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To cite this article: Erik Lundkvist , Stefan Wagnsson , Louise Davis & Andreas Ivarsson (2020) Integration of immigrant youth in Sweden: does sport participation really have an impact?, International Journal of Adolescence and Youth, 25:1, 891-906, DOI: [10.1080/02673843.2020.1775099](https://doi.org/10.1080/02673843.2020.1775099)

To link to this article: <https://doi.org/10.1080/02673843.2020.1775099>



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Published online: 05 Jun 2020.



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Integration of immigrant youth in Sweden: does sport participation really have an impact?

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ABSTRACT

Sport participation for youth with immigrant background is often argued to play an important role for migrant youth integration into their new host society. Although few well sampled longitudinal studies has been conducted. The aim of this study was to study the impact that sport participation has on two integration-related outcomes (problem behaviours and native friends) by using the Swedish version of the longitudinal CILS4EU study. The multi-group latent growth curve models showed that although youth active or starting in sport independent of immigrant background did less problem behaviours and had more native friends than their peers with the same immigrant background that was not engaged in sport. However, the trajectories were very similar and often very close to zero, which makes it difficult to claim that sport participation has any significant impact on integration in the Swedish society.

ARTICLE HISTORY

Received 26 March 2020
Accepted 20 May 2020

KEYWORDS

Social integration; sport; inclusion; anti-social behaviours; positive youth development

Introduction

During migration, young immigrants can suffer deprivation of basic needs, endure stress and anxiety related to potential conflict and uncertainty and suffer a loss of friendships. Consequently, loneliness and isolation are often central features of immigrants' youth's experiences of their new host society (De Haene et al., 2010). These feelings and experiences can interfere with stabilization, recovery and integration in a host society where resettlement is sought (Bala, 2005). The European Union, European Commission and the UNHCR believes that organized sport can play a vital role for immigrants' physical and mental health, as well as provide an extremely valuable resource in the context of social inclusion and integration. With this in mind, the context of sport has been seen to be able to facilitate positive youth development (PYD; Lerner et al., 2005) whereby positive development changes in youth's competence, confidence, social bonds, morale and sympathy for others can be achieved. In consideration that sport participation is seen as an activity with a social mission that include both social interaction and teamwork (Bratt, 2015; Elbe et al., 2016; Ryba et al., 2017) as well facilitating greater understanding between youth from different backgrounds (European Commission, 2007) the potential to improve positive development and integration of immigrant youth into society through sport is distinct (Amara et al., 2004). According to the UNHCR (2018) sport has the capacity to play a healing role in the lives of migrant youth and address psychosocial and psychological development needs including problem behaviours. That said, evidence regarding the

role that sport participation plays in facilitating optimal integration for youth is sparse, complex and ambiguous and, further research is warranted (Jiang & Peterson, 2012).

Despite potential positive effects of engagement in sport and physical activity, sport participation is lower among immigrant youth compared to native youths (Gordon-Larsen et al., 1999; Singh et al., 2008). Particularly, girls with immigrant background seem to participate less in organized sport and/or physical activity in their host nation compared to immigrant boys with the same background (De Knop et al., 1996; Okamoto et al., 2013). Whilst explanations for engaging or non-engagement in sport participation are scarce and at times poorly misunderstood; cultural, socioeconomical and environmental considerations have been identified as potential barriers (Caperchione et al., 2009). For example, socioeconomic barriers to physical activity include low literacy, poor education and poverty, whilst higher socioeconomic status has been associated with greater involvement in sport participation (Fairclough et al., 2009).

The effects of sport participation among immigrant youth have mostly been studied from case study or qualitative perspectives, whereas longitudinal and quantitative studies interested in the effects of sports on integration variables over time have been sparse (Smith et al., 2019). Ager and Strang (2008) define integration in four parts that include: (1) rights and citizenship; (2) facilitators, that include knowledge of language, culture, and/or safety and stability; (3) social connection such as social bonds, bridges and links; and (4) markers and means, which concern employment, housing, education and health. For the present study, two potential integration outcomes that fits within the PYD framework have been chosen to study the effects of organized sport on the integration process over time. First, we see problem behaviours as an inverted proxy and facilitator for becoming part of society on a more general level; not engaging in problem behaviours can be seen as an indication that a person is feeling safe and experiencing stability in their new country (Ager & Strang, 2008). Second, making new native friends in the host country was included as an integration outcome as a proxy for social connection (Ager & Strang, 2008).

