Am J Community Psychol (2013) 51:451–467
DOI 10.1007/s10464-012-9563-1

How Neighborhood Structural and Institutional Features Can Shape Neighborhood Social Connectedness: A Multilevel Study of Adolescent Perceptions

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Published online: 20 December 2012

Abstract According to the norms and collective efficacy model, the levels of social connectedness within a local community are a function of neighborhood structural characteristics, such as socioeconomic status and ethnic composition. The current work aims to determine whether neighborhood structural and institutional features (neighborhood wealth, percentage of immigrants, population density, opportunities for activities and meeting places) have an impact on different components of neighborhood social connectedness (intergenerational closure, trust and reciprocity, neighborhood-based friendship and personal relationships with neighbors). The study involved a representative sample of 389 early and middle adolescents aged 11–15 years old, coming from 31 Italian neighborhoods. Using hierarchical linear modeling, our findings showed that high population density, ethnic diversity, and physical and social disorder might represent obstacles for the creation of social ties within the neighborhood. On the contrary, the presence of opportunities for activities and meeting places in the neighborhood was associated with higher levels of social connectedness among residents.

Keywords Neighborhood institutions · Socio-economic structure · Social cohesion · Connections · Disorder · Adolescence · Social capital · Collective efficacy · Italy

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Introduction

There is increasing evidence regarding the detrimental effects that neighborhood structural disadvantage has on a wide range of adolescent outcomes (Leventhal and Brooks-Gunn 2000; Leventhal et al. 2009). Indeed, several studies conducted in the last decades have shown that in neighborhoods characterized by high levels of disadvantage, adolescents have worse academic results (Boyle et al. 2007; Brooks-Gunn et al. 1993; Crowder and South 2003), are more frequently involved in behavioral and emotional problems (Bursik and Grasmick 1993; Beyers et al. 2003; Sampson et al. 2005) and experience lower level of psychosocial well-being (Meyers and Miller 2004). In contrast, advantaged neighborhoods seem to protect against these problems, and promote the development of important competencies, such as civic knowledge and political tolerance (Hart and Atkins 2002), and prosocial behaviors (Lenzi et al. 2012). Past research underlines the importance of social processes occurring within the neighborhood, showing how different levels of social connectedness can impact adolescents' physical and psychological well-being (Almgren et al. 2009; Cantillon 2006; Chung and Steinberg 2006; Lenzi et al. 2012; Sampson et al. 2002; Vieno et al. 2010; Woolley et al. 2008; Santinello et al. 2011).

Although the understanding of specific mechanisms of influence through which neighborhood structure may influence adolescent development is still limited, the *norms and collective efficacy model* (Leventhal and Brooks-Gunn 2000; Leventhal et al. 2009) proposes a possible pathway linking neighborhood structural features to youth outcomes. This theoretical model posits that the levels of social connectedness within a local community are a function of neighborhood structural characteristics, such as socioeconomic status (SES), ethnic diversity and

residential instability. According to the model, social relationships within the local community need a "structural basis" to develop, stressing the role of neighborhood socioeconomic status, ethnic composition and residential instability in promoting or hindering the creation of social ties. In line with recent literature showing the importance of neighborhood social connectedness for the well-being of its residents (e.g., Mohnen et al. 2011), it is critical to understand which factors can shape social relationships within the local community.

Most of the existing literature investigating the association between structural and social features of the local community has been conducted in the U.S. (Leventhal and Brooks-Gunn 2000; Leventhal et al. 2009), a context characterized by a pronounced concentration of structural disadvantage. Less is known about the role of neighborhood structural features in influencing social processes within the neighborhood in other countries, where the concentration of disadvantage is not so pronounced and other neighborhood features may contribute in impacting social connectedness within the local community. Moreover, although one of the main foci of neighborhood research is to understand how neighborhood features influence youth well-being, adolescents' perceptions of these features have been less studied (Anthony and Nicotera 2008). Views of neighborhood can be very different for children, teenagers, adults and the elderly, as shown in various studies (e.g., Burton et al. 1997; Lee and Campbell 1997); as a consequence, youth perceptions of some neighborhood features represent uniquely important predictors of developmental outcomes (Nicotera 2007); at the same time, how youth perceive neighborhood structural and institutional features is fundamental to understanding how they develop and experience social relationships within the neighborhood. For these reasons, the present study is aimed to examine the association between neighborhood structural and institutional features (neighborhood wealth, percentage of immigrants, population density, opportunities for activities and meeting places) and youth perceptions of neighborhood social connectedness in a sample of Italian early and middle adolescents.

Neighborhood Structure, Physical and Social Disorder, and Institutional Resources as Predictors of Social Connectedness in the Community

The social disorganization theory (Park et al. 1967; Shaw and McKay 1942) and the norms and collective efficacy model (Leventhal and Brooks-Gunn 2000) postulate that in neighborhoods characterized by high levels of structural disadvantage (e.g., low levels of socioeconomic status, high levels of residential instability, high ethnic diversity), the establishment of social networks among residents can be extremely difficult.

According to these theoretical models, some characteristics of the neighborhood structure influence the ability of community members to establish cohesive relationships and create a shared set of socially accepted norms that promote the willingness to intervene on behalf of the common good. In particular, high levels of concentrated poverty and ethnic diversity in the neighborhood represent two of the main obstacles for the creation of strong social ties among residents; indeed, these structural features undermine levels of perceived trust towards other neighbors, thus reducing the social interactions and relationships among residents within the neighborhood.

Several studies found support for the association between neighborhood structural disadvantage and social connectedness among residents (e.g., social control, collective efficacy, social cohesion). Neighborhoods that have low levels of socioeconomic status and that are highly heterogeneous in terms of ethnic composition appear to hinder social interactions among residents, making the creation of social networks within the community difficult. These findings have been reported both in studies with adult populations (Kruger et al. 2007; Raudenbush and Sampson 1999; Sampson et al. 1999; Weden et al. 2008) and in studies with adolescents (Cantillon 2006; Cantillon et al. 2003; Chung and Steinberg 2006; Rankin and Quane 2002; Tolan et al. 2003; Wickrama and Bryant 2003).

Another aspect of neighborhood structure which previous studies pointed out as a possible determinant of the quality and quantity of social relationships has to do with the size of the community. Prior studies, for example, have explored how the size of a community (e.g., rural area, town, small city, and large city) affects social bonding among residents (Fischer 1977; Ingram 1993; Tittle 1989; Wilson 1991), showing how the small dimensions of a community makes social interactions easier, thus promoting cohesive relationships. Consistent with these results, studies conducted with adolescents found that young people living in small towns tend to develop stronger relationships with neighbors, compared to their peers residing in bigger cities (Albanesi et al. 2007). According to these studies, smaller communities favor social interactions among residents, which in turn constitute the basis for establishing strong social bonds characterized by trust and reciprocity.

