women and girls and people with disabilities. The study demonstrated that Sportivate had immediate success in increasing participation figures but that participation outcomes started to stagnate. They conclude that there were shortcomings with regards to the programmes sustainability. Another study (Slater *et al*. 2014) investigated the policy of cities and private organisations entering into agreements with schools to use their facilities to run sports programmes. This study reported a small significant increase in PA which increased if the contract contained specific

provisions such as specifying which facilities can be utilised at which times. This area was evaluated by studies deploying a qualitative design with Flintoff (2008), Eime and Payne (2009) and Makinen and colleagues (2016) evaluating policy initiatives seeking to harness the sport sector for participation goals. A common theme of these studies was the difficulty of steering the sports clubs to emphasise priority targets of the policymakers. This area was also the subject of a review by Lindsey and Bacon (2016). The review concluded that initiatives designed to increase youth sport participation through establishing sport partnerships lacked innovation in these initiatives, and there was a lack of evidence of impact on participation.

3.3.4 Exhortation

The two actions in the policy area 'public interest in sport' each had an individual code, representing 14% of the available evidence. Chen and colleagues (2016) sought to leverage an event, the 2012 London Olympics, by implementing a competitive Workplace Challenge Programme (WCP) to increase participation in sport and PA. The WCP had a cash prize and was reported as successfully increasing sport and PA participation, though without a significance test. As noted, Higgerson and colleagues (2018) examined the combination of a free swimming initiative (mentioned above) with media outreach measures. In addition to the quantitative evidence provided, a qualitative study (Wang and Theodoraki 2007) that investigated attempts to promote sports participation through a sporting mega-event, by building sports facilities and training sports instructors reported that stakeholders were satisfied that there was an effect on sport participation. However, these efforts had drawbacks such as exacerbating an existing disparity of sport participation opportunities between urban and rural areas. Furthermore, two review studies (Weed *et al*. 2012, 2015) investigated policy actions that attempted to drive sport participation utilising the London Olympics. They concluded that hosting the Olympics can affect sport participation patterns if appropriate policy actions aimed at harnessing the events were implemented prior to the games (the so-called 'pregnancy period'). However, the studies conclude that the main effect seems to be on people who are moderately active in sport or who have been active in the past.

4. Discussion

This review identifies areas with underlying policy actions within sport settings which have been shown to increase PA or sport participation. This discussion will consider how interactions with contextual factors might have limited the effectiveness of policy actions. An important concept is the 'inequality paradox' (Allebeck 2008, Frohlich and Potvin 2008). The inequality paradox is a critique of health promotion interventions which seek to reduce health risks across the entire population (the population-based approach). According to Frohlich and Potvin (2008) persons who are at a lower risk of adverse health outcomes are better positioned to respond positively to population-based interventions. This has the adverse consequence of increasing inequality in health outcomes. Frohlich and Potvin advocate complementing population-based approaches with so-called vulnerable population approaches. Vulnerable populations are defined as 'populations that share social characteristics that put them at higher risk of risks' (Frohlich and Potvin 2008, p. 2). The size of these unintended consequences may vary between polities depending on the underlying characteristics of a population to which policy interventions are applied.

The European Commission has described the sports movement as a tool for enhancing PA with 'a greater influence than any other social movement' (European Commission 2007). However, some academic commentators have expressed scepticism about the ability of sport policy as a tool for public health amongst the segments of the population who are vulnerable to inactivity (Coalter 2013; Spaaij et al., 2015). Weed (2016), who provides the efficacy model that is assumed throughout this review, notes that while the efficacy model of sport participation is well supported, the effectiveness of sport policy is not. Weed (2016) also highlights a trend of PA increasing in the United Kingdom despite stagnant sport participation levels as second tier evidence suggesting that

prioritising policies designed to increase sport participation may be detrimental to the agenda of increasing PA levels. It is argued that policies that promote sport participation come with an opportunity cost. The view taken in this review, however, is that insufficient PA is a complex public health problem that requires many actions across many sectors. This is in line with ISPAHs recommendation to promote PA through eight different best investments as part of a systems-based approach (ISPAH). Adopting this perspective, promoting PA through sport participation should be regarded as complementary to other policy actions rather than obstructive.

