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Does social support mediate or moderate socioeconomic differences in self-rated health among adolescents?

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Abstract
Objective Social support is assumed to be a protective social determinant of health. The aim of this cross-sectional study was to explore whether social support from the father, mother and friends mediates or moderates the association between socioeconomic position and self-rated health among adolescents.
Methods The sample consisted of 1,863 secondary school students from the Kosice region in Slovakia (mean age 16.85; 53.3% females, response rate 98.9%). We assessed the mediation and moderation effects of social support from the mother, father and friends on the relation between socioeconomic position and self-rated health, performing binary logistic regression models. Socioeconomic position was measured by parents' education, the family affluence scale and financial strain.
Results Social support from the father mediated the association between family affluence and self-rated health among both males and females and the association between financial strain and self-rated health among males only. No moderating effect of social support on socioeconomic differences in self-rated health was found.
Conclusion Father involvement seems to have the potential to mediate socioeconomic differences in health during adolescence.

Keywords Adolescents · Health · Self-rated health · Social support · Socioeconomic status

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Introduction

Social support has been recognised as an important social determinant of health. Social support itself represents a salutogenic factor in the model of Antonovsky (1987), and it is assumed to affect health by providing instrumental or emotional help which buffer stressful situations and their adverse health effects (Ellis et al. 2009; Murberg and Bru 2004). There is considerable evidence suggesting that social support is beneficial to health (Ovd Knesebeck and Geyer 2007), yet, there is a lack of information, particularly in relation to adolescence, on the role of this possible protective psychosocial factor with regard to socioeconomic differences in health (Matthews et al. 2010). Obtaining and utilising social support is likely to be established in adolescence and is similar to, for example, most health-related behaviours. Patterns acquired in adolescence may then affect the further course of a person's life; this also holds for the effects of socioeconomic differences in social support.

An association of social support with mortality and morbidity as well as with self-rated health has been previously shown (Kawachi and Berkman 2001; Lett et al. 2005; Melchior et al. 2003). Data on health outcomes among children indicate that emotional support in particular has an impact on both psychological and physical health outcomes; strong associations are seen between social support and psychological well being (Gruenewald and Seeman 2010). Childhood exposure to less responsive parenting has been related to an increased risk of childhood illness (Repetti et al. 2002).

Social support may be a contributing factor in explaining the relatively poorer health of those in lower socioeconomic groups (Stansfeld et al. 2003; Taylor and Seeman 1999). However, in some studies the contribution of social support to socioeconomic differences in mental health is minimal (Geckova et al. 2003; Turner and Marino 1994). According to Huurre et al. 2007), there are different pathways through which social support may play a role in the relationship between socioeconomic position and health, either as a mediator or as a moderator. Regarding the first, social support may positively influence health and may be unequally distributed among social classes, which leads to unequal exposure to the protective effect of social support against poor health among social classes. Evidence shows that levels of social support are indeed higher among adolescents with higher socioeconomic position (Geckova et al. 2003; Weyers et al. 2008; Weyers et al. 2010). Lower income adolescents tend to have poorer social networks (Weyers et al. 2008), fewer organisational involvements (Schoon and Parsons 2002) and less social support from both the community and family members (Schoon and Parsons 2002; Weyers et al. 2010). These hold for both genders, but the differences appear to be somewhat greater for men (Marmot et al. 1997). However, evidence among adults also suggests important moderating effects of social support on the association between socioeconomic position and health (Ryff et al. 2004), as well as between socioeconomic position and physical functioning (Unger et al. 1999). Regarding moderation, the differences in effects of social support on health by social class may be due to differences in vulnerability (Gruenewald and Seeman 2010).

Hence social support could serve as mediator as well as a moderator in the relationship between socioeconomic position and health. Studies which assess both of these roles of social support have been lacking until now. Therefore, the aim of this study was to explore whether social support from the father, mother and friends mediates or moderates the association between socioeconomic position and self-rated health.

