Neighbourhood perceptions and sense of coherence in adolescence

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Funding

This research has been funded by an agreement signed between the Spanish Ministry of Health, Social Policy and Equality, and the University of Seville (Spain). In addition, this work is supported by the Spanish Ministry of Education through the National Program FPU [grant number: AP2009-0978].

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Abstract

The neighbourhood has traditionally been neglected in studies about adolescents' sense of coherence (SOC). The current study represents the first attempt to analyse the associations between neighbourhood assets, neighbourhood risks, and SOC during adolescence. The sample consisted of 7580 Spanish adolescents aged 13 to 18 who were selected for the 2009/10 edition of the *Health Behaviour in School-aged Children* (HBSC) survey in Spain. The adolescents completed self-report questionnaires that included the SOC-29 scale and separate HBSC scales measuring neighbourhood risks and assets. The results showed that neighbourhood risks were negatively associated with the adolescents' SOC. In contrast, neighbourhood assets, especially relationships with significant adults, were positively associated with the adolescents' SOC. Assets explained 6.5% of the variability in SOC scores after controlling for risks, suggesting that assets may play a significant role, even in neighbourhoods where risks are present. We discuss implications and future research directions.

Keywords: sense of coherence; adolescence; neighbourhood; assets; risks

The sense of coherence (SOC) was proposed by Aaron Antonovsky (1987) as the central construct within the salutogenic model. SOC is seen as an asset that promotes people's movement towards health (Eriksson & Lindstrom, 2006) because it appears to be an ability that facilitates successful coping in response to the demands of life. More precisely, SOC has been defined as "a global orientation that expresses the extent to which one has a pervasive, enduring though dynamic feeling of confidence that (1) the stimuli deriving from one's internal and external environments in the course of living are structured, predictable and explicable (comprehensibility); (2) the resources are available to one to meet the demands posed by the stimuli (manageability); and (3) these demands are challenges, worthy of investment and engagement (meaningfulness)" (Antonovsky, 1987, p. 19).

Although a notable body of research has been conducted on the relationship between SOC and health (Eriksson & Lindström, 2006, 2007), little is known about the experiences that encourage the development of a strong SOC, as noted by Sagy and Antonovsky (2000). Thus, it is worthwhile to conduct studies aimed at increasing our understanding of the psychosocial factors in everyday life that shape the development of the SOC. Furthermore, adolescence has been considered a developmental stage of special interest for studies on the origins of SOC (Evans, Marsh, & Weigel, 2010; Marsh, Clinkinbeard, Thomas, & Evans, 2007), and the number of SOC studies with adolescent samples has grown substantially over the last decade (Lindström & Eriksson, 2010).

According to the original formulation by Antonovsky (1987), three types of experiences have the potential to promote a strong SOC: a consistency in life experiences, which increase the perception that environmental events are ordered and structured more often than they are chaotic; a proper balance between demands and the resources to address them, which strengthens the individual's perception that stressors can be tackled successfully;

and a commitment to active participation in different domains in life, which reinforces the perception of playing an active role in one's life and destiny (Sagy & Antonovsky, 1996). These experiences are hypothesised to reinforce the comprehensibility, manageability and meaningfulness dimensions, respectively, of the SOC (Antonovsky, 1987). Nevertheless, although these three dimensions are conceptually distinct, several works on the factorial structure of SOC show that the dimensions of SOC are inextricably related and difficult to disentangle (see Rivera, López, Ramos, & Moreno, 2011). Accordingly, it may be more appropriate to view consistency, load balance, and participation as contributors to global SOC through their joint effect on its three interrelated facets.

