



Review

Facilitators and barriers in the collaboration between the primary care and the sport sector in order to promote physical activity: A systematic literature review

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ABSTRACT

Introduction. The aim of this review was to identify collaborative initiatives between the primary care and the sport sector in order to promote physical activity (PA), and barriers and facilitators in these initiatives.

Method. Pubmed, SportDiscus, Web of Science, and SOCindex were systematically searched for publications published between 2000 and June 2014. Publications reporting on collaboration between the primary care and the sport sector to promote PA were included. Publications reporting on non-empirical data were excluded, except for study protocols.

Results. The search process yielded 1352 publications. After selection, 40 publications were included. Twenty-eight different initiatives were divided into four forms of collaboration, and two approaches to promote PA were distinguished with different kinds of facilitators and barriers. In the referral of patients, sport professionals' lack of medical knowledge, and health professionals' lack of time, were seen as barriers. In networks to organize activities to promote PA among the community, different shared interests and different cultures were seen as barriers.

Conclusion. This review showed that performance of intersectoral collaboration and the collaboration between both sectors are still unexplored. This review provides a first step towards an insight into collaboration and factors that facilitate or hinder collaboration between these sectors.

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Contents

Introduction	461
Method	461
Search strategy	461
Collaboration	461
Primary care	461
Sport sector	461
Promote PA	461
Study selection	462
Data analysis	462
Assessment of study quality	462
Results	462
Search results	462
Characteristics of included studies	462
Collaborative initiatives between the primary care and the sport sector	462
Collaborative initiatives to refer primary care patients to sport facilities	463
Collaborative initiatives to promote PA among the community	464
Facilitators and barriers in the collaboration between the primary care and the sport sector	464
Facilitators and barriers in collaborative initiatives to refer primary care patients to sport facilities	464
Facilitators and barriers in collaborative initiatives to organize activities to promote PA among the community	465
Barriers to, and facilitators of, intersectoral collaboration	465
Discussion	466

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Study limitations	466
Conclusion	466
Conflict of interest	466
Acknowledgments	466
Appendix A.1. Overview of collaborative initiatives between primary care and sport in order to promote physical activity presented in this review.	466
Appendix A.2. Overview of barriers and facilitators in the initiatives between the primary care and the sport sector presented in this review.	466
References	477

Introduction

To address public health challenges like the increasing number of people with chronic diseases, there is a need to join forces both within the healthcare sector and between the health and other societal sectors, especially because no organisation has the resources, access, and trust relationships to address the wide range of community determinants of public health problems (Granner and Sharpe, 2004; Green et al., 2001; Koelen et al., 2009, 2012). Therefore, intersectoral collaboration – defined as people and organisations from multiple sectors working together for a common purpose – has become an increasingly popular health promotion strategy (Roussos and Fawcett, 2000). Intersectoral collaboration between the healthcare and other societal sectors is expected to have the potential to bring about changes in at least two directions. Firstly, it should lead to the improvement of health determinants and thereby the health of individuals and populations. Secondly, it is expected to increase awareness of the health implications of policy decisions and organisational practice within and among these different sectors (Green et al., 2001).

Intersectoral collaboration is challenging because it means working in a new area or setting, with new people with different backgrounds, interests, and perspectives (Granner and Sharpe, 2004; Koelen et al., 2012; Lasker et al., 2001). A health broker seems to offer the promise of improving intersectoral collaboration (Harting et al., 2011). In 2012, the Dutch Ministry of Health, Welfare, and Sport introduced neighbourhood sport coaches (in Dutch *Buurtsportcoach*) – to whom a broker role has been ascribed – to stimulate physical activity (PA) and connect the sport sector with other sectors. The sport sector covers all PA services in the neighbourhood, i.e. sport clubs, fitness centres, PA lessons at community centres. Some of these coaches, the so-called Care Sport Connectors (CSCs), are employed specifically to connect the primary care and the sport sector in order to guide primary care patients towards local sport facilities. Recent years several studies about PA promotion have been conducted in the primary care setting. Reviews provided an overview of the effect of PA or PA promotion on health outcomes (Chimen et al., 2012; Pavey et al., 2013; Semlitsch et al., 2013; Vaes et al., 2013), the effectiveness of PA promotion based in primary care (Lawlor and Hanratty, 2001; Neidrick et al., 2012; Orrow et al., 2012; Sanchez et al., 2015; Stevens et al., 2014; Vuori et al., 2013), and the perceptions of primary care providers on PA promotion (Hebert et al., 2012; Hinrichs and Brach, 2012). In addition, reviews considering intersectoral collaboration in the field of health promotion provided an overview of the effectiveness of partnerships for improving community health (Roussos and Fawcett, 2000; Zakocs and Edwards, 2006). However, no review specifically addresses intersectoral collaboration between the primary care and the sport sector. Research indicates differences between both sectors that influence collaboration, such as culture, target groups, and way of working (Casey et al., 2009a; den Hartog et al., 2014). However, an overview of barriers to, and facilitators of, this intersectoral collaboration between the primary care and the sport sector is – to our knowledge – not available. CSCs may find it useful to have an overview of initiatives and barriers and facilitators in collaborations between the primary care and the sport sector so that they can facilitate collaboration between these sectors and guide primary care patients towards local sport facilities. Therefore, the aim of this paper is to: 1) document and describe collaborative initiatives between the primary care and the sport sector to promote PA, and 2) identify barriers and facilitators in these collaborative initiatives.

Method

Search strategy

To search for literature on collaboration initiatives between the primary care and the sport sector, a literature search was conducted in Pubmed, SportDiscus, Web of Science, and SOCindex. These databases were systematically searched for original research published in English, Dutch, or German between January 2000 and June 2014. These databases were selected to cover medical and health-related literature from Pubmed and sport-related literature from SportDiscus. Web of Science and SOCindex were searched to cover more general literature about the topic of this review. The time span (2000–2014) was chosen to assess recent evidence on collaboration between the primary care and the sport sector, in particular because intersectoral collaboration has become popular as a health promotion strategy since the start of the 21st century (Roussos and Fawcett, 2000). The search strategy combined the concepts: 1) collaboration, 2) primary care, 3) sport sector, and 4) promote PA. Each of these concepts is operationalised in more detail below. The complete search strategy is shown in Table 1.

Collaboration

Because of the variety in strategies for, and definitions of, collaboration, Himmelman's (Himmelman, 2002) categorisation of collaboration and synonyms for (intersectoral) collaboration were used to operationalise the concept 'collaboration'. 'Broker' was added because of its promising role in facilitating intersectoral collaboration.

Primary care

Primary care was operationalised by using synonyms for primary care. Actors representing the primary care sector were added as search terms, as also health/lifestyle in combination with intervention/programme, because primary care professionals are often involved in the implementation of these programmes or interventions.

Sport sector

The sport sector was operationalised with synonyms for sport and combined with actors representing the sport sector.

Promote PA

Promote PA was operationalised with synonyms for the concept 'promote' and combined with synonyms for the concept 'physical activity'.

Table 1
Search strategy for the present review.

Concepts	Search
Collaboration	(collaborat* OR network* OR coordinat* OR cooperat* OR intersector* OR inter-sector* OR partnership* OR allianc* OR multisector* OR multi-sector* OR broker*)
Primary care	("primary care" OR "public health" OR "health sector" OR "general pract*" OR GP OR physician OR dietician OR physiotherapist OR "family pract*" OR "health professional*" OR "health intervention*" OR "health program*" OR "lifestyle program*" OR "lifestyle intervention*")
Sport sector	((sport OR sports OR physical activity or exercise) AND (sector OR club* OR organi?ation* OR professional* OR facility OR facilities OR provider* OR organized OR non-organized OR counsellor* OR service*))
Promote physical activity	((promot* OR improv* OR stimulat* OR increas*) AND ("physical activity" OR sport OR sports OR exercise OR "active lifestyle"))
Other	AND Language = (English OR Dutch OR German) AND Document Type = NOT(review OR editorial OR conference abstracts OR book OR theoretical arguments) AND NOT(developing countries)

The Boolean operators 'OR' and 'AND' were used to separate synonyms and link the concept and the different search term groups.

Study selection

In the first selection phase, titles and abstracts of the identified publications were reviewed by the first author (KL). A random selection of 11% of all titles and abstracts was reviewed by a second reviewer (AW), resulting in 89.2% agreement between the two reviewers. In the second phase, full texts of potentially relevant publications were independently reviewed by two reviewers (KL and AW or ES). Any disagreements were resolved by discussion to reach consensus between the reviewers, or by consulting a third reviewer (AW or ES). For included publications, backward citations (reference lists) and forward citations (via Pubmed and Google Scholar) were checked for additional relevant publications.

Publications were included when: they contained empirical data (1) on collaboration between primary care and the sport sector in order to promote PA and (2) were written in English, Dutch, or German and published between 2000 and June 2014.

1. Books, reviews, theoretical arguments, editorials, conference abstracts were excluded. However, study protocols were included, because they report on existing plans for collaboration initiatives.
2. Studies originating in developing countries were excluded since there might be social, cultural, and organisational differences from Western countries and therefore these studies would not be suitable for this review.

Data analysis

After the study selection, the full texts of the included studies were examined by two independent researchers (KL and AW) to analyse the collaborative initiative between primary care and sport (type of collaboration, partners, target group, structure or programme after referral, aim) and to identify barriers and facilitators in these initiatives.

Assessment of study quality

The quality of included publications reporting on barriers and facilitators in the collaboration between the primary care and the sport sector were assessed independently by three researchers (KL, AW, ES) on the basis of Boulton et al.'s (Boulton et al., 1996) criteria, as shown in Table 2. These criteria focus on aspects for good practices in sampling, data collection, and analysis in qualitative studies and are therefore suitable for the assessment of study quality. In total, 18 plusses could be assigned. Studies with fewer than 7 plusses were considered as low quality, studies with 7–12 plusses as medium quality, and studies with 13 or more plusses as high quality.