Methods

Sample

Data were collected in winter 2002 among secondary school students from the Kosice region in Slovakia. Parents were informed prior to the study via the school administration in a regular meeting of parents with the school staff and could opt out if they disagreed with their child's participation. Children were informed prior to the study; participation was fully voluntary and on anonymous basis in the absence of their teachers and in the presence of the researcher. Selected schools were stratified according to the five educational levels of the regular Slovak school system, and classes within schools were chosen randomly. The study sample consisted of 2,014 students, from which 1992 responded (response rate 98.9%). Non-response ($n = 22$) was mainly due to the absence from school. One hundred twenty-nine questionnaires (representing 6.4% of the study sample) were excluded because of missing data values in the indicators of socioeconomic position, self-rated health or social support, resulting in 1,863 analysed questionnaires. The mean age of the respondents was 16.85 years (SD 1.1), and 53.4% of them were females.

The study was done according to the ethical requirements formulated by the Agreement on Human Rights and Biomedicine (40/2000 Slovak Code of Laws). The Science and Technology Assistance Agency also approved the ethical aspects of the study in its decision on APVT-20-003602 in April 2002.

Measures

Indicators of socioeconomic position

Three measures were used as indicators of socioeconomic position: the highest educational level of parents, family affluence and perceived financial strain. The *parents' education level* was based on the parent with the highest level of education attained. It was classified as—I. University, II. Secondary school and III. Apprenticeship or primary school only.

Family affluence was measured using an indicator of consumption and material deprivation developed by Currie et al. (2008). The scale used in the present study is composed of four questions concerning possession of a car, telephone or computer in the family, and the respondents having their own room. Possible answers were: no; yes, one; yes, several, for the first three questions; and no/yes for the last question. The composite family affluence scale score (range 4–11) was trichotomised (4–6 high family

affluence/7–9 medium family affluence/10–11 low family affluence). Cronbach's α was 0.68.

Financial strain was measured by asking the respondents to define the occurrence of perceived financial strain on a five point scale (very often–often–sometimes–rarely–never). The variable was dichotomised (sometimes–rarely–never/very often–often).

Perceived social support

Perceived social support from the mother, father and friends was assessed using the modified and shortened version of the Provisions and Social Relations Scale (Turner and Marino 1994). The questionnaire was focused on perceived emotional social support. For example, it asks about closeness with parents and friends, time to talk with parents and friends, a feeling of being a worthwhile person, being relaxed and himself/herself in the presence of parents and friends, feeling that parents and friends are always here and a feeling of parents' and friends' confidence in adolescents. The questionnaire consisted in a total of 18 items (6 items per source). Each item has a four-point response scale. For each domain of social support (mother, father and friends) a separate composite score was computed, with a higher score meaning higher social support. All scales showed satisfactory internal reliability (Cronbach's alpha varied from 0.84 to 0.87).

Self-rated health

Self-rated health is widely used in health studies because it is generally accepted as a good predictor of morbidity and mortality (Andresen et al. 2003; Idler and Benyamini 1997). Respondents rated their health using the five-point Likert scale from 1 (excellent) to 5 (bad). For the purpose of the analyses, the variable was dichotomised (excellent and very good health/and good, fairly good and bad). We adhered to cut-offs that had been used in the previous studies (Bacikova-Sleskova et al. 2007; Geckova et al. 2003; Salonna et al. 2008; Tuinstra et al. 1998).

Statistical analyses

We first assessed the background characteristics of the sample. Second, socioeconomic differences in social support were analysed using ANOVA. Next, to test for possible mediating and/or moderating effects of social support, binary logistic regression models were performed. Analyses were done separately for both genders, three sources of social support (from mother, father and friends), and three indicators of socioeconomic position (educational level of parents, family affluence and financial strain). In the first step, the association of the particular indicator of socioeconomic position with self-rated health was explored using binary logistic regression. In the second step, in order to explore the possible mediating effect of social support, the association of socioeconomic position with self-rated health was adjusted for the sources of social support. In the third step of the models, when testing for a moderating effect of social support, the interaction variable (the cross product of socioeconomic position and social support) was included. The continuous variable (social support) was centred to eliminate multicollinearity effects between the predictor and moderator, and the interaction terms during moderation/mediation analyses. For this purpose, the sample mean of social support was subtracted from all individual scores on the variable. All binary logistic regression models were adjusted for age. Analyses were performed using the Statistical Package for the Social Sciences (SPSS), version 16.