Based on PYD, sport participation should theoretically facilitate integration (Bratt, 2015; Elbe et al., 2016; Lerner et al., 2005; Ryba et al., 2017). For example, sport participation should buffer problem behaviours (e.g., substance use and delinquency) because of fostering of life skills and other positive behaviours (e.g. self regulation, character, self-confidence or contribution to civil society) (Lerner et al., 2005). Further, participation in sport requires taking up one's spare time which therefore has the capacity to hinder problem behaviours, as there is a greater focus of time on engagement in sport activities (Johnson et al., 2016). Specifically, Pate et al. (2000) have provided some preliminary evidence to suggest that youth participating in organized sports showed lower amounts of problem behaviours compared with those youth not participating in organized sport. This suggests that sport in itself promotes social behaviours as well as puts youth in prosocial environments keeping them from problem behaviours. Other evidence, however, suggests that sport participation does not have an effect on problem behaviours when comparing sport participants with non-participants (Linver et al., 2009). Sport participation have also showed to have negative consequences on youth both in relation to peer pressure, stress and negative self-esteem (Fraser-Thomas & Côté, 2009). Studying problem behaviours via crime rates shows that an increase of sport participation in general seem to be associated with lower crime rates (Brosnan, 2019; Caruso, 2011) to the exception of one study that has indicated small increases of violent crimes (Caruso, 2011). Furthermore, a recent meta-analysis could not identify any relationship between sport participation and juvenile crimes (Spruit et al., 2016). The inconclusive findings in the relationship between sport participation and problem behaviours via mainly cross-sectional methods could have implications on drawn conclusions since differences in sample composition and sample size are two factors that influence statistical analysis (Benjamin et al., 2018). When not being able to follow within person change other variables that influence crime rates, for example, socioeconomic and culture influence crime rates which could influence results for some studies more in some studies than other (Forst, 2016; Sarnecki, 1989). Therefore, more longitudinal studies from different regions could possibly give a broader understanding to the relation between sport participation and adolescent problem behaviours.

The effect that sport participation has on youth problem behaviours, appears to differ within different groups from different backgrounds, age or when gender considerations are compared. Using both gender and migration background as moderators, research has shown that sport participation can buffer problem behaviours for some groups but not for others (Fredricks & Eccles, 2006; Gardner et al., 2009; Jiang & Peterson, 2012; Pate et al., 2000). Particularly, immigrants who participate in sport during early to middle adolescence (e.g., 11–16 years of age) have been shown to illustrate fewer problem behaviours (e.g., rowdy behaviours, violent behaviours and substance use) later on in adolescence for boys but not for girls (Fredricks & Eccles, 2006; Gardner et al., 2009). Comparing youth with immigrant background and youth with native background, research has indicated that sport participation may not be beneficial for immigrant youth when it comes to problem- and violent behaviours but beneficial for native youth (Jiang & Peterson, 2012; Pate et al., 2000). However, qualitative interviews following up an intervention that included immigrant boys has indicated more positive results where participation in a sports program brought meaning to their everyday lives and kept them out of trouble (Fuller et al., 2013).

Another theoretical perspective on how sport participation may foster immigrant youth integration, stems from contact hypothesis in ethnic relations (Amir, 1969). This hypothesis illustrates that persons being in favourable environments alongside others from different cultural backgrounds creates a sense of 'togetherness' that facilitates the development of new friendships and a greater network of social support (Amir, 1969). Within the context of sport, earlier findings illustrate that youth who are members of diverse sports teams (i.e. those teams of varying cultures) have more tolerating attitudes towards other cultures than those involved in sports teams of similar culture and background (Chu & Griffey, 1985). Finally, it has been found that Americans with diverse backgrounds (although with no information on immigration status), who are active in sports, are more likely to talk and interact with peers from varying cultural backgrounds more often than American youth who do not participate in sport at all (Chu & Griffey, 1985).

Within the context of sport, interview studies have pinpointed a dualism in regards to the contact hypothesis and the favourable and unfavourable conditions where sports can make a young immigrant feel included and excluded at the same time. For example, sport participation has been described to facilitate new diverse friendships providing an opportunity to learn about their new society and a new language but at the same time facilitate feelings of exclusion, as it is often difficult for these youth to understand the language spoken by other players and/or their coaches (Elling et al., 2001). Further, if a sports club is ethnocentric, transitioning to the new culture maybe more difficult, and therefore increasing the risk that the effects of sport is over-generalized (Coalter, 2007; Doherty & Taylor, 2007; Spaaij, 2015). To sum up, the evidence of the effects that sport participation has on integration outcomes are both scarce, complex and ambiguous. The presence of cross-sectional studies and lack of longitudinal data, further illustrates the importance and justification for further research that allows the potential change of outcomes in relation to sport participation to be analysed (Smith et al., 2019).

The current study

In the current study, we use the Swedish version of an EU funded longitudinal project called Children of Immigrants Longitudinal Survey in four countries (CILS4EU; Dollmann et al., 2014) to analyse longitudinal relations between organized sport participation and indicators of integration (e.g., problem behaviours and amount of Swedish friends). The Swedish part of CILS4EU was carried out over two years across three measurement points in schools all over Sweden. Utilizing this data, we propose a number of aims to the present study. First, we want to examine if participation in organized sport reduces the development of problem behaviour among youths with different immigrant backgrounds. Second, we want to examine if participation in organized sport facilitates the development of friendships with native Swedish youth for diverse immigrant backgrounds. Lastly, our aim is to examine if gender, socio-economic status and proportion of immigrants within school environments influences immigrants problem behaviour and development of Swedish friendships.

Although prior research is somewhat ambiguous, we ground our first hypothesis on PYD framework where sport participation is seen as fostering of pro-social behaviours. We therefore first hypothesize that immigrant youth that are active in organized sports or have started participating in sport will develop fewer problem behaviours over time and that immigrant youth not participating in sport, or dropping out from sport, will develop more problem behaviours over time. Furthermore, based on contact hypothesis, we hypothesize that immigrant youth active in organized sport or have started participating in organized sport will develop friendships with more native Swedish friends over time and that immigrant youth not participating in sport or stop engaging in organized sports will develop friendship with less native Swedish friends over time.