A further concern is raised by the arguments of Coalter (2013) who states that participation in sport may be 'epiphenomenal'. In essence, participation in sport is contingent on structural factors that are outside of the influence of traditionally conceived sport policy, such as social class. This is supported by Spaaij and colleagues (2015) who argued that sport is a site of reproduction of social stratification. Further, as mentioned in the introduction, there is a substantial literature on social determinants of sport participation (Hartmann-Tews 2006, Downward 2007, Hovemann and Wicker 2009, Scheerder and Vos 2011). Hence, supporting participation in sport may have implications for the equity of PA outcomes.

4.1 Facility availability

The most popular action identified was to supply sport facilities. A cross sectional study by Ståhl and colleagues (2002) found that the area corresponding to the former East Germany, which pursued a policy prioritising elite athlete development, had fewer sport sites per inhabitant than countries, like Finland and West Germany, that pursued a sport for all policy. Similarly, in Russia, a cross sectional study documents a correlation between growth in sports infrastructure and participation (Ishkineeva and Ozerova 2017). These suggest that building sport facilities is an effective policy to increase participation in these formerly Eastern Bloc states.

However, Weed (2016) has argued that the policies of increasing the stock of facilities undertaken in the UK in the 1970s may have increased participation only in persons who are already interested in sport. This suggests that direct provision of sport facilities may be an ineffective, and expensive, intervention when 'latent demand' for sport infrastructure is satiated. Furthermore, this intervention will not stimulate participation in the most inactive populations. The data presented by Weed (2016) does suggest, however, that the policies of building of facilities pursued between 1977 and 1990 coincided with an increase in sport participation. Taken together, these studies suggest that the geographical context, the availability of facilities, limited sport participation opportunities, and hence PA and that public policy of building and increasing access was successful in ameliorating this factor. However, the utility of this policy is limited by the proportion of the population who display willingness to use the facilities, determined by socio cultural factors.

This is in line with other literature that suggests that broadening the range of possible activities, and including the opportunity for individualised, non-competitive or non-traditional forms of recreation, may be an effective approach (Lindsey and Bacon 2016). A second strategy identified in a review of sports initiatives in the UK was local consultation while planning the development and provision of activities (Audrey *et al*. 2012). This was identified as particularly important for targeting 'semi sporty youths, who may have a narrow range of sporting interests (Lindsey and Bacon 2016).

4.2 Financial barriers and incentives

The other policy action which was frequently cited in the literature identified in this review was reducing the financial constraints associated with sport participation. Utilising the CICI framework this action may be regarded as an attempt to use policy to reduce the socio-economic barriers to participation. The most popular action was to eliminate fees for certain target subpopulations (persons under 16 or over 65) in local authority-owned facilities and in swimming pools. Studies of the determinants of sport participation suggest that promoting swimming may be an effective way

of achieving high population levels of PA. Swimming is popular with groups who are less likely to participate in sport, for example, females and people with children who are of school age or in infancy (Downward 2007, Downward and Riordan 2007).

As detailed above, the findings from different studies of the benefits of Free Swimming Initiatives (FSIs) launched first in Wales in 2003 and then in England in 2009, are somewhat contradictory. Encouragingly, several studies indicate FSIs stimulated attendance by people who were not habitual swimmers before the introduction of the policy (Bolton and Martin 2013, Kokolakakis *et al*. 2015, Higgerson *et al*. 2018). However, Bullough and colleagues (2015) contradict the finding that uptake is primarily in new participants, arguing that the greatest impact is on 'market penetration' (frequency of swimming) rather than 'market development' (uptake by new participants), although this study received a lower quality rating than the other studies assessing the impact of FSIs.

The tentative conclusion drawn from these contradictory results is that the policy is somewhat effective in removing barriers to participation. Kokolakakis and colleagues (2015) identify elevated levels of participation in civic and cultural activities as a characteristic of the regular participants who were displaced in their study by new participants. Therefore, based on the evidence reviewed, we suggest that the policies of providing free access effectively targets socio-economic aspects of access and participation but are limited by socio-cultural factors such as self-segregation. Therefore, there is an argument for its implementation to improve equity in PA outcomes but they should be considered as part of a package of measures. There is a further caveat that increasing the frequency of participation may be more difficult than uptake.