Results

Socioeconomic differences in social support

Table 1 gives the descriptive information about adolescents' age, socioeconomic position (measured by parents' education level, family affluence and financial strain), self-rated health and perception of social support from the mother, father and friends. No significant socioeconomic differences were found in perceived social support from the mother. However, we found that perceived social support from fathers was significantly lower in both males and females with low family affluence and more frequent financial strain. No statistically significant socioeconomic differences were found in perceived social support from friends, with the exception of financial strain among females (Table 2).

Socioeconomic position and self-rated health

The assessment of the effect of socioeconomic position on self-rated health showed that the lower the education of the parents, the higher the probability of adolescents reporting poor self-rated health. Similarly, respondents reporting lower wealth and more frequently experienced financial strain have a higher probability of rating their own health as poor (Table 3). Among males all three socioeconomic position indicators (educational level of parents, family affluence and financial strain) were statistically significantly associated with self-rated health, but among females, only the association of family affluence with self-rated health was statistically significant (Table 3).

Table 1 Characteristics of study variables by gender ($n = 1{,}863$, Slovakia–Kosice region, 2002)

	Males ($n = 868$)		Females ($n = 995$)		Total ($n = 1{,}863$)	
	Number (Mean)	% (SD)	Number (Mean)	% (SD)	Number (Mean)	% (SD)
Age	(16.91)	(1.11)	(16.80)	(1.10)	(16.85)	(1.11)
Parents' education level						
University	235	27.1	242	24.3	477	25.6
Secondary high school	465	53.6	558	56.1	1,023	54.9
Apprentice or elementary school only	168	19.4	195	19.6	363	19.5
Family affluence						
High	106	12.2	63	6.3	169	9.1
Medium	605	69.7	673	67.6	1,578	68.6
Low	157	18.1	259	26.0	416	22.3
Financial strain						
Very often/often	70	8.1	121	12.2	191	10.3
Sometimes/rarely/never	798	91.9	874	87.8	1,972	89.7
Self-rated health						
Good (excellent, very good)	647	74.5	607	61.0	1,254	67.3
Poor (good, fair, bad)	221	25.5	388	39.0	609	32.7
Social support from						
Mother	(20.25)	(3.19)	(20.25)	(3.48)	(20.25)	(3.35)
Father	(18.72)	(4.16)	(17.87)	(4.34)	(18.27)	(4.28)
Friends	(19.77)	(2.79)	(20.52)	(2.85)	(20.18)	(2.85)

Percentages do not always add up to 100 due to rounding

Mediating effect of social support from the mother, father and friends on socioeconomic differences in self-rated health

In the second step, the mediating effect of social support on the association between socioeconomic position and self-rated health was assessed. When social support from the mother was introduced in the regression models, only minor changes in the effect estimates for the effect of socioeconomic position on self-rated health were found (Table 3). Similarly, only minor changes in the effect estimates for the effect of socioeconomic position on self-rated health were found after introduction of social support from either friends or from the father into the model regarding differences in self-rated health by parental educational level (Table 3). However, introduction of social support from the father changed the effect estimates in the regression models assessing the effect of family affluence on self-rated health, which indicates a mediating effect of social support from the father. A mediating effect was found among males as well among females (Table 3). Similarly, social support from the father also changed effect estimates for the relation between financial strain and self-rated health, but this mediating effect was found only among males (Table 3).

Moderating effect of social support on socioeconomic differences in self-rated health

In the third step, the moderating effects of social support on the association between socioeconomic position and self-rated health were assessed. Interaction terms indicating moderation did not contribute to any model with statistical significance. Hence social support from the mother, father, and friends did not moderate the relation between socioeconomic indicators and self-rated health (Table 4).