Results

Search results

After the removal of duplicates, the search process yielded 1352 potentially relevant publications. During the first selection phase, 1221 publications were excluded because they did not meet the inclusion criteria. Full texts of 131 publications were assessed, leading to the inclusion of 25 publications. Fifteen additional publications were included via forward and backward citation tracking. The final sample consists of 40 original publications describing a collaborative initiative between the primary care and the sport sector in order to promote PA. Fig. 1 is a flow chart representation of the literature selection process.

Characteristics of included studies

Of the 40 studies included in this review, 9 were conducted in Canada and 8 in the USA. Nineteen studies were performed in Europe, of which 12 in the UK, 5 in the Netherlands, 1 in Sweden, and 1 in Germany. Three studies were conducted in Australia and one in Colombia. Four studies in this review are study protocols, 14 used quantitative methods, 14 qualitative methods, and eight, mixed methods to study the collaborative initiative. Ten studies aimed to study the effect of the collaborative initiative on participants' PA behaviour, eight

Table 2
Quality assessment of qualitative studies.

Introduction
1. Is the aim of the study clear? (i.e. clearly formulated at the beginning and consistent with the way data were collected and analysed)
2. Is a qualitative approach appropriate to the aim? (i.e. aim conceived in terms of investigating 'what' or 'how')
Sample and generalisability
3. Are the criteria for selecting the sample clearly described? (i.e. exclusion and inclusion criteria specified)
4. Is the method of recruitment clear? (i.e. an account of from where, by whom, and how those potentially included in the sample were contacted)
5. Are the characteristics of the sample adequately described? (i.e. age, gender, ethnicity, social class, and other relevant demographic characteristics)
6. Is the final sample adequate and appropriate? (i.e. large and diverse enough for the aims of the study to be fulfilled)
Methods of data collection
7. Is the fieldwork adequately described? (i.e. an account of where data were collected, by whom, in what context)
8. Are methods of data collection adequately described? (i.e. an account of the ways the data were elicited, and the type and range of questions)
9. Are the data collected systematically? (i.e. evidence of consistent use of interview guide or rationale for ceasing questioning)
10. Are the data collected sensitively? (i.e. evidence of flexible approach, responsiveness to participants' agendas, follow-up questions, and adequate time given)
11. Are careful records of data kept? (i.e. audio/video recordings and fieldnotes which can be independently inspected)
Data analysis
12. Are the data analysis processes adequately described? (i.e. an account of how data were processed and interpreted; of how concepts, themes, or categories were developed)
13. Is evidence provided in support of the analysis? (i.e. excerpts from original data, summaries of examples, or numerical data presented as evidence for interpretation made)
14. Is sufficient original material presented? (i.e. original material not just a token illustration)
15. Is there evidence that supporting material is representative? (i.e. excerpts are named or numbered and sources given)
16. Is there evidence of efforts to establish validity? (i.e. evidence that accounts of the phenomenon reflect it accurately)
17. Is there evidence of efforts to establish reliability? (i.e. evidence that accounts of the phenomenon are consistent over time or between researchers)
Discussion
18. Is the study set in a broader context? (i.e. compared with other studies in terms of methods, findings, or implications; related to a wider literature and body of knowledge)

Source: based on Boulton et al. (Boulton et al., 1996)

aimed to study the experiences of professionals involved in the initiative, seven aimed to study network structures and functions, four evaluated both process and effects of the initiative, four studied participants' experiences, and three did not mention their aim.

Collaborative initiatives between the primary care and the sport sector

Of the 40 studies included in this review, 20 publications reported on 20 different initiatives between the primary care and the sport sector. The other 20 publications reported on eight different initiatives: the BeweegKuur programme (n = 4), PAC (n = 4), VicHealth (n = 2), collaboration between a Community Health Centre and a YWCA (n = 2), SESPAN (n = 2), CN-Diabetes (n = 2), PARS (n = 2), and NERS (n =

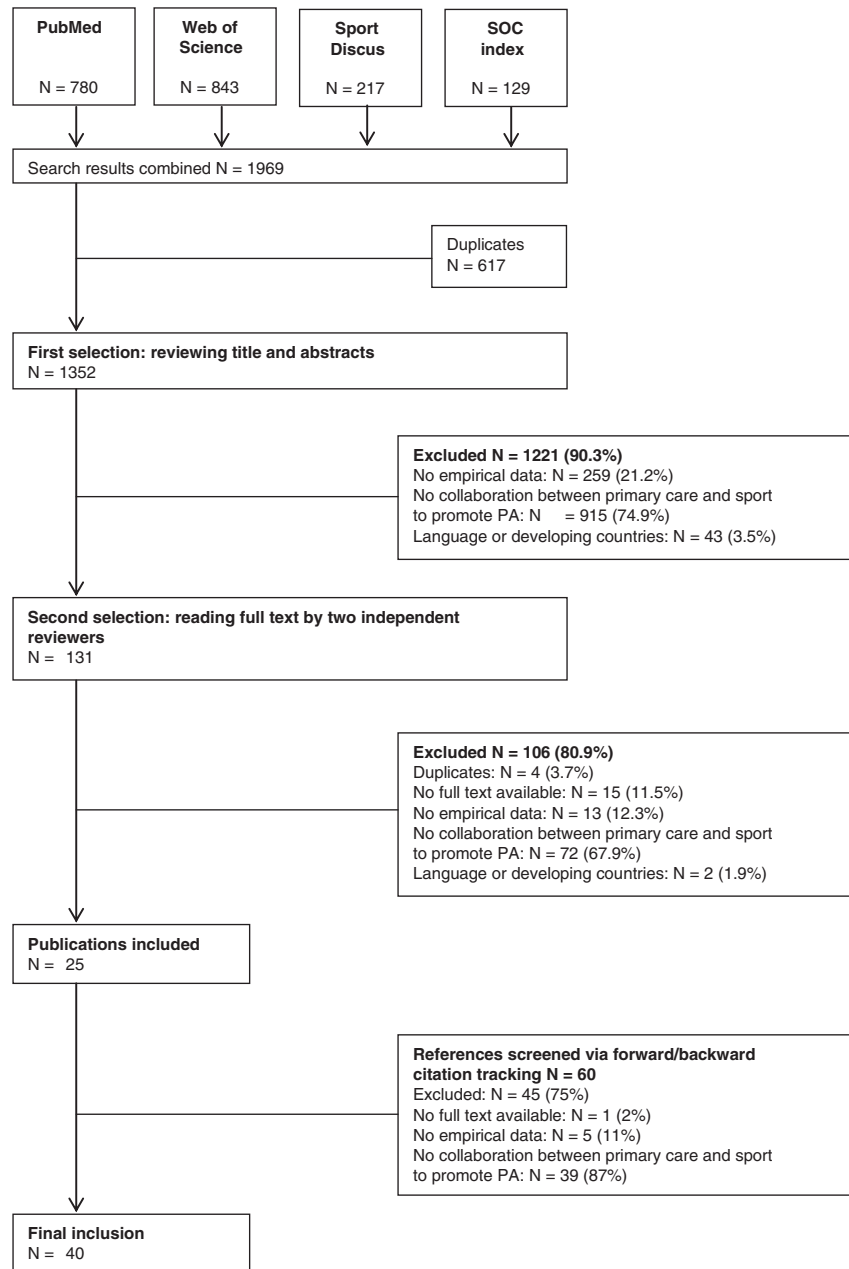


Fig. 1. Flow chart of the literature selection process.

2). These 28 initiatives can be divided into four different forms of collaboration between the two sectors. Thirteen initiatives used a referral scheme, ten organised a network among different community partners with representatives of the primary care and the sport sector, four consisted of a multidisciplinary primary care team with a connection to the sport sector, and two developed a partnership between a community health centre and a sport facility. One initiative, the BeweegKuur programme, had two different forms of collaboration. Helmink et al. (Helmink et al., 2010, 2012) and Berendsen et al. (Berendsen et al., 2011) reported on the multidisciplinary primary care team carrying out the BeweegKuur programme and were allocated to that group. Den Hartog et al. (den Hartog et al., 2014) reported on regional and local BeweegKuur alliances and therefore this publication was allocated to the network group. Although all these four forms of collaborative initiatives aim to promote PA, two different settings and approaches can be distinguished: a primary care setting in which collaboration was set up to refer and guide specifically primary care patients, and a community

setting in which collaboration was set up to organize PA activities more in general. In the primary care setting, primary care patients were referred to sport facilities through referral schemes, a partnership between a health centre and a sport facility, or a multidisciplinary primary care team. In the community setting, activities to promote PA were organized by a community network of primary care and sport professionals. Appendix A.1 provides a complete overview of all 28 collaborative initiatives.

Collaborative initiatives to refer primary care patients to sport facilities

Referral schemes. Nine of the 13 referral schemes were implemented in the United Kingdom, two in Canada, one in the Netherlands, and one in Sweden. In all these initiatives, primary care professionals made the referral. In four initiatives, a GP made the referral (Foley et al., 2000; Harrison et al., 2005; Taylor and Fox, 2005; Trinh et al., 2012), and, in one initiative, a physiotherapist made the referral (Wiles et al., 2008).

Four initiatives used referral cards to refer patients to a local leisure centre or sport and recreation organisations (Foley et al., 2000; Taylor and Fox, 2005; Trinh et al., 2012; Hardcastle and Taylor, 2001). In two initiatives, a leisure centre staff member contacted the patient after referral (Harrison et al., 2005; Annesi et al., 2012), and in three other initiatives patients were contacted by a member of the initiative (James et al., 2008; Schmidt et al., 2008; Wormald et al., 2006). Six initiatives did not explicitly mention the method of referral.

The program after referral differed in the initiatives. In nine initiatives, patients were given an exercise program at the sport facility (Foley et al., 2000; Taylor and Fox, 2005; Hardcastle and Taylor, 2001; Annesi et al., 2012; James et al., 2008; Crone et al., 2008; Lee et al., 2009; Moore et al., 2011; Murphy et al., 2010). One of these initiatives used a standardised exercise support protocol (Annesi et al., 2012). In four initiatives, prescribed PA could be either self-monitored, organised activities, or a consultation with a sport advisor for referral to exercise groups or information (Trinh et al., 2012; Schmidt et al., 2008; Wormald et al., 2006; Kallings et al., 2008), and in one initiative patients received a subsidised leisure pass (Harrison et al., 2005). One initiative did not mention the programme after referral (Wiles et al., 2008).