Another intervention that utilises financial incentives is voucher programmes to incentivise sport and PA participation. This was reported as significantly effective in increasing PA in children aged four to 18 (Foley *et al*. 2021). The effect appears uniform across demographics though the authors note that children of more disadvantaged socioeconomic backgrounds were underrepresented in the cohort.

4.3 Organised sports may not hold the keys to the kingdom

Sports clubs are organisations whose core business is engaging people in sporting activity. Previous research has revealed a strong association between club membership and the odds of participating in at least mostly intensive sports and PA (Grix et al., 2013). As Heinemann (2005) argues, sports often receive public subsidies which guarantee their existence. Therefore, funding arrangements could also be utilised to support the government's welfarist goals in their activities. This review presents evidence of the effectiveness of policy actions that attempted to take advantage of this circumstance to steer sports organisation towards priority target groups. However, there is some evidence that sports clubs have limitations in their ability to promote health via increased PA.

Ikramullah and colleagues (2018) argue that to ensure sustainability of programmes like Sportivate, policymakers should consider that organisational resources and capacity might limit the deliverers ability to realise the participation outcomes demanded. The qualitative papers included in this review concur and provide greater detail on the mechanism underlying the reported difficulty steering sports organisations to target particular demographics such as young people or underrepresented groups. Broad reform of organised sports in Finland failed to achieve a shift in focus in line with the government's priorities and hence failed to substantially impact the performance targets set out by the government (Makinen *et al*. 2016). Indeed, sports federations in Finland increased their fundraising activities, reducing the contribution of public performance-based funding to their budgets. Similarly, an Australian study reports that a government-funded initiative to promote sports uptake by linking community sports clubs and schools was hampered by 'a lack of interest' by sports clubs in sending their 'overworked volunteers' to run school clinics (Eime and Payne 2009).

These findings suggest that a top-down approach where the public authority attempts to steer sports organisations in their preferred direction have not been successful due to factors relating to

power and the ability of these organisations to summon the required resources; in essence, the political context. However, providing organised sport with greater freedom to pursue its agenda may not be an effective way to achieve sport for all outcomes either. Flintoff reports issues with the development of activities by a school sport partnership that was established in the UK as it was dominated by competitive activities which have 'traditionally been viewed as "male" sports'. Furthermore, persons responsible for implementation were opposed to targeted approaches believing it was 'unfair and 'unworkable'. Flintoff notes that a feature of successful sport programmes is that participants choose to attend (Flintoff 2008). Furthermore, studies have demonstrated that sports clubs are more successful in attracting membership from higher-income families (Eime *et al*. 2013) and people from higher occupational classes (Carmichael et al., 2013). This indicates that there are socio-cultural factors influencing whether organised sports will struggle to influence hard to reach or unmotivated people.

Objections made by clubs over capacity issues and the profiles of active club members support arguments made by some commentators that the essential purpose of sports clubs is incongruous with sport for all policy goals (Coalter 2013). However, alternatives to organised sports are increasing in prominence. Studies of participation note that more flexible forms of participation outside of the membership of traditional sports organisations are becoming more common (Heinemann 2005, Deelen *et al*. 2016). The recognised trend of 'individualisation' supports the claim made by several authors who have reported that increases in participation in underrepresented groups can be driven by opportunities outside of the traditional sport sector (Theeboom *et al*. 2010, Coalter 2013). While this may increase PA, this trend implies that these groups, and the community at large, will not benefit from social opportunities that membership in organised sports can provide.

4.4 Stimulating demand

Discussion has thus far been limited to actions that may reduce the barriers to sport participation. However, Kokolakakis *et al*. (2015) point out that it is simplistic to assume that the population is inherently motivated to participate in sport and PA. Actions that have sought to stimulate desire to participate in sport and PA have frequently been centred around sports events. These events have been used as a window of opportunity to increase investment in sport. One study (Chen and Henry 2016) reports that an initiative seeking to leverage the 2012 London Olympics by promoting sports in the workplace had positive effects, while two others report increased sport participation rates (Wang and Theodoraki 2007) and reduced risk of inactivity (Cummins *et al*. 2018) following development work in anticipation of the Beijing and London Olympics respectively.