Methods

Participants and procedures

Participants were initially sampled from the Swedish part of the longitudinal CILS4EU project funded by several research councils in Europe (Dollmann et al., 2014). The first authors' regional ethics committee approved the implementation of this study. Only data from the Swedish part of the study were used within the present study (Kalter et al., 2017). To reach youth with different types of immigrant backgrounds a cluster sampling design in three steps were implemented. First, when targeting schools, a larger sample of schools from areas with a high proportion of immigrants were identified. Second, two classes from each school were randomly selected. Third, all adolescents in the targeted classes were asked to take part in the study (Kalter et al., 2017). Youths that were disabled, in such way that they could not fill in the questionnaires, as well as youths that did not have enough knowledge of the Swedish language, were considered to not meet the inclusion criteria and were excluded from the study. Further information about sampling procedures are provided within the technical reports for the original EU project (CILS4EU, 2016b, 2016c, 2016d).

A longitudinal design with three time points over two years was employed within this study. Two methods of data collection were adopted across the three time points. The first and second data collection periods for T1 and T2 were carried out by the research team at each participating school. For the third wave of data collection, participants were asked to complete their survey using an online web-survey. The reason for this is that youth in Sweden change from junior high school to high school the year they become 16. All students that had participated in T1 and T2 and had provided contact information were contacted via email, telephone or letter and provided with a link to the web-based survey for their completion (Dollmann et al., 2014).

The initial data file included 5843 ID numbers. Data from 414 participants were missing at all three waves. In consideration that we received no information as to why this data was missing, they were excluded from further analysis and seen as missing at random. Consequently, 5429 participants with a mean age of 14.04 ($SD = .29$) were included in the final sample, of which 40% participated at all three occasions and 84% on at least two occasions resulting in a sample size of 5025 at T1, 4531 at T2 and 2768 at T3. Participants only participating at one time were omitted from the sample giving a total sample of 4569 for the present study. The gender distribution in the final sample was close to equal (52% female and 48% male). A sensitivity analysis was carried out comparing those included in the study (answering two or three times) with those excluded (answering at one time point). Problem behaviour and number of Swedish friends was compared with a Bayesian independent samples T-test at the individuals first measurement point. The test showed that there was no difference in Swedish friends between the group included in the analysis and the group excluded from the analysis ($BF_{10} = .49$). For problem behaviours the difference between the two groups ($BF_{10} = 2.56$) indicating anecdotal evidence for differences between the groups. Anecdotal in this sense means that it is the second weakest evidence on a six-point scale between no evidence, anecdotal evidence, moderate evidence, strong evidence, very strong evidence and extreme evidence (Wagenmakers et al., 2018).

Further information about the sampling procedure can be found within the technical reports of the original EU project (CILS4EU, 2016b, 2016c, 2016d).

Measures

Gender and immigrant background

Gender was assessed by asking questions about the participants' sex (boys or girls). Immigrant background was grouped in three categories including, native, developing country background or developed country background. Youth born in another country or within Sweden with at least one parent born in another country were coded as either having developing country background or developed country background based on United Nations list of developed and developing countries (Outlook, 2019). The separation between developing country background or developed country background was made since heritage country play a role in organized sport participation for Swedish youth.

Sport participation

Sport participation was generated by combining two questions. Included was youths who answered that they were physically active within an organized sports more than once a week and also answered that they participated in club activities more than once a week. Accounting for different patterns of sport participation over the three waves of measurement, four groups for each immigration group (e.g., native, developing country background and developed country background) were created. The first group (*Active participants*) included participants ($n = 1385$) who were active in organized sports at all measurement points. The second group (*Starters*) included those participants ($n = 552$) who had started engaging in organized sports at T2 or T3. The third group (*Dropouts*) included those participants ($n = 649$) who had dropped out of organized sports at T2 or T3. The fourth group (*Non-participants*) included those ($n = 1472$) who never participated in organized sports during the study. In addition to these groups, one other group with unstable patterns of activity were noted. This group started and stopped participating in organized sports between every measurement. However, these groups ($n = 165$) were chosen to be excluded from further analyses since when immigrant background was added, the groups became too small (less than 5 in each group) to perform the statistical analysis.

Antisocial behaviours was considered as an integration outcome variable and was measured by a set of 12 aggregated questions regarding different types of antisocial behaviours (e.g., aggressiveness, conflicts with peers, family and friends, concentration problems and rowdy behaviours like deliberately damaging others possessions or carrying a knife). Participants responded on a 4-point Likert scale, ranging from 0 to 4 (0 = 'Never or less often than once a month', 1 = 'Once or several times a month', 2 = 'Once or several times a week', 3 = 'Every day'). This conceptualization has been utilized previously and the psychometric properties of reliability and validity have been supported (Haugland & Wold, 2001; Mood et al., 2016).

Friends with Swedish background was also considered as an integration outcome and was assessed using an estimate of how many friends each youth thought they had developed that were Swedish. Participants responded on a scale, ranging from 1 to 5 (1 = 'Non or very few'; 2 = 'A few'; 3 = 'About half'; 4 = 'A lot'; 5 = 'Almost all' or 'All') (Mood et al., 2016).

Parents Socio-Economic Status (SES) was measured via two different measures; one measure that focused on the individual family and the other on the school. First using the highest rate of any parent from the ISEI-index illustrating an estimate of parental occupation status in regards to education, occupation and salary. Scores ranged from 10 to 89. Three examples are cashiers 31, life science technicians 47 and chief executives 70 (Ganzeboom & Treiman, 2013).