The focus in all 13 referral schemes was on promoting PA among sedentary patients or patients who could benefit from PA. Four initiatives had a more specific focus: to effect a change in lifestyle, or to achieve 30 minutes of moderate PA at least five days per week, (Foley et al., 2000; Schmidt et al., 2008; Wormald et al., 2006; Murphy et al., 2010). All 13 referral schemes referred primary care patients, but five initiatives had a more specific target group: patients from deprived neighbourhoods or patients with risk factors for certain diseases, like cardiovascular disease, diabetes, anxiety, or depression (Wiles et al., 2008; Annesi et al., 2012; Schmidt et al., 2008; Moore et al., 2011; Murphy et al., 2010).

Multidisciplinary primary care team with a connection to the sport sector. Four initiatives consisted of a multidisciplinary primary care team with a connection to the sport sector. Two multidisciplinary primary care teams were organised in Canada, one in the Netherlands, and one in Germany. Three initiatives consisted of a multidisciplinary care team carrying out the programme, establishing links with local sport facilities or referring patients to these local sport facilities (Helmink et al., 2010, 2012; Berendsen et al., 2011; De Civita and Dasgupta, 2007; Hofreuter-Gatgens et al., 2011; Nasmith et al., 2004). These multidisciplinary care teams consisted always of a GP, a physiotherapist, and a dietitian. These three initiatives targeted specific groups: patients with diabetes (De Civita and Dasgupta, 2007; Nasmith et al., 2004), primary care patients (Helmink et al., 2010, 2012; Berendsen et al., 2011), and residents aged 60 years or older who were not in need of care and were living independently (Hofreuter-Gatgens et al., 2011). The other initiative integrated a PA counsellor in the primary care team (Fortier et al., 2007, 2011a, 2011b; O'Sullivan et al., 2010). Patients received intensive autonomy-supportive counselling over a three-month period by the PA counsellor.

Partnership between a community health centre and a sport facility. Two initiatives, both in the USA, organised a formal partnership between a community health centre and a local sport facility, with the aim of improving access to an exercise programme for low-income patients (Boyd et al., 2006; Candib et al., 2008; Cashman et al., 2012). In these initiatives, patients received free membership of the YMCA after referral by community health centre professionals.

Collaborative initiatives to promote PA among the community

Network among community partners including the primary care and the sport sector. Ten initiatives organised a network for the organisation of activities to promote PA among the community. Four of these networks were organised in the USA. The other networks were organised in Canada (n = 1), Australia (n = 2), United Kingdom (n = 1), the

Netherlands (n = 1), and Colombia (n = 1). All these 10 networks consisted of different community-based, non-profit, and public organisations (Casey et al., 2009a, 2009b; den Hartog et al., 2014; Baker et al., 2012; Balcazar et al., 2012; Barnes et al., 2010; Cheadle et al., 2010a, 2010b; de Groot et al., 2010; Evans and Sleap, 2013; Litt et al., 2013; Meisel et al., 2014). The 10 initiatives aimed to promote PA among different target groups. Three had a more specific aim: two initiatives aimed to make it easier for people to be active in their daily routines and to make healthy choices more available (Baker et al., 2012; Barnes et al., 2010), and one initiative aimed to reduce cardio-vascular disease (CVD) risk factors among Hispanics (Balcazar et al., 2012). Nine networks targeted the whole community, and four of these networks had a more specific target group in the community: Hispanics (Balcazar et al., 2012), low-income groups (Casey et al., 2009a, 2009b), children (de Groot et al., 2010), primary care patients (den Hartog et al., 2014), and older adults (Cheadle et al., 2010a, 2010b).

Facilitators and barriers in the collaboration between the primary care and the sport sector

Of the 40 publications included in this review, 13 reported facilitators and/or barriers in 12 different collaborative initiatives. Seven studies in these publications were assessed as high quality and six studies as medium quality (Appendix A.2).

Seven publications reported on barriers and/or facilitators specific to the collaboration between the primary care and the sport sector: four reported on facilitators/barriers in the referral of primary care patients to local sport facilities (Foley et al., 2000; Trinh et al., 2012; Wiles et al., 2008; Cashman et al., 2012), and three reported on facilitators/barriers in the promotion of PA through a community network (Casey et al., 2009a, 2009b; den Hartog et al., 2014). The other six publications reported on barriers and/or facilitators not specific to the collaboration between the primary care and the sport sector but to intersectoral collaboration in general (De Civita and Dasgupta, 2007; Baker et al., 2012; Cheadle et al., 2010a; de Groot et al., 2010; Evans and Sleap, 2013; Meisel et al., 2014). Table 3 gives an overview of facilitators and barriers in the different forms of collaboration and approaches, and Appendix A.2 provides a complete overview of facilitators and barriers in the collaborative initiatives.

Facilitators and barriers in collaborative initiatives to refer primary care patients to sport facilities

Facilitators for the referral of primary care patients to local sport facilities were reported in two publications on a referral scheme (Foley et al., 2000; Trinh et al., 2012) and in one publication on a partnership between a health centre and a sport facility (Cashman et al., 2012). Trinh et al. (Trinh et al., 2012) and Cashman et al. (Cashman et al., 2012) reported that collaboration provided physicians with a better understanding and awareness of the services and support available to their patients. The referral scheme also laid the groundwork for a relationship between physicians and sport organisations. Foley et al. (Foley et al., 2000) and Cashman et al. (Cashman et al., 2012) reported that the referral process provided a welfarist and commercial benefit for leisure. Both publications reported funding (Foley et al., 2000) or remuneration (Trinh et al., 2012) as a priority or a key influence on ongoing implementation.

Barriers to the referral of primary care patients to local sport facilities were reported in three publications on a referral scheme (Foley et al., 2000; Trinh et al., 2012; Wiles et al., 2008) and in one publication on a partnership between a health centre and sport facility (Cashman et al., 2012). Three publications identified lack of communication as a barrier in the collaboration (Foley et al., 2000; Trinh et al., 2012; Cashman et al., 2012). Physicians mentioned the lack of feedback from the sport or leisure professionals on their patients' progress. Another barrier was leisure or sport professionals' limited medical knowledge (Foley et al., 2000; Wiles et al., 2008). Therefore, physicians and physiotherapists were 'unsure' and 'apprehensive' of the PA programme for the patients

Table 3

Overview of facilitators and barriers specified for the four forms of collaboration between the primary care and the sport sector.

Form of collaboration	Approach and setting	Facilitators	Barriers
Referral schemes (Foley et al., 2000; Trinh et al., 2012; Wiles et al., 2008)	Setting: primary care Approach: referral of primary care patients	<ul style="list-style-type: none"> - Better understanding and awareness of service - Groundwork for relationship - Commercial benefit - Funding 	<ul style="list-style-type: none"> - Lack of communication - Lack of feedback from sport professionals on patients' progression - Sport professionals' limited medical knowledge - Health professionals' lack of time
Network of community partners (Casey et al., 2009a, 2009b; den Hartog et al., 2014; Baker et al., 2012; Cheadle et al., 2010a, 2010b; Evans and Sleep, 2013; Litt et al., 2013)	Setting: community Approach: organisation of activities to promote physical activity among the community	<ul style="list-style-type: none"> - Short communication lines - Clear roles and responsibilities - Funding - Time - Capacity of organisation - Shared interests - Trust - Engagement of key stakeholders - Partnership agreement - Commitment - Visibility of results for partners - Consistent meeting attendance - Diverse partners - Engagement of more than one person from a sport organisation (key leaders) and professional organisation (reduce impact of staff turnover) 	<ul style="list-style-type: none"> - Lack of communication - Unclear roles and responsibilities - Uncertainty about funding - Health professionals' lack of time - Lack of agency capacity - Differences in shared interests of the primary care (interest in the programme) and the sport sector (increased club membership) - Staff turnover - Lack of leadership skills - Fixed protocol - Different cultures (preferred meeting time and target groups)
Multidisciplinary primary care team (De Civita and Dasgupta, 2007)	Setting: primary care Approach: referral of primary care patients	<ul style="list-style-type: none"> - Communication - Funding 	<ul style="list-style-type: none"> - Recognised need and importance - Positive effects on patients
Partnership (Cashman et al., 2012)	Setting: primary care Approach: referral of primary care patients	<ul style="list-style-type: none"> - Mutual and complementary missions of both organisations - Cultural shift in how physical activity is viewed - Burnishing of the sport facility's public image 	<ul style="list-style-type: none"> - Overcrowding - Inadequate feedback about patients

and 'uncomfortable' with the leisure or fitness professionals. Also, physicians' and physiotherapists' lack of time was identified as a barrier that caused problems for physicians to implement the interventions. Barriers to the partnership between the health centre and sport facility resulted mostly from the success of the partnership. The high number of patient referrals led to overcrowding, which resulted in reducing the number of referred patients who could use the facility.

Facilitators and barriers in collaborative initiatives to organize activities to promote PA among the community

Three publications reported on facilitators/barriers in the promotion of PA through a community network with representatives of the primary care and the sport sector (Casey et al., 2009a, 2009b; den Hartog et al., 2014). Trust and shared interests among members (Casey et al., 2009b), having enough time to develop trust among members (den Hartog et al., 2014), funding (Casey et al., 2009b), formalisation of the partnership agreement (Casey et al., 2009a), and the engagement of key stakeholders (Casey et al., 2009a) were seen as facilitating factors for partnership formation. Short communication lines and communicating roles and responsibilities (den Hartog et al., 2014; Casey et al., 2009b), the organisation's capacity to participate and develop programmes, the organisation's commitment, engagement of more than one person from a sport organisation (key leaders that influence the strategic direction of the sports club), professional organisation (reduce the impact of staff turnover), and visibility of results for the partners (den Hartog et al., 2014; Casey et al., 2009b) were seen as facilitating factors for the partnership function.