Besides these structural features, which describe a geographical unit in terms of demographic composition of the population, other neighborhood characteristics have been investigated as factors that influence the social connectedness among people within a local community. Different studies, for instance, have shown an association between neighborhood physical and social disorder, and the quality of social relationships within the community. Physical disorder involves signs of incivilities and decay

such as abandoned buildings, broken streetlights, graffiti and litter on the street (Perkins et al. 1992; Perkins et al. 1996), whereas social disorder refers to events such as public drinking, prostitution, drug dealing, and loitering young males (Ross and Jang 2000; Sampson and Raudenbush 1999).

Neighborhood disorder has been investigated both as a consequence of weak social bonds, and as an obstacle to the creation of cohesive ties among residents. According to the norms and collective efficacy model (Leventhal and Brooks-Gunn 2000), for example, the levels of disorder in the local community are conceptualized as a consequence of the low levels of collective efficacy, that is, the residents' inability to establish shared norms within the neighborhood (Fauth et al. 2005; Freisthler et al. 2005; Sampson and Raudenbush 1999; Taylor 1996).

However, other studies have conceptualized neighborhood physical and social disorder as key determinants of social connectedness in the local community. Indeed, high levels of disorder can weaken social ties with neighbors, by causing a physical and psychological withdrawal from the life of the local community (Bursik and Grasmick 1993). As a consequence, a number of studies have shown that the presence of signs of disorder in the neighborhood can negatively impact the capacity of the community to promote a set of socially accepted norms, and to ensure that residents' behavior respects these social norms (collective efficacy and informal social control; Bursik and Grasmick 1993; Skogan 1990).

Beyond the structural features and signs of disorder, the literature on neighborhood effects has also identified an association between institutional resources and social connectedness among residents. The quality of social and health services, schools and youth organizations are thought to be influenced by the ability of community members to work together for common goals and values, establishing formal and informal institutions that promote and enforce these values by regulating behavior (Sampson et al. 2002; Vieno et al. 2005).

However, if it is true that the social connections between neighbors can influence institutional resources, there is also empirical evidence suggesting that the presence of specific institutional resources can strongly impact the level of social connectedness in the neighborhood (Anthony and Nicotera 2008; Quane and Rankin 2006). During adolescence, a critical aspect of the local community involves the presence of recreational activities and meeting places. The availability of meeting places and community organizations has a critical role in binding people together, allowing them to get to know each other and to develop supportive networks with other residents, especially during adolescence. Indeed, some of the aspects of neighborhood life that are important for young people could be quite different than those considered salient during adulthood. When adolescents are asked to describe their neighborhood, they name aspects such as places to socialize and have fun and having friends in the neighborhood (Chipuer et al. 1999). Existing evidence of the impact of these features on adolescent development confirms their importance for adolescents' lives, showing how in neighborhoods where sport programs, cultural associations and community centers are available, adolescents have more opportunities to be involved in structured activities and to develop social relationships with people in the local community.

Understanding what factors shape adolescent perceptions and experience of social relationships in their neighborhood is critical for the impact that neighborhood social connectedness in the local community can have on their development. When there are cohesive and supportive relationships among people living in a neighborhood, adolescents are less likely to engage in problem behaviors such as crime and delinquency, compared to neighborhoods with lower levels of social cohesion (Leventhal et al. 2009). In a number of studies, high levels of neighborhood cohesion and social control (collective efficacy) were negatively linked to various adolescent externalizing (affiliation with deviant peers, delinquency, violence, risky sexual behaviors) and internalizing (psychological distress and depressive symptoms) problems (Browning et al. 2008; Chung and Steinberg 2006). Consistent with these results, cohesive relationships among residents within a neighborhood have also shown a positive impact on adolescent psychosocial well-being, in terms of positive self-concept, social well-being, involvement in conventional activities and civic engagement (Cicognani et al. 2008; Flanagan et al. 2007; Quane and Rankin 2006). Most of the existing research on neighborhood effects, including the studies investigating the association between structural and social features of the local community, has been conducted in the United States (Leventhal and Brooks-Gunn 2000; Leventhal et al. 2009). The North American context is characterized by a pronounced concentration of structural disadvantage, so that great attention has been paid to the examination of how neighborhoods with different structural characteristics (especially in terms of neighborhood SES and ethnic diversity) influence social processes within the community.

In contexts where the concentration of disadvantage is not so pronounced (such as the Italian context) however, the role of neighborhood structural features in shaping social processes within the neighborhood may be less marked. Indeed, in these contexts the variability in structural features across neighborhoods is lower, if compared with the North American context (Lenzi et al. 2012; Vieno et al. 2010). As a consequence, it is plausible that other neighborhood features contribute in shaping social

processes in the local community. Consistent with the empirical evidence discussed above, the level of neighborhood physical and social disorder, as well as the availability of institutional resources, may influence the levels of social connectedness within the local community.

The Present Study

Many different constructs have been employed in neighborhood research to define and measure the social relationships among residents in a neighborhood (e.g., social capital, sense of community, social cohesion, neighboring, informal social control, collective efficacy). In the current study, we chose to examine two different components of neighborhood social connectedness, which have shown their influence on adolescents' well-being (Almgren et al. 2009; Lenzi et al. 2012): (1) the general level of connectedness among people in the local community, that is, adolescents' perception of the degree to which people in the neighborhood interact and take care of each other; (2) adolescent personal connection with people in the local community, that is, the degree to which adolescents know and interact with other residents, and the perceived quality of their personal ties with neighbors. The first component includes *intergenerational closure* (the level of knowledge and interaction between adults and adolescents in the neighborhood, and the adults' willingness to monitor adolescents' behavior and to be reference models if advice and support are needed; Sampson et al. 1999) and *trust and reciprocity* (the degree to which people trust other residents and the willingness to help each other; Putnam 2000); the second component comprises *neighborhood friends* (the quantity and quality of adolescents' relationships with peers in their local community) and *personal relationships with neighbors* (the degree to which adolescents know and interact with other residents who live in their neighborhood).

The main objectives of the present study are the following: (1) evaluating the suitability of the role of neighborhood structural features (neighborhood wealth, percentage of immigrants, population density) in the Italian context, in order to determine whether they have an impact on adolescents' perception of neighborhood social connectedness (defined as: neighborhood intergenerational closure, neighborhood trust and reciprocity, neighborhood friends and personal relationships with neighbors); (2) evaluating whether, along with structural characteristics, the level of neighborhood physical and social disorder and the availability of institutional resources (opportunities for activities and meeting places) are associated with the level of social connectedness among people in the neighborhood (the influence of disorder and institutional features will be estimated both at the individual and at the contextual level).

Specifically, we expect that higher neighborhood population density, percentage of immigrants and physical and social disorder are associated with lower levels of perceived neighborhood social connectedness and adolescent personal connection with neighbors. On the other hand, we expect that higher neighborhood wealth and more opportunities for activities and meeting places in the local community are associated with higher levels of perceived social connectedness among residents and adolescent personal ties in the local community (Perkins et al. 1990).