Immigrant proportion in school was used as a proxy for socio-economic status on an area level. Schools with higher proportion of immigrants in Sweden are often located in areas where the socioeconomic status as a mean is lower compared to schools with larger proportion of native

youth (Andersson et al., 2010). The first strata included schools with 0–10%, the second 10–30%, the third 30–60% and the fourth above 60% immigrants, respectively (CILS4EU, 2016a).

Data analyses

Statistical analysis was conducted within the Bayesian framework. Descriptive data was analysed using JASP statistics (JASP Team, 2018).

To compare both development over time (slope) and the level at the last measurement point (T3; intercept) between subgroups, based on immigrant background and sport participation pattern (T1 – T3), a multi group latent growth curve approach was implemented (Fan, 2003; Muthén & Curran, 1997) using Mplus (version 8.2; Muthén & Muthén, 2017). The multi group latent growth curve approach makes it possible to examine potential differences in slopes and intercepts of the problem behaviour and amount of native friends over time between different subgroups (i.e., immigrant background and sport participation behaviour (Fan, 2003; Muthén & Curran, 1997)).

Deviance information criterion (DIC) was used to compare the model fit of the different models where a lower DIC indicates a better fit to the model (Asparouhov et al., 2015). Models for each outcome variable was tested separately. The first group tested was a model without any covariates. Then SES, proportion of immigrants in school and gender, were included and added as covariates of change (Preacher et al., 2016). All combinations of covariates were then tested giving eight different combinations for each outcome.

In the analyses, we used the Markov Chain Monte Carlo simulation procedures with a Gibbs sampler. For all analyses, we performed 500,000 iterations. In line with previous recommendations, a potential scale reduction factor around 1 was considered as evidence of convergence (Kaplan & Depaoli, 2012). Model convergence was also analysed using the optimization history from the Mplus output Tech8 option (Muthén & Muthén, 2017). We assessed model fit using the posterior predictive p (PPp) value and its accompanying 95% confidence interval. In Mplus 'the 95% confidence interval is produced for the difference in the f statistic for the real and replicated data. A positive lower limit is in line with a low posterior predictive p value and indicates poor fit' (Muthén & Asparouhov, 2012, p. 315). For all models, default priors were used.

We estimated credibility interval (CI) for all parameters estimated within the models. In comparison to the more traditional confidence interval the credibility interval indicates, the probability (e.g., 95%) that the parameter of interest, given the observed data, lies between the two values. The recommendations from Zyphur and Oswald (2015) were followed and as a result, we rejected the null hypothesis if the 95% CI did not include zero. Slopes and intercepts between groups were analysed using the multi group setting in Mplus. The z-test in the model constraint option in Mplus allowed us to compare slopes and intercepts of the moderating groups (Muthén & Muthén, 2017). A statistically credible group difference was defined as a CI not including zero (Zyphur & Oswald, 2015).

Results

Descriptive statistics

According to the results (Table 1), both immigrant youth from developing countries and developed countries participate to a lesser extent in organized sports during the three waves than native Swedish youth. This difference is especially evident among girls, who report to engage in much less organized sports than their male counterparts across each of the groups. Furthermore, the descriptive statistics also highlight that a larger percentage of developing country and developed country immigrant females report to be non-participants in organized sports, compared to their fellow immigrant males and their native female peers. Regarding socio-economic status (SES) the inactive groups (*Non participants*) from all backgrounds differ from the *Starters*, *Dropouts* and *Active participants* groups from the perspective that they have parents with a lower socioeconomic status. For

Table 1. Descriptive statistics.

	Developing country immigrants			
	<i>Active participants</i>	<i>Starters</i>	<i>Dropouts</i>	<i>Non-Participants</i>
All	23.3%	16.8%	14.3%	45.6%
Males	34.3%	20.3%	15.1%	30.2%
Females	13.5%	13.7%	13.5%	59.3%
SES	48.96 (22.71)	45.56 (22.28)	51.39 (22.94)	45.18 (21.14)
Stratum	3.20 (.86)	3.41 (.80)	3.21 (.88)	3.40 (.84)
Developed country immigrants				
All	33.1%	15%	16.3%	35.6%
Males	38.9%	14.5%	13.4%	33.3%
Females	27.9%	15.5%	18.9%	37.7%
SES	57.05 (20.37)	50.69 (21.35)	52.73 (21.05)	48.24 (21.08)
Stratum	2.54 (.94)	2.61 (1.01)	2.67 (1.02)	2.73 (.98)
Natives				
All	41.7%	11.6%	16.3%	30.5%
Males	43.8%	10.5%	13.3%	32.4%
Females	39.6%	12.6%	19.3%	28.5%
SES	60.68 (18.49)	57.48 (19.63)	59.33 (17.62)	51.24 (20.50)
Stratum	2.07 (.82)	2.22 (.90)	2.06 (.79)	2.12 (.86)

Notes: Participation patterns are presented in percentages. SES and stratum are presented with means and standard deviation within brackets.

differences regarding the amount of immigrants in each school (Stratum), no systematic patterns were observed between the four sport participant groups. However, as expected, results showed that native youths had less immigrants in their schools.