The barriers identified in publications on networks among different community partners to promote PA were mainly the inverse of the facilitators mentioned above. So, a lack of communication, unclear roles and responsibilities, staff turnover in professional organisations (Casey et al., 2009b), lack of agency capacity (Casey et al., 2009b), lack of leadership (Casey et al., 2009b), and uncertainty about funding (den Hartog et al., 2014) were mentioned as barriers in the collaboration between the primary care and the sport sector.

Some of the barriers were caused by differences in shared interests and culture in both sectors (Casey et al., 2009a, 2009b; den Hartog et al., 2014). Differences between the shared interest of professional organisations (interest in the programme) and that of volunteer groups (increased club memberships) (Casey et al., 2009b), and different cultures in the primary care and the sport sector (preferred meeting time and target groups) (den Hartog et al., 2014) led to difficulties in engaging sport organisations in the partnership (Casey et al., 2009a, 2009b; den Hartog et al., 2014). Sport organisations did not always recognise the benefits of the partnership (Casey et al., 2009a, 2009b) or were not familiar with the types of participant in the intervention programme (obese people, often in combination with low socio-economic status) (den Hartog et al., 2014). In addition, health professionals' lack of time to establish partnerships (Casey et al., 2009a) or to refer patients (den Hartog et al., 2014) hindered the collaboration.

Barriers to, and facilitators of, intersectoral collaboration

Six publications reported on barriers and/or facilitators without specifically addressing these in relation to the collaboration between the primary care and the sport sector. However, the facilitators and barriers identified in these publications largely resembled facilitators and barriers found for the collaboration between the primary care and the sport sector. In addition, factors identified as barriers or facilitators were often the inverse of the facilitators or barriers. So, recruiting diverse partners and engaging key stakeholders (Baker et al., 2012; de Groot et al., 2010; Meisel et al., 2014), time to build relationships, shared interest among partners, consistent meeting attendance, leadership skills (Baker et al., 2012), the involvement of more than one person from the organisations in the partnership (Baker et al., 2012), communication (De Civita and Dasgupta, 2007; Baker et al., 2012; Meisel et al., 2014), funding (Baker et al., 2012; de Groot et al., 2010), clarity about roles and responsibilities (Baker et al., 2012; de Groot et al., 2010), and building upon an existing structure (De Civita and Dasgupta, 2007) were identified as factors that facilitated the development of these collaborative initiatives, or whose absence hindered it.

Discussion

This review has shown that collaboration between the primary care and the sport sector, and the performance of these collaborative initiatives, are still unexplored. Most publications reported on the effects of PA promotion on patients' health status or PA behaviour. Of the 40 publications, only 13 mentioned facilitators and barriers, of which nine specifically aimed to study partnership-related processes. In addition, one of these publications (den Hartog et al., 2014) made use of a framework for intersectoral collaboration, Koelen et al.'s (Koelen et al., 2012) HALL framework, to identify factors that hinder or facilitate the success of alliances. These findings are consistent with two other reviews considering intersectoral collaboration, which also noted a lack of empirical research evaluating the functioning and effectiveness of partnerships (Roussos and Fawcett, 2000; Zakocs and Edwards, 2006) and the failure to use theoretical frameworks (Zakocs and Edwards, 2006).

Despite the limited number of studies on partnership-related processes in the collaboration between the primary care and the sport sector, this review has identified facilitators and barriers specific to such collaboration, alongside facilitators and barriers for intersectoral collaboration in general. The facilitators and barriers specific to the collaboration between the primary care and the sport sector differed in the two approaches to promote PA identified in this review; this can be explained by differences in the structure of the collaborative initiatives.

The initiatives focusing on the referral of primary care patients can be characterised as a coordination; this means that organisations or professionals modify their activities so that together they can provide better services and make these services more user friendly (Himmelman, 2002). In these initiatives, professionals work in their own field in order to provide a PA programme for primary care patients. This form of collaboration can also be characterised as multidisciplinary, whereby different disciplines work independently on different aspects of a project (Choi and Pak, 2006). Therefore, in these initiatives, facilitators and barriers relating to their joint services were identified, such as: a better understanding and awareness among health professionals about PA, sport professionals' limited medical knowledge and their failure to provide feedback to health professionals, and health professionals' lack of time.

The initiatives focusing on the organization of activities to promote PA through community networks can be characterised as (intersectoral) collaboration, in which organisations share resources, alter activities, and enhance their capacity for mutual benefit and to achieve a common purpose (Himmelman, 2002). In these networks, professionals work together in order to develop or implement programmes for PA promotion. This form of collaboration can also be characterised as interdisciplinary, whereby different disciplines work together on the same project (Choi and Pak, 2006). Therefore, professionals in these networks are dealing with differences in both sectors' shared interest (interest in the programme or increased club membership) and cultures (target groups and meeting time).

The identified general facilitators of intersectoral collaboration, such as communication, clarity about roles and responsibilities, agency capacity, leadership skills, and trust, were often the inverse of the barriers and are mostly similar to other studies on intersectoral collaboration (Koelen et al., 2012; Roussos and Fawcett, 2000; Zakocs and Edwards, 2006). These factors are inherent in intersectoral collaboration because this means working in a new area with partners with different interests and backgrounds (Granner and Sharpe, 2004; Koelen et al., 2012; Lasker et al., 2001). Therefore, it is not surprising that in collaborative initiatives between the primary care and the sport sector these general factors for intersectoral collaboration were also identified.

This review is a first step towards an insight into collaboration between the primary care and the sport sector and the factors that facilitate or hinder collaboration between them. This is valuable information, especially for professionals deployed to facilitate collaboration between these two sectors, like the CSC. For example, it is useful to know that

health professionals need to receive adequate feedback on patients' progress or that more than one person from a sport organisation should be engaged in the collaboration. However, there is need for more studies focusing on partnership-related processes between the primary care and the sport sector. The evaluation of intersectoral collaboration and the use of frameworks for intersectoral collaboration to assess prerequisites in partnerships are important because focusing on more intermediate outcomes enhances the functioning of a partnership by helping to identify and provide feedback on what is (and is not) working (Roussos and Fawcett, 2000). Consequently, this can contribute to the success of the partnership, because many partnerships do not survive their first year or remain in the development phase of plans or of the implementation of interventions (Lasker et al., 2001; Kreuter et al., 2000).

To study the effectiveness of the different collaborative initiatives on stimulating PA was not the aim of this review, but some included studies reported on the effectiveness. These studies mentioned an improvement on different outcomes. Some studies reported on an increased number of PA activities organised (Cheadle et al., 2010a, 2010b), other studies reported on an increased level of PA behaviour (Harrison et al., 2005; Trinh et al., 2012; Annesi et al., 2012; James et al., 2008; Wormald et al., 2006; Kallings et al., 2008; Fortier et al., 2011a; Balcazar et al., 2012), and others on improved health outcomes (Taylor and Fox, 2005; Annesi et al., 2012; Wormald et al., 2006; Lee et al., 2009; Boyd et al., 2006; Candib et al., 2008). However, due to the different measuring methods, target groups, and different outcomes it is not possible to relate the outcomes to the different forms of collaboration. Other studies are necessary to study which of these different collaborative initiatives are effective for increasing PA.

Study limitations

Although the literature was systematically searched, it is possible that relevant studies were not found or included. Publications for which no full text was available were excluded from the search. In addition, only publications that described very clearly the partners in the collaborative initiative could be included. Many publications did not mention the professions of the partners in the collaborative initiative, thereby making it hard to ascertain whether professionals from the primary care and the sport sector were involved. In particular, publications reporting about networks often do not mention the type of partner. Another limitation has to do with the study quality of the included publications. Although all publications were assessed as medium or high quality, some of the medium quality studies scored low on data collection method (De Civita and Dasgupta, 2007; Cheadle et al., 2010a). These publications in comparison with other studies did not describe clearly the processes of data collection and analysis, and therefore the validity and reliability of the results of these publications was difficult to determine.

Conclusion

Collaboration between the primary care and the sport sector is unexplored. This review provides a first insight into factors that facilitate or hinder collaboration between these sectors. However, there is need for more studies focusing on partnership-related outcomes between the primary care and the sport sector.

Conflict of interest

The authors declare there is no conflict of interest.

Acknowledgments

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Appendix A.1. Overview of collaborative initiatives between primary care and sport in order to promote physical activity presented in this review.