Methods

Sampling and Participants

Participants were randomly sampled from the city register office of the Padova Municipality, a mid-sized city located in the Northeast of Italy (Veneto Region). The Veneto region enjoyed one of the highest levels in all of Europe of uninterrupted economic growth in the 1980s and 1990s. The city of Padova was mainly chosen for its medium size (213,797 inhabitants), such that it has some of the characteristics of a city, and other features that make it similar to a village. Within the Padova Municipality, there are some districts situated in rural and others in urban areas. The city is thus representative of many different geographical realities within the Italian context.

A random sample of 800 early- and middle-adolescents was drawn from the complete list of 11-, 13- and 15-year-olds living in Padova, employing a stratified sampling method with proportional allocation of the strata (in order to obtain a sample of participants analogous to the population of the city). The sample was stratified for neighborhood, age, gender, and immigrant status.

Participants involved in the study were 403 adolescents (47.9 % male), 11 to 15 years old ($M = 13.6$, $SD = 1.64$), from 38 different neighborhoods. The response rate was 59.5 %, excluding families who relocated (4.5 %) or who were not found (10.9 %). However, since some of the neighborhood features were measured by employing aggregate measures, similarly to previous studies (Dupéré and Perkins 2007; Maas and Hox 2005), we excluded neighborhoods where there were less than 4 respondents. Although the sample was stratified by immigrant status (with 12.6 % of foreign born in the original random sample), possibly due to immigrants' greater difficulty in filling out the questionnaire, almost all the participants were born in Italy (95.3 %), with small percentages from Eastern Europe (2.7 %) and other countries (2.0 %).

Analyses were run on a final sample of 389 participants coming from 31 different neighborhoods of Padova (due to the exclusion of neighborhoods where there was a low response rate). The sub-sample excluded from the analysis does not differ significantly from the final sample in terms

of gender distribution (χ^2 (1) = .03, n.s.) or mean age (F (1,397) = .04, n.s.).

Procedures

The present data came from a study conducted in the city of Padova in the Northeast of Italy, and was approved by the institutional review committee at University of Padova. In order to have access to city register office data, the approval of the Padova Municipality was also obtained.

The sampled families received the self-report questionnaires (one for the adolescent, one for one of the parents[1]) at home, along with a letter explaining the aims of the study and a written consent form for parents to allow their children to participate in the study. After a period ranging from 3 to 5 days, the families were contacted by a member of the research team (on the phone, when possible, or directly at home) to briefly discuss the aims of the study. Consent was requested from the family and an appointment was made to collect the completed questionnaires from participants at their homes. Participants were instructed not to complete questionnaire sections which seemed unclear but rather to wait for clarification from researchers on the day of collection.

When the telephone number was not available (in almost 50 % of cases), families were contacted at home directly. When the family was not found at home, the researchers made from three to five attempts in different hours of the day; after that, if families were not found, they were excluded from the sample.

The distribution of the questionnaires was gradual, so that data were collected during a four-month period (October 2009–January 2010). Participants who took part in the study received a small compensation (10 euros).

Measures

All the hypothesized predictors of social connectedness are conceptualized and measured at the neighborhood level. In particular, regarding structural features, percentage of immigrants and population density are measured employing administrative data. Neighborhood wealth, on the other hand, has been measured using participants' perception of the socioeconomic level of people residing in the local community;[2] adolescents' perceptions have been aggregated at the neighborhood level. Similarly, physical and social disorder and the availability of activities and meeting places have been measured employing participants' subjective perceptions, and aggregating responses to obtain the same measures at the neighborhood level (all self-report measures refer to adolescents' perceptions).

Independent Variables

Neighborhood Population Density

The population density in each neighborhood examined was measured employing administrative data, drawn from the Annual Statistical Report of the Padova Municipality (Comune di Padova 2009).

Percentage of Immigrants in the Neighborhood

Ethnic composition of each neighborhood was measured through the percentage of immigrants residing in each neighborhood, using data from the Annual Statistical Report of the Padova Municipality (Comune di Padova 2009).

Perceived Wealth in the Neighborhood

Participants' subjective perception of wealth was used as a measure of the socioeconomic level of the neighborhoods. Participants responded to a single item asking them how well-off the people living in their neighborhood were on a 5-point scale, ranging from (1) "not at all well off" to (5) "very well off". This measure was widely tested in the Health Behavior in School-aged Children study (Currie et al. 2002). Participants' responses have been aggregated at the neighborhood level, in order to obtain the average perception of adolescents living in a given neighborhood.

Neighborhood Physical and Social Disorder

The level of physical and social disorder in the neighborhood was measured employing an 8-item scale, adapted from Perkins et al. (1990), asking participants the degree to which the following signs of disorder were appropriate to describe their own neighborhood: "crime, robberies", "fighting and brawls", "abandoned buildings", "graffiti or incivilities", "drug dealing". Item responses range from (1) "not at all" to (4) "a lot"; a single measure of physical and social disorder in the neighborhood was created by averaging participants' responses to the items, and by aggregating responses at the neighborhood level, with a higher score representing a higher level of disorder (this predictor was included in the analyses both at the individual and at the aggregate level).

[1] Although data have been collected from adolescents and their parents, for the purpose of the current study we only considered adolescents' responses.

[2] Data on the families' socioeconomic conditions (including census-type data on neighborhood median income) in Italy are not accessible for research purposes due to privacy issues.

Neighborhood Perceived Opportunities

Neighborhood opportunities were measured using the "Opportunity for involvement" subscale of the Sense of Community for Adolescent (SOC-A, Cicognani et al., 2006), comprising seven items about the availability and quality of activities and meeting places within adolescents' local communities. "This neighborhood gives me the opportunity to do many different things" and "In this neighborhood, there are enough opportunities to meet other boys and girls" are sample items. Internal consistency of the scale was good (alpha = .92); responses, that ranged from (1) "completely disagree" to (5) "completely agree", were averaged for the measure of neighborhood opportunities, and aggregated at the neighborhood level (this predictor was included in the analyses both at the individual and at the aggregate level).

Dependent Variables

Neighborhood Intergenerational Closure

Intergenerational closure in the neighborhood was measured using Sampson et al.'s scale (1999), which comprises five items asking participants about the level of connectedness between young people and adults in the local community (e.g., "There are adults in this neighborhood that young people can look up to"; "Parents in this neighborhood know their children's friends"). Participants responded on a Likert scale ranging from (1) "completely disagree" to (5) "completely agree". The Cronbach's alpha for the scale was .78. Averaging participants' responses created a single measure of intergenerational closure.

Neighborhood Trust and Reciprocity

An adapted version of the "Neighborhood social capital" scale was drawn from the Health Behaviours in School-aged Children study (Boyce et al. 2008). The final scale was composed of eight items, such as: "You can trust people around here" and "Many people in this neighborhood are willing to help each other". Items are responded to on a 5-point scale ranging from (1) "completely disagree" to (5) "completely agree". The Cronbach's alpha for the scale was .86, and averaging participants' responses to the items created a single measure of neighborhood trust and reciprocity.

