A Capacity Building Approach to Increase Sports Participation in Disadvantaged Urban Communities: A Multilevel Analysis

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ABSTRACT Recent evidence showed that community capacity building is one of the key methods to reach health improvements within disadvantaged communities. Physical activity and sports participation are important means to reach health improvements. This study investigates a capacity building method which aims at increasing sports participation in the community, especially for individuals at higher risk of sports deprivation. The main aims of the present study, are the following: (1) to examine differences in sports participation between individuals living in communities implementing a sports-based capacity building program and individuals living in communities without such capacity building program and (2) to investigate if the community sports program reaches the individuals known to experience higher barriers to engage in sports. In Flanders, Belgium, five disadvantaged urban communities implementing the community capacity building program (program communities) and four without (control communities) were selected based on similarity of sociodemographic and environmental characteristics. Two hundred adults (aged 18–56 years) per community were randomly selected and visited at home to fill out a questionnaire on sociodemographics, sports participation, and the community sports program. A sample of 414 adults participated in the study. Results showed that adults from program communities reported on average 96 min/week more participation in sports than their counterparts living in control communities. Furthermore, 61.3 % of the individuals of program communities indicated to engage in sports, whereas in control communities, this was only 42.4 %. Respondents at higher risk of sports deprivation also engaged in significantly more sports participation in program communities than those in control communities. This difference was also noted for groups that are not related with sports deprivation. These results are promising and plead for a community capacity building approach to increase sports participation in disadvantaged communities.

KEYWORDS Sports participation, Capacity building, Community sports

INTRODUCTION

Disadvantaged communities deal with high population densities, low socioeconomic status, high rates of chronic disease, high levels of migration, and multiculturalism and young people at risk of exclusion from society.¹ Health in

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these marginalized communities is generally poor, and promoting health in these communities often means arduous effort for limited health improvements.^{2,3} One of the methods that has been shown to be effective in decreasing risk factors for unhealthy behavior in these deprived communities is community capacity building.⁴⁻⁶ The concept community capacity building is commonly used in health promotion and its value is widely recognized.⁶ In the health promotion glossary, "community capacity" is defined as "the development of knowledge, skills, commitment, structures, systems and leadership to enable effective health promotion."⁷ It has its influences on three levels of health promotion.⁷ First, it affects the practitioners' level, by improving their knowledge and skills. Second, it stimulates the organizational level, by expanding the support and infrastructure. Third, it has an impact on the partnership level by building and/or strengthening partnerships and the cohesiveness among the health promotion organizations.

Concerning physical activity and sports participation, national health objectives have been established to reduce the disparity in physical activity between the general population and disadvantaged minorities.^{8, 9} Several studies investigating the effect of a community capacity building program on physical activity showed significant improvements. One study detected a significant decrease in physical inactivity in disadvantaged communities from the intervention region. Physical activity in this region was among other activities promoted by developing walking clubs and aerobic exercise classes.⁴ Another study showed a significant lower increase in BMI of children living in the program communities in comparison to children of control communities.⁵ Furthermore, the researchers observed a significant enlargement of health inequalities among low-SES children of the control communities, whereas in program communities no such significant enlargement was noted. One of the used methods to stimulate physical activity in the latter study comprised the training of coaches of sports clubs and the investment in sporting club equipment. Two studies in Canada also investigated the relation of sports participation and capacity building.^{10,11} One found that community capacity building has great potential to increase sports participation when community champion are identified, partnerships are built and quality programs are delivered.¹⁰ Another reported that community capacity building shows considerable potential for including those who are least likely to be involved in the planning and participation of local sports and recreation programs.¹¹ As a result of these studies, distinct sports programs are set up in a wide variety of countries and cities to promote sports participation in disadvantaged individuals and communities.

However, despite these promising results, only limited studies have analyzed the relationship between community capacity building and sports participation. Studies in other contexts are needed in order to support the claim that capacity building is an effective method to increase sports participation.^{4, 5} The present study tries to extend the current body of knowledge by investigating the relationship between the implementation of a community capacity building approach and sports participation in a Belgian context of disadvantaged communities. The main aims of this study are the following: (1) to investigate differences in sports participation between individuals living in communities implementing the capacity building program and individuals of control communities and (2) to examine if disadvantaged minorities are reached by the community sports program.