A review of the evidence for a 'demonstration effect' on sport participation from hosting the Olympics reported that an event, if properly leveraged in the period immediately prior to hosting, can inspire greater frequency of sport participation and reengagement of lapsed sport participants (Weed *et al*. 2015). However, the study cautions that such efforts are unlikely to inspire new participants to sport.

5. Limitations

There are reasons to recommend that the findings are interpreted with caution. Pawson (2006) describes policy evaluation research as a cottage industry characterised by research units who depend upon research commissions. Evidence of the effectiveness of policies to promote sport participation may therefore be dependent on what research evaluation is commissioned leading to a piecemeal body of evidence. Furthermore, research may be collected and evaluated without resulting in a scientific publication. This review, however, only considers evidence published in academic journals. Therefore, our conclusions should be considered with a recognition of the limitations of data availability. A recommendation for future research is that particular actions, such as a policy of building facilities or subsiding access to leisure facilities, are explored with reviews

utilising realist methods described by Pawson (2006). According to Pawson, realist reviews go beyond merely answering 'what works' in order to answer the more intricate question 'what works for whom under what circumstances' (Pawson 2006, p. 25). A point of difference between realist methods and traditional reviews is that realist reviews make greater use of administrative and grey literature to explore the particular circumstances of a policy or programme.

A potential second limitation is the strong representation of studies from the United Kingdom, with ten studies in the quantitative synthesis investigating the impact of policy actions in the UK during the period between 2004 and 2015. A reason so many studies originate from the UK may be that this corresponds to the period immediately before and after the hosting of the 2012 London Olympics, allegedly the first Olympics to target widespread participation (Weed *et al*. 2015). While the studies in this review report broadly positive outcomes the overall rate of participation in sport in the UK was relatively stagnant during this period (Weed 2016). This would suggest that the objective of using the Olympics to increase participation was a failure. However, it is possible that an even more important factor determining sport participation during this period was the macroeconomic policies of severe austerity which were imposed on the UK by successive governments post 2008. These policies led to reduced spending on social benefits and local authority spending on programmes similar to those described in this review (Audrey *et al*. 2012). It has been suggested that about 40% of the population are stubbornly resistant to participation in sport in the United Kingdom (Weed 2016). This figure reflects the European average for non-participation, though some countries have lower levels. It has been suggested that the class structures of a society may be a powerful contextual factor that limits what sport policy can achieve (Coalter 2013). The context of hosting the London Olympics, the period of austerity and the particular class structure of the United Kingdom are all contextual factors that limit the generalisability of the findings of this review.

6. Conclusion

The review suggests that there are policy actions that can increase sport participation. This finding is based on studies of generally moderate quality. Building sports facilities, reducing financial constraints and stimulating demand through sports events have all demonstrated qualified success. However, there is evidence that sports policies are more effective in increasing participation frequency in moderately active persons with a moderate level of inherent motivation than in stimulating participation in the least active. A theme that emerged is that while increasing the supply of sports opportunities can reduce the barriers to participation in people who are at least moderately motivated, the effectiveness of this approach will be impacted by the number of people in the population who are unmotivated to participate in sport. Furthermore, policy actions that have achieved some success in reaching less active groups, such as initiatives providing free access to certain target demographics, may have the effect of stimulating participation in some demographics while displacing others. Targeting the factors that facilitate motivation to participate in these demographics may be an effective way to increase overall sport participation. Unfortunately, the measures that have facilitated interest in participation (e.g. harnessing sports events like the Olympics) seem to be less effective in unmotivated subgroups. It has been theorised that unmotivated people do not relate to people that are presented as role models for sport participation. Studies on policy interventions that can effectively target the unmotivated are lacking thus far. A general conclusion is that there are identifiable reasons by which policies promoting traditional sports are likely to be ineffective in various demographics. It is recommended that future policy actions support participation in informal and flexible forms of recreational activity are explored as trends identified by van Bottenburg *et al*. (2005), Theeboom and colleagues (2010), Coalter (2013) and Weed (2016) indicate this may be where future gains are realised and mechanisms identified by Flintoff (2008) and Lindsay and Bacon (2016) demonstrate that these activities may have greater potential in promoting PA in groups underrepresented in competitive sports. Furthermore, it is

recommended that the sports environment is considered as a subsystem alongside other policies designed to promote PA as part of a broader systems perspective.

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