



What role do family composition and functioning play in emotional and behavioural problems among adolescent boys and girls?

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Abstract

Objectives The aim was to explore the associations of family composition, family support and communication with emotional and behavioural problems among adolescents as well as a possible moderating effect of gender on these associations.

Methods Data from the Health Behaviour in School-aged Children study conducted in 2014 in Slovakia were used. The final sample consisted of 2908 students (mean age 14.36; 49.7% boys). We explored the association using generalized linear models.

Results We found that non-intact family was significantly associated with a higher score in emotional and behavioural problems. Family support and communication were found to be significantly associated with a lower score in emotional and behavioural problems. Significant interactions of gender and family communication with emotional and behavioural problems were found, showing that family communication decreased emotional and behavioural problems only in girls.

Conclusions Family composition, family support and communication play an important role in the occurrence of emotional and behavioural problems in adolescence. Family communication lowers these problems only in girls. Prevention and intervention programmes could be focused on parent–child communication strategies with the importance of differences in the needs of boys and girls.

Keywords Adolescence · Family composition · Family support · Family communication · Emotional and behavioural problems · Gender

Introduction

Emotional and behavioural problems have a high prevalence and can have long-lasting consequences not only for adolescents but also for their families and society as a

whole (Jaspers et al. 2012). Emotional problems include depression, withdrawal, social phobia, specific phobias, anxiety, post-traumatic stress disorder, obsessive–compulsive disorder, poor self-esteem, as well as feelings of inferiority, self-consciousness, shyness, hypersensitivity and somatic complaints or eating disorders. Behavioural problems, on the other hand, include defiance, impulsivity, disruptiveness, aggression, antisociality and overactivity as well as problems with attention, self-regulation and non-compliance, such as temper tantrums, attention deficit hyperactivity disorder, oppositional defiance disorder, conduct disorder, bipolar disorder, substance abuse and bullying (Achenbach et al. 1991; Bornstein et al. 2013; Ogundele 2018).

Emotional and behavioural problems in adolescence, if left untreated, may have negative long-term consequences. Behavioural problems can be linked to poor educational outcomes and the failure to finish school attendance, long-

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term unemployment, poor interpersonal relationships and parenting difficulties in adulthood (Ogundele 2018; Smith et al. 2014; National Institute for Health and Clinical Excellence 2006) as well as to severe alcohol and drug abuse, engagement in risky sexual behaviour, self-harm, risk of developing post-traumatic stress disorder and involvement in the social justice system (Raudino et al. 2012; National Institute for Health and Clinical Excellence 2006; Kretschmer et al. 2014; Burke et al. 2010; Fergusson et al. 2005). In addition, emotional and behavioural problems in adolescence can be related to the development of more severe emotional and behavioural disorders (such as anxiety, depression, obsessive–compulsive disorder, schizophrenia, etc.) in adulthood (National Institute for Health and Clinical Excellence 2006; Dougherty et al. 2015; Stringaris et al. 2014; Luby et al. 2014).

Emotional and behavioural problems can be associated with a number of factors (Offord 1998). One of the important domains is the family environment, where we can find risk as well as protective factors (WHO 2005). Family composition is one of the factors that can play an important role. Several previous studies have shown divorce to be linked with heightened emotional as well as behavioural problems among adolescents (Simons et al. 1999; Wood et al. 2004). Adolescents living with single parents or in step-families show emotional problems, such as suicidal thoughts or depressive feelings (Samm et al. 2010) and behavioural problems (e.g. bullying, delinquency, alcohol use) more than those growing up in intact families (Undheim and Sund 2010; Vanassche et al. 2014).

However, there are family characteristics which might play a positive role in adolescence, such as family support and positive family communication. Recent research shows that family is the most stable source of support throughout adolescence (Pösel et al. 2018). Family support is associated with decreased emotional and behavioural problems (Heerde and Hemphill 2018). Adolescents who perceive parental support can have a decreased likelihood of developing depressive symptoms (Stice et al. 2004; Santens et al. 2018).