Neighborhood Friends

An adapted version of the "Friendship" subscale of the Neighborhood Youth Inventory (Chipuer et al. 1999), comprising six items, was used to measure the quality of adolescent relationships with peers in their local community. "None of my friends live in my neighborhood" and "I like being with the other kids in my neighborhood" are sample items. Internal consistency of the scale was good (alpha = .91); responses, that ranged from (1) "completely disagree" to (5) "completely agree", were averaged for the measure of neighborhood-based friendship.

Personal Relationships with Neighbors

The level of personal knowledge and interaction with people in the neighborhood was measured using a 5-item scale obtained by combining items employed in two different studies (Ziersch et al. 2005; Widome et al. 2008). Sample items were: "I regularly visit my neighbors" and "I know the names of a lot of people in my neighborhood". Item responses range from (1) "completely disagree" to (5) "completely agree." The Cronbach's alpha for the scale was .82, and averaging participants' responses to the items created a single measure of adolescent social relationships with neighbors.

Demographics

Adolescents reported their gender, date of birth and family socio-economic status, which was measured by the Family Affluence Scale (FAS), a four-item measure developed and validated in the HBSC study (Boyce et al. 2006). The scale includes four indicators of family affluence: family car ownership, unshared rooms, number of computers at home, and times spent on holiday in the last 12 months. Responses were summed up in a total score ranging from 0 to 9, with a higher score indicating a higher family affluence.

Analytic Approach

Since these kinds of data are inherently clustered, with adolescents having been sampled within neighborhoods, we used the multilevel regression technique of hierarchical linear modeling (HLM; Raudenbush and Bryk 2002).

An independent model for each one of the dependent variables (intergenerational closure, trust and reciprocity, neighborhood friends and personal relationships with neighbors) was run.

The within-neighborhood (level 1) model estimates the influence of perceived physical and social disorder and opportunities in the neighborhood on neighborhood intergenerational closure, trust and reciprocity, neighborhood-based friends and personal relationships with neighbors for adolescent *i* in neighborhood *j*, controlling for gender, age

and family socioeconomic status (FAS). Perceived disorder and neighborhood opportunities were centered around the neighborhood mean, entailing that the estimate of neighborhood-mean measures are unadjusted for between neighborhood variation in these variables; this way it is possible to examine the between-neighborhood influence of the aggregates of these variables at level 2 (Raudenbush and Bryk 2002). The individual-level model includes two predictors and three demographic control variables:

$$Y_{ij} = \beta_{0j} + \beta_{1j}(\text{age}) + \beta_{2j}(\text{gender}) + \beta_{3j}(\text{FAS}) + \beta_{4j}(\text{Neigh. Disorder}) + \beta_{5j}(\text{Neigh. Opportunities}) + \varepsilon_{ij}$$

We considered the contextual effects on neighborhood social connectedness as a function of neighborhood population density, percentage of immigrants in the neighborhood, neighborhood wealth, neighborhood disorder, and neighborhood opportunities.

We explored possible effects on the adjusted neighborhood log-odds of social connectedness (intergenerational closure, trust and reciprocity, neighborhood friends and social relationships with neighbors), γ_{0j}; all predictors were grand mean centered.

$$\beta_{0j} = \gamma_{00} + \gamma_{01}(\text{Neigh. Dens}) + \gamma_{02}(\text{Neigh. Immigrants}) + \gamma_{03}(\text{Mean Wealth}) + \gamma_{04}(\text{Mean Disorder}) + \gamma_{05}(\text{MeanOpportunities}) + u_{0j}$$

Results

Preliminary Analyses

Descriptive statistics for the variables on each level are shown in Table 1. There was a wide variation in adolescents' reports of their neighborhoods' social connectedness, with standard deviations ranging from .64 in trust and reciprocity to .98 in neighborhood-based friendship.

Within- and Between-Neighborhood Analyses

As stated above, an independent model for each one of the dependent variables measuring neighborhood social connectedness (intergenerational closure, trust and reciprocity, neighborhood friends and personal relationships with neighbors) was evaluated. The within- and between-neighborhood HLM models predicting the four different components of neighborhood social connectedness are shown in Tables 2, 3, 4 and 5. The four models tested included the same individual- and neighborhood-level predictors.

The within-neighborhood model includes two predictors (perceived physical and social disorder in the neighborhood, and neighborhood opportunities) and three demographic control variables (gender, age, FAS), while the between-neighborhood model includes neighborhood structural and institutional resources (population density, ethnic composition, neighborhood wealth, disorder, opportunities)

Table 1 Descriptive statistics for neighborhood social connectedness (intergenerational closure, trust and reciprocity, neighborhood friends and personal relationships with neighbors) and neighborhood

Variable	N	Descriptive
Dependent variables		
Neighborhood intergenerational closure	389	Mean = 3.29 (SD = .72), Range = 1–5
Neighborhood trust and reciprocity	389	Mean = 3.08 (SD = .64), Range = 1–4.75
Neighborhood friends	389	Mean = 3.21 (SD = .98), Range = 1–5
Personal relationships with neighbors	389	Mean = 3.19 (SD = .87), Range = 1–5
Independent variables		
Individual level		
Gender	389	Male (190, 48.2 %); female (204, 51.8 %)
Age	389	Mean = 13.60 (SD = 1.64), Range = 11–15
FAS	389	Mean = 5.85 (SD = 1.66), Range = 1–9
Physical and social disorder	389	Mean = 1.68 (SD = .54), Range = 1–4
Perceived opportunities	389	Mean = 3.03 (SD = .90), Range = 1–5
Neighborhood level		
Population density	31	Mean = 3706.42 (SD = 2423.01), Range = 559–10,061
% Immigrants	31	Mean = 10.81 (SD = 4.05), Range = 4.63–20.00
Neighborhood wealth	31	Mean = 3.28 (SD = .23), Range = 2.89–3.91
Physical and social disorder	31	Mean = 1.65 (SD = .19), Range = 1.29–2.09
Neighborhood opportunities	31	Mean = 2.97 (SD = .32), Range = 2.20–3.55

Table 2 Hierarchical linear model predicting neighborhood intergenerational closure

Fixed effects	Coeff. (CI)	SE	T-ratio	df	*p* value
Neighborhood level: intercept γ_{00}	3.291 (2.926, 3.656)	.178	18.49	25	.000
Population density	−.001 (−.003, .000)	.001	−2.18	25	.039
% Immigrants	−.016 (−.037, .005)	.010	−1.61	25	.118
Neighborhood wealth	−.130 (−.328, .068)	.096	−0.69	25	.187
Ph. and Soc. disorder	−.075 (−.545, .395)	.228	−0.36	25	.743
Neighborhood opportunities	.467 (.172, .761)	.143	3.32	25	.003
Individual level					
Gender (female)	−.004 (−.147, .139)	.073	−0.05	378	.959
Age	−.047 (−.092, −.002)	.023	−2.03	378	.042
FAS	.023 (−.016, −.062)	.020	1.15	378	.253
Perceived ph. and soc. disorder[a]	−.306 (−.463, −.149)	.080	−3.81	378	.000
Perceived opportunities[a]	.311 (.229, .394)	.042	7.35	378	.000

Random effect	SD	Var. component	df	χ^2	*p* value
Final estimation of variance components					
INTERCEPT, U0	0.112	0.013	25	36.68	.06
Level-1, R	0.604	0.365			

Level 2 intraclass $r = 0.0638$, $p = .003$ (6.38 % of total variance in IC is due to differences between neighborhoods)

Model explains 25.8 % of Level 1 (individual) variance, and 62.3 % of Level 2 (neighborhoods) variance

[a] Neighborhood-mean centered

population density, % of immigrants in the neighborhood, neighborhood wealth, neighborhood disorder and neighborhood opportunities as predictors of neighborhood social connectedness.