Author, year, country	Study design, method, aim	Collaboration initiatives between the primary care and sport sector
Annesi et al. [2012] Canada	Longitudinal study: questionnaire among 92 obese or overweight adults at baseline, 12 weeks, and 24 weeks Aim: report the effects of a six-month application of the Coach Approach	The Coach Approach intervention <ul style="list-style-type: none"> - Type of collaboration: referral scheme - Referral of patients by medical professionals - Target group: patients with obesity along with cardiovascular disease, diabetes, or renal disease - Programme after referral: wellness leader administered the Coach Approach exercise support protocol, a standardised treatment of six-monthly one-on-one sessions between a wellness specialist and participant. Exercise modalities chosen by the participant - Aim: not mentioned
Baker et al. [2012] USA	Cross-sectional study, mixed-methods evaluation (key informant interviews, focus groups, and surveys) Aim: compare and contrast 25 partnerships with regard to partnership structures and functions	Active Living by Design (ALBD) <ul style="list-style-type: none"> - Type of collaboration: network among community partners - Partners: several types of partners were represented across the community partnership initiatives, including health, schools, urban design, park and recreation, walking/biking clubs, etc. - Structure: three community partnerships models emerged: utilitarian, lead agency, and collaboration - Target group: community - Aim: make it easier for people to be active in their daily routines through policy changes, physical projects, and other supporting efforts
Balcazar et al. [2012] USA–Mexico border	Cross-sectional study: six-week pilot among 37 participants for HEART phase 2. Eighteen participants completed the HEART questionnaire. Ten participants participated in focus groups Aim: not mentioned	Health Education Awareness Research Team (HEART) <ul style="list-style-type: none"> - Type of collaboration: network among community partners - Partners: community Health Academy and Leadership Council, YWCA, the Parks and Recreation Department, council members, and Mexican American community members - Structure: YWCA promoters conducted the activities of the Mi Corazón, Mi Comunidad (MiCMiC [My Heart, My Community]) programme - Target group: Hispanics - Aim: reduce CVD risk factors among Hispanics and engage the community in an environmental restructuring initiative focusing on nutrition and exercise
Barnes et al. [2010] Canada	Cross-sectional study, survey among 34 organisations (response rate 91%) Aim: whole network analysis to understand the network structure and the types of linkages among partners	Health Promotion Network (HPN) <ul style="list-style-type: none"> - Type of collaboration: network among community partners - Partners: 34 organisations are included in the HPN. These organisations are community-based, non-profit (local cycling club, YMCA), and public organisations (regional health unite, school boards) - Structure: two fulltime staff members (one coordinator and one clerical) were responsible for supporting the network - Target group: community - Aim: develop environmental support and policies to make healthy choices for community members more readily available
Berendsen et al. [2011] The Netherlands	Study protocol Aim: evaluate the effectiveness and cost-effectiveness of the 'supervised exercise programme' versus the less intensively supervised 'start-up exercise programme'	The BeweegKuur <ul style="list-style-type: none"> - Type of collaboration: multidisciplinary team with a connection to sport - Structure: multidisciplinary team consists of a general practitioner, a lifestyle advisor, a physiotherapist, and a dietician. The lifestyle advisor has the key role in this team and offers wide-ranging lifestyle counselling. The physiotherapist provides coaching for physical activity to enable participants to transfer to local exercise facilities - Target group: primary care patients - Aim: improve physical activity and dietary behaviour and thereby decrease health risk
Boyd et al. [2006] USA	Longitudinal study: characteristics and clinical variables were taken and assessed quarterly over a 12-month period among 48 participants Aim: not mentioned	Triad Exercise Partnership <ul style="list-style-type: none"> - Type of collaboration: partnership between Siouxland Community Health Centre (SCHC) and the YMCA. - Structure: providers from the SCHC refer patients to the YMCA. Patients receive a free three-month YMCA membership (after three months a reduced membership fee) - Target group: low-income patients - Aim: improve low-income patients' access to an exercise programme
Candib et al. [2008] USA	Cross-sectional study of 1060 adult patients over a 24-month period Aim: not mentioned	Collaboration between a community health centre and a local YWCA <ul style="list-style-type: none"> - Type of collaboration: partnership between a community health centre and a YWCA

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Appendix A.1 (continued)

Author, year, country	Study design, method, aim	Collaboration initiatives between the primary care and sport sector
Cashman et al. [2012] USA	Multiple case study: interviews with nine staff members of the partnership (YWCA) and 19 health professionals from the health centre Aim: describe the partnership, identify challenges, and specify lessons learned	<ul style="list-style-type: none"> - Structure: the community health centre referred patients to a YWCA. The YWCA delivered an introductory tour, and patients could immediately attend group exercise classes and use the swimming pool - Target group: low-income patients - Aim: open access for patient exercise <p>Collaboration between a community health centre and a local YWCA</p> <ul style="list-style-type: none"> - Type of collaboration: partnership between a community health centre and a YWCA - Structure: the community health centre referred patients to a YWCA. The YWCA provided access for patient to use the YWCA for physical activity at no charge to the patient - Target group: low-income patients - Aim: promote health among a low-income population by allowing community health centre patients to use the YWCA for physical activity at no charge to the patient
Casey et al., 2009b Australia	Multiple case study: interviews with 22 partnership members of eight partnerships Aim: gain a better understanding of the development of partnerships to establish sport and recreation programmes	<p>The Victorian Health Promotion Foundation (VicHealth)</p> <ul style="list-style-type: none"> - Type of collaboration: network among community partners - Partners: community health, community sport, schools, State Sporting Association, Primary Care Partnership - Structure: programme manager and programme officer - Target group: low-income persons - Aim: overcome long-term barriers to physical activity participation
Casey et al., 2009a Australia	Cross-sectional study: interviews with 22 partnerships members and document analysis of eight partnerships Aim: investigate the partnership-related processes and capacity-building strategies	<p>The Victorian Health Promotion Foundation (VicHealth)</p> <ul style="list-style-type: none"> - Type of collaboration: network among community partners - Partners: community health, community sport, schools, State Sporting Association, Primary Care Partnership - Structure: programme manager and programme officer - Target group: low-income persons - Aim: increase community-level participation in sports and recreation by a grant scheme for people who were not currently active and on low incomes
Cheadle et al., 2010a USA	Longitudinal study: interviews with community stakeholders, programme logs, and counts of programme participation at mid-point and at the end of the project Aim: evaluate SESpan and formulate lessons learned during implementation	<p>The Southeast Senior Physical Activity Network (SESPAN)</p> <ul style="list-style-type: none"> - Type of collaboration: network among community partners - Partners: Seattle Department of Parks and recreation, senior centres, senior housing, community coalitions, healthcare providers - Structure: a community-organising strategy, involving hiring a half-time community organiser to develop partnerships and network among a variety of community-based organisations (CBOs), groups, and institutions - Target group: older adults - Aim: promote physical activity among older adults in SE Seattle
Cheadle et al., 2010b USA	Longitudinal study, mixed methods: programme logs, key informant interviews with community partners, participant observation, survey-based measures Aim: assess the impact of SEpan and provide formative information for programme improvement	<p>The Southeast Senior Physical Activity Network (SESPAN)</p> <ul style="list-style-type: none"> - Type of collaboration: network among community partners - Partners: Seattle Department of Parks and recreation, senior centres, senior housing, community coalitions, healthcare providers - Structure: a community-organising strategy, involving hiring a half-time community organiser to develop partnerships and network among a variety of community-based organisations (CBOs), groups, and institutions - Target group: older adults - Aim: promote physical activity among older adults in SE Seattle
Crone et al., 2008 United Kingdom	Longitudinal study: survey among 2901 referred patients between 2002 and 2003 Aim: compare initial progression, uptake, and completion among patients referred on the basis of a mental health condition and those referred on the basis of physical health conditions	<p>Physical Activity Referral Schemes (PARS)</p> <ul style="list-style-type: none"> - Type of collaboration: referral scheme - Referral by health professionals to a leisure provider - Target group: patients - Programme after referral: programme of physical activity under the supervision of qualified exercise professionals. Exercise programmes were typically gym-based, but could include swimming, circuit training, or exercise-to-music classes - Aim: not mentioned
De Civita and Dasgupta, 2007 Canada	Cross-sectional study: re-examination of the actual reported experiences of a specific diabetes management pilot Aim: describe and underscore the utility of Diffusion of Innovations Theory in identifying and targeting possible challenges to the successful adaption and sustainability of an innovative diabetes management strategy	<p>Côte-des-Neiges Diabetes Pilot Project (CN-Diabetes)</p> <ul style="list-style-type: none"> - Type of collaboration: multidisciplinary team with a connection to sport - Structure: the multidisciplinary diabetes management team consists of a coordinator, a community organiser, two nurses, a dietician, a foot-care technician, a social worker, and an exercise consultant. CN-Diabetes established links within the community by offering group exercise sessions and walking groups - Target group: patients with diabetes

Appendix A.1 (continued)

Author, year, country	Study design, method, aim	Collaboration initiatives between the primary care and sport sector
De Groot et al. [2010] Australia	Cross-sectional study: mixed methods: document analysis, interviews with 16 key informants, a Community Capacity Index Aim: determine whether the capacity of the community was increased after Romp & Chomp	<ul style="list-style-type: none"> - Aim: coordinate diabetes care in conjunction with individual physicians working at clinics within the CN area of Montreal <p>Romp & Chomp</p> <ul style="list-style-type: none"> - Type of collaboration: network among community partners - Partners: Barwon Health, CoGG, Geelong Kindergarten Association, Leisure Networks, Department of Human Services (DHS), Deakin University, Bellarine Community Health, Dental Health Services Victoria, and Kids-‘Go for your life’ - Structure: management committee of stakeholders oversaw the implementation of the action plan and assisted the project coordinators - Target group: children aged 0–5 years - Aim: increase the capacity of the Geelong community to promote healthy eating and active play and to achieve healthy weight in under 5 s
Den Hartog et al. [2014] The Netherlands	Cross-sectional study: eight interviews with regional coordinators, two focus groups with regional alliances, four interviews with local coordinators, and two focus groups with local alliances Aim: explore the successes and challenges associated with collaboration processes in local BeweegKuur alliances	<p>The BeweegKuur programme</p> <ul style="list-style-type: none"> - Type of collaboration: network among community partners - Partners: regional alliances between an advisor from each regional support structure for primary healthcare (ROS), a professional from a municipal health service (MHS), and a professional from a sports organisation were initiated. Local alliances between primary care professionals like GP, practice nurse, physiotherapist and dietician - Structure: regional alliances establish local alliances, local alliances are coordinated by a lifestyle advisor - Target group: primary care patients - Aim: guide patients towards local sports facilities
Evans and Sleep [2013] United Kingdom	Cross sectional study: interviews with 20 programme stakeholders from two local authority areas Aim: provide insight into the development processes occurring in Swim for Health	<p>Swim for Health</p> <ul style="list-style-type: none"> - Type of collaboration: network among community partners - Partners: Amateur Swimming Association, Hull Leisure, East Riding of Yorkshire Council, Hull and East Riding Public Health Directorates, Hull University, Humber Sports Partnership, and Sport England - Structure: strategic planning by a steering group involving representatives of all programme stakeholders. Day-to-day running by a development officer - Target group: employees, older people, young children and their families, people with specific health needs - Aim: improve access to swimming for the whole community with a focus on four target groups
Foley et al. [2000] Scotland	Cross-sectional study: 16 interviews with health and leisure personnel Aim: explore the relationship between health and leisure departments and the impact of collaborative policy for those who deliver the service	<p>GP Exercise Referral Scheme (GPERS)</p> <ul style="list-style-type: none"> - Type of collaboration: referral scheme - Referral by GPs to a leisure facility. GPs complete a ‘exercise prescription’ by ticking a series of boxes indicating activities which the GP believes ‘would be unsuitable’ for the patient - Target group: primary care patients - Programme after referral: the patient undergoes a consultation with a member of staff to agree an exercise programme, which is reviewed on a six-week basis. - Aim: effect a ‘change in lifestyle’ where exercise/activity becomes a form of ‘positive addiction’ with the patient being ‘self-motivated’ to continue or increase participation
Fortier et al. [2007] Canada	Study protocol Aim: outline the rationale, methods, and interventions for the ongoing physical activity counselling RCT	<p>The Physical Activity Counselling (PAC) randomised control trial (RCT)</p> <ul style="list-style-type: none"> - Type of collaboration: multidisciplinary team with a connection to sport - Structure: integration of a PA counsellor in the primary healthcare team to provide intensive PA counselling <ul style="list-style-type: none"> ○ Phase I: PA counselling provided by the healthcare provider during a regular primary care visit ○ Phase II: intensive autonomy-supportive PA counselling over a three-month period by the PA counsellor - The PA counsellor has an university degree in exercise sciences with knowledge of exercise psychology, behaviour change counselling, and clinical exercise physiology, as well as certification from the Canadian Society for Exercise Physiology - Target group: primary care patients - Aim: not mentioned
Fortier et al., 2011a, 2011b Canada	RTC: 98 (82%) patients completed the trail, questionnaire, fitness test Aim: assess the incremental effects of intensive physical activity counselling from an integrated physical activity counsellor, above and beyond brief counselling from a primary care provider	<p>The Physical Activity Counselling (PAC) randomised control trial</p> <ul style="list-style-type: none"> - Type of collaboration: multidisciplinary team with a connection to sport - Structure: integration of a PA counsellor in the primary healthcare team to provide intensive PA counselling