A number of studies have shown that positive communication with parents is negatively related to adolescent emotional problems, such as depression or self-harm (Branje et al. 2010; Hakvoort et al. 2010; Johnson and Galambos 2014; Klemera et al. 2017), as well as behavioural problems, such as aggressive and delinquent behaviours (Ponnet et al. 2014). Dujardin et al. (2016) examined family support together with family communication. They found that adolescents who trust less in maternal support are less likely to communicate with their mothers about experiences and distress, which is linked to more depressive symptoms and more severe self-harm.

There exist a number of partial studies which examine only some family characteristics and their relationship to emotional and behavioural problems. Previous studies were focused on family composition, family communication and family support only separately or in combination of two of them (Estévez et al. 2018; Heerde and Hemphill 2018; Bellon-Champel and Varscon 2017; Dujardin et al. 2016; Jackson et al. 2016; Magklara et al. 2015; Vanassche et al. 2014; Hamama and Ronen-Shenhav 2012; Branje et al. 2010). However, the question remains: what role might the gender of an adolescent play on the association between parental support and communication with emotional and behavioural problems? Only a few previous studies have examined gender differences in the effect of family functioning on emotional and behavioural problems (Kerr et al. 2006; Rueger et al. 2010; Demaray et al. 2005). As one of the studies point out, open parental communication is negatively associated with behavioural problems in both genders; however, girls report that their communication with mother is more open than that of boys (Ponnet et al. 2014). To the best of our knowledge, no comprehensive study exists that examines the associations of family composition, family social support and family communication with emotional and behavioural problems as well as a possible moderating effect of gender on these associations.

Therefore, the aim of the present study was to explore the associations of family composition, family social support and family communication with emotional and behavioural problems among adolescents as well as a possible moderating effect of gender on these associations.

Methods

Sample and procedure

Data from the Health Behaviour in School-aged Children (HBSC) study conducted in 2014 in Slovakia were used. HBSC is a cross-national study of school students that includes 48 countries and regions in Europe and North America. HBSC data are collected every 4 years (hbsc.org). Each country has to follow a standardized international research protocol to ensure consistency in the survey instruments, data collection and processing. Questions are subject to validation studies and piloting at national and international levels, with the outcomes of these studies often being published (Roberts et al. 2009). To obtain a representative Slovakian sample, a two-step sampling was performed. According to HBSC study protocol, the Data Management Centre of the HBSC study in Bergen randomly selected schools from a list of all primary schools with the required 5th–9th grades based on

information from the Slovak Institute of Information and Prognosis for Education, with oversampling to assure a sufficient pool of schools. Schools in this sample were then listed in random order. In the first step, 151 larger and smaller elementary schools located in rural as well as urban areas from all regions of Slovakia were asked to participate. In the end, 130 schools took part in the survey (response rate: 86.1%). In the second step, data from 10,179 adolescents from the 5th to 9th grades (response rate: 78.8%) were obtained.

Non-responses were caused mainly by school absence due to illness or other reasons and the refusal of parents or adolescent to be involved in this study. Respondents younger than 11 years and older than 15.9 years (929 respondents) and respondents with missing responses regarding the studied variables were excluded (1655 respondents), leading to a final sample of 7595 adolescents (mean age: 13.53 years; 48.1% boys). Only 13- to 16-year-old adolescents from the 7th, 8th and 9th grades were asked questions covering the aim of this paper as described in the measures section below. This represents a final sample of 2908 adolescents (mean age 14.36; 49.7% boys).

The study was approved by the Ethics Committee of the Medical Faculty at P. J. Safarik University in Kosice (No: 9/2012). Parents were informed about the study via the school administration and could opt out if they disagreed with their child's participation. Participation in the study was fully voluntary and anonymous, with no explicit incentives provided for participation. Questionnaires were administered by trained research assistants in the absence of a teacher during regular class time.

