



Neighbourhood social capital as a moderator between individual cognitions and sports behaviour among Dutch adolescents



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ARTICLE INFO

Article history:

Available online 10 January 2014

Keywords:

The Netherlands
Sports
Adolescent
Environment
Social
Cognitive factors
Moderation
Neighbourhood social capital

ABSTRACT

This study aimed to explore whether individual cognitions and neighbourhood social capital strengthen each other in their relation with engaging in sports at least three times per week. Cross-sectional analyses on data from the last wave of the YouRAction trial (2009–2010, Rotterdam, the Netherlands; baseline response: 98%) were conducted. In total 1129 had data on the last wave questionnaire (93%) and 832 of them had complete data on a self-administered questionnaire on frequency of sports participation, perceived neighbourhood social capital, cognitions (attitude, subjective norm, perceived behavioural control and intention toward sport participation) and demographics. Ecometric methods were used to aggregate perceived neighbourhood social capital to the neighbourhood level. Multilevel logistic regression analyses (neighbourhood and individual as levels) were conducted to examine associations of cognitions, neighbourhood social capital and the social capital by individual cognition interaction with fit norm compliance. If the interaction was significant, simple slopes analyses were conducted to decompose interaction effects.

It was found that neighbourhood social capital was significantly associated with fit norm compliance (OR: 5.40; 95% CI: 1.13–25.74). Moreover, neighbourhood social capital moderated the association of attitude, perceived behavioural control and intention with fit norm compliance. The simple slope analyses visualized that the associations of cognitions with fit norm compliance were stronger in case of more neighbourhood social capital.

Hence, higher levels of neighbourhood social capital strengthen the associations of attitude, perceived behavioural control and intention in their association with fit norm compliance.

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Introduction

Adolescents who sufficiently participate in sports will on average have less cardio-vascular diseases, cancers and adverse social outcomes later in life (Ortega, Ruiz, Castillo, & Sjostrom, 2008; U.S. Department of Health and Human Services, 2002). Therefore it is internationally recommended to engage in vigorous activities such as sports at least three times per week (American Heart Association, 2013; Australian Government. Department of Health and Ageing, 2004; Roberts, Tynjälä, & Komkov, 2004), which is known in the Netherlands as the “fit norm”. However only one in three adolescents comply with this norm (De Vries, Chorus, & Verheijden, 2010). To promote sports participation among

adolescents, insight into correlates of and mechanisms in relation to fit norm compliance is needed.

Socio-ecological models postulate that both individual and environmental level factors influence health-related behaviour, such as sports participation (Alfonzo, 2005; Franzini et al., 2010; Kremers et al., 2006). Individual level factors of interest may be cognitions, such as attitude, subjective norms, perceived behavioural control (PBC) and intention as suggested by the Theory of Planned Behaviour (TPB) (Ajzen, 1991). The most proximal determinant of behaviour is, according to the TPB, the intention to perform the behaviour. Perceived behavioural control (PBC), attitudes and subjective norms determine someone's intention to perform the behaviour. PBC is defined as the perceived ease or difficulty for performing the behaviour. Attitudes refer to a person's evaluation of the advantages and disadvantages of engagement in a specific behaviour. Subjective norm is related to the perception of what important others think you should do. There is ample evidence that these factors predict sports participation (Motl et al.,

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2002; Nache, Bar-Eli, Perrin, & Laurencelle, 2005; Prins, van Empelen, Te Velde, et al., 2010).

On the environmental side, to date much research has focused on physical environmental factors (e.g. availability of places to be active). However, also social environmental factors, such as neighbourhood social capital (NSC), may be associated with behaviour. The origin of social capital states that “social networks have value” (Putnam, 2000) and that it is a resource that “inheres in the structure of relations between actors and among actors” (Coleman, 1988). In the present study, social capital is defined as the resources (e.g. norms, trust) that are available to all members of a neighbourhood (Kawachi, Subramanian, & Kim, 2008). For social capital it is important that there are common norms, behavioural reciprocity and mutual trust on the community level (Putnam, 2000). Neighbourhood social capital is likely to affect behaviour via maintenance of healthy norms and access to social support (Kawachi, 1999; Lindström, 2008). In addition, neighbours live close to each other, and as such it is likely that they observe and learn from each other’s behaviour (Bandura, 1977, 1986), especially if the individuals involved have a strong social connection. Various studies have shown that neighbourhood social capital is of importance for health and wellbeing among adults (Mohnen, Groenewegen, Volker, & Flap, 2011; Scheffler, Brown, & Rice, 2007; Scheffler et al., 2008; Yip et al., 2007), but also among children (Drukker, Kaplan, Feron, & van Os, 2003; Morgan & Haglund, 2009). It is also known that physical activity is related to social capital among adults (Ball et al., 2010; Linden-Bostrom, Persson, & Eriksson, 2010; Mohnen, Volker, Flap, & Groenewegen, 2012) and, may explain part of the association between neighbourhood social capital and health (Mohnen et al., 2012). Also for adolescents there is evidence that neighbourhood social capital (Morgan & Haglund, 2009; Prins, Mohnen, van Lenthe, Brug, & Oenema, 2012) and derivatives of it (Cradock, Kawachi, Colditz, Gortmaker, & Buka, 2009; Singh, Kogan, Siahpush, & van Dyck, 2008) are associated with physical activity and sports participation. Few studies take both individual and social environmental factors into account as correlates of adolescent sports participation, while there is a need for more evidence regarding the joint influence of these factors on behaviour.