METHODS

Description of the Community Sports Program

The community sports program in Antwerp, Belgium (506,225 inhabitants, 204.26 km², 2,478 inhabitants/km²), which is subject of this study, has been inceptioned through a bottom-up process of trial and error by sports, social, and health care practitioners. It developed organically over the last 20 years by responding to local needs. Currently, 17 communities of the existing 62 communities located in Antwerp are implementing the community sports program. Communities in the context of this study comprise two to four adjacent statistical sectors, which are the smallest units for which information on income, ethnicity rate, and other socioeconomic factors is available. Since the objective of the community sports program is increasing sports participation in people who experience higher barriers to engage in sports, the program mainly targets communities with a lower average income, a higher percentage of immigrants, or a higher unemployment rate than most of the other communities. As thresholds concerning mobility, financial effort and commitment are perceived as larger barriers for ethnic minorities and low-SES citizens, this program attempts to lower these thresholds.¹² The mobility thresholds are lowered by locating the activities within the community. The financial effort to participate is reduced by minimizing the participation fee. Finally, commitment on a weekly base is not obligatory, but participants can generally participate when they please. Another important aspect of the community capacity program is raising awareness of the opportunities to participate in sports in the community. One of the used methods involves visiting people from the target group in their homes and asking about their favorite leisure-time occupation and their main sports interests. When interest is shown, they guide and accompany them to the sports club or sports activity and introduce them to the staff and other participants, again in an attempt to reduce possible barriers. In 2012, a total of 838 people were personally guided to the sports offer of their community.

The main goal of the community sports program is to increase sports participation in the disadvantaged communities. The community sports program applies a community capacity approach and influences on three levels of sports participation promotion. Firstly, the practitioners' level is affected by organizing a weekly platform where experienced problems and good practices are discussed between the practitioners. Secondly, the organizational level is influenced by expanding support and infrastructure concerning sports facilities. This is put into practice by setting up low-threshold sports activities in the community for disadvantaged groups, actively supporting sports activities from partner organizations and by creating new resources for sports. Lastly, partnerships are created which provide, promote, and gather information to and from the sports, health, and social organizations. Building partnerships is one of the core elements of the community capacity building theory determining the success of the program.¹³ The researchers of this study were not involved in the initial design of the sports-based capacity building program. Their focus was upon capturing the effect of such program after more than 10 years of implementation.

Sampling

The study was conducted in Antwerp, Belgium (506,225 inhabitants, 204.26 km², 2,478 inhabitants/km²). Data were collected between January 2013 and March

2013. The study was approved by the Ethics Committee of the Ghent University Hospital.

For this study, five communities implementing the capacity building program (program communities) and four communities similar to the program communities (control communities) were selected. As described earlier, 17 communities are implementing the community capacity approach. However, some neighboring communities collaborate to implement the program. As we did not want to measure multiple communities with the same method of implementation, the total was diminished to 10 potential program communities. From these 10, five communities were selected based on the intensity of the organizational and the partnership level. On organizational level, the number of activities held and adults reached with these activities were taken into account. On partnership level, the number of partners involved was quantified. Data were acquired by the coordinators of each program community. Control community selection was based on similarity to the program communities for population density (number of inhabitants per square kilometer), ethnicity rate (percentage of parents from ethnic origin), unemployment rate (proportion of unemployed people looking for a job between 18 and 64 years and the population between 18 and 64 years), and average income (median declaration of net taxable income). These data were acquired through the Public Service of Antwerp. The selected communities were further controlled for environmental variables known to correlate with physical activity: walkability,¹⁴ recreational facilities,¹⁵ accessibility to sports infrastructure,^{15,16} accessibility to fitness centers,¹⁶ and number of sports clubs.¹⁷ Walkability data were acquired through data of population density (number of inhabitants per square kilometer) and street connectivity (number of intersections per square kilometer).¹⁸ An adjusted formula of former research was used: $(2 \times z - \text{connectivity}) + (z - \text{population density})$.¹⁹ Recreational area data were calculated as an index of three factors. First, the amount of green and open space available per person for each community; second, the accessibility of that green and open space, expressed by people living in a span of 400 m of that green and open space; and lastly, the population and building density. Sports infrastructure was measured through the percentages of people of the community that were situated in a certain span of a local sports field (400 m), sports hall (1,600 m), outdoor sports field (1,600 m), or swimming pool (2,400 m). Fitness center data represent the percentage of people living in a span on 800 m from a fitness center. These data were separately included because urban inhabitants report high levels of sports participation in fitness centers.²⁰ Finally, the number of sports clubs were calculated per 1,000 inhabitants for each community. Fisher's exact test²¹ showed no significant differences between program and control communities for the different variables, indicating similarity between the type of community for those variables. Table 1 depicts these sociodemographic, socioeconomic, and environmental characteristics of the selected program, control communities, and the city of Antwerp. From Table 1, some clear differences between the characteristics of the sample communities and the Antwerp values can be distinguished; the sample communities are in general far more densely populated, have a higher ethnicity rate, have a lower average income, and possess more recreational area. These differences were expected, as the objective of the community sports program exists in targeting the disadvantaged communities, and control communities were selected in function of their similarity to the program communities. No overall differences between the sample communities and Antwerp, however, could be noted for unemployment rate.