Measures

Emotional and behavioural problems

Emotional and behavioural problems were measured using The Strengths and Difficulties Questionnaire (SDQ), which includes 25 items (Goodman et al. 1998), of which we used the 20 difficulty items. These items could be divided into four scales of five items each: emotional symptoms, conduct problems, hyperactivity/inattention and peer problems. Response options were (0) Not True, (1) Somewhat True and (2) Certainly True. The sum scores for emotional (internalizing) problems (score 0–20, emotional symptoms and peer problems, Cronbach's α at .71) and behavioural (externalizing) problems (score 0–20, conduct problems and hyperactivity/inattention, Cronbach's α at .65) were computed. A higher score indicates more difficulties.

Family composition

Respondents were asked about the family in which they live, with possible responses: (1) complete own (both parents are your own), (2) complete mixed (one of the parents is not your own) and (3) incomplete (you are living with mother or father only). In order to focus not only on the completeness of the family, but on the structure as well, this question was dichotomized to intact (complete own) and non-intact families (complete mixed and incomplete).

Family social support

Family support was measured using the Multidimensional Scale of Perceived Social Support (MSPSS) (Zimet et al. 1998). The scale consists of four items (Cronbach's α at .91). Respondents were asked if they feel that their family really tries to help them, that they can get emotional support from them when they need it, they can talk to their family about problems and if the family is prepared to help them make decisions. Response options ranged on a 7-point scale from very strongly disagree to very strongly agree. The resulting sum score ranges from 1 to 28. A higher score indicates higher perceived family social support.

Family communication

Family communication was measured using questions asking whether important things are talked about, whether someone listens when they want to say something, whether they ask questions when they do not understand each other and whether misunderstandings are clarified. Response options ranged on a 5-point scale from strongly disagree to strongly agree. The resulting score of four items (Cronbach's α at .79) ranges from 1 to 20. A higher score indicates higher quality of family communication.

Family affluence

The Family Affluence Scale was used as a measure of socio-economic status. The scale consists of six items that self-report material affluence. The questions were: Does your family own a car, van or truck? (Responses: (0) No, (1) One, (2) Two or more); Do you have your own bedroom for yourself? [(0) No, (1) Yes]; How many computers does your family own? [(0) None, (1) One, (2) Two, (3) More than two]; How many bathrooms (rooms with a bath/shower or both) are in your home? [(0) None, (1) One, (2) Two, (3) More than two]; Does your family have a dishwasher at home? [(0) No, (1) Yes]; and How many times did you and your family travel out of Slovakia for a holiday/vacation last year? [(0) Not at all, (1) Once, (2) Twice,

(3) More than twice]. The responses to the items are given as specific values and calculated as an aggregated FAS index ranging from 0 to 13. A higher score indicates higher family affluence.

Statistical analysis

In the first step, the studied variables were explored using descriptive statistics. Next, we explored the association between family composition and emotional and behavioural problems using generalized linear models adjusted for gender, age and family affluence (Model 1). To explore possible influences of family support and family communication, these were added to the analysis in generalized linear models in the next step (Model 2). Finally, to explore the moderating effect of gender on family support and family communication, respectively, interactions between the mentioned variables were added to the analysis in a generalized linear model in the final steps (Model 3 and Model 4). Statistical analyses were performed using SPSS v.20.

Results

Table 1 presents descriptive statistics of SDQ emotional (internalizing) problems and SDQ behavioural (externalizing) problems and family characteristics for the whole sample and separately by gender.

Based on generalized linear models, a non-intact family was significantly associated with a higher score in emotional problems ($B = 0.65$, 95% CI = 0.33|0.97) and behavioural problems ($B = 0.73$, 95% CI = 0.38|1.07) adjusted for gender, age and family affluence compared to an intact family (Model 1 of Tables 2 and 3). In the next step (Model 2 of Tables 2 and 3), family support and family communication were added to the models and were

