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Are Family, Neighbourhood and School Social Capital Associated with Psychological Distress Among Lithuanian High-School Students? A Cross-Sectional Study

Dario Novak[1], Stevo Popovic[2], Arunas Emeljanovas[3], Brigita Mieziene[3], Tomislav Kristicevic[1]

1. University of Zagreb, Faculty of Kinesiology, Zagreb, Croatia
2. University of Montenegro, Faculty for Sport and Physical Education, Niksic, Montenegro
3. Lithuanian Sports University, Faculty of Sports Education, Kaunas, Lithuania

Correspondence with:

Stevo Popovic

stevop@ac.me

University of Montenegro

Faculty for Sport and Physical Education

Narodne omladine bb, 81400 Niksic, Montenegro

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Abstract

The purpose of the present study was to examine associations between family, neighborhood and school social capital with psychological distress among Lithuanian adolescents 14-18 years of age. Participants were 1863 high-school students (51.4% females), aged 14-18 years in the 2015/2016 school year. Psychological distress was dependent, while social capital domains independent variables. Logistic regression was used to examine the associations of family, neighborhood and school social capital on the risk of high psychological distress. Psychological distress was measured by the Kessler-6 scale. Adjusting for gender, body mass index, self-perceived socioeconomic status, self-rated health and physical activity, high family social capital (OR 0.37; 95% CI 0.27 to 0.50), high neighborhood trust (OR 0.49; 95% CI 0.39 to 0.63), high vertical school trust (OR 0.67; 95% CI 0.52 to 0.88), high horizontal school trust (OR 0.76; 95% CI 0.58 to 1.00) and reciprocity at school (OR 0.56; 95% CI 0.43 to 0.74) was each associated with lower odds of psychological distress. When all independent variables were entered simultaneously, high family social capital, high neighborhood trust, high vertical school trust and reciprocity at school remained associated with lower odds of psychological distress. Since family, neighborhood and school social capital were inversely associated with psychological distress, strategies and policies that improve mutual support between the community and children must be implemented within the system.

Keywords: social capital, psychological distress, adolescents, support

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Introduction

Adolescence represents sensitive period, where our psychological system is under big emotional, social and mental changes (National Research Council and Institute of Medicine, 2007). Due to those big changes, most often combined with substance use and misuse, inadequate nutrition and obesity, children and youth often experience emotional and mental disorders (Costello et al., 2003). The prevalence of diagnosable mental disorders is approximately 20% among adolescents (Kessler et al., 2005), while around 25% of adolescence have had one major depressive episode before they enter adulthood (Rushton et al., 2002). According to Patel et al. (Patel et al., 2006), mental problems has become increasing complex between the childhood and adolescence period. Also, mental health problems may lead to poor school performance, disconnectedness with family and friends and substance use (Kapphahn et al., 2006). It is important to notice, that mental health is often associated with risk factors, such as parental divorce, conflicts with peers, family, neighbors and stress (Levitt et al., 2007).

Social capital of children represents their social relationship with family, neighborhood and school (Boone-Heinonen, & Gordon-Larsen, 2012). Healthy social capital and strong relationships have been protective factors from obesity and some cardiovascular diseases (Kawachi et al., 2010). According to Morrow (2004), Childs' environment might directly influence on his/hers development, beginning with people who live with or near the child (family and neighbors) and people who surround him/her at school. Since nowadays, a few studies have been investigating possible associations between social capital and mental health (McPherson et al., 2014; Morgan, 2010; Morrow, 2004). Most recent study conducted in Croatian 17-18 years old high-school students showed that the prevalence of high-school students, who reported high psychological distress, was around 25% (16% for males and 33% for females) (Novak & Kawachi, 2015). The authors of the mentioned study also showed that high psychological distress was inversely associated with family, neighborhood and school social capital, that is, children who reported high family, neighborhood and school social

capital were less likely to report high psychological distress (Novak & Kawachi, 2015; Novak et al., 2016).

Lithuania, as a country which has been moving from socialism to democratism, still suffers from perceived lack of transparency and social transformation, creating social inequalities. These type of social inequalities are directly associated with health inequalities. For example, children who reported that is easy to talk to parents were less likely to report some psychological problems or complaints (Moreno et al., 2009). Communication with the father seems to have protective role in maintaining emotional well-being (Sheeber et al., 2007), which was significantly higher among females (Fenton et al., 2010). Results from Health-Behavior in School-Aged Children Study (HBCS) showed that the prevalence trend of communicating with parents have been decreasing from the age of 11 to the age of 15 (Currie et al., 2012), pointing out that parents are slowly losing control over their children and the relations with friends are increasing. According to Schneider (Schneider, 2000), establishing firm relationship with friends prevent from lower levels of happiness, self-esteem and school-adjustment. Also, Zambon et al. (2010) showed that club participations among adolescents might be preventing method for depressive mental health and anxiety. School experience affect development period in children and youth, where students who dislike shool are more likely to have mental problems (Shochet et al., 2006). Also, feeling pressured by the schoolwork might be the trigger for experiencing psychological problems (sadness and being nervous) (Simetin et al., 2011; Torsheim & Wold, 2001).