TABLE 1 Comparison of the sociodemographic, socioeconomic, and environmental characteristics of the selected program communities, control communities, and Antwerp

	Population density (inhabitants/km ²)	Ethnicity rate (%)	Unemployment rate (%)	Average income (€)	Walkability	Recreational area	Fitness center (%)	Sports infrastructure (%)	Number of sports clubs (per 1,000 inhabitants)
Program community									
A	14,370	65.90	18.87	15,118	-0.17	5.58	64.90	97.40	0.90
B	19,150	64.60	15.20	16,464	2.58	2.50	90.50	85.70	1.50
C	16,818	55.06	11.93	17,891	5.61	4.15	85.50	98.00	1.30
D	8,329	41.42	9.55	20,842	-1.14	4.28	69.90	78.50	1.30
E	16,778	39.86	12.00	16,084	-0.43	3.51	100.00	77.90	0.70
Profile program community	15,089	52.90	13.50	17,280	1.29	4.00	82.16	87.50	1.10
Control community									
F	13,577	68.71	10.06	14,819	-1.81	3.46	100.00	64.70	1.20
G	14,216	50.46	8.59	17,036	-1.95	3.10	94.10	90.40	0.80
H	15,328	47.23	11.11	18,572	0.39	2.99	100.00	80.40	1.50
I	10,751	42.62	12.22	20,880	-3.02	7.18	68.80	92.50	0.90
Profile control community	13,468	52.30	10.50	17,600	-1.60	4.18	90.70	82.00	1.10
Antwerp	2,919	42.10	10.70	19,310	0.00	5.70	75.70	79.00	1.50

After communities' selection, potential respondents were selected. Prior power analysis indicated a needed total sample size of 400 adults between 18 and 56 years living in the nine communities. This implied that 45 respondents were needed per community to have an equal sample distribution over the nine communities. Since recruiting respondents in disadvantaged communities presents itself as a complicated endeavor, a response rate of 25 % was expected. Therefore, the public service of Antwerp selected in each community, a random sample of 200 addresses of adults (aged 18–56 years) who already resided more than two years in the community. Potential respondents were visited at home. Up to three attempts were made on different days and different times of the day to find these persons at home. Home visits were carried out until 45 participants were recruited in each community. Participating respondents were asked to complete a written informed consent. The researchers conducting the visits were able to speak English and French, next to Dutch, to assist if participants showed difficulties responding in Dutch. If language remained a barrier, the help of a family member or friend was asked to assist in translation during the interview. Respondents were asked to respond to a questionnaire of sociodemographics, sports participation, and the community sports program.

MEASURES

Differentiation between level one and level two measures were made to account for compositional variation of individuals in communities (level one) and factors relating to contextual variation (level two).

Level One

Sociodemographics Participants were asked to give information about gender, age, education, and country of birth place of parents. SES was measured by level of education,²² and ethnicity was assessed by birth country of the respondents' parents.