Research on the importance of developmental contexts, especially family and school, has shown that these contexts have the potential to promote meaningful experiences in the development of SOC (e.g., García-Moya, Rivera, Moreno, Lindström, & Jiménez-Iglesias, 2012; Natvig, Hannestad, & Samdal, 2006). In brief, these works have indicated that a positive climate within the family, especially relationships of trust, affection and open communication with parents, and support from classmates and teachers, as well as feelings of belonging and safety at school, have a positive influence on SOC during adolescence (for a systematic review of the research on SOC and developmental contexts in adolescent samples, see Rivera, García-Moya, Moreno, & Ramos, 2013). However, research into the simultaneous contributions of several developmental contexts to SOC in adolescence is still scarce, probably because the linkages between SOC and certain important spheres, such as neighbourhoods, have not yet been sufficiently studied.

Therefore, turning to the communities and neighbourhoods (Braun-Lewensohn & Sagy, 2011a) appears to be an appropriate strategy for expanding the research on the origins of SOC. Neighbourhoods where adolescents live affect the quality of family life and the

diversity of life opportunities, and have both direct and indirect effects on adolescent development (Leventhal, Dupéré, & Brooks-Gunn, 2009). Importantly, the neighbourhood has been seen as an important setting in the provision of social capital (Fustenberg & Hughes, 1997; Kawachi, 2010), a key health asset that refers to the relationships between people (i.e., social networks and connections) that provide support and offer the potential to mobilise resources (Coleman, 1988). Social cohesion, trustworthiness, reciprocity and information channels can be seen as essential elements of neighbourhoods that are rich in social capital. Good infrastructure and services, as well as perceived safety, are other neighbourhood assets that have been demonstrated to be important for positive youth development (Oliva, Antolín, Estévez, & Pascual, 2012). On the other hand, risk factors in the neighbourhood, such as poverty and disorganisation, have been associated with a wide array of risk behaviours during adolescence, including drug consumption, risky sexual activity and criminal activities (Leventhal et al., 2009; Murry, Berkel, Gaylord-Harden, Coopeland-Linder, & Nation, 2011).

The few studies that have examined the relationships between SOC and neighbourhoods have shown that neighbourhood experiences can either facilitate or inhibit the development of a strong SOC. In particular, some findings have suggested that informal control (i.e., the willingness of neighbourhood residents to take responsibility and actively engage in behaviours aimed at preventing deviant behaviour by the youth in their community), as well as neighbourhood cohesion and perceived social support, appear to have positive effects on SOC (Nash, 2002; Marsh et al., 2007). In contrast, living in nomadic communities or lacking housing stability (Antonovsky & Sagy, 1986; Braun-Lewensohn & Sagy, 2011a), being an ethnic minority (Braun-Lewensohn & Sagy, 2011b), being exposed to violence or vandalism (Braun-Lewensohn & Sagy, 2010; Koposov, Ruchkin, & Eisemann, 2003), and the presence of criminal gangs in the neighbourhood (Marsh et al., 2007) were associated with a low SOC.

In summary, now that strong evidence appears to support the positive relationship between SOC and health (Eriksson & Lindström, 2006, 2007), efforts are needed to expand our knowledge about the psychosocial factors that can contribute to the development of SOC in different developmental contexts. Given the notable gap in the research with regard to the role of the neighbourhood as a potential provider of such experiences, this study aimed to analyse the degree to which neighbourhoods influence SOC levels during adolescence. Specifically, we distinguished between neighbourhood risks and assets, conceptualising risks as factors that increase the probability of the onset of a problem or that maintain problem states (Coie et al., 1993), and defining assets as resources that enhance one's ability to maintain and sustain health (Morgan & Ziglio, 2010).

Specifically, the aims of this study were as follows:

1. To explore the associations between adolescents' SOC, neighbourhood risks and neighbourhood assets.

2. To assess the extent to which the risks and assets of the neighbourhood explain SOC levels.

Based on the cited literature, and given that a stronger SOC has been associated with better health, we hypothesised that neighbourhood risks would be associated with a weaker SOC, whereas neighbourhood assets would be associated with a stronger SOC (Murry et al., 2011; Marsh et al., 2007).