Discussion

The aim of this study was to explore whether social support from different sources mediates or moderates the association between socioeconomic position and self-rated health. Results indicate a mediating effect of social support from the father on the association between family affluence and self-rated health among males and females, and a mediating effect of social support from the father on the association between financial strain and self-rated health among males only. Lower levels of social support are associated with worse health. No mediation effects of social support from the mother or friends on socioeconomic differences in self-

Table 2 Socioeconomic differences in social support by source among both genders (ANOVA, $n = 1{,}863$, Slovakia–Kosice region, 2002)

	Social support from											
	Mother				Father				Friends			
	n	Mean	*F*	*p*	*n*	Mean	*F*	*p*	*n*	Mean	*F*	*p*
Males												
Parents' education level												
University	235	20.20	0.080	0.923	235	18.53	1.332	0.265	235	19.83	0.157	0.855
Secondary high school	465	20.26			465	18.93			465	19.72		
Apprentice or elementary school only	168	20.33			168	18.40			168	19.83		
Family affluence												
High	106	19.78	1.418	0.243	106	18.80	4.681	0.010	106	20.07	0.868	0.420
Medium	605	20.30			605	18.94			605	19.77		
Low	157	20.41			157	17.81			157	19.61		
Financial strain												
Sometimes/rarely/never	798	20.29	1.037	0.309	798	18.89	17.500	0.000	798	19.83	3.728	0.054
Very often/often	70	19.89			70	16.74			70	19.16		
Females												
Parents' education level												
University	242	20.26	1.858	0.157	242	18.26	1.314	0.269	242	20.66	2.260	0.105
Secondary high school	558	20.10			558	17.78			558	20.59		
Apprentice or elementary school only	195	20.66			195	17.65			195	20.13		
Family affluence												
High	63	19.54	2.688	0.069	63	18.78	7.431	0.001	63	20.49	0.596	0.551
Medium	673	20.18			673	18.11			673	20.58		
Low	259	20.59			259	17.03			259	20.36		
Financial strain												
Sometimes/rarely/never	874	20.30	1.362	0.243	874	18.14	27.062	0.000	874	20.63	11.602	0.001
Very often/often	121	19.90			121	15.98			121	19.69		

rated health were found. Similarly, no moderation effect of social support from any source on socioeconomic differences in self-rated health was found. In line with this are the findings of Yarcheski and Mahon (1999) who did not show a moderating role of social support on the relationship between perceived stress and symptom patterns among adolescents. Also no moderation effect on socioeconomic differences in health among Slovak adolescents was found by Geckova et al. (2003).

Our findings show that the role of social support in the relation between socioeconomic status and health also varies by type of socioeconomic indicator. This is in line with findings of Geyer et al. (2006), which indicate that education, income and occupational class cannot be used interchangeably as indicators of one hypothetical social dimension. Although modestly correlated, they measure different phenomena and tap into different causal mechanisms.

A lower educational level of parents or a lower family affluence could be considered as predisposing to stressful life events (Melchior et al. 2003; Mezuk et al. 2011; Seeman et al. 2010), but perceived financial strain represents an already acute or chronic stressful situation. For every life event that socially disadvantaged individuals' experience, their already scarce resources may be further depleted. Approaching their network with multiple chronic and acute events, rather than a single acute event, might overwhelm the network's already limited resources and availability (Mickelson and Kubzansky 2003). Furthermore, their network is more likely to be coping with similar stressful situations (Bassuk et al. 1996).