A preliminary step in HLM involves fitting an unconditional model and examining the variance of the dependent variable, partitioning it into individual- and neighborhood-level components. In the first model (Table 2), predicting neighborhood intergenerational closure, 93.62 % of the variation in the dependent variable lies at the individual level, 6.38 % between-neighborhood. Although the estimated neighborhood-level variances of the dependent variable are statistically significant ($\chi^2_{(30)} = 56.03$, $p < .01$), and of sufficient size to proceed with multilevel analyses, it is clear that there is much greater variability between individuals within neighborhoods than between neighborhoods. The estimated reliability with which neighborhoods can be distinguished on the dependent variable is .43.

At the neighborhood level, population density and neighborhood opportunities were associated with adolescents' perceptions of intergenerational closure: a higher population density was associated with lower levels of intergenerational closure, whereas higher levels of opportunities for activities and meeting places were related to higher levels of intergenerational closure. At the individual level, higher age and neighborhood disorder were negative predictors of intergenerational closure, while perceived neighborhood opportunities were positively related to adolescents' perceptions of intergenerational ties within the local community. The final model explains 25.8 % of the individual-level variance and 62.3 % of the variance at the neighborhood level (the neighborhood-level variance in intergenerational closure was totally explained by the examined predictors).

In the second model (see Table 3), predicting neighborhood adolescents' perception of trust and reciprocity among people in the neighborhood, a lower portion of variance (4.14 %) was due to differences between neighborhoods, as compared with the previous model ($\chi^2_{(30)} = 45.54$, $p < .05$). The estimated reliability with which neighborhoods can be distinguished on the dependent variable is .33.

At the neighborhood level, the percentage of immigrants in the local community was negatively related to neighborhood trust and reciprocity, while, similarly to the results of the previous model, neighborhood opportunities were positively associated with adolescents' perceptions of trust and reciprocity. Furthermore, neighborhood-level perception of physical and social disorder was a negative predictor of neighborhood trust and reciprocity, meaning that higher levels of disorder in the neighborhood correspond to lower levels of perceived trust and reciprocity in the local community. At the individual level, no demographic variables showed a significant effect on neighborhood trust and reciprocity; similarly to the previous model, higher levels

Table 3 Hierarchical linear model predicting neighborhood trust and reciprocity

Fixed effects	Coeff (CI).	SE	T-ratio	df	*p* value
Neighborhood level: intercept γ_{00}	2.968 (2.701, 3.235)	.130	22.89	25	.000
Population density	−.001 (−.003, .001)	.001	−1.15	25	.260
% Immigrants	−.022 (−.034, −.010)	.006	−3.53	25	.002
Neighborhood wealth	−.112 (−.371, .147)	.126	−0.89	25	.383
Ph. and Soc. disorder	−.291 (−.563, −.019)	.132	−2.21	25	.037
Neighborhood opportunities	.419 (.258−.580)	.078	5.32	25	.000
Individual level					
Gender (female)	−.002 (−.081, .077)	.040	−0.06	378	.955
Age	−.008 (−.037, .021)	.015	0.56	378	.578
FAS	.014 (−.010, .038)	.012	1.15	378	.249
Perceived ph. and soc. disorder[a]	−.356 (−.521, −.191)	.084	−4.22	378	.000
Perceived opportunities[a]	.331 (.260, .402)	.036	9.15	378	.000

Random effect	SD	Var. component	df	χ^2	*p* value
Final estimation of variance components					
INTERCEPT, U0	0.007	0.000	25	17.02	>.500
Level-1, R	0.506	0.256			

Level 2 Intraclass $r = 0.0414$, p = .034 (4.14 % of total variance in TR is due to differences between neighborhoods)

Model explains 35.0 % of Level 1 (individual) variance, and 99.7 % of Level 2 (neighborhoods) variance

[a] Neighborhood-mean centered

of perceived physical and social disorder were associated with lower levels of trust and reciprocity, whereas perceived neighborhood opportunities were a positive predictor of adolescents' perceptions of trust and reciprocity. The final model explains 35.0 % of the individual-level variance and 99.7 % of the neighborhood-level variance in trust and reciprocity, which was totally explained by the examined predictors.

Regarding adolescents' personal connectedness within the neighborhood, Tables 4 and 5 show the results of the models predicting neighborhood-based friendship and personal relationships with neighbors. In the former, 4.48 % of the total variance in neighborhood friends is due to differences between neighborhoods ($\chi^2_{(30)} = 50.45$, $p < .05$), while the estimated reliability with which neighborhoods can be distinguished on the dependent variable is .34. At the neighborhood level, coherent with the previous results, a higher percentage of immigrants constituted a negative predictor of adolescents' tendency to establish social ties with peers in the local community, whereas neighborhood opportunities were positively related to neighborhood-based friendship. Moreover, in contrast with the results of the previous models, higher levels of disorder in the neighborhood were associated with a higher tendency of having friends in the local community. At the individual level, the only significant predictor of neighborhood friends was the adolescents' perception of opportunities within the neighborhood: the more young people report that in their local community there are opportunities for activities and meeting places, the more they tend to have friends in their neighborhoods. In the final model, 10.3 % of the individual-level variance, and 98.6 % of the variance at the neighborhood level, was explained; the contextual-level variance in neighborhood friends was completely explained by the analyzed predictors.

In the last model (see Table 5), predicting adolescents' personal ties with neighbors, 8.32 % of the total variance is due to differences across neighborhoods ($\chi^2_{(30)} = 64.30$, $p < .001$) (the estimated reliability with which neighborhoods can be distinguished on the dependent variable is .49). In line with the results of the first model, at the neighborhood level a higher population density corresponded to lower levels of adolescents' personal relationships with neighbors. Moreover, coherent to all the tested models, neighborhood opportunities were positively related to adolescents' tendency to develop social ties with neighbors. At the individual level, adolescents reporting higher levels of neighborhood opportunities also reported having cohesive relationships with their neighbors. The final model explains 10.3 % of the individual-level variance and 99.3 % of the neighborhood-level variance in adolescents' social relationships with neighbors; the variation across neighborhoods of the dependent variable was totally explained by the examined predictors.