Method

Participants

As part of the 2010 edition of the international *Health Behaviour in School-aged Children* (HBSC) survey in Spain, a national representative sample of adolescents was selected by means of a random multi-stage sampling stratified by conglomerates that took into account geographic area (mirroring the current percentages of students from the northern, eastern, central and southern regions of Spain), type of school (mirroring the proportions of state and private schools in the four geographic areas, which resulted in 62.9% state schools and the remainder private schools) and educational level (a balanced representation of students from each of the three pairs of grades in Spanish secondary education). Adolescents between the ages of 13 and 18 who had completed the SOC scale as part of the survey were selected from the original Spanish sample for this study. Specifically, the sample consisted of 7580 adolescents (3672 boys and 3908 girls) whose mean age was 15.4.

A detailed description of the demographic characteristics of the sample is presented in Table 1.

(Insert Table 1 here)

Measures

We measured study variables using the relevant items from the 2010 edition of the HBSC questionnaire in Spain. This questionnaire was approved by the Research Ethical Committee of the University of Seville, which certified that both the instrument and the research procedures complied with current ethical requirements for human research. For the purposes of this study, the following measures were used:

Neighbourhood assets. We assessed three different types of neighbourhood assets (resources associated with people, availability of recreational facilities and neighbourhood

safety) by means of six items answered on a 5-point Likert-type scale. The items that formed this scale were developed within the HBSC network partially based on the items used to assess social capital by Kawachi, Kennedy, Lochner and Prothrow-Stith (1997), and have been conceptualised as indicators of the sense of belonging in the neighbourhood, one of the dimensions of social capital (Morgan, 2011; Morgan, Rivera, Moreno, & Haglund, 2012). Examples of the items that assessed resources associated with people are *You can trust people around here* and *I could ask for help or a favour from neighbours*. We assessed the availability of recreational facilities by the following item: *There are good places to spend your free time (e.g., leisure centres, parks, shops).* Finally, we measured neighbourhood safety by the following items: *It is safe for younger children to play outside during the day* and *I feel safe in the area where I live*. We calculated the mean values for each source of assets, thus obtaining three ordinal variables ranging from 0 to 5. The complete scale showed a good reliability ($\alpha = .82$), and we also found acceptable reliability values for the subscales resources associated with people and safety ($\alpha = .70$ and $\alpha = .66$, respectively).

Neighbourhood risks. Using a 3-item scale, we assessed the basic elements of perceived local area appearance that can be considered risk sources. These three items were adapted from a set of questions from the National Longitudinal Survey of Children and Youth in Canada (Human Resources Development Canada, 1995), which were designed to tap the perception of the following elements of risk in the local area: gang activity, social disorganisation and deprivation. Thus, the scale assessed the presence of antisocial behaviour (*groups of young people who cause trouble*) and several aspects of neighbourhood physical disorder (*litter, broken glass or rubbish lying around* and *run-down houses or buildings*) in the area where the adolescents lived. Possible responses were *none* (coded as 0), *some* (coded

as 1) and *lots* (coded as 2). A cumulative risk index was obtained by summing the scores for each aspect of risk. This scale showed good reliability (α = .76).

Both sets of questions were related to the adolescents' perceptions of the neighbourhood where they lived. These questions were developed and piloted within the HBSC network, and have been proven to be useful tools for evaluating social capital and neighbourhood problems (Mullan et al., 2001).

Sense of coherence (SOC). It was measured by using the SOC-29 Scale (Antonovsky, 1987), which consists of 29 items answered on a 7-point Likert scale. Some examples of items in this scale are: *Until now your life has had…*1- *No clear goals or purpose at all,* 7- *Very clear goals and purpose* and *What best describes how you see life* from 1- *One can always find a solution to painful things in life* to 7- *There is no solution to painful things in life*. The global score constituted the average of the answers given for the 29 items, ranging from 1 to 7. When needed, items were reverse-coded so that higher scores represented a stronger SOC. Further information on the construction and structure of the SOC-29 scale can be found in Antonovsky (1987, 1993). In this study, the scale yielded a Cronbach's alpha of .87. Although the SOC-29 also provides separate scores for comprehensibility, manageability and meaningfulness, the global score is preferred, given the inextricable relationships among these dimensions (Antonovsky, 1993).