found, respectively, to be significantly associated with a lower score in emotional problems ($B = -0.14$, 95% CI = $-0.17|-0.12$ for family support; $B = -0.11$, 95% CI = $-0.15|-0.06$ for family communication) and behavioural problems ($B = -0.15$, 95% CI = $-0.18|-0.12$ for family support; $B = -0.17$, 95% CI = $-0.22|-0.12$ for family communication). Association between a non-intact family and emotional problems ($B = 0.37$, 95% CI = 0.06|0.67) and behavioural problems ($B = 0.42$, 95% CI = 0.10|0.75) remained significant even though a decrease was found in the strength of the association. Finally, interactions between gender and family support in the associations with emotional and behavioural problems were not significant (Model 3 of Tables 2 and 3). However, significant interactions of gender and family communication were found in association with emotional ($B = -0.11$, 95% CI = $-0.18|-0.03$) as well as behavioural problems ($B = -0.16$, 95% CI = $-0.24|-0.08$).

Discussion

The aim of the presented study was to explore the associations of family composition, family social support and family communication with emotional and behavioural problems among adolescents as well as a possible moderating effect of gender on these associations.

A non-intact family (living with only one parent—*incomplete family* or living with a step-parent—*complete mixed family*) was significantly associated with a higher score in emotional and behavioural problems. There have been a number of studies focusing on the negative effects of divorce, living in step-families or living with a single parent on adolescents' emotional and behavioural problems. Divorce or separation of parents is linked to the occurrence of depression in adolescence (Magklara et al. 2015; Samm et al. 2010). Parental divorce or separation

Table 1 Descriptive statistics of emotional and behavioural problems and family characteristics ($N = 2908$, Health Behaviour in School aged Children (HBSC), Slovakia, data collection 2014)

	Whole sample ($N = 2908$)			Boys ($N = 1445$)			Girls ($N = 1463$)		
Emotional problems (range, mean, SD)	0–18	6.28	3.04	0–17	6.21	3.10	0–18	6.35	2.99
Behavioural problems (range, mean, SD)	0–18	6.76	3.25	0–18	6.65	3.25	0–18	6.86	3.23
Family composition (n , %)									
Intact	2304	81.9%		1245	82.5%		1289	81.3%	
Non-intact	509	18.1%		264	17.5%		296	18.7%	
Family support (range, mean, SD)	4–28	23.88	5.15	4–28	24.43	4.72	4–28	23.35	5.54
Family communication (range, mean, SD)	4–20	15.41	3.06	4–20	15.54	3.09	4–20	15.30	3.06
Family affluence (range, mean, SD)	0–13	7.36	2.55	0–13	7.58	2.46	1–13	7.17	2.61

SD standard deviation

Table 2 Associations of family composition, family support and communication, and interactions of gender with family support and communication with emotional problems adjusted for gender, age and family affluence based on generalized linear models ($N = 2908$, Health Behaviour in School aged Children, Slovakia, data collection 2014)

	Emotional problems	
	Model 3 <i>B</i> (95% CI)	Model 4 <i>B</i> (95% CI)
Family composition		
Intact	Ref.	Ref.
Non-intact	0.36 (0.06 0.67)*	0.49 (0.18 0.80)**
Family support	- 0.16 (- 0.20 - 0.12)***	
Family communication		- 0.18 (- 0.24 - 0.13)***
Gender		
Boys	Ref.	Ref.
Girls	0.94 (- 0.20 2.08)	1.82 (0.60 3.03)**
Age		
13 years old	Ref.	Ref.
14 years old	- 0.08 (- 0.35 0.21)	- 0.07 (- 0.36 0.21)
15 years old	- 0.23 (- 0.52 0.07)	- 0.18 (- 0.48 0.12)
Family affluence	- 0.02 (- 0.06 0.03)	- 0.03 (- 0.07 0.02)
Gender × family support		
Boys × family support	Ref.	
Girls × family support	- 0.04 (- 0.08 0.01)	
Gender × family communication		
Boys × family communication		Ref.
Girls × family communication		- 0.10 (- 0.18 - 0.03)**

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 3 Associations of family composition, family support and communication, and interactions of gender with family support and communication with behavioural problems adjusted for gender, age and family affluence based on generalized linear models ($N = 2908$, Health Behaviour in School aged Children, Slovakia, data collection 2014)