Sports Participation Sports participation was determined by asking respondents to select their three most important sports both organized and nonorganized. For each of these sports, frequency (from once a year to more than once a day, 14 possibilities were given) and duration (from some hours per year to more than 20 h per week) were inquired. Fluctuation of sports participation during different periods of the year was taken into account by questioning the number of months one practiced throughout the year. A sports participation index was computed by summing hours per week spent in total for the different sports.²³

Community Sports Program Respondents were asked two simple questions concerning the program: "Do you know the community sports program; have you already participated in one of the activities of the community sports program." (yes or no) These questions provide us information about the visible aspects of the community sports project.

Level Two

Type of Community Because the community sports program is implemented on a community level, we can categorize communities into program communities, which

implement the sports program, and control communities, which do not. The type of community is the only variable at level two in our multilevel analysis.

DATA ANALYSIS

Descriptive statistics and multilevel regression analyses were conducted using SPSS 20 for Windows. A multilevel model was used because it allows us to attribute differences in physical activity to the characteristics of the people who live in these communities (compositional variation in communities) and to factors that relate to communities themselves (contextual variation).²⁴ Regression coefficients and variance components are estimated with the full maximum likelihood (FML) method. Only significant predictors that contribute in understanding sports participation were added in the models. Following four models were sequentially developed:

- Model 1 This is a one-level model. This model assumes that all variance is situated at one level. Its main purpose is to interpret the fit of the intercept model.
- Model 2 This is an intercept model, also referred to as empty model or two-level null model. This model has no level one or level two predictors, it solely differs from the previous model with the addition of the intercept. If the fit is significantly better, multilevel analyses are needed and variance on first (individual) and second (community) level can be explained by the different predictors. When significant, this intercept model will function as a benchmark for comparing the other models.
- Model 3 A model including all individual predictors. This model assesses the effect of individual predictors on sports participation. Individual predictors were entered in the model in three sequential steps: first, the sociodemographic variables age (centered on the grand mean), sex, ethnicity (model 3A); second, socioeconomic status (model 3B); and third, possible significant interactions of the level one predictors (model 3C). The contextual variation in sports participation between communities was estimated before and after taking into account the compositional effect of individual sociodemographic and socioeconomic variables.
- Model 4 A model including the second level variable: type of community.

ANOVA models were used to further investigate relations between type of community and sociodemographic and socioeconomic variables. Additionally, the individuals with high SES were excluded from analysis to be able to explore the groups at risk of sports deprivation. Differences for gender, sex, and ethnicity for the low-SES individuals were examined in the different types of community. This model aims at clarifying the potential of the capacity building program to reach out for the individuals who are most at risk of sports deprivation.

Because sports participation was positively skewed, Box-Cox transformation was used to improve normality. When reporting mean sports participation scores for program and control communities, raw data will be reported. For all analysis, significance was set at $p=0.05$.

RESULTS

The overall response rate (respondents/potential respondents found at home) was 63.1 %. The final sample consisted of 414 participants (54.3 % females; 38.8±13.2 years). Table 2 shows the demographic characteristics of the sample for program and control communities. When analyzing the sociodemographic characteristics of the study sample, program community and control community respondents were comparable for all characteristics, except for educational level and working situation. These parameters were significantly lower in the program community sample.

Table 3 presents the results of the different multilevel models in the order they were developed. The second model improved significantly compared to the first model ($p<0.001$), indicating that a part of the variability of sports participation is located at the second level. The covariance parameters of the random effects of model 2 show that 94.6 % of the variance in sports participation is situated at the individual level, meaning that 5.4 % is located at the community level. Model 3A demonstrates significant associations of the sociodemographic variables with people’s sports participation: male ($p<0.05$), young adults ($p<0.01$), whose parents are born in Belgium ($p<0.05$) report higher levels of sports participation ($p<0.001$). Model 3B added educational attainment as proxy for SES. Confirming expectations, higher educated respondents indicated to participate more in sports. Model 3C added possible interaction effects of these predictors. An interaction effect of sex and ethnicity was significant and therefore added to the model. In total age, SES and the interaction effect of sex and ethnicity explained 8.0 % of the individual variance. Before interpreting model 4, we controlled for possible compositional effects of sociodemographic and socioeconomic variables that could explain the variance between the communities. Before entering these variables, 5.4 % of the variance was explained at level two. Afterwards, 7.1 % is explained by variance between communities. The sociodemographic and socioeconomic composition of respondents in communities did not explain a part of the variation of sports participation of level 2; on the contrary, they only added to the importance of contextual predictors.