Procedure

A computer-assisted web interviewing (CAWI) system was employed in the data collection that made it possible to automatically incorporate the students' answers into the survey database, thus reducing potential human errors associated with the data entry. The questionnaires were completed by students during regular school hours, in accordance with

the international standardised procedure for the HBSC (Roberts et al., 2009), and participants' anonymity was guaranteed.

Statistical analysis

First, Pearson's (*r*) correlations were used to analyse the relationships between all of the variables we examined. Based on the criteria recommended for behavioural sciences (Cohen, Cohen, West, & Aiken, 2003), correlations were considered small (approximately .10), moderate (approximately .30) or large (.50 or higher). Second, hierarchical multiple regression was employed to analyse the contribution of neighbourhood variables in explaining SOC. For that purpose, the cumulative risk factor score was entered in the first step so that the contributions of the three types of assets could be evaluated after controlling for risk levels. We used Beta coefficients to propose a hierarchy of the importance of the neighbourhood characteristics examined according to the magnitude of their effects on SOC, and we compared the levels of explained variability after each step of the regression analysis to evaluate the specific contributions of neighbourhood risks and assets to the development of SOC. We conducted the analyses for the present study on the whole sample because the contributions of sex and age in explaining the SOC differences in this sample of adolescents had been proven to be negligible and very small, respectively (for descriptive statistics and a discussion of these findings, see García-Moya, Moreno, & Rivera, in press).

Results

The correlations among the variables are presented in Table 2.

(Insert Table 2 here)

As shown in Table 2, we found moderate to high positive correlations between the various neighbourhood assets and negative correlations between the assets and risks. In

addition, small to moderate correlations were found between SOC and neighbourhood characteristics. Specifically, neighbourhood risks were negatively associated with SOC, whereas assets associated with people, recreational facilities and safety showed significant positive associations with SOC.

Illustrating the results of the multiple regression analysis, Table 3 reveals a significant negative association between neighbourhood risk and SOC that accounts for 4.1% of the variability in adolescents' SOC scores. The inclusion of neighbourhood assets (Model 2) raised the level of explanation to 10.6%, thus suggesting that assets explained 6.5% of the variance after controlling for neighbourhood risks. The percentages of explained variance represent the proportion of the differences in SOC explained by the predictors. In other words, they serve as an indicator of the ability of these independent variables (neighbourhood risks and assets) to independently predict individual SOC scores. In addition, these percentages provide an indication of the magnitude of their effects on SOC. Among the various assets examined, resources associated with people had the strongest association with SOC levels ($\beta = .14$, $p < .001$). Recreational facilities ($\beta = .10$, $p < .001$) and feelings of safety ($\beta = .08$, $p < .001$) were also significantly related to SOC scores, although the magnitudes of these effects were lower.

(Insert Table 3 here)

Discussion

This study examined the separate effects of neighbourhood risks and neighbourhood assets on SOC during adolescence. The assets and risks were also analysed together to obtain a hierarchy of their effects on adolescents' SOC.

Descriptive bivariate analyses showed that the presence of assets and risks in the neighbourhood affected the strength of adolescents' SOC. Thus, SOC was negatively associated with risks in the neighbourhood (groups of young people causing trouble, litter or rubbish lying around and run-down houses). These risks appeared to have negative implications for the adolescents' resources, as reflected by SOC in the present study.

The association between the presence of 'troubled youth' and a weaker SOC has been reported in previous research that indicated that exposure to vandalism or violent situations (Koposov et al., 2003) and the presence of criminal gangs in the neighbourhood (Marsh et al., 2007) tended to be associated with a lower SOC. A possible explanation for these associations is that young people's antisocial behaviour makes adolescents feel less confident about their abilities to cope successfully with their everyday life demands and reduces their opportunities for active participation in their neighbourhood. Litter or rubbish lying around and run-down houses were also negatively associated with SOC scores. Although these two factors had not been previously studied in relation to SOC, these associations may be attributed to the fact that their presence is usually associated with a lack of financial and social resources in the neighbourhood. In addition, these two aspects of disadvantaged neighbourhoods may be indicators of other background characteristics such as socioeconomic status, which was not considered in this study but has shown a significant association with SOC levels (Due & Holstein, 1998; Lundberg, 1997).