Since there has been lacking of studies investigating the influence of social capital on psychological distress (Novak & Kawachi, 2015) in other countries, we speculated that social capital domains might be associated with high psychological distress, that is, higher levels of social capital might indicate lower level of psychological distress among Lithuanian high-school students (Novak et al., 2015). Thus, the aim of the present study was to examine associations between family, neighborhood and school social capital on psychological distress among Lithuanian high school students aged 14-18 years.

Methodology

Sample

We conducted a survey among 1863 high-school students (906 males and 957 females) in Lithuania. The students ranged in age from 14-18. Basic descriptive

characteristics are presented in Table 1 One of the parents for each subject signed an informed consent form. The students signed an assent form as well. All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Psychological distress

Psychological distress was assessed using the 6-item Kessler scale. Previous studies have shown that the K-6 is reliable instrument able to detect mood and anxiety compared to other psychological disorders in adolescents (Kessler et al., 2003). Each question is scored from 0 (none of the time) to 4 (all of the time). Scores of the 6 questions were then summed (0–24) with lower score indicating low levels of psychological distress. Previous research has shown that the dichotomous scoring of responses in the range 13+ versus 0–12 discriminates accurately between respondents with and without psychological distress, respectively (Kessler et al., 2003).

Social capital domains

Social capital in children and youth has been consisted of family, neighborhood and school social trust (Morrow, 1999). Family social capital was assessed using one-item question: "Do You feel that Your family understands and gives attention to You?". Neighborhood social capital was assessed using two-item questions: “Do You feel people trust to each other in Your neighborhood?" and "Do You feel that Your neighbors step in to criticize someone's deviant behavior during high school. The first neighborhood social capital question referred on neighborhood trust, and the second one on informal social control. School social capital was assesses using three-item questions: “Do You feel that teachers and students trust each other in Your high-school?", "Do You feel students trust to each other in Your high-school?" and "Do You think students collaborate to each other in Your high school?". The first school social capital question referred on vertical school trust, the second one on horizontal school trust and the third on reciprocity at school. Possible answers were arranged across five-item Likert-type scale: (1) strongly agree, (2) agree, (3) neither agree or disagree, (4) low disagree and (5) disagree. We binarised the outcome of each variable as "high" (strongly agree and agree) and "low" (neither agree or disagree, low disagree and disagree).

Covariates

As marker of physical activity, we considered students’ total physical activity in the last 7 days. Physical activity was assessed using the short version of the

International Physical Activity Questionnaire (IPAQ) and was expressed as metabolic equivalent-hours per week (MET-hour/week) (Craig et al., 2003). Socioeconomic status was entered in our regression models as a potential cofounder, i.e., theoretically associated with both self-rated health and social capital (Subramanian et al., 2002). The classification of SES was based on both parents' occupations at the time when research was conducted. Self-perceived SES was categorized into three levels: high SES (i.e., managers and professionals), middle SES (white collar) and low SES (blue collar) (Wang et al., 2005), and was dichotomized as high/middle (responses in the range 2–4) versus low (responses in the range 5–6). Self-rated health was assessed using the standard single item question: "How do you perceive your health?". Possible responses were arranged along a 5-item Likert type scale: 1 very poor, 2 poor, 3 fair, 4 good, or 5 excellent. Good, very good and excellent were collapsed into one category (good); while fair and poor were designated as poor self-rated health. The measure has also been used previously in adolescents (Pastor et al., 2003).

Statistical analysis

All the analysis were analyzed using SPSS 18.0 software (SPSS Inc. Chicago, IL USA). Firstly, we determined number of answered questions using percentages (%). Differences for categorical variables were determined using Chi-square test. The associations between family, neighborhood and school social capital with psychological distress were determined using multivariate logistic regression. Also, as potential cofounders, we entered gender, body mass index, level of socio-economic status, self-rated health and level of physical activity. In the present study, we investigated the associations between family social trust and psychological distress (model 1), between neighborhood social trust and psychological distress (model 2), between school social trust and psychological distress (model 3) and between all social capital determinants simultaneously entered into the model with psychological distress (model 4). Spearman's coefficient of correlation was used to determine relations between all variables. Statistical significance was set up at $p<0.05$.

Results

Roughly, 22% of all participant reported high psychological distress. The prevalence of high psychological distress was almost three times higher among females (31.4%) than males (12.5%). The prevalence of poor self-rated health on a whole

sample was 43.6%, while more females significantly reported poor self-rated health than males (52.7% vs. 34.1%) (Table 1).