Main analysis

Participation in sport and problem behaviours

A summary of the intercepts and slopes from the multi-group latent growth curve analysis can be found in Table 2 and the estimates across all z-tests are summarized in Table 3. The structural model that showed the best fit to data (i.e. DIC 5466 vs 45,747–50,990) was the model analysed without covariates. Socio-economic status, gender and stratum are therefore not included within the

Table 2. Unstandardized slopes and intercepts for problem behaviours and native friends.

	Developing country background							
	Active participants		Starters		Dropouts		Non-participants	
	m(sd)	95% CI	M(sd)	95% CI	M(sd)	95% CI	M(sd)	95% CI
Intercept PB	.35(.02)	[.31,.40]	.33(.03)	[.30,.38]	.46(.05)	[.37,.55]	.43(.02)	[.39,.47]
Slope PB	-.01(.02)	[-.04,.02]	-.04(.02)	[-.07, -.01]	.01(.02)	[-.04,.05]	-.01(.01)	[-.03,.01]
Intercept NF	3.20(.09)	[3.03, 3.37]	2.86(.11)	[2.65, 3.07]	3.08(.12)	[2.83, 3.31]	2.70(.07)	[2.57, 2.83]
Slope NF	-.02(.05)	[-.12,.76]	-.01(.06)	[-.13,.11]	.01(.07)	[-.14,.15]	.00(.04)	[-.07,.07]
Developed country background								
Intercept PB	.41(.03)	[.36,.46]	.38(.03)	[.32,.44]	.54(.05)	[.44,.64]	.48(.03)	[.42,.54]
Slope PB	.02(.02)	[-.02,.05]	.01(.02)	[-.02,.05]	.03(.03)	[-.03,.08]	-.01(.02)	[-.04,.02]
Intercept NF	3.68(.09)	[3.50, 3.86]	3.65(.12)	[3.41, 3.90]	3.47(.12)	[3.23, 3.71]	3.33(.09)	[3.16, 3.51]
Slope NF	.01(.05)	[-.08,.10]	.07(.06)	[-.06,.19]	-.02(.06)	[-.15,.09]	-.01(.05)	[-.07,.10]
Native background								
Intercept PB	.43(.01)	[.41,.46]	.45(.03)	[.40,.50]	.49(.02)	[.45,.54]	.52(.02)	[.48,.55]
Slope PB	.04(.01)	[.03,.05]	-.01(.01)	[-.04,.01]	.04(.01)	[.02,.06]	.01(.01)	[-.01,.03]
Intercept NF	4.35(.03)	[4.29, 4.40]	4.14(.07)	[4.01, 4.27]	4.34(.05)	[4.25, 4.44]	4.28(.04)	[4.20, 4.36]
Slope NF	-.05(.02)	[-.08, -.02]	-.05(.04)	[-.13,.02]	.02(.03)	[-.07,.03]	.01(.02)	[-.04,.06]

Notes: Note: A statistically credible slope has a 95% credibility interval not passing thru zero. PB = problem behaviours. NF = native friends.

Table 3. Group differences for problem behaviours.

Developing country background																	
Active vs starters			Active vs dropouts			Active vs non-participants			Starters vs dropouts			Starters vs non-participants			Dropouts vs non-participants		
	m(sd)	95% CI	m(sd)	95% CI	m(sd)	95% CI	m(sd)	95% CI	m(sd)	95% CI	m(sd)	95% CI	m(sd)	95% CI	m(sd)	95% CI	
Intercept	.04(.04)	[-.05,.10]	-.10(.05)	[-.20,-.01]	-.07(.03)	[-.13,-.01]	-.13(.05)	[-.23,-.03]	-.09(.03)	[-.16,-.03]	.03(.05)	[-.06,.13]	-.09(.03)	[-.16,-.03]	.03(.05)	[-.06,.13]	
Slope	.03(.02)	[-.01,.08]	-.02(.03)	[-.07,.04]	-.00(.02)	[-.04,.03]	-.05(.03)	[-.10,.01]	-.03(.02)	[-.07,.00]	.01(.03)	[-.04,.06]	-.03(.02)	[-.07,.00]	.01(.03)	[-.04,.06]	
Intercept	.03(.04)	[-.05,.11]	-.13(.06)	[-.25,-.01]	-.07(.04)	[-.15,.01]	-.16(.06)	[-.28,-.04]	-.10(.04)	[-.18,-.01]	.06(.06)	[-.06,.18]	-.10(.04)	[-.18,-.01]	.06(.06)	[-.06,.18]	
Slope	.01(.02)	[-.05,.03]	-.01(.03)	[-.07,.06]	.03(.02)	[-.02,.07]	-.00(.03)	[-.06,.07]	.04(.02)	[-.01,.08]	.03(.03)	[-.03,.10]	.04(.02)	[-.01,.08]	.03(.03)	[-.03,.10]	
Swedish background																	
Intercept	-.02(.03)	[-.08,.03]	-.06(.03)	[-.11,-.01]	-.09(.02)	[-.13,-.04]	-.04(.04)	[-.11,.03]	-.07(.03)	[-.13,.01]	-.03(.02)	[-.09,.03]	-.07(.03)	[-.13,.01]	-.03(.02)	[-.09,.03]	
Slope	.05(.02)	[.02,.08]	-.00(.01)	[-.03,.02]	.03(.01)	[.01,.05]	-.06(.02)	[-.09,-.02]	-.03(.02)	[-.06,.01]	.03(.01)	[.00,.06]	-.03(.02)	[-.06,.01]	.03(.01)	[.00,.06]	
Developing vs developed																	
Developing vs natives																	
Active participants																	
Intercept	m(sd)	95% CI	m(sd)	95% CI	m(sd)	95% CI	m(sd)	95% CI	m(sd)	95% CI	m(sd)	95% CI	m(sd)	95% CI	m(sd)	95% CI	
Slope	-.06(.04)	[-.12,.01]	-.08(.03)	[-.13,-.03]	-.05(.02)	[-.08,-.02]	-.08(.03)	[-.13,-.03]	-.02(.03)	[-.08,-.04]	-.03(.02)	[-.06,.01]	-.02(.03)	[-.08,-.04]	-.03(.02)	[-.06,.01]	
Intercept	Starters																
Slope	-.05(.04)	[-.14,.03]	-.12(.04)	[-.19,-.04]	-.03(.02)	[-.07,.02]	-.05(.02)	[-.08,-.02]	-.07(.04)	[-.13,-.01]	-.03(.02)	[-.06,.01]	-.07(.04)	[-.13,-.01]	-.03(.02)	[-.06,.01]	
Intercept	Dropouts																
Slope	-.05(.02)	[-.10,-.01]	-.03(.02)	[-.07,.02]	-.03(.02)	[-.07,.02]	-.03(.02)	[-.07,.02]	.03(.02)	[-.02,.07]	-.03(.02)	[-.06,.01]	.03(.02)	[-.02,.07]	-.03(.02)	[-.06,.01]	
Intercept	Dropouts																
Slope	-.02(.04)	[-.09,.05]	-.03(.05)	[-.08,.07]	-.04(.03)	[-.09,.05]	-.03(.05)	[-.08,.07]	.05(.06)	[-.02,.03]	-.03(.02)	[-.06,.01]	.05(.06)	[-.02,.03]	-.03(.02)	[-.06,.01]	
Intercept	Non-participants																
Slope	-.05(.04)	[-.12,.02]	-.09(.03)	[-.15,-.04]	-.02(.01)	[-.05,.01]	-.09(.03)	[-.15,-.04]	-.04(.04)	[-.09,.03]	-.03(.02)	[-.06,.01]	-.04(.04)	[-.09,.03]	-.03(.02)	[-.06,.01]	