In contrast, neighbourhood assets (relationships with neighbours, the availability of good places to spend leisure time, and the provision of a climate of safety) were positively associated with SOC, meaning that neighbourhoods have the potential to provide significant positive experiences that encourage the development of a strong SOC. These findings can be understood in light of the associations between these characteristics and the likelihood of

active participation in neighbourhood life. In addition, a greater perception of support from others derives from the perception that neighbours are nice people who can be trusted or asked for a favour, thus representing a greater pool of resources that are available for adolescents to rely on. The availability of good places to meet with those neighbours, as well as the resulting feelings of safety in the neighbourhood, also benefitted SOC.

When considered together, the neighbourhood dimensions were significantly associated with the adolescents' SOC, and the contribution of assets was significant after taking risk effects into account. Resources associated with people had the strongest effect and were associated with higher SOC levels. As shown in previous research (Nash, 2002; Marsh et al., 2007), neighbourhood cohesion and perceived social support appear to have positive effects on SOC, which may be explained by the fact that social capital provides opportunities for SOC-promoting experiences. In this study, resources associated with people were one aspect of the neighbourhood sense of belonging and served as an expression of social capital, a neighbourhood asset that was positively associated with adolescents' SOC.

The availability of recreational facilities and feelings of safety also had positive but modest effects on SOC after controlling for risk, but their individual contributions to the explanation of SOC levels appeared to be small. A possible reason for this phenomenon may be that recreational facilities and safety are neighbourhood conditions that are necessary but not sufficient for youths to experience consistency, load balance, and active participation in neighbourhood life. Although this hypothesis needs further examination, safety and good places to spend free time could be viewed as conditions that are necessary for social capital to emerge, which could explain why their contribution beyond relationships with significant others was small. However, the importance of safety and the availability of good places to spend time in the neighbourhood should not be understated, since these assets can result in

higher levels of neighbourhood cohesion and vitality and facilitate the emergence of neighbourhood identity (Arundel, Clutterbuck, & Cleverly, 2005). Instead, further research should be conducted to clarify the role of these assets.

Some limitations should be taken into account in the interpretation of these findings. First, the cross-sectional design of the study does not allow definitive conclusions to be drawn regarding the direction of the relationships between neighbourhood characteristics and SOC. Second, some criticism may arise about a potential overlap between the presence of assets and the absence of neighbourhood risks. However, evidence has indicated that assets and risks are not two sides of the same coin; for instance, variations in assets such as social cohesion have been found across communities that had similar neighbourhood risk profiles (Kawachi, 2010). In addition, our interest in exploring the roles of different types of neighbourhood assets has led to the differentiation of the three dimensions, which entailed the need to measure assets with one to three items. Consequently, measures of neighbourhood characteristics are somewhat limited and should be improved so that researchers can perform a more detailed analysis of each dimension as well as incorporate other relevant dimensions, such as peer group relationships. Furthermore, we assessed neighbourhood characteristics by means of residents' self-reports, which may be viewed as a source of bias. However, recent perspectives suggest that self-reports may be especially valuable for understanding adolescent health for the very reason that they are frequently criticised: that is, because they capture subjective perceptions of reality that may be more meaningful for studies of adolescent health than reality itself (Laursen & Collins, 2009). Specifically, employing residents' perceptions to assess neighbourhoods has been considered a useful approach in the study of adolescent development because this strategy has a developmental anchor and considers the subjective meaning of the environment in the analysis of the relationship between neighbourhoods and