Table 4 Hierarchical linear model predicting neighborhood-based friendship

Fixed effects	Coeff. (CI)	SE	T-ratio	df	*p* value
Neighborhood level: intercept γ_{00}	3.174 (2.587, 3.761)	.286	11.11	25	.000
Population density	−.001 (−.003, .001)	.001	−1.03	25	.314
% Immigrants	−.023 (−.046, −.001)	.011	−2.12	25	.043
Neighborhood wealth	−.186 (−.464, .092)	.135	−1.38	25	.181
Ph. and Soc. disorder	.596 (.079, 1.113)	.251	2.38	25	.025
Neighborhood opportunities	.821 (.545, 1.101)	.134	6.13	25	.000
Individual level					
Gender (female)	−.167 (−.348, .014)	.092	−1.81	378	.071
Age	.021 (−.040, .082)	.031	0.66	378	.506
FAS	.031 (−.022, .084)	.027	1.13	378	.261
Perceived ph. and soc. disorder[a]	.104 (−.057, .265)	.082	1.27	378	.205
Perceived opportunities[a]	.547 (.454, .639)	.047	11.71	378	.000

Random effect	SD	Var. component	df	χ^2	*p* value
Final estimation of variance components					
INTERCEPT, U0	0.025	0.001	25	27.31	.34
Level-1, R	0.821	0.674			

Level 2 Intraclass $r = 0.0448$, p = .011 (4.48 % of total variance in NF is due to differences between neighborhoods)

Model explains 10.3 % of Level 1 (individual) variance, and 98.6 % of Level 2 (neighborhoods) variance

[a] Neighborhood-mean centered

Table 5 Hierarchical linear model predicting personal relationships with neighbors

Fixed effects	Coeff. (CI)	SE	T-ratio	df	*p* value
Neighborhood level: intercept γ_{00}	2.882 (2.568, 3.196)	.153	18.78	25	.000
Population density	−.001 (−.003, .001)	.001	−4.13	25	.000
% Immigrants	−.009 (−.032, .014)	.011	−0.77	25	.447
Neighborhood wealth	−.164 (−.543, .215)	.184	−0.89	25	.381
Ph. and Soc. disorder	.275 (−.174, .724)	.218	1.26	25	.218
Neighborhood opportunities	.580 (.275, .885)	.148	3.92	25	.001
Individual level					
Gender (female)	.025 (−.140, .190)	.084	0.29	378	.678
Age	.038 (−.011, .087)	.025	1.54	378	.123
FAS	.020 (−.029, .069)	.025	0.82	378	.414
Perceived ph. and soc. disorder[a]	−.051 (−.181, −.079)	.066	−0.78	378	.437
Perceived opportunities[a]	.312 (.214, .410)	.050	6.21	378	.000

Random effect	SD	Var. component	df	χ^2	*p* value
Final estimation of variance components					
INTERCEPT, U0	0.020	0.000	25	26.76	.37
Level-1, R	0.793	0.629			

Level 2 Intraclass $r = 0.0832$, $p = .000$ (8.32 % of total variance in PR is due to differences between neighborhoods)

Model explains 10.3 % of Level 1 (individual) variance, and 99.3 % of Level 2 (neighborhoods) variance

[a] Neighborhood-mean centered

Discussion

The main aim of the study was to determine whether neighborhood structural and institutional features (neighborhood wealth, percentage of immigrants, population density, opportunities for activities and meeting places) are associated with different components of neighborhood social connectedness, in a sample of Italian adolescents. Our results partly confirmed the assumption included in the norms and collective efficacy model (Leventhal and Brooks-Gunn 2000; Leventhal et al. 2009), according to which neighborhood structural features shape the social processes occurring within the local community. In particular, our findings showed that the association between neighborhood structural characteristics and social connectedness also appears in contexts where the concentration of disadvantage is not as pronounced as in North America, where most studies have been conducted (Dallago et al. 2009; Vieno et al. 2010). However, the results of the current work pointed out that other features, that are less investigated in neighborhood research, may impact the quantity and quality of social relationships in the local community: the availability of institutional resources, more specifically the presence of opportunities for activities and meeting places in the neighborhood, and the levels of physical and social disorder within the community.

Given that, in neighborhood research, data are inherently clustered, the present study employed a multilevel perspective, which allowed the estimation of the effect of structural characteristics (drawn from administrative data) on social connectedness at the neighborhood level and the influence of institutional features and disorder both at the individual and at the contextual level. As expected from previous multilevel analyses of neighborhood effects (Perkins and Long 2002), neighborhood-level variance in social connectedness was modest, ranging from 4.1 to 8.3 %, but it was fully explained by the neighborhood predictors under investigation.

Regarding the first aim of the study, investigating the role of neighborhood structural features as predictors of neighborhood social connectedness (neighborhood intergenerational closure, neighborhood trust and reciprocity, neighborhood friends and personal relationship with neighbors), our results supported the role of some neighborhood structural characteristics in helping to shape social processes within the local community. In particular, high ethnic diversity was associated with lower levels of perceived trust and reciprocity among residents and a lower tendency to establish social networks with peers in the same neighborhood. Consistent with social disorganization theory (Park et al. 1967; Shaw and McKay 1942), and the norms and collective efficacy model (Leventhal and Brooks-Gunn 2000), in neighborhoods characterized by higher levels of ethnic diversity, which in the literature is defined as a sign of structural disadvantage, the establishment of social networks among residents may be more difficult. Our results show that, consistent with previous findings (Cantillon 2006; Chung and Steinberg 2006; Rankin and Quane 2002; Raudenbush and Sampson 1999; Weden et al. 2008), in neighborhoods with a high ethnic diversity, the creation of social relationships based on norms of trust and reciprocity tend to be lower, like adolescents' tendency to have friends in their own neighborhood. However, the results of studies investigating the relationship between ethnic diversity, social processes and adolescent outcomes are mixed, varying depending on whether ethnic heterogeneity or the proportion of a specific ethnic group is measured, the ethnicity of the study participants, the outcomes under study and the neighborhood SES level (e.g., Reardon et al. 2002). Moreover, although Padova represents a city characterized by a high percentage of foreign citizens (14.4 % of the population, compared with the national percentage 7.1 %), our sample included mostly native-born young people, and this could have affected our results, which must be interpreted with caution. Among the neighborhood structural characteristics investigated, the population density in different neighborhoods was associated with different components of social connectedness. Consistent with studies showing that people living in small towns tend to develop stronger relationships with neighbors, compared to people residing in bigger cities (Albanesi et al. 2007; Fischer 1977; Ingram 1993; Tittle 1989; Wilson 1991), our findings pointed out that in neighborhoods characterized by a higher population density, the levels of intergenerational closure are lower, as are adolescents' personal connectedness with neighbors. According to our results, less densely populated neighborhoods may favor the establishment of cohesive relationships among residents, by making social interactions in the local community easier.