Note: A statistically credible difference has a 95% credibility interval not passing thru zero.

presented model. This made it impossible to answer the third aim. The chosen model without covariates showed acceptable fit to data ($PPp = .140$, 95% CI = -18.90 , 64.83 , DIC = 5466.99 , BIC 6085.54). The results indicate that on a group level the problem behaviours reported by immigrant youth were low ($y = .33$ to $.54$) and the slopes were very close to zero ($\Delta = -.04$ to $.04$) across all groups. Three groups had statistically credible slopes. The *starters* for youth with developing background ($\Delta = -.04$; CI = $-.07$, $-.01$), the *active participants* in the native group ($\Delta = .04$; CI = $.03$, $.05$) and the *dropouts* among natives ($\Delta = .04$; CI = $.02$, $.06$).

Comparing slopes between youth with different activity patterns but similar immigrant background, four differences in the native group were statistically credible (ranging from $z = -.06$, CI = $-.09$, $-.02$ to $z = .05$, CI = $.02$, $.08$). No other z-tests were statistically credible. Comparing slopes between youth with the same participation pattern but different immigrant background, two statistically credible differences were found for *starters* between developing immigrant youth and natives ($z = -.05$; CI = $-.10$, $-.01$) and *active participants* between youth from developing countries and native youth ($z = -.05$; CI = $-.08$, $-.02$).

When comparing intercepts between youth with the same immigrant background, 50% of the tested differences were statistically credible (ranging from $z = -.16$, CI = $-.28$, $-.04$ to $z = -.06$, CI = $-.11$, $-.01$). Intercept differences between youth that had different immigration backgrounds and the same sport participation pattern three differences were statistically credible. All credible differences were between developing youth and native youth ($z = -.08$; CI = $-.13$, $-.03$ to $z = -.12$; CI = $-.19$, $-.04$ and $z = -.09$; CI = $-.15$, $-.04$).

Participation in sport and the development of Swedish friends

A summary of the results can be found in Table 4 and the estimates from all z-tests are shown in the Table 5. The model that showed the best fit to data (i.e. DIC 21,939 vs 53,845–59,108) was the model without covariates. Socioeconomic status, gender and stratum are therefore not included as covariates in the presented model. This made it impossible to answer the third aim. The chosen model without covariates showed acceptable fit to data ($PPp = .166$, 95% CI = -22.34 , 61.01 , DIC = $21,939.44$, BIC $22,554.16$). Only one of the twelve slopes were statistically credible. The credible slope was the native *active participants* ($\Delta = -.05$, CI = $-.08$, $-.02$).

For differences between slopes none of the tested combinations had statistically credible differences either between youth with the same immigrant background but different activity patterns or those with the same activity pattern and different immigrant backgrounds. When comparing intercepts between youth with the same immigrant background, seven of the 16 tested differences were statistically credible ($z = -.20$, CI = $-.36$, $-.04$ to $z = .50$, CI = $.28$, $.21$). For differences between groups with different immigrant background but same sport participation pattern, all tested differences were statistically credible ($z = -.40$, CI = $-.76$, $-.21$ to -1.58 , CI = -1.73 , -1.43).