The present study, therefore, examines the potential moderating role of neighbourhood social capital on the relationship between cognitions and fit norm compliance. Some models explicitly assume such interactions. The extended TPB model by Fishbein assumes interactions between environmental factors and intentions in their relation to behaviour (Fishbein, 2000). Similarly, the socio-ecological framework by Alfonzo (2005) suggests interaction between environmental characteristics and psychological correlates of physical activity. Hence, environmental factors such as neighbourhood social capital can inhibit or facilitate the translation of positive cognitions to behaviour. This would imply that when more neighbourhood social capital is available it is more likely that positive cognitive factors, such as positive intentions result in the desired behaviour. Therewith, it may reduce the observed intention–behaviour gap as observed in physical activity and other behaviours (Hagger, Chatzisarantis, & Biddle, 2002; Motl et al., 2002). Previous research has confirmed that such an interaction indeed occurs between cognitions and physical environmental factors. For instance, significant interactions between intention and the availability of facilities in relation to sports participation among adolescents (Prins, van Empelen, Te Velde, et al., 2010) and walking behaviour among older adults (Rhodes, Courneya, Blanchard, & Plotnikoff, 2007) have been observed. Similarly, interactions have been found between other cognitions (e.g. attitude, self-efficacy and intention) and perceived safety in relation to walking (Beenackers, Kamphuis, Mackenbach, Burdorf, & van Lenthe, 2013)

and sports participation (Beenackers, Kamphuis, Burdorf, Mackenbach, & van Lenthe, 2011) among adults. Finally, walkability and cognitions (barriers, benefits) interacted in their relation to walking among adolescents (De Meester, Van Dyck, De Bourdeaudhuij, Deforche, & Cardon, 2013). Whether interactions between cognitions and social environmental factors occur in relation to sports behaviour among adolescents is an unstudied subject thus far. It is however likely that such an interaction occurs, as various theories hypothesize (Alfonzo, 2005; Fishbein, 2000).

In this study we will therefore explore whether social environmental factors (i.e. neighbourhood social capital) also interact with TPB cognitions in relation to the fit norm compliance. We hypothesize that neighbourhood social capital is significantly associated with compliance with the fit norm (Prins, Mohnen, et al., 2012) and that it moderates the associations of cognitions in such a way that higher levels of neighbourhood social capital contribute to stronger associations with fit norm compliance.

Methods

Study design

This study used data derived from the final measurement of the Youth of Rotterdam in Action (YouRAction) study (2009–2010, Rotterdam, the Netherlands) (Prins, Van Empelen, Beenackers, Brug, & Oenema, 2010), because information on neighbourhood social capital was only collected in this measurement. YouRAction was a three-armed cluster randomized trial in which two versions of a computer tailored physical activity promotion intervention were evaluated among adolescents (12–13 years). In the trial, measurements were conducted at baseline, one month and six months post intervention. School classes were randomly assigned to one of the study arms using block randomization. The evaluation study showed that the interventions were not effective in promoting moderate-to-vigorous physical activity and fit norm compliance among adolescents (Prins, Brug, van Empelen, & Oenema, 2012). The Medical Ethics committee of the Erasmus Medical Center issued a “declaration of no objection” for the YouRAction study.

Sampling and procedure

Schools were informed about the study and contacted to assess their willingness to participate in the trial. From the 12 participating schools in total, 54 classes (ranging from 1 to 12 classes per school) participated in the study. All students in a class participated in the study unless they or their parents rejected to participate. In total 1240 students were in these classes and were invited to participate in the YouRAction trial, of whom 27 (2.2%) declined to participate (response: 98%). Of the 1213 baseline respondents, 1129 (93%) completed the final post measurement questionnaires on physical activity behaviour, its cognitive and perceived environmental determinants and demographics during a school hour in the presence of a research assistant and a teacher.

Adolescents living in neighbourhoods in which at least 5 respondents lived (to be able to generate a reliable aggregated value for neighbourhood social capital) and with complete data on the variables of interest were eligible for analyses. Of the 1129 adolescents with follow-up measurements, 152 adolescents were excluded because 5 or less respondents lived in their neighbourhood (13%) and 145 had incomplete data on the variables of interest (13%). Hence, in total 832 of the 1129 adolescents (74%) met these criteria and were eligible for analyses. There were no differences in fit norm compliance for those with complete and those with incomplete data.

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