TABLE 2 Sociodemographic characteristics of respondents

	Total	Program community, <i>n</i> =230	Control community, <i>n</i> =184
Sex (%)			
Male	45.7	47.4	43.5
Female	54.3	52.6	56.5
Age, mean (SD)	38.8 (10.6)	39.0 (11.0)	38.5 (10.1)
SES (%)			
Low SES (primary, secondary)	53.1	60.4	44.0
High SES (college/university)	46.9	39.6	56.0
Ethnicity (%)			
Native (parents born in Belgium)	53.6	50.4	57.6
Ethnic (parents born abroad)	46.4	49.6	42.4
Community sports (%)			
Knowledge of program	39.1	54.3	20.1
Participated in event/session of program	13.0	17.4	7.6

SD standard deviation

TABLE 3 Significant fixed and random effects of sports participation for the multilevel model (estimates of parameters with FML)

	Model 1	Model 2	Model 3A	Model 3B	Model 3C	Model 4
Fixed effects						
Constant	0.990 (0.049)***	0.99 (0.091)***	1.205 (0.123)***	1.295 (0.129)***	1.159 (0.137)***	1.381 (0.128)***
Level 1						
Sex (ref. male)						
Age (grand mean centered)			-0.194 (0.095)*	-0.203 (0.094)*	0.051 (0.127)	0.052 (0.126)
Ethnicity (ref. parents born in Belgium)			-0.015 (0.004)**	-0.015 (0.004)**	-0.016 (0.004)***	-0.015 (0.004)***
SES (ref. college/university)			0.231 (0.096)*	-0.192 (0.098)	0.104 (0.140)	0.097 (0.139)
Sex x ethnicity				-0.196 (0.098)*	-0.212 (0.097)*	-0.229 (0.097)*
Level 2					-0.546 (0.185)**	-0.533 (0.185)**
Community program						-0.480 (0.125)**
Random effects						
Level 1						
Constant	1.00 (0.070)	0.943 (0.066)	0.897 (0.063)	0.887 (0.062)	0.868 (0.061)	0.868 (0.061)
Level 2						
Constant		0.054 (0.035)	0.062 (0.039)	0.068 (0.041)	0.071 (0.043)	0.015 (0.016)
2 Log likelihood	1,173.880	1,162,308	1,142.888	1,138.926	1,130.352	1,121.618
Δ 2 Log likelihood (Δ df)		11,572***	19,420***	3,962*	8,574**	8,734**

Age was centered on the grand mean

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; ρ null model = 5.4 %; ρ model 3C = 7.1 %

TABLE 4 Differences in sports participation between type of community for several individual characteristics

Individual characteristics	Mean (SD), overall	F value, individual characteristics	Mean (SD), program community	Mean (SD), control community	F value for type of community	F value for type of community for selected cases	N, PC-CC for selected cases
Grand mean	0.960 (0.051)		1.200 (0.068)	0.721 (0.076)	21.922***		230-184
Sex		6.654*					
Man	1.092 (0.076)		1.404 (0.099)	0.781 (0.115)	1.964	15.232***	109-80
Women	0.828 (0.069)		0.996 (0.094)	0.660 (0.101)		8.122**	121-104
Ethnicity		1.054					
Native	1.013 (0.068)		1.244 (0.091)	0.782 (0.101)	0.028	13.382***	116-106
Ethnic	0.908 (0.076)		1.156 (0.101)	0.659 (0.115)		10.436***	114-78
SES		6.683*			0.019	14.986***	91-103
High	1.093 (0.075)		1.339 (0.107)	0.846 (0.106)		8.881**	139-81
Low	0.828 (0.070)		1.061 (0.085)	0.595 (0.110)			
Sex x Ethnicity		9.454**					
Male and Native	0.988 (0.100)		1.308 (0.132)	0.667 (0.150)	0.120	10.906**	52-44
Male and Ethnic	1.197 (0.114)		1.500 (0.147)	0.895 (0.174)		4.892*	57-38
Female and Native	1.038 (0.093)		1.180 (0.126)	0.896 (0.136)		4.892*	57-36
Female and Ethnic	0.618 (0.102)		0.812 (0.139)	0.424 (0.149)		5.453*	57-42
Results filtered for individuals with low SES							
Low SES and sex		1.198					
Low SES and male	0.940 (0.102)		1.244 (0.123)	0.636 (0.162)	1.101	7.315**	69-39
Low SES and female	0.786 (0.097)		0.942 (0.120)	0.629 (0.154)		2.183	70-42
Low SES and ethnicity		3.310					
Low SES and native	0.991 (0.105)		1.181 (0.132)	0.801 (0.163)	0.328	2.391	57-38
Low SES and ethnic	0.735 (0.094)		1.005 (0.110)	0.464 (0.152)		7.516**	82-43
Low SES and ethnicity x Sex		3.344					
Low SES and native and male	0.939 (0.158)		1.358 (0.195)	0.520 (0.248)	4.860*	7.665**	26-16
Low SES and native and female	1.042 (0.139)		1.003 (0.178)	1.082 (0.212)		0.081	31-22
Low SES and Ethnic and Male	0.940 (0.128)		1.130 (1.098)	0.751 (1.058)		1.824	43-22
Low SES and ethnic and female	0.529 (0.137)		0.881 (1.061)	0.178 (0.531)		7.747**	39-20