Discussion

The aims of the present study were to analyse if development over time differed in two integration outcomes (problem behaviours and amount of Swedish friends) for youth with different immigration background (native, developing country and developed country) and different sport participation patterns (*active participants*, *starters*, *dropouts* and *non-participants*).

We hypothesized that immigrant youth that are active in sports or have started participating in sport would develop fewer problem behaviours over time and that immigrant youth not participating in sport or dropping out from sport would develop more problem behaviours over time. From a theoretical perspective grounded in PYD, it is acknowledged that sport participation should foster good behaviour in society (Johnson et al., 2016; Lerner et al., 2005; Pate et al., 2000). That said, previous research on both immigrants, and minority youth does not seem to match this conjecture

Table 4. Diff analysis of number of Swedish friends.

Developing country background											
Act-start			Act-stop			Act-inact			Start-stop		
m(sd)	95% CI		m(sd)	95% CI		m(sd)	95% CI		m(sd)	95% CI	
Intercept	.34 (.14)	[.07,.61]	.12 (.15)	[−.17,.42]		.50 (.11)	[.28,.71]		−.22 (.16)	[−.54,.10]	
Slope	−.01 (.08)	[−.67,.14]	−.03 (.09)	[−.20,.15]		−.02 (.06)	[−.14,.10]		−.01 (.10)	[−.20,.17]	
Intercept	.03 (.15)	[−.27,.33]	.21 (.15)	[−.09,.52]	Developed country background						
Slope	−.05 (.08)	[−.21,.11]	.04 (.08)	[−.12,.19]		−.00(.07)	[.10,.60]		.18 (.17)	[−.16,.53]	
Intercept	.21 (.07)	[.07,.36]	.01 (.06)	[−.11,.12]	Native background				.09 (.09)	[−.08,.26]	
Slope	.00 (.04)	[−.08,.09]	−.03 (.03)	[−.09,.03]		.07 (.05)	[−.03,.17]		−.20 (.08)	[−.36, −.04]	
Participants						−.06 (.03)	[−.12, −.01]		−.03 (.05)	[−.12,.06]	
Non west – west			Non west – west			Non west – Swedish			West – Swedish		
95% CI			95% CI			95% CI			95% CI		
Intercept	−.49(.13)		[−.73, −.24]			m(sd)			m(sd)		
Slope	−.04(.07)		[−.17,.10]			−.15(.10)			−.66(.10)		
Starters						.03(.05)			.06(.05)		
Intercept	−.80(.16)		[−.12, −.47]			−.128(.13)			−.49(.14)		
Slope	−.07(.09)		[−.25,.10]			.05(.07)			.11(.08)		
Dropouts											
Intercept	−.40 (.18)		[−.76, −.21]			−.127(.13)			−.87(.13)		
Slope	.03(.10)		[−.16,.22]			.03(.08)			.00(.07)		
Non participants											
Intercept	−.63(.11)		[−.085, −.41]			−.158(.08)			−.95(.10)		
Slope	−.02(.06)		[−.13,.10]			−.01(.04)			.00(.05)		

Note: A statistically credible difference has a 95% credibility interval not passing thru zero.

and results are both ambiguous and hard to interpret (Caruso, 2011; Fredricks & Eccles, 2006; Fuller et al., 2013; Gardner et al., 2009; Jiang & Peterson, 2012; Linver et al., 2009). The findings from the present study provides additional insight regarding the role that sport participation may play in reducing problem behaviour with immigrant youth. Moreover, our findings add further ambiguity to an already complex phenomenon. Our results on one hand illustrate that immigrant youth engaged in sports seem to report lower self-rated problem behaviours, and more so from those with a background from developing countries. Generally, however, the differences in problem behaviours between both immigrant youth and native youth with different sport participation patterns are small and the trajectories on each of the slopes are almost non-existent. The only groups following our hypothesis were starters with developing background who reported decreased problem behaviours over the study period. This decrease, however, does not have a statistically credible difference compared to dropouts and non-participants, thus making additional interpretations more difficult in a broader context. Native dropouts reported more problem behaviours over time, supporting our hypotheses and also demonstrated statistically credible differences with those participants who started participating in organized sport but not those who were active participants. Therefore, our findings do not fully support the contention that sport participation reduces problem behaviours in youth with immigrant or native backgrounds.

Another interesting finding is in relation to the level of problem behaviour reported between groups with different immigrant backgrounds. For example, the level of problem behaviour reported is lower for youth with immigrant background and stronger for youth with native Swedish background. Although these differences in the level of self-reported problem behaviour are small and the practical relevance questioned as a result, these findings are contrary to other studies (Jiang & Peterson, 2012; Pate et al., 2000). Although this effect has not been analysed similarly in previous studies, it has been found that youth with lower socio-economic status often show more problem behaviours independent of their sport participation (Bjerk, 2007). One potential interpretation of the findings that we can suggest is that youth with Muslim background do not consume alcohol; a problem behaviour identified within the measure employed in this study.