Table 1. Characteristics of the study subjects, Lithuania, 2016.

	Total (N=1863)	Males (N=906)	Females (N=957)	p Value*
	N (%)	N (%)	N (%)	
Self-rated health				
Poor	813 (43.6)	309 (34.1)	504 (52.7)	
Good	1050 (56.4)	597 (65.9)	453 (47.3)	<0.001
Family social capital				
Low	226 (12.1)	110 (12.1)	116 (12.1)	
High	1637 (87.9)	796 (87.9)	841 (87.9)	0.989
Neighbourhood trust				
Low	944 (50.7)	407 (44.9)	537 (56.1)	
High	919 (49.3)	499 (55.1)	420 (43.9)	<0.001
Informal social control				
Low	1291 (69.3)	652 (72.0)	639 (66.8)	
High	572 (30.7)	254 (28.0)	318 (33.2)	0.015
Vertical school trust				
Low	926 (49.7)	419 (46.2)	507 (53.0)	
High	937 (50.3)	487 (53.8)	450 (47.0)	0.004
Horizontal school trust				
Low	859 (46.1)	360 (39.7)	499 (52.1)	
High	1004 (53.9)	546 (60.3)	458 (47.8)	<0.001
Reciprocity at school				
Low	431 (23.1)	207 (22.8)	224 (23.4)	
High	1432 (76.9)	699 (77.2)	733 (76.6)	0.775
Body mass index				
Normal	1696 (91.0)	803 (88.6)	893 (93.3)	
Overweight/obese	167 (9.0)	103 (11.4)	64 (6.7)	<0.001
Self-perceived socioeconomic status				
High/middle	415 (22.3)	206 (22.7)	209 (21.8)	
Low	1448 (77.7)	700 (77.3)	748 (78.2)	0.641
Psychological distress				
High	414 (22.2)	113 (12.5)	301 (31.4)	
Low	1449 (77.8)	793 (87.5)	656 (68.6)	<0.001
Physical activity				
High/moderate	1437 (77.1)	746 (82.3)	266 (27.8)	
Low	426 (22.9)	160 (17.7)	691 (72.2)	<0.001

Legend: *Chi-square test.

The influences of social capital on high psychological distress were presented in Table 2. Psychological distress was inversely associated with high family social capital (OR 0.37; 95% CI 0.27 to 0.50) (Model 1), neighborhood trust (OR 0.49; 95% CI 0.39 to 0.63) (Model 2), vertical school trust (OR 0.67; 95% CI 0.52 to 0.88), horizontal school trust (OR 0.76; 95% CI 0.58 to 1.00) and reciprocity at school (OR 0.56; 95% CI 0.43 to

0.74) (Model 3). Informal social control was positively associated with psychological distress (OR 1.77; 95% CI 1.39 to 2.25). When all the social capital variables were entered simultaneously (Model 4), all the variables remained inversely associated with psychological distress, except for horizontal school trust (OR 0.81; 95% CI 0.61 to 1.08). Informal social control remained positively associated with psychological distress (OR 1.86; 95% CI 1.45 to 2.38).

Table 2. ORs for high psychological distress among high-school students, Lithuania, 2016.

	Model 1 OR (95% CI)	**Model 2 OR (95% CI)**	**Model 3 OR (95% CI)**	**Model 4 OR (95% CI)**
Family social capital				
Low				
High	0.37 (0.27 to 0.50)***			0.44 (0.31 to 0.61)***
Neighbourhood trust				
Low				
High		0.49 (0.39 to 0.63)***		0.65 (0.51 to 0.84)***
Informal social control				
Low				
High		1.77 (1.39 to 2.25)***		1.86 (1.45 to 2.38)***
Vertical school trust				
Low				
High			0.67 (0.52 to 0.88)**	0.75 (0.57 to 0.99)*
Horizontal school trust				
Low				
High			0.76 (0.58 to 1.00)*	0.81 (0.61 to 1.08)
Reciprocity at school				
Low				
High			0.56 (0.43 to 0.74)***	0.62 (0.47 to 0.83)***
Gender				
Male				
Female	2.05 (1.61 to 2.60)***	2.05 (1.61 to 2.60)***	2.05 (1.61 to 2.60)***	2.81 (2.17 to 3.64)***
Body mass index				
Normal				
Overweight/obese	0.82 (0.55 to 1.23)	0.82 (0.55 to 1.21)	0.78 (0.53 to 1.17)	0.82 (0.54 to 1.24)
Self-perceived socioeconomic status				
High/middle	0.83 (0.63 to 1.10)	0.87 (0.66 to 1.16)	0.82 (0.61 to 1.08)	0.78 (0.58 to 1.04)
Low				
Self-rated health				
Good	0.49 (0.38 to	0.49 (0.38 to	0.49 (0.38 to	0.54 (0.42 to

	0.62)***	0.62)***	0.62)***	0.69)***
Poor				
Physical activity				
High/moderate	0.96 (0.73 to 1.25)	0.98 (0.75 to 1.29)	0.93 (0.71 to 1.22)	0.92 (0.70 to 1.21)
Low				

Legend: *p<0.05, **p<0.01, ***p<0.001.