Our results suggest that fathers and mothers have different roles in the development of socioeconomic differences in self-rated health during adolescence. While no mediation effect of social support from the mother was found in the association between socioeconomic position and self-rated health of adolescents, social support from the father mediated the association between family affluence and self-rated health among both males and females and the association between financial strain and self-rated health among males. Some studies have indicated that males and females could exhibit different

Table 3 Effects of social support from the mother, father and friends on socioeconomic differences in poor health (Slovakia–Kosice region, 2002, odds ratios (OR) and 95% confidence intervals (CI) for reporting poor health)

	OR (CI)	*p*	Controlled for social support from mother OR (CI)	*p*	Controlled for social support from father OR (CI)	*p*	Controlled for social support from friends OR (CI)	*p*
Males								
Education of parents								
University	1	*	1	*	1	*	1	*
Secondary high school	1.24 (0.85–1.81)		1.25 (0.86–1.83)		1.30 (0.86–1.90)		1.24 (0.85–1.81)	
Apprentice or elementary school	1.75 (1.12–2.74)		1.78 (1.13–2.79)		1.76 (1.12–2.78)		1.77 (1.12–2.77)	
Social support			0.95 (0.90–0.99)		0.93 (0.90–0.96)		0.93 (0.88–0.99)	
Family affluence								
High family affluence	1	*	1	*	1	n.s.	1	*
Medium family affluence	1.31 (0.79–2.19)		1.36 (0.81–2.23)		1.33 (0.79–2.23)		1.29 (0.79–2.16)	
Low family affluence	2.01 (1.12–3.59)		2.09 (1.17–3.77)		1.88 (1.04–3.38)		1.96 (1.17–3.62)	
Social support			0.95 (0.90–0.99)		0.93 (0.90–0.97)		0.94 (0.88-0.98)	
Financial strain								
Low financial strain	1	**	1	*	1	n.s.	1	*
High financial strain	1.96 (1.18–3.25)		1.92 (1.15–3.20)		1.66 (0.99–2.85)		1.87 (1.13–3.13)	
Social support			0.95 (0.91–1.00)		0.93 (0.90–0.97)		0.94 (0.89–0.99)	
Females								
Education of parents								
University	1	n.s.	1	n.s.	1	n.s.	1	n.s.
Secondary high school	1.14 (0.84–1.56)		1.13 (0.83–1.55)		1.11 (0.81–1.52)		1.14 (0.83–1.56)	
Apprentice or elementary school	1.32 (0.90–1.94)		1.36 (0.92–2.00)		1.27 (0.86–1.88)		1.27 (0.86–1.88)	
Social support			0.94 (0.91–0.98)		0.91 (0.91–0.96)		0.93 (0.89–0.97)	
Family affluence—females								
High family affluence	1	**	1	*	1	n.s.	1	n.s.
Medium family affluence	1.38 (0.79–2.41)		1.44 (0.82–2.54)		1.32 (0.75–2.33)		1.39 (0.80–2.47)	
Low family affluence	1.94 (1.08–3.50)		2.09 (1.15–3.79)		1.74 (0.96–3.16)		1.94 (1.12–3.63)	
Social support			0.94 (0.91–0.98)		0.94 (0.91–0.96)		0.93 (0.89–0.98)	
Financial strain								
Low financial strain	1	n.s.	1	n.s.	1	n.s.	1	n.s.
High financial strain	1.30 (0.89–1.91)		1.28 (0.87–1.88)		1.12 (0.76–1.67)		1.22 (0.83–1.80)	
Social support			0.95 (0.91–0.98)		0.93 (0.91–0.96)		0.93 (0.89–0.97)	

p value, significance in the change of the model fit after introduction of the variable concerned; *$p < 0.05$; **$p < 0.01$; n.s., not significant

reactions in stressful situations (Reevy and Maslach 2001; Taylor et al. 2000). Taylor et al. (2000) proposed that, although fight-or-flight may characterise the primary physiological responses to stress for both males and females, females' responses are behaviourally more marked by a pattern of 'tend-and-befriend'. Tending involves nurturing activities in order to promote safety and reduce distress for offspring; befriending is the creation and maintenance of social networks that may aid in this process. Fathers who had highly stressful workdays were more likely to withdraw from their families (Repetti 1989). Contrary to this, on days when mothers reported that their stress levels at work had been the highest, their children reported that their mothers had shown them more love and nurturing (Wood and Repetti 1997). The access of adolescents to social support from the father seems to be more negatively influenced by socioeconomic position than social support from the mother. If lower socioeconomic position means a higher probability of stressful life situations, then the fact that males tend to give less social support under stressful conditions than females could explain a part of the mediating effect of a father's social support on the association between socioeconomic position and self-rated health.