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Appendix A.1 (continued)

Author, year, country	Study design, method, aim	Collaboration initiatives between the primary care and sport sector
Fortier et al., 2011a, 2011b Canada	RCT: questionnaire among 120 participants of the PAC trial Aim: examine whether self-determined motivation moderated the mediational influence of quantity of motivation on the relationship between the intervention and physical activity in the PAC trial	<ul style="list-style-type: none"> ○ Phase I: PA counselling provided by the healthcare provider during a regular primary care visit ○ Phase II: intensive autonomy-supportive PA counselling over a three-month period by the PA counsellor - The physical activity counsellor has a BSc in Human Kinetics, is also a Certified Fitness Consultant, and was integrated into the practice one month before the intervention began - Target group: primary care patients - Aim: not mentioned <p>The Physical Activity Counselling (PAC) randomised control trial</p> <ul style="list-style-type: none"> - Type of collaboration: multidisciplinary team with a connection to sport - Structure: integration of a PA counsellor in the primary healthcare team to provide intensive PA counselling ○ Phase I: PA counselling provided by the healthcare provider during a regular primary care visit ○ Phase II: intensive autonomy-supportive PA counselling over a three-month period by the PA counsellor - Target group: primary care patients - Aim: not mentioned
Hardcastle and Taylor, 2001 United Kingdom	Cross-sectional study: interviews with 15 newly referred older women (50–80 years of age) Aim: provide insight into the cultural and social processes experienced by older women in a GP exercise-referral programme	<p>Exercise-referral program: Hailsham, East Sussex UK</p> <ul style="list-style-type: none"> - Type of collaboration: referral scheme - Referral by a member of the primary care team to a leisure centre with a referral card indicating various physical or mental indices - Target group: sedentary patients - Programme after referral: at the leisure centre an initial appointment is arranged and further screening is undertaken, including an interview and the design of a tailored exercise programme. Exercise instructors are available to offer advice, support, and encouragement during the programme - Aim: not mentioned
Harrison et al. [2005] United Kingdom	RCT: questionnaire among 545 patients Aim: examine the effectiveness of the Exercise Referral Scheme and written information to increase levels of PA at one year, compared with written information only	<p>Exercise Referral Scheme: local authority borough in the north-west of England</p> <ul style="list-style-type: none"> - Type of collaboration: referral scheme - Referral by a primary care practitioner ERS - Target group: sedentary patients - Programme after referral: exercise officers telephoned clients to arrange a one-hour consultation at one of the leisure centres. Patients received person-specific advice and information. All clients were offered a subsidised 12-week leisure pass, providing reduced entrance fees to any of the physical activity facilities. At the end of 12 weeks, patients were invited for an exit interview - Aim: increase the amount of physical activity clients do each week.
Helminck et al. [2010] The Netherlands	Study protocol Aim: describe the rationale for the development of the BeweegKuur programme and the development and contents	<p>The BeweegKuur programme</p> <ul style="list-style-type: none"> - Type of collaboration: multidisciplinary team with a connection to sport - Structure: GP practice staff are responsible for including the patient, coaching and supervising them, and referring them to allied health professionals and/or local exercise coaches or a sports physician. The lifestyle advisor designs an individual exercise programme, which can be undertaken in the existing local exercise facilities or (temporarily) under the supervision of a specialised exercise coach or physiotherapist - Target group: primary care patients - Aim: guide participants in achieving a sustained healthy lifestyle
Helminck et al. [2012] The Netherlands	Longitudinal study: two questionnaires among healthcare professionals of 18 pilot practices (round 1: 59 healthcare providers, response rate 59.8%; round 2: 35 healthcare providers, response rate: 60.3%) Aim: study the motivation of primary care professionals to implement and continue the BeweegKuur programme	<p>The BeweegKuur programme</p> <ul style="list-style-type: none"> - Type of collaboration: multidisciplinary team with a connection to sport - Structure: the GP determines whether individuals are eligible for the intervention. Coaching and supervision are provided by a lifestyle advisor, usually the practice nurse. The lifestyle advisor designs an individual exercise programme in consultation with the patient. Patients can be referred to an independent exercise setting (local exercise facilities), a start-up exercise setting (training with a physiotherapist for one month) or a supervised exercise setting (training with a physiotherapist for three months). After training with the physiotherapist, all patients transfer to exercise at local facilities. In addition, all patients are referred to a dietician - Target group: primary care patients - Aim: guide participants in achieving a sustained healthy lifestyle

Appendix A.1 (continued)

Author, year, country	Study design, method, aim	Collaboration initiatives between the primary care and sport sector
Hofreuter et al. [2011] Germany	Cross-sectional study: questionnaire among 315 participants (response rate 68%) and interviews with the intervention team and with participants Aim: process evaluation of the intervention: reach of the target group, acceptance of the intervention, and factors influencing implementation	Active health promotion in old age/Aktive Gesundheitsförderung im Alter (AGil) <ul style="list-style-type: none"> - Type of collaboration: multidisciplinary team with a connection to sport - Structure: intervention is carried out by a physiotherapist, physician, dietician, and a social worker, and consists of existing local network structures (for example exercise groups). The intervention includes an information meeting about healthy aging. Participants also have an individual meeting with the multidisciplinary team. After the meeting, the participants receive a brief with recommendations. An integral part in the latter is community services for the implementation of physical activity - Target group: older people (>60 year) - Aim: improve physical activity, healthy nutrition, and the integration of older people who are not in need of care and are living independently without cognitive impairment into network structures
James et al. [2008] United Kingdom	Longitudinal study: data collected among 2956 patients between 2000 and 2003 Aim: examine participant and scheme characteristics in relation to access, uptake, and participation in PARS	Physical activity referral schemes (PARS) <ul style="list-style-type: none"> - Type of collaboration: referral scheme - Referral by a health professional to PARS - Target group: primary care patients - Programme after referral: participants were contacted by the PARS coordinator and offered 8–12 weeks of bi-weekly, supervised exercise sessions at local leisure facilities - Aim: not mentioned
Kallings et al., 2008 Sweden	Longitudinal study: survey among 298 patients (response rate 62%) at baseline and after six months Aim: evaluate the feasibility and effects of FaR in a routine clinical setting on physical activity level and quality of life after six months	Physical activity on prescription (FaR) <ul style="list-style-type: none"> - Type of collaboration: referral scheme - Referral by a health professionals - Target group: routine care patients with a diagnosis related to insufficient physical activity or need to be more physical active - Programme after referral: prescribed physical activity could be either self-monitored or organised by public physical activity organisations. Sport or recreation organisations offered activity groups and physical activity instructors, and a person from this organisation often contacted the patient - Aim: not mentioned
Lee et al. [2009] United Kingdom	Longitudinal study: audit data collected from 656 Active for Life participants between 2004 and 2007 Aim: examine the effectiveness of exercise referral schemes in clinical and psychosocial variables over the 10 weeks of the scheme	Active for Life <ul style="list-style-type: none"> - Type of collaboration: referral scheme - Referral by GPs, practice nurses, or physiotherapists to local leisure centres - Target group: individuals aged 13 years - Programme after referral: referred to four leisure centres where a 10-week tailored exercise programme is delivered by trained staff. Trained exercise referral staff develop an individually tailored exercise programme for participants. Each participant is encouraged to attend sessions twice per week - Aim: not mentioned
Litt et al. [2013] USA	Cross-sectional study: telephone interviews with 59 coordinators of active living collaborative Aim: examine the characteristics and activities of active living collaborative groups and the extent to which they have achieved environmental and policy changes	Active living partnerships <ul style="list-style-type: none"> - Type of collaboration: network among community partners - Partners: most collaborative groups had a diverse membership representing a range of sectors (public, government, private), disciplines (public health, planning, agriculture, sports and fitness), and perspectives (residents, local leaders, universities, schools, business leaders, faith-based organisations) - Structure: most coordinators (76%) reported that their collaborative had designated a lead agency. These lead agencies were located in health departments (35%), non-profit organisations (15%), and healthcare agencies (9%) - Target group: community - Aim: partnerships have a focus on active living as a primary or secondary goal
Meisel et al. [2014] Colombia	Cross-sectional study: a questionnaire among 22 organisations (response rate 88%). Information was used to develop a network analysis Aim: conduct a network analysis	Bogotá's Ciclovía Recreativa <ul style="list-style-type: none"> - Type of collaboration: network among community partners - Partnerships: City Hall, SoM, SoG, SoH, SoEdu, SRS, IDR (Sports and Recreation). Twelve percent of the organisations belonged to Sports and Recreation and were responsible for the development and implementation of Ciclovía. Eight percent of the organisations belonged to Health and were responsible for procedures in case of emergencies and the promotion of Ciclovía as a strategy to promote PA - Structure: IDR leads the Ciclovía programme - Aim: promote physical activity with a mass programme in which