The second hypothesis was that that immigrant youth active organized sport or have started to participate in sport would develop more native Swedish friends over time than immigrant youth not participating in sport or dropping out from sports. The contact hypothesis state that participating in sport creates an environment where youth from different backgrounds meet and thus facilitates contacts between these youth to create new friendships (Amir, 1969; Chu & Griffey, 1985). Within this study, the amount of Swedish friends immigrant youth reported at the last measurement point differ depending upon their sport participation pattern. Active participants, starters and dropouts reported more Swedish friends than the non-participants both for developing and developed immigrant backgrounds. In consideration of these findings, it is possible that sport participation influences the development of friendships between youth with different backgrounds. However, caution is warranted in relation to this interpretation since the differences were only visible in intercepts. The trajectories over time were not statistically credible and very close to zero for all groups of youth with immigrant background independent of sport participation pattern. The contact hypothesis can potentially further support the findings for active participants with native Swedish background whom decreased their amount of Swedish friends in consideration that the slope difference was statistically credible with the non-participating native Swedish group. However, active participants still reported a larger amount of Swedish friendships at the last measurement point than the non-participant group with native background, providing some ambiguity to this finding. Overall, our findings warrants further investigation.

The main conclusion of our study is that sport participation, as it is organized in Sweden has very little impact on a general level on the two integration-related outcomes of problem behaviour or on the amount of Swedish friendships on youth aged between 14 and 16. One potential explanation could be that participating in sports at some point during youth expose a person to the positive effects of PYD and new friendships from different backgrounds. However, these

positive effects may have more prevalence prior to the age of 14, which was not accounted for within the present study. On the other hand, it is notable that the youth that participated in organized sports also had parents with higher socioeconomic status and attended schools with greater amounts of native Swedish students. This could also explain the reported differences in problem behaviours (Bjerk, 2007; Wight et al., 2006) and the amount of reported Swedish friendships (Blomdahl et al., 2017). Another possible explanation is that sport participation could offer bi-directional effects in that it may serve as both an explanatory variable for social integration and at the same time an outcome of social integration. This may require further investigation and additional analysis in future studies.

The present study has several strengths. Firstly, the study extended existing research by examining relations between sport participation and integration with a longitudinal European sample of more than 5000 youth. Previous research has relied solely on cross-sectional and qualitative data, thus, limiting the ability to address potential change over time. The sample also made it possible to compare youth from different immigrant backgrounds with youth from native backgrounds. Despite their importance, these findings are also not without limitations. Firstly, the current study only focused on measuring two out of several possible outcomes that are related to integration (Ager & Strang, 2008). This limits our understanding of how these factors may interact with additional aspects of the immigration experience that relate to integration from a broader perspective. For example, school grades and language skill development could have been fruitful outcomes to test the integration effects of sport. Secondly, the proportion of native friends can also be seen as a problematic measure of integration since it is proportional to how many friends a person may have. For example, a youth with immigrant background who has a total of 10 friends, whereby two are native Swedish; the proportion is considered lower compared with a person with four friends, where two are native Swedish. Thirdly, the missing data at time point maybe considered another limitation to this study and could have possibly biased the results (Schafer & Graham, 2002). However, since the groups did not differ in dropouts, 'missing' at random could be assumed, and therefore reducing the likelihood of data error (Asparouhov & Muthén, 2010). A final limitation to the study reflects the groupings of being active in sport, which included persons not participating in organized sports since it is theoretically possible that a person being physically active more than once a week is engaged in a club which isn't an organized sports club.

This present study adds to the existing knowledge base, illustrating the impact sport participation has on integration variables. That said further research is required within this area. For example, future studies could focus on longitudinal designs across longer time periods and during adulthood (e.g., 20 s and 30 s) whereby we can examine if sport participation for immigrant youth have had an impact in regards to their employment, education, housing, and health. Furthermore, participants do not engage in organized sport in isolation. Sports coaches, parents and peers play a significant role in facilitating the appropriate support for the development of sporting friendships, as well as healthy psychosocial and psychological development (Carr, 2009; Davis & Jowett, 2014; Davis et al., 2019). Future research could therefore consider experimental designs to further understand the mediating role of coach leadership as well as the role of the parent-child and coach relationships in facilitating the development of positive outcomes for social integration.

Conclusions

This study adds some new insight to the common ideas that sport participation can be a potential arena that promotes integration and inclusion into society (Bratt, 2015; European Commission, 2007; Hatzigeorgiadis et al., 2013). Whilst the present study has identified that youth sport (as it is organized in Sweden), seems to have limited impact on problem behaviours and the development of Swedish friendships, this study also cannot fully support PYD and contact theory in relation to immigrant sport participation in Sweden. That said, this does not mean that using sports as a vehicle to promote integration when working with immigrants necessarily needs to be time wasted, since

there are examples that in certain conditions sport participation programs has the ability to foster outcomes related to integration (Geidne et al., 2013). Better designed studies are needed to more thoroughly study sport programmes facilitating positive youth development, both in immigrant youth and in other groups of youth. However, from a general perspective when no specific intervention or clear aims are considered when working closely with immigrants within their a club or team/group, the impact of sport participation on adolescent's psychosocial development tend to be exaggerated (Coakley, 2002; Priest et al., 2008). If coaches and leaders working with adolescent immigrants do not have inclusion as an aim with the work they undertake, sport participation alone will not facilitate their effective integration into society (Skille, 2009). Interventions with a clear focus on hindering problem behaviours have demonstrated potential for success (Fuller et al., 2013); thus, sport participation or organized sport opportunities need to be supplemented with integration promoting conditions; unfortunately, this is not the standard focus of traditional sport programs that are currently operated in Sweden at the moment.

Disclosure statement

No potential conflict of interest was reported by the authors.

Funding

This work was supported by the This work was supported by the research initiative Children, Migration and Integration at Stockholm University, Stockholm [No grant number].

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