Contrary to our hypothesis and most of the literature on neighborhood effects (see for example, Boyle et al. 2007; Connell and Halpern-Felsher 1997; Leventhal et al. 2009), neighborhood wealth was not associated with the level of social connectedness in the local community. This finding may be explained by the peculiarities of the context where the research has been conducted, or by methodological aspects of the study. First, the lower tendency of socio-economic disadvantage being concentrated in specific areas of cities, characterizing the Italian context, may be responsible of this finding: since the variation in socio-economic level across the neighborhoods of Padova is not highly pronounced (Comune di Padova 2009), neighborhood wealth has no effect on social processes occurring within the community. Alternatively, the result may be

related to the use of participants' subjective perception of residents' wealth as a proxy of neighborhood socioeconomic status, deriving from the impossibility to obtain objective measures such as the income level. Although participants' subjective perceptions were aggregated to the neighborhood level in order to obtain a more objective measure by estimating the effect of the average perception of wealth in the local community, this measure can only be considered a proxy of neighborhood socioeconomic status. As a consequence, the lack of association between neighborhood wealth and the four components of social connectedness under investigation may derive from this methodological choice, and results have to be interpreted with caution.

The study also aimed to examine whether, along with structural features, the level of physical and social disorder and the availability of institutional resources (opportunities for activities and meeting places) is associated with the level of social connectedness among people in the neighborhood. Although these characteristics have not been widely studied as predictors of neighborhood social connectedness, there is empirical and theoretical evidence supporting the potential role of neighborhood disorder and institutional resources in shaping social relationships in the local community (Bursik and Grasmick 1993; Anthony and Nicotera 2008). Considering the peculiarities of the Italian context, where the variation in structural features across neighborhood is not very pronounced, we hypothesized that the levels of disorder and opportunities for activities and meeting places in the local community might influence the creation of social relationships in the neighborhood.

The availability of meeting places and opportunities for activities in the neighborhood showed a positive association to all the four components of neighborhood social connectedness: in local communities where adolescents, on average, report higher levels of opportunities to have fun and meet other people in the neighborhood, they also report higher levels of social cohesion among residents (intergenerational closure, trust and reciprocity) and higher levels of personal connectedness with people (neighborhood-based friendship, social relationships with neighbors). In line with previous research (Anthony and Nicotera 2008; Quane and Rankin 2006), the presence of some institutional resources, such as spaces and opportunities for activities, may play a critical role in binding people together, allowing residents in a neighborhood to know each other and to develop supportive networks with other people. The association between neighborhood institutional resources and social connectedness has already been postulated in social disorganization theory (Park et al. 1967; Shaw and McKay 1942), and subsequently within the institutional resources model (Leventhal and Brooks-Gunn 2000). According to these theories, the quality of institutional resources are influenced by the level of social connectedness within the neighborhood and the ability of community members to work together for common goals and values, establishing formal and informal institutions that promote and enforce these values by regulating behavior (Sampson et al. 2002). Our hypotheses were based on a reverse causal direction among these features (deriving from theoretical and empirical evidence), with the availability of meeting places and activities in the neighborhood, which tends to be more stable, hypothesized to influence the level of social connectedness among residents. The findings supported this association; however, it is plausible that the relationship between these neighborhood features is not unidirectional, but characterized by a set of reciprocal influences. These findings are also in line with theoretical and empirical evidence showing that the availability of activities and meeting places in the neighborhood may be one of the most influential features of the local community for adolescents' well-being. Adolescents are in a developmental stage characterized by increasing autonomy from parents, which allows them to explore different settings; their range of actions, however, is still limited, thus making the neighborhood a critical context in adolescent lives. Many of the activities in which youth participate are often located in their immediate neighborhood of residence, thus making the local community a critical social context where they can develop social ties with peers and adults. Our findings suggest that the more the local community provides opportunities for activities and meeting places, the more adolescents may be able to create cohesive relationships in the neighborhood.

Besides the positive effect of the aggregate perceptions of neighborhood opportunities, that is, the average perception of the availability of activities and meeting places of people residing in a given neighborhood, perceived opportunities were also positively associated with social connectedness at the individual level. Participants who reported that in their neighborhood there are many opportunities to have fun and meet other people, also reported higher levels of social cohesion among residents in their neighborhood (intergenerational closure, trust and reciprocity) and a stronger personal connectedness with people in the local community (neighborhood friends, social relationships with neighbors). It is possible that, regardless of the real opportunities which exist within the neighborhood, those adolescents who are more aware of, and thus possibly use more facilities and opportunities in their neighborhood, are more connected with other people residing in the local community; this could explain the higher levels of social cohesion and personal connectedness reported by participants who perceive themselves to live in a neighborhood with many opportunities for activities and social interactions.

Finally, our results show an association between physical and social disorder in the neighborhood and the level of social connectedness among residents. More specifically, in line with previous studies showing that the presence of signs of disorder in the neighborhood can negatively impact the establishment of strong social networks among people in the local community (Bursik and Grasmick 1993; Quane and Rankin 2006; Skogan 1990), in the current study, higher levels of disorder in the community were associated to lower levels of perceived trust and reciprocity among people: in neighborhoods where, on average, participants reported more signs of physical and social disorder, adolescents also tend to report a lower tendency to help each other and a lower perceived trust towards other neighbors. Despite the fact that neighborhood disorder, similarly to institutional resources, is usually investigated as a consequence of weak social ties in the community, and the residents' inability to establish shared norms within the neighborhood (Fauth et al. 2005; Freisthler et al. 2005; Leventhal and Brooks-Gunn 2000; Sampson and Raudenbush 1999; Taylor 1996), our findings are in line with studies conceptualizing neighborhood physical and social disorder as key determinants of social connectedness in the local community. Indeed, high levels of disorder might weaken social ties within the neighborhood, by lowering the levels of perceived trust and causing a physical and psychological withdrawal from the life of the local community (Bursik and Grasmick 1993; Skogan 1990). This could be especially relevant in adolescence, when parents living in highly violent and impoverished neighborhoods may use restrictive strategies to protect their children against negative community influences (Beyers et al. 2003; Burton and Jarrett 2000; Roche et al. 2005), thus lowering their opportunities to create social relationships in the neighborhood. Also in this case, it is likely that neighborhood disorder and neighborhood cohesion mutually influence each other, in a cycle where physical and social incivilities weaken social relationships among residents, who in turn become unable to promote a set of socially accepted norms and monitor residents' behavior, making the proliferation of signs of disorder more likely (Perkins et al. 1990; Taylor 1996).

In addition to the aggregate perceptions of neighborhood disorder, that is, the average perception of the degree to which different signs of disorder constitute a problem within a given neighborhood, the individual perception of physical and social incivilities was also negatively associated with the levels of neighborhood cohesion: adolescents reporting high levels of neighborhood disorder also reported lower levels of intergenerational closure and trust and reciprocity. It is plausible that individuals perceiving themselves to live in a neighborhood characterized by high levels of disorder will also be less involved in the life of the local community; as a consequence, they may perceive social relationships among residents as less cohesive. Again, restrictive strategies adopted by parents to protect their children against risky community influences may play a role in explaining this association.