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Appendix A.1 (continued)

Author, year, country	Study design, method, aim	Collaboration initiatives between the primary care and sport sector
Moore et al. [2011] Wales	Cross-sectional study: interviews with 38 exercise professionals involved in the NERS intervention Aim: explore exercise professionals' experiences of engaging diverse clinical populations in an ERS and emerging practices to support uptake and adherence	streets are temporarily closed to motorised transport, allowing exclusive access to individuals for leisure activities and physical activity National Exercise Referral Scheme (NERS) - Type of collaboration: referral scheme - Referral by health professionals to community sports centres - Target group: sedentary patients with coronary heart disease risk factors, anxiety or depression, musculoskeletal conditions, and respiratory/pulmonary conditions - Programme after referral: motivational interviewing, and patients were offered a discounted programme for 16 weeks, supervised by level 3 qualified exercise professionals, employed specifically to deliver the scheme - Aim: not mentioned
Murphy et al. [2010] Wales	Study protocol Aim: evaluate the overall effectiveness of the intervention	The Welsh National Exercise Referral Scheme (NERS) - Type of collaboration: referral scheme - Referral by health professionals working in a range of healthcare settings to community sports centres - Target group: sedentary patients with coronary heart disease risk factors, anxiety or depression, musculoskeletal conditions, and respiratory/pulmonary conditions - Programme after referral: motivational interviewing and a 16-week tailored exercise programme run by qualified exercise professionals at community sports centres - Aim: participants achieve 30 minutes of moderate physical activity at least five days per week
Nasmith et al. [2004] Canada	Cross-sectional study: focus groups and interviews with physicians and patients Aim: describe the process followed to develop and implement the model and the components, and describe the preliminary findings from the evaluation	Côte-des-Neiges Diabetes Pilot Project (CN-Diabetes) - Type of collaboration: multidisciplinary team with a connection to sport - Structure: a coordinator, a community organiser, two nurses, a dietician, a foot-care technician, a social worker, and an exercise consultant. CN-Diabetes established links within the community, and physical activity was promoted through group exercise sessions and walking groups, and links were established with a local sports centre - Target group: diabetes patients - Aim: organise healthcare in an integrative framework, promote behaviour changes in patients to foster self-care, introduce tools to allow family physicians to modify their practices, and encourage local community action to support patients and providers
O'Sullivan et al. [2010] Canada	Longitudinal study: 15 patients took part in three interviews about their experiences with this three-month combined-provider PA counselling intervention Aim: assess patient experiences and satisfaction with the intervention	The Physical Activity Counselling (PAC) randomised controlled trial - Type of collaboration: multidisciplinary team with a connection to sport - Structure: integration of a physical activity counsellor into an interdisciplinary primary care team. All patients received brief PA counselling (2–4 min) from their primary care provider during a regular office visit. The experimental group also received three months of intensive counselling from a PA counsellor (a total of six sessions) - Target group: primary care patients - Aim: not mentioned
Schmidt et al. [2008] The Netherlands	Cross-sectional study: questionnaire among 523 female participants and interviews among 38 female participants Aim: explore female participants' characteristics in ERS located in deprived neighbourhoods and determine which elements make it appealing for them to participate in the scheme	Exercise Referral Schemes (ERS) - Type of collaboration: referral scheme - Referral by a GP or other health professional to ERS - Target group: patients aged between 24 and 55 years when GP believes that the health of the patient would benefit from exercise - Programme after referral: participants contact ERS for an appointment with a sport advisor. The sport advisor processes the intake and refers the patients to one of the exercise groups: swimming, gymnastics, cardio-fitness, or dancing. The participants follow a 10-week period of weekly exercise sessions. After this period, participants have the opportunity to purchase a second course of 10 lessons - Aim: encourage GPs' patients living in five deprived neighbourhoods to pursue a more active lifestyle
Taylor et al. [2005] United Kingdom	RCT: questionnaire among 142 participants Aim: investigate the effect of a widely adopted health service programme to promote PA, based in a primary-care-leisure-service partnership, on aspects of mental wellbeing in a middle aged and elderly population	Exercise Referral Intervention - Type of collaboration: referral scheme - Referral by a GP to local recreation centres. Patients received a signed prescription card with information on reason of referral, resting heart rate and blood pressure, and prohibited activities - Target group: patients (aged 40–75 years) with one or more of three coronary heart disease risk factors Programme after referral: a 10-week programme with two sessions per week. After 10 weeks, a progress report was returned to the GP. Participants were encouraged to maintain a physically active lifestyle and were given the option of a reduced membership fee at the leisure

Appendix A.1 (continued)

Author, year, country	Study design, method, aim	Collaboration initiatives between the primary care and sport sector
Trinh et al. [2012] Canada	Longitudinal study: 101 patients filled in a questionnaire at baseline and after six weeks and a web log for daily step count. Interviews with five physicians and two community action site (CAS) representatives Aim: explore the feasibility and potential impact of the pedometer and partnership on patient PA levels	<p>centre for six months</p> <ul style="list-style-type: none"> - Aim: not mentioned <p>A six-week PA intervention</p> <ul style="list-style-type: none"> - Type of collaboration: referral scheme. - Referral by physicians, and patients were provided with a pedometer, a referral card to the CAS, and information about relevant community services and walking routes - Programme after referral: the CAS coordinator contacted patients by telephone one week into the intervention to provide follow-up support - Aim: not mentioned
Wiles et al. [2008] United Kingdom	Cross-sectional study, interviews with nine EoP participants, six fitness instructors, two physiotherapists, and two focus groups with 15 physiotherapists Aim: identify the views of patients, fitness instructors, and physiotherapists about the appropriateness and acceptability of EoP schemes for people with stroke	<p>Exercise on Prescription (EoP)</p> <ul style="list-style-type: none"> - Type of collaboration: referral scheme - Referral by physiotherapists to leisure centres - Target group: stroke patients post-discharge from physiotherapist - Programme after referral: fitness instructors working at leisure centres are responsible for running the schemes - Aim: not mentioned
Wormald et al. [2006] United Kingdom	Cross-sectional study: five focus groups with AL participants who had attended at least one consultation with the AL advisor Aim: explore participants' perceptions of the operation and effectiveness of the AL service	<p>Active Lifestyles (AL)</p> <ul style="list-style-type: none"> - Type of collaboration: referral scheme. - Referral by health professionals to an AL professional - Target group: patients aged over 12 years with a sedentary lifestyle, or a physical or mental health problem - Programme after referral: the AL advisor provides motivational support to help the patient become more active through behaviour change strategies and individual lifestyle changes (max six visits). The AL advisor can also refer patients to a range of organised activities, including walking groups, green gyms, and ER class or gym schemes - Aim: encourage patients to become more active and develop healthier lifestyles\

Appendix A.2. Overview of barriers and facilitators in the initiatives between the primary care and the sport sector presented in this review.

Initiative	Method	Facilitators of collaboration between primary care and sport	Barriers to collaboration between primary care and sport	Study quality
ALbD Baker et al. [2012] USA	Questionnaire, interviews, focus groups among key partners	<ul style="list-style-type: none"> - Recruiting diverse partners and supporting relationships between those partners - When partners recognised their common interests and contributed their strengths to the common goals, had diverse experiences and a variety of distinct connections, and were open to expanding their own perspectives, this positively influenced success - When new partners were invited to participate, it was helpful to share the history of the partnership and to develop and use a partner orientation manual - Local champions had the following characteristics: visionary, charismatic, energetic, possessing a take-charge attitude, passionate, well-known and respected, well connected with a strong network of resources, trusted by the community and the partnership, competent, persistent, and politically savvy - Local champions were described as 'sparkplugs' for initiation of partnership efforts and assisted in sustaining efforts over time - Ensuring each organisation has more than one person involved in the partnership - All organisations have consistent meeting attendance - Individual or organisation leadership changes help bring new strengths to the project or overcome former bureaucratic or regulatory road-blocks - Flexibility, creativity, and effective management of conflict and friction by the project coordinator were described as essential to group functioning - Utilitarian model: less time was required to move into implementation for partners' assigned project tasks - Collaboration model: time invested in building relationships helped to address challenges or disagreements 	<ul style="list-style-type: none"> - Individual or organisational leadership changes also had negative impacts, including loss of institutional memory, causing initiatives to stagnate or lose momentum; an unsupported change in the vision, mission, or approach; and the loss of established key connections to media, residents, community leaders, or others - Inadequate staffing for initiatives, changes in leadership, and weak leadership - Time the partners have to commit to the initiative, and the amount of overall time it takes to see partnerships efforts led to intermittent engagement of partners - Lack of communication and cohesion among the partners - Lack of clear roles and responsibilities for accomplishing tasks interfered with progress - Financial and political barriers, including insufficient funds, funding cuts at state and national level - Utilitarian model: partners' skills, expertise, and resources were not fully leveraged, relationships among partners had not been cultivated deeply enough to sustain the initiative - Lead agency model: resulted often in lead agency staff exhaustion or burnout, did not cultivate the deep relationships necessary for shared ownership and sustainability - Collaboration model: progress was often slow given that the initiative often moved in many directions at once to meet the needs of all partners at the table 	High*
Collaboration between a community health centre and YWCA Cashman et al. [2012] USA	Interviews with staff members from both organisations	<ul style="list-style-type: none"> - The collaboration was a natural outgrowth of both organisations' mutual and complementary missions - Integration of PA discussions into the patient visit and a cultural shift in how PA is viewed - Expanded opportunities through system change and the ability to contribute positively to the city's health - The partnership had given the YWCA 'bragging rights' and burnished their public image - Budgetary implications and capacity and communication issues need to be addressed in the initial stages - Communication between agencies and among staff should be regular and frequent - Need for training and diversity of staff. Staff should be trained to make patients feel comfortable and welcome - Having a single person responsible for programme - Leadership solving problems and not walking away from a partnership - Facility and programmes offered meet client needs - Requirement for patience - Roll out the programme slowly - Providers receive regular data on their patients' usage 	<ul style="list-style-type: none"> - Inadequate feedback about patients' use of the YWCA - Difficulties in setting priorities: which patients should be referred? - Resignation of YWCA staff members: preferred not to work with low-income health-centre patients - High patient usage stretched the YWCA's limited facilities and led to overcrowding - Resignation of members because of the more diverse environment - Stresses of success: YWCA reduced the number of patients who could use the facility and suspended acceptances of new referrals. The community health centre was disappointed and concerned that the successful programme was being curtailed 	High
VicHealth Casey et al. [2009] Australia	Interviews with 22 partnership members	<ul style="list-style-type: none"> - Trust among members and shared interests between members were facilitating factors for partnership formation 	<ul style="list-style-type: none"> - Difference between the shared interest of professional organisations (interest in a programme because it complements their work and core 	Medium