Results show means of Box-Cox transformed sports participation. If SES was not included as a fixed factor it was included as a covariate in the analysis

PC program community, CC control community, SD standard deviation

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Model 4 considers whether the capacity building community sports program was implemented in the community or not. Living in a program community was associated with significantly more sports participation ($p < 0.01$) and accounted for 78.9 % of the contextual variance, thus representing 5.6 % of the total explained variance.

Results showed a participating rate in sports of 52.9 %. In program communities, 61.3 % of the participants reported to engage in sports; whereas in control communities, this was only 42.4 %. Table 4 clarifies this relation by presenting the amount of sports participation between the individual characteristics of the respondents of the different type of community. On average, participants reported a mean of 114 (SD=198) min/week of sports participation. Participants of program communities reported 156 (SD=246) min/week. Participants of control communities reported 60 (SD=102) min/week of sports participation. The group indicating the lowest sports participation rate is the low SES women from ethnic origin. Significant differences were found for all sociodemographic and socioeconomic characteristics between program and control citizens. The second part of Table 4 looks closer to the amount of sports participation for low-SES individuals in relation with their sex and ethnicity. Results showed a significant interaction effect for type of community $\times$ sex $\times$ ethnicity for the low-SES individuals. After selecting these cases to be able to interpret this effect, results showed that the group of female, low SES from ethnic origin and the male, low-SES individuals from native origin in the program communities reported significantly more ($p < 0.01$) sports participation than in the control communities.

DISCUSSION

The community capacity program, which is subject of this study, aims at promoting sports participation in disadvantaged communities. The first objective of this study was to examine sports participation differences between adults living in program communities and control communities. The main finding was that adults from program communities reported on average 96 min/week more participation in sports than their counterparts living in control communities. Participants in the program community reported a mean time spent in sports of 156 min/week, which is comparable to the 165 min/week of sports participation found by a representative study on sports participation in Flanders.²³ Citizens of control communities thus showed an average sports participation far below the average in Flanders. This was expected due to high ethnicity and the low average income of the communities. In contrast, citizens of program communities, having similar ethnicity rates and income of the control communities, bridge this difference with the average sports participation of adults living in Flanders. Furthermore, the percentage of people that participate in sports (61.3 %) is 5.6 % higher for individuals of program communities compared to the average mean of 55.7 % of Flanders.²⁵ Individuals of control communities (42.4 %) score 13.3 % lower than the average of Flanders. Although this seems very promising for the capacity building approach, it must be noted that the capacity building program only accounts for 5.6 % of the amount of sports someone engages in. This explained variance, however, is more than the variance explained by any of the other variables of age, gender, ethnicity, and SES, identified as stable correlates of sports participation and physical activity.²² The positive associations using a capacity building approach on sports participation

were earlier demonstrated in Canada.¹⁰ Other studies investigating a community capacity building approach using sports activities also noted positive effects.^{4,5}