developmental outcomes (Burton, Price-Spratlen, & Spencer, 1997). Finally, some would argue that the model in this study is not sufficiently strong because the total level of explained variance might be considered low. Nevertheless, the 10.6% of the variance we explained seems quite reasonable compared to previously obtained results in research on the role of the family (García-Moya et al., 2012) or school in combination with support from parents (Natvig et al., 2006), which reported 18.1% and 38%, respectively, and given that non-experimental studies usually reveal a lower contribution of neighbourhoods to health compared to family and school (Leventhal et al., 2009). In our view, this phenomenon is not the result of deficiencies in the model but a consequence of the fact that SOC is shaped by a wide variety of factors, including multiple experiences related to adolescents' main developmental contexts and several individual characteristics, such as self-efficacy (Posadzki, Stockl, Musonda, & Tsouroufli, 2010) and personality traits (Ruiselová, 2000).

Despite those limitations, this study has provided an interesting analysis of the relationships between neighbourhood characteristics and SOC, thereby reducing the gap in research with regard to the relationships between neighbourhood and SOC during adolescence. Furthermore, we included both risks and assets in the analysis, which provided a comprehensive overall view of neighbourhood reality, despite the aforementioned limitations. Thus, our study has shown that neighbourhoods where adolescents live do matter for their SOC, and has highlighted the importance of neighbourhood social capital, recreational facilities, and safety as assets that can have positive effects on SOC during adolescence. Furthermore, assets as a whole appeared to be more important than risks for adolescents' SOC.

Despite the exploratory nature of this study, we note some interesting implications from these findings. After controlling for risk, resources associated with people had the

strongest positive association with SOC, which hints at the potential for promoting social capital as an effective strategy for developing a strong SOC among community members, even in high-risk neighbourhoods. Although reducing risks in neighbourhoods is always an important goal, more work is necessary to redress the balance between the dominant deficit model and the less well-known asset model, as noted by Morgan and Ziglio (2010). In addition, given that the neighbourhood is a meaningful context in adolescents' lives that has largely been ignored in former research about SOC in adolescence, the reported significant associations between neighbourhood characteristics and adolescent SOC should be considered a starting point for further research on this topic. Incorporating variables from family and other developmental contexts that play a key role in adolescents' sense of belonging and health (e.g., Morgan & Haglund, 2009) would also represent an important step forward. Similarly, research on the potential roles of gender and age in diverse SOC-promoting experiences would also be beneficial.

In summary, the present study deepens our knowledge about the ways in which SOC is formed, not only by making a relevant contribution to the research on the sources of SOC but also by hinting at potentially useful strategies for health promotion interventions in the neighbourhood. Our findings should encourage the incorporation of the neighbourhood into future research on SOC development, which to date has predominantly been focused on the role of family and school.

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Table 1

Description of the sample

		Boys	Girls	Total
13-14 years	*N*	1099	1203	2302
	%	14.5	15.9	30.4
15-16 years	*N*	1596	1752	3348
	%	21.1	23.1	44.2
17-18 years	*N*	977	953	1930
	%	12.9	12.6	25.5
Total	*N*	3672	3908	7580
	%	48.4	51.6	100

Table 2

Pearson's (r) correlations between neighbourhood characteristics and SOC

	1	2	3	4	5
Assets associated with people	-				
Recreational facilities	.485*	-			
Safety in the neighbourhood	.673*	.421*	-		
Neighbourhood risks	-.162*	-.091*	-.233*	-	
SOC	.261*	.204*	.244*	-.203*	-

* $p < .001$.

Note. SOC = sense of coherence

Table 3

Regression coefficients for the linear association between SOC and neighbourhood assets, after controlling for the effect of neighbourhood risk

Variable	*B*	SE	β	R^2	ΔR^2	rs^2
Model 1				.041*	--	
Neighbourhood risks	-.102	.006	-.203*			
Constant	4.774	.014				
Model 2				.106*	.065*	
Neighbourhood risks	-.077	.006	-.152*			-.021
Resources associated with people	.136	.017	.139*			.010
Recreational facilities	.066	.010	.095*			.007
Neighbourhood safety	.071	.016	.077*			.003
Constant	3.675	.055				

* $p < .001$

Note. SOC = sense of coherence