Appendix A.2 (continued)

Initiative	Method	Facilitators of collaboration between primary care and sport	Barriers to collaboration between primary care and sport	Study quality
VicHealth Casey et al., 2009a Australia	Interviews with 22 partnership members.	<ul style="list-style-type: none"> - Capacity of organisations to participate in programmes (skilled staff or community groups with pro-active committees of management) - The opportunity to access grant funding facilitated partnerships because it provided resources to develop relationships - Communicating roles and responsibilities was important for ensuring the implementation of partnership programmes - Managing partnerships and facilitating communication were considered to be key factors for promoting effective partnerships between professionals and volunteers - Important to engage more than one person from a sports club, especially key leaders that influence or control the strategic direction of the club - Engaging more than one person within organisations in the programme was a strategy used to reduce the impact of staff turnover within partner organisations on programme implementation - Continuation of the programme because the real and expected benefits of the programme could be seen - Engagement of key stakeholders - Formalisation of the partnership agreement - Capacity to identify and develop sports and recreation programmes - Partnerships' formalised prior funding made greater impacts in the short term on the implementation of sports and recreation programmes - Engage organisations in project planning, create a sense of ownership - Range of organisations from various sectors that each brought a different resource to the partnerships - The stronger the commitment of organisations to the partnership, the more likely they were to commit additional resources 	<ul style="list-style-type: none"> - business) and that of volunteer groups (need to increase club membership and improve the delivery of their sport) - Professional organisations had to spend time convincing volunteer groups of the benefits of the partnerships - Unclear roles and responsibilities possibly slowing the implementation of planned activities - Staff turnover within professional organisations slowed the implementation of planned activities - Lack of agency capacity: professional agencies found it difficult to engage sporting clubs in health promoting programs - Programmes lacked leadership and/or support from senior management to provide direction to programme officers - Lack of staff skills and decision-making capacities within professional organisations 	Medium
SESPAN Cheadle et al., 2010a USA	Key informant interviews	<ul style="list-style-type: none"> - The SESPAN organiser was perceived as effective in carrying out her work (has a lot of energy, passionate about the work, good sense of the community's needs, she connects very well, knows everyone in the area, a strong advocate) - The SESPAN organiser played a significant, if not crucial, role in the development of the physical activity programmes and Healthy and Active Rainier Valley Coalition (HARVC) (a huge impact: co-founded HARVC, instigator full of ideas) 	None mentioned	Medium
CN-Diabetes De Civita and Dasgupta, 2007 Canada	Analyses of the actual reported experiences of a specific diabetes management pilot	<ul style="list-style-type: none"> - Stakeholders recognised the need for coordinated diabetes care - Compatibility: the CN-diabetes multidisciplinary team operated within an existing community health centre and attempted to work with the existing group and solo practices within the CN area. The programme therefore built upon an existing structure - Physicians observed that patients participating in CN-Diabetes appeared to have more diabetes-related knowledge and were more willing to make lifestyle changes - Family physicians, nurses, and patients acknowledged the importance of the CN-Diabetes intervention programme 	<ul style="list-style-type: none"> - Collaboration among all members of the team relied heavily on the adaption of the diabetes-specific software; limited use of this system by physicians may have hindered the communication process - A greater level of mobilisation of community interest in the programme might have led to community pressure for continued funding for the programme 	Medium
Romp & Chomp De Groot et al. [2010] Australia	Key informant interviews	<ul style="list-style-type: none"> - Bringing together the big 'players' from across the Geelong community to work together - The intervention strategy of training allied health professionals to support the health promotion activities in the kindergartens was viewed positively 	<ul style="list-style-type: none"> - Lack of processes and protocols that could have facilitated better partnerships and overcome philosophical differences between partners about the project - Perception that some partners tried to hold onto the ownership and branding of their own project - Lack of project leadership due to high staff turnover - Lack of resources and funding available for project implementation 	High

(continued on next page)

Appendix A.2 (continued)

Initiative	Method	Facilitators of collaboration between primary care and sport	Barriers to collaboration between primary care and sport	Study quality
The BeweegKuur Den-Hartog et al. [2014] The Netherlands	Interviews and focus groups with stakeholders	<ul style="list-style-type: none"> - Short communication lines - Perceived health benefits for patients and engagement of new partners strongly motivated partners - An enthusiastic coordinator or linchpin - Having enough time was key to development of trust among alliance partners and for the planning and implementation of the BeweegKuur programme - The alliance partners brought in their professional expertise and appreciated the input and expertise of other partners - Discussing the adoption of broader goals was perceived as a success by the alliances 	<ul style="list-style-type: none"> - Lack of organisational structures and management support - Ambiguity about roles and responsibilities - Lack of meetings of the higher level reference group - Inability to make independent decisions; this was seen to have slowed down processes - Some committee members' lack of skills and knowledge about capacity building and health promotion - Lack of major partners like municipalities, welfare organisations, GPs, and local sports facilities - Local sport facilities did not participate in the alliances because the care and sports sectors have different cultures. Differences in preferred meeting time (day or evening) and target groups - Sports sector was not familiar with BeweegKuur participants: comprising obese or overweight people, often in combination with low socio-economic status - The GPs' role was experienced as both crucial (referral of patients) and hard to secure (limited time) - GPs perceived the BeweegKuur as an extra task without an extra allowance - Limited flow of patients from primary care to local sports facilities - Uncertainty about funding hampered the development of alliances - The fixed protocol sometimes hindered joint discussion and the development of aims and objectives 	High
Swim for Health Evans and Sleep, 2013 United Kingdom	Interviews with key stakeholders	None mentioned	<ul style="list-style-type: none"> - Communication difficulties, particularly between steering group members operating at a strategic level and those delivering services - Stakeholder support was limited if programme goals did not match organisational goals - There was a lack of trained staff to offer new activity types such as aqua circuit 'aquafit' or fitness swimming and aqua gym - Poor participant uptake in new services offered was evident 	Medium
GPERS Foley et al. [2000] Scotland	Interviews with GPs and leisure personnel	<ul style="list-style-type: none"> - Funding and development of a specified post was a fundamental priority - The referral process thus provided a welfarist and commercial benefit for leisure, paraphrased as a 'spin-off in terms of service' 	<ul style="list-style-type: none"> - Limited reporting of patient progress. Once patients had entered the scheme, progress evaluation was informally 'self-reported' to GPs or 'you never hear about a patient' - The lack of periodical reporting was, for the majority of practitioners, a fundamental flaw in the overall process - Communication failures were compounded by GP confusion over the actual process of activity prescription operation within leisure facilities. Some GPs were 'unsure' of the procedures at the facilities and 'uncomfortable' with 'leisure industry people' with limited medical knowledge - Many GPs were 'worried' about patients and the ability of 'leisure people to keep them [patients] motivated' - Leisure personnel believed that any confusion was on the part of the bio-medical professions, and they were aware of divisions within the GP community. For them, this was best resolved by selecting the 'GPs that are very keen' and 'work on a word of mouth methodology in an attempt to encourage GPs to be more open minded' - Many GPs and other bio-medical professionals were cynical of leisure, who they regarded as 'having a different agenda' and being driven by a 'bums on seats policy' rather than any social objective 	Medium
Bogotá's Ciclovía Recreativa Meisel et al. [2014] Colombia	Questionnaire among organisations in the network	<ul style="list-style-type: none"> - The organisations considered most important by others are most likely to cooperate, collaborate, or form partnerships 	<ul style="list-style-type: none"> - Organisation structure/bureaucracy, lack of time, lack of formal agreements were indicated as the main barriers to working with others 	High
A six-week PA	Telephone interviews with			High

Appendix A.2 (continued)

Initiative	Method	Facilitators of collaboration between primary care and sport	Barriers to collaboration between primary care and sport	Study quality
intervention Trinh et al. [2012] Canada	CAS representatives and physicians	<ul style="list-style-type: none"> - The collaboration provided physicians with a better understanding of services and support available to their patients - The intervention laid the groundwork for a relationship between physicians and CAS - The intervention increased the physicians' awareness of the usefulness of the pedometer and the various resources available in the community - Remuneration from the government for lifestyle counselling, the availability of resources (pedometers and CAS support), and documentation of the positive effects of the intervention acted as key influences on ongoing implementation 	<ul style="list-style-type: none"> - Physicians' lack of time the greatest challenge for implementation and uptake of the interventions - Communication could have been improved: <ul style="list-style-type: none"> ○ CAS received very few enquiries and were uncertain about the referral process ○ Physicians did not receive feedback from the CAS as to who had connected with the site and how they were progressing 	
EoP Wiles et al. [2008] United Kingdom	Interviews with patients, physiotherapists, fitness instructors, and focus groups with physiotherapists.	None mentioned	<ul style="list-style-type: none"> - Physiotherapists were apprehensive about fitness instructors' knowledge of neurological conditions and of appropriate exercise programmes for people post stroke - Physiotherapists would invariably attend the first session to provide input into the exercise programme developed by fitness instructors - It was time-consuming for the physiotherapists to attend the first meeting, but they also experienced discomfort about being out of their familiar territory and felt wary about giving too much advice to fitness instructors - Being paid by the session and the absence of budgets within leisure centres to pay for their training were barriers to fitness instructors participating in training 	High

* Brownson et al. (2012) describe the method used in Baker et al. (Baker et al., 2012), therefore we used Brownson et al. to assess the quality of Baker et al.'s study.

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