The second aim of this study was to examine whether the community sports program reaches the individuals experiencing higher barriers to engage in sports. The findings showed that especially female, low-SES individuals from ethnic origin reported less sports participation. This is similar to findings of most other research on sociodemographics and sports participation^{22, 26} Results show that this group of female, low-SES individuals from ethnic origin participate in significantly more sports in program communities than in control communities. This effect was expected due to the adjusted offer of sports activities for disadvantaged groups and the lowered mobility, financial, and commitment barriers, e.g., inexpensive dance lessons for women given by female teachers in nearby sports infrastructure. Frisby and Miller¹¹ concluded earlier that community capacity building showed promise in including those who are least likely to be involved in sports. Additionally, findings revealed significant differences in sports participation between program communities and control communities for men and women, native and ethnic groups, high- and low- SES individuals. This exceeded our expectations as we a priori hypothesized that the effect of type of community would mostly be allocated due to the increase of sports participation among the disadvantaged groups. Apparently, the capacity building program affects the promotion of sports participation of all individuals of the community by the impact on the practitioners' organizational and partnership level. Specific for our study, the community capacity program created more resources for sports, promoted the sports activities better by the built partnerships and lowered mobility, financial, and commitment barriers for everybody living in the program community. Other research also suggests that the main strength and core value of community capacity building lies in its ability to multiply health gains.^{6, 27}

STRENGTHS, LIMITATIONS, AND FUTURE RESEARCH

Tackling social determinants of health inequalities is a major priority in health research. The question how to reach disadvantaged communities and its inhabitants remains however largely unanswered. One of the methods that have shown empirical proof in reaching out and decreasing risk factors for these deprived communities is a community capacity building approach. Current limitations that hamper progress in this area of research are low response rates and consequentially biased samples in the disadvantaged communities, the lack of control communities to compare results with²⁸, and the absence of a multilevel design to capture community effects.²⁴ The major strengths of our research lay in its accountability to these limitations. The first strength relates to the methodology of data collection; all respondents were visited at home to overcome language and cultural barriers, to decrease response bias, and to increase generalizability of findings. Although this method was very time consuming, it eventually resulted in a higher response rate, more accurate answers and a higher external validity. The second strength was the selection of control communities based on their similarity of program communities for several sociodemographic and socioeconomical characteristics linked with physical activity and sports participation. Moreover, data of environmental variables were collected to control for possible mediating or moderating variables of sports participation. Since communities were situated in the same city and had similar environmental, sociodemographic, and economical characteristics, compa-

rability between program and control communities was maximized. This ensures us that results can be allocated to the community capacity program itself and not to other contextual variables. Finally, the present study makes use of multilevel techniques which is advocated to capture community effects of population health.²⁴

The claim that a capacity building approach should be advocated and implemented within health promotion programs needed more empirical proof in other domains, contexts, and countries. This research contributed to this claim by delivering empirical proof for the beneficial relation of a capacity building project in raising sports participation in Flanders (Belgium). More specific, this study showed significant higher rates and more time of sports participation in disadvantaged communities implementing a capacity building program compared to control communities without capacity building program. This effect was also present for ethnic minorities and individuals with a lower SES.

The present study also has some limitations. The first limitation of this study was the relatively small number of communities ($n=9$), which reduced the number of variables that could be added on the second level, as well as the power for more analyses on the random part of the model, such as complex cross-level interactions. Adding more communities to the design was not feasible because comparability between program and control communities would then reduce. The second limitation was the cross-sectional design which inhibited determination of causality. It takes time, however, to implement such programmes, especially to established partnerships and formed trust between the different partners. Conducting this study with a randomized control trial design could therefore lead to a high drop-out rate and a loss of representativeness due to the big time elapse between the measurements. Lastly, no qualitative data were collected concerning the management of implementation. To better understand how capacity programs should be implemented, it is needed to better comprehend the determinants that affect the outcome of the program.

Implication of these results for policy indicate that a capacity building approach shows great promise in increasing sports participation for all individuals in disadvantaged communities. It also backs up the claim that this approach could be a potential answer in reaching out for disadvantaged groups and tackling health inequalities. Future research should incorporate collection of qualitative data to give better and deeper insight about the functionalities of how community capacity building is exactly implemented and what critical success factors can be deducted. This would improve transfer of knowledge to other contexts and answer the question what works for whom in which context.

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