Table 4 Moderation effects of social support from the mother, father and friends on socioeconomic differences in self-rated health (Slovakia–Kosice region, 2002, odds ratios (OR) and 95% confidence intervals (CI) for reporting poor health)

Controlled for social support from	Males			Females		
	Mother OR (CI)	Father OR (CI)	Friends OR (CI)	Mother OR (CI)	Father OR (CI)	Friends OR (CI)
Education of parents						
Uni	1.0*	1.0$^{n.s.}$	1.0$^{n.s.}$	1.0$^{n.s.}$	1.0$^{n.s.}$	1.0$^{n.s.}$
Second	1.2 (0.8–1.8)	1.3 (0.9–1.9)	1.3 (0.9–1.9)	1.2 (0.8–1.6)	1.1 (0.8–1.6)	1.2 (0.8–1.6)
Appr	1.7 (1.1–2.7)	1.7 (1.1–2.8)	1.7 (1.1–2.8)	1.4 (0.9–2.0)	1.3 (0.9–1.9)	1.3 (0.9–1.9)
SoS	1.0 (0.9–1.1)	0.9 (0.9–1.0)	0.9 (0.8–1.0)	0.9 (0.9–1.0)	0.9 (0.8–1.0)	1.0 (0.9–1.1)
Uni*SoS	1.0$^{n.s.}$	1.0$^{n.s.}$	1.0$^{n.s.}$	1.0$^{n.s.}$	1.0$^{n.s.}$	1.0$^{n.s.}$
Second by SoS	0.9 (0.8–1.0)	1.0 (0.9–1.1)	1.1 (0.9–1.2)	1.0 (0.9–1.1)	1.1 (0.9–1.1)	1.0 (0.9–1.1)
Appr by SoS	1.0 (0.9–1.1)	1.0 (0.9–1.1)	1.0 (0.8–1.1)	1.0 (0.9–1.1)	1.1 (0.9–1.2)	1.0 (0.9–1.1)
Family affluence						
High FA	1.0*	1.0*	1.0*	1.0*	1.0$^{n.s.}$	1.0*
Medium FA	1.3 (0.8–2.2)	1.3 (0.8–2.2)	1.3 (0.8–2.2)	1.6 (0.9–3.0)	1.3 (0.7–2.2)	1.4 (0.8–2.5)
Low FA	2.0 (1.1–3.6)	1.9 (1.0–3.4)	2.0 (1.1–3.6)	2.3 (1.2–4.4)	1.7 (0.9–3.1)	1.9 (1.0–3.5)
SoS	1.1 (0.9–1.2)	1.0 (0.9–1.1)	1.0 (0.9–1.2)	0.9 (0.7–1.0)	0.9 (0.8–1.0)	0.9 (0.7–1.0)
High FA*SoS	1.0$^{n.s.}$	1.0$^{n.s.}$	1.0$^{n.s.}$	1.0$^{n.s.}$	1.0$^{n.s.}$	1.0$^{n.s.}$
Medium FA by SoS	0.9 (0.8–1.0)	0.9 (0.8–1.0)	0.9 (0.8–1.1)	1.1 (1.0–1.3)	1.1 (0.9–1.2)	1.1 (0.9–1.3)
Low FA by SoS	0.9 (0.7–1.0)	0.9 (0.8–1.1)	1.0 (0.8–1.2)	1.1 (0.9–1.3)	1.1 (0.9–1.3)	1.1 (0.9–1.3)
Financial strain						
Low FinS	1.0*	1.0*	1.0*	1.0$^{n.s.}$	1.0$^{n.s.}$	1.0*
High FinS	2.0 (1.2–3.3)	2.0 (1.2–3.4)	1.9 (1.1–3.2)	1.2 (0.8–1.7)	1.1 (0.7–1.7)	1.1 (0.7–1.7)
SoS	0.9 (0.9–1.0)	0.9 (0.9–1.0)	0.9 (0.9–1.0)	1.0 (0.9–1.0)	0.9 (0.9–1.0)	0.9 (0.9–1.0)
Low FinS*SoS	1.0$^{n.s.}$	1.0$^{n.s.}$	1.0$^{n.s.}$	1.0$^{n.s.}$	1.0$^{n.s.}$	1.0$^{n.s.}$
High FinS by SoS	1. 1 (0.9–1.2)	1.1 (1.0–1.2)	1.0 (0.9–1.2)	1.0 (0.9–1.1)	1.0 (0.9–1.1)	1.0 (0.9–1.1)