A result that deserves particular attention, which is in contrast to that which we hypothesized and with the literature (e.g., Quane and Rankin 2006), is the positive association between the neighborhood-level disorder and adolescents' tendency to have friends within the local community. According to our findings, in areas characterized by high levels of disorder, young people tend to establish stronger ties with peers within the neighborhood. The positive association between physical and social disorder and neighborhood-based friendship may be explained by a protective strategy put in action to cope with the high levels of disorder: adolescents, when living in a local community where signs of disorder such as vandalism, drug dealing or prostitution are frequent, may be encouraged to create strong ties with peers in the neighborhood in order to feel safer in their own neighborhood. This explanation is in line with the work of Taylor (1996), who found that people living in neighborhoods with higher rates of crime were more involved in their local communities respect to those living in neighborhoods characterized by lower levels of crime. He explained this finding concluding that in some neighborhoods, signs of disorder such as crime may draw residents together, providing a common problem to deal with, and giving them a sense of confidence that cohesive ties can reduce their vulnerability in the face of neighborhood disorder. Alternatively, it is possible that neighborhoods with high levels of disorder promote affiliation with deviant peers by increasing adolescents' exposure to violence and crime and by lowering informal social control, i.e., residents' ability to monitor youth behavior (Leventhal et al. 2009). However, since we did not take into account the possible affiliation with deviant peers, and this finding is in contrast with most of the literature on neighborhood effects, it should be interpreted with caution.

Overall, the results of the present study are in line with previous findings supporting the association between neighborhood structural features and social processes within the local community. Indeed, the high ethnic diversity, as well as a high population density in the neighborhood, were associated to less cohesive relationships among residents. Similar to North American findings, neighborhood structure appears to contribute in shaping social processes also in the Italian context. In contrast to typical findings on the detrimental effect of socioeconomic disadvantage, we did not find any association between perceived neighborhood wealth and social connectedness among residents. Although this lack of association may be due to the use of a subjective measure for neighborhood

wealth, it is also possible that the weaker concentration of economic disadvantage characterizing Italian cities is responsible for this result, suggesting that other features deserve greater attention when planning community actions. For example, according to our results there are other factors that may have an impact on the creation of social ties within the neighborhood. The opportunities for activities and meeting places offered by the local community, in particular, seem to promote both the general level of cohesion among residents and the adolescents' social integration with peers and adults in the neighborhood. Signs of physical and social disorder, instead, appear as an obstacle to the creation of social relationships characterized by norms of trust and reciprocity, although they were positively associated to adolescents' tendency to have friends in their own neighborhood.

Although neighborhood-level variance in social connectedness was modest, ranging from 4.1 to 8.3 % of total variance, it was fully explained by the neighborhood predictors under investigation, showing the importance of considering neighborhood structure, institutional resources and signs of disorder among the factors helping to understand the differences in social connectedness across different neighborhoods.

Limitations and Conclusions

The study has some limitations to acknowledge. The main limitation is related to the geographical area where the study was conducted: indeed, findings obtained with participants coming from a mid-sized Italian city may not generalize to adolescents in different Italian cities and other parts of the world, where social, cultural, and economic aspects may influence neighborhood features. However, one of the aims of the current research study was to elucidate potential differences between the Italian context, where there is a paucity of studies that investigated the effects of neighborhood structure with a multilevel approach, and North American cities, where there is strong evidence about the detrimental effects of neighborhood structural disadvantage.

Moreover, because of the cross-sectional nature of the data, it is not possible to draw conclusions about the direction of the effects. It is plausible that, in neighborhoods where adolescents report high levels of social connectedness and cohesive ties with other neighbors, individuals have been able to work for their local communities, taking care of public spaces and promoting activities and social events. The direction of the relationship between these neighborhood features can only be evaluated using longitudinal studies.

Another limitation lies in the impossibility to obtain an objective measure of neighborhood socioeconomic status (e.g., income level, % poverty), which makes it difficult to compare our findings with studies examining the effects of socioeconomic disadvantage on social processes occurring within the local community. However, the employment of administrative data to measure other aspects of neighborhood structure (ethnic diversity, population density), and the use of aggregate measures to estimate the average perceptions of neighborhood opportunities and disorder, allowed us to obtain diversified and reliable measures of neighborhood features.

Moreover, the exclusion of some neighborhoods of the city may have influenced the results of the study. Indeed, while in some cases the exclusion was due to the small number of adolescents residing in the neighborhoods, in other cases, along with a reduced population, there was also a very low response rate. In these excluded neighborhoods it would have been difficult to use aggregate measures because, with the sampling methodology we adopted, the number of respondents was not sufficient to obtain reliable neighborhood indicators. The exclusion of these neighborhoods may have partly influenced the results, and these particular urban units deserve further attention in future studies.

Finally, although in our study we considered the main neighborhood structural and institutional factors influencing social relationships between neighbors, controlling for age, gender and family affluence, other unmeasured factors may have contributed to our findings. For example, length of residence (Lewicka 2010) or housing type (Michelson 1977) have been found to predict the creation of social ties in the local community.

Despite these limitations, the current study represents the first research conducted in the Italian context examining the association between neighborhood structural and institutional features, conceptualized and measured at the neighborhood level, and social connectedness within the local community. By using a methodological approach similar to North American studies, the current study allows some comparisons between the two different contexts. According to our findings, neighborhood structural disadvantage can also hinder the establishment of strong social ties within the local community in contexts where socioeconomic disadvantage is not highly pronounced, such as the Italian context. In particular, neighborhood ethnic composition and population density were associated with the social connectedness of the community. However, our findings also show the importance of other neighborhood features, which may represent the basis from which some of the social processes within the neighborhood are shaped. The opportunities offered by the local community, in terms of meeting places, social events and activities, seem to have a role in promoting the social connectedness among residents, allowing them to get to know each other and developing relationships characterized by trust and reciprocity. The role of these

neighborhood features may be relevant especially in contexts where there are not wide and concentrated socioeconomic disparities (e.g., the Italian context), which may undermine the influence of other neighborhood characteristics, such as institutional resources. These findings are critical not only for a better understanding of some of the factors influencing social relationships within the neighborhood, but also for developing community interventions able to promote social connectedness among people living in the same neighborhood and, in turn, adolescent positive development. Indeed, as supported by our previous research and prior literature on neighborhood social processes, in local communities where people are willing to help each other and work for the common good, adolescents have a lower likelihood to be engaged in risky behaviors and develop emotional problems (Browning et al. 2008; Leventhal et al. 2009; Vieno et al. 2010), while they are encouraged to foster their competencies and skills, thus promoting their positive development (Cicognani et al. 2008; Flanagan et al. 2007; Quane and Rankin 2006). Thus, according to our results and existing evidence, fostering opportunities for activities and meeting places for residents in a community would not only nurture social cohesion within the neighborhood, but it would also create a setting for young people's positive development (Durlak et al. 2007).

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