Discussion

The aim of the present study was to examine the associations between family, neighborhood and school social capital with psychological distress among Lithuanian high-school students aged 14-18 years.

Results from our study showed that the prevalence in high family social trust was almost 88% among high-school students. Also, those participants who reported high family social capital were less likely to reported high psychological distress. Our study results were similar to other study, which was conducted on Croatian high-school students aged 17-18 years (Novak & Kawachi, 2015). This relationship between parents and children may be characterized by mutual communication (Birndorf et al., 2005) and lower level of conflicts (Ying & Han, 2008), which was associated with lower levels of mental health and behavioral problems. Strong mutual relations between parents and children might serve as a protective role, preventing other risk behaviors among children and youth. Well-structured and cohesive families, full of trust and respect, seem to have better mental health and outcomes (Ying, & Han, 2008). Moreover, children who have both parents living with, tend to have more positive mental health outcomes, and are less likely to participate in risk-behaviours, such as substance use and misuse (Winstanley et al., 2008).

Neighborhood trust social capital was also inversely associated with psychological distress. A few studies showed, that children and youth who reported high community support of peers were less likely to report mental or behavioral disorders (Bosacki et al., 2007; Rotenberg et al., 2004). Our results also showed that informal social capital was associated with high psychological distress, which is inconsistent with other studies. For example, Drukker et al. (2004) showed that higher informal social control was positively associated with mental and emotional well-being, thus, children and youth who live in healthier neighborhood and were surrounded with supporting people had better mental health status. Similar, Aslund et al. (2010) showed that lower level of neighborhood social capital led to physiological and psychological problems, like depression. The prevalence of low informal social control was about 69% in our study,

possibly pointing out, that in Lithuania, community doesn't pay enough attention on children and youth behaviors. Delinquent behavior, often characterized with non-acceptable social norms, is one way for adolescents to express rebellion, possibly against the society, parents or peers. For example, in Croatia, freedom in life among adolescents may only by gained by ruining positive social norms the society wants to establish within them (Ilisin & Potocnik, 2010), while in Japan, informal social control serves as preserving method, by keeping adolescents away from vandalism.

The associations between vertical and horizontal school trust with psychological disorders were inverse, pointing out that low teacher-student interpersonal trust and student interpersonal trust were associated with higher psychological distress. Our findings are consistent with findings conducted by Novak and Kawachi (2015), where mutual trust between students and teachers prevent mental and emotional problems, while also serves as health promotion based on support, acceptance and safety (Drukker et al., 2005). According to some authors, attending the school with higher quality environment, where children think of a school as a safe place, was associated with fewer mental, emotional and behavioral problems (Stevens et al., 2007).

Gender is a critical determinant of mental health and psychological distress. In our study, the prevalence of high psychological distress was almost three times higher among females than males. Studies on psychological distress have consistently reported gender differences: women experience more distress than men (McDonough & Walters, 2001; McDonough & Strohschein, 2003). Women are more distressed than men because women's roles expose them to more stressors (McDonough & Walters, 2001). Scholars have interpreted women's distress in terms of their greater exposure to the stressors and other emotional factors.

Our study has several limitations. Because of cross-sectional design, there is possible reverse association, that is, reverse causality in a way that mental problems may cause poorer family, neighborhood and school social capital. Due to those causalities, one of cofounders was self-rated health, which could result in an association between social capital and psychological distress. Secondly, since we used subjective way for collecting the data, we cannot rule out possible method bias away from the null. Third, since students fulfilled the questionnaires during the class hour, we cannot exclude possible environment bias, that is, that the teacher indirectly influenced on students' answers in vertical school trust. Fourth, we used only one question for each social capital domain, where there is no golden standard tool for measurement of social

capital. Fifth, it is possible that students did not understand or had different perception of what social capital really is. Thus, we analyzed students' social capita on their individual level. Sixth, future studies should try to examine the same associations as in this study on the same sample, tracking them for several months or years, trying to answer the question about the reverse causality between variables.

Conclusions

Results from our study showed that family social capital, neighborhood trust and school social capital were inversely associated with psychological distress, that is, students who reported low social capital were more likely to report high psychological distress. Since parents, neighbors and other peers play the important role in children's mental, emotional and behavioral development, communities with lower trust should create and implement strategies and policies for preventing risk-behaviors, such as substance use and misuse, vandalism or poor nutrition.

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