Uni University, *Second* Secondary high school, *Appr* Apprentice or elementary school, *SoS* Social support, *FA* Family affluence, *FinS* Financial strain

*$p < 0.05$; n.s., not significant

In addition, this effect could be enhanced by different needs in received social support of the offspring during late adolescence when compared to their needs during childhood. The ability to perceive social support and the actual needs of particular types of social support tends to change over the lifespan (Uchino 2009). From a developmental point of view, adolescence is a stage when offspring start to clearly break away from the family, cutting off some emotional but still not material links. Adolescents seem to allow decreased parental emotional support because they are able to gain such support from sources outside the family, while instrumental support from parents seems to have high importance. Del Valle et al. (2010), in an assessment of social support networks with a sample of 884 Spanish adolescents aged 12–17, reported a decrease in emotional support, while the instrumental support of parents did not decrease significantly throughout adolescence. The need for instrumental support during adolescence is probably also a factor explaining parental differences in the mediating role of social support in the association between socioeconomic differences and self-rated health. According to Reevy and Maslach (2001), a masculine personality provides and receives different types of social support than a feminine one. Masculine qualities appear to be helpful in receiving particular types of instrumental support, while feminine qualities are at advantage in regard to social support interactions and are better prepared to provide, seek and receive emotional support (Reevy and Maslach 2001). Even though we did not focus on instrumental support in this study, among the indicators that we did assess family affluence apparently has the closest relation to the abilities of a family to provide instrumental support. This topic deserves further attention in research.

Strengths and limitations

The key strengths of this study are its large representative sample oriented towards the general population and its

high response rate; as a result, selection bias in this sample is unlikely. The study also has some limitations. First, only subjective self-reports were used for measuring individual aspects. However, the previous studies support the validity of such self-reports (Reijneveld et al. 2003). A second limitation is the cross-sectional design of our study, which makes conclusive statements about causality in our findings impossible. They thus need to be confirmed in a study with a longitudinal design. A third limitation was a lack of information on family structure. We could not identify whether a respondent evaluated social support from a biological parent, a step-parent or from another person serving as a parent, so we could not link the partnership situation of parents with data on perceived social support.

Conclusion

This study is one of the few investigations that focus on the possible role of social support when examining socioeconomic differences in self-rated health among adolescents. To conclude our results, it seems that social support from the father mediates the association between certain indicators of socioeconomic position and self-rated health of adolescents, in contrast to social support from the mother and from friends. Even if the importance of social support from the mother is often emphasised in stressful life situations, paternal involvement seems to also have the potential to mediate socioeconomic differences in health. A father and mother could alternate or complement each other in providing their children with different types of social support, and active parental involvement seems to have the potential to affect the self-rated health of their offspring. However, more research is needed for a deeper understanding of the mediating role of paternal social support in socioeconomic differences in self-rated health. Particularly, a culture-oriented approach is needed, as the socially expected roles of father and mother could be different across countries. For example, in some countries being a father traditionally goes with family role of "breadwinner". Both pressure from social expectations and internal pressures given by this role could influence the psychological functioning of a father and accordingly social support provided by him. Thus, the effect of parental support on adolescents' health may be also different in different cultural settings.

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Conflict of interest The authors declare that they have no competing interests.

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