	Behavioural problems	
	Model 3 <i>B</i> (95% CI)	Model 4 <i>B</i> (95% CI)
Family composition		
Intact	Ref.	Ref.
Non-intact	0.42 (0.10 0.75)**	0.54 (0.22 0.87)***
Family support	- 0.18 (- 0.22 - 0.14)***	
Family communication		- 0.22 (- 0.28 - 0.16)***
Gender		
Boys	Ref.	Ref.
Girls	1.11 (- 0.10 2.31)	2.68 (1.40 3.95)***
Age		
13 years old	Ref.	Ref.
14 years old	- 0.05 (- 0.34 0.25)	- 0.08 (- 0.37 0.22)
15 years old	- 0.02 (- 0.34 0.29)	0.02 (- 0.30 0.34)
Family affluence	0.02 (- 0.03 0.07)	0.02 (- 0.03 0.07)
Gender × family support		
Boys × family support	Ref.	
Girls × family support	- 0.04 (- 0.09 0.01)	
Gender × family communication		
Boys × family communication		Ref.
Girls × family communication		- 0.16 (- 0.24 - 0.08)***

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

increases the risk of early drinking (Jackson et al. 2016; Vanassche et al. 2014) and aggressive behaviour, such as bullying or delinquency (Undheim and Sund 2010; Vanassche et al. 2014).

In addition, we focused in our study not only on the effect of a non-intact family on emotional and behavioural problems among adolescents, but we also considered other family characteristics—family support and family communication. Family support and family communication were both found to be significantly associated with a lower score in emotional problems and behavioural problems. These findings are in line with previous research focusing on these specific characteristics of family functioning. Family support plays an important role in decreasing both emotional and behavioural problems in adolescence (Heerde and Hemphill 2018). On the other hand, a lack of family support can increase depressive symptoms in adolescence (Stice et al. 2004; Santens et al. 2018). In divorced families, a lack of family support is associated with aggression in adolescents (Hamama and Ronen-Shenhav; 2012). Good family communication decreases emotional (Branje et al. 2010; Hakvoort et al. 2010; Johnson and Galambos 2014; Klemmera et al. 2017) and behavioural problems in adolescence (Estévez et al. 2018; Ponnet et al. 2014). In divorced or single-parent families, poor communication can influence substance use in adolescents (Bellon-Champel and Varscon 2017). As presented in our results, we found a mutual influence between family support and communication on the occurrence of emotional and behavioural problems. This finding is in line with the study of Dujardin et al. (2016) who found that adolescents who trust less in maternal support tend to communicate less with their mother, which leads to more depressive symptoms and self-harm.

According to Bronfenbrenner's (1979) ecological model and Lerner's relational developmental systems model (Lerner and Overton 2008), people are influenced by their external environment. Positive relationships within a family play an important role in positive health outcomes in adolescence, even though this period of life is typified by an increasing independence from the family (Blum and Blum, 2009). In one study, perceived parental support was shown to be one of the reasons why adolescents ended risky behaviours (Stamato et al. 2018). Other parental strategies that have positive outcomes on an adolescent's development are positive discipline (Wyman et al. 1991), awareness of children's activities (Peterson and Hann 1999) or a combination of discipline and parental support (Henry et al. 2006; Thomson et al. 2015). Adolescents who have more conflicts with their parents have more emotional and behavioural problems (Tucker et al. 2003).

Finally, our findings revealed significant interactions of gender with family communication in association with

emotional and behavioural problems, with family communication decreasing emotional as well as behavioural problems in girls. In previous years, only a few studies have explored gender differences in the effect of family functioning on emotional and behavioural problems, and the findings have been inconsistent. A study by Kerr et al. (2006) found parental support to be important in lowering depressive symptoms and suicidal ideations for girls but not for boys. However, no gender differences were found in the effect of family functioning on behavioural problems. In other recent studies, family support has been shown to be a factor which decreases emotional problems (Rueger et al. 2010; Demaray et al. 2005) in both genders.

The finding that family communication works for girls but not for boys might find an explanation in a few older studies and in social psychological theory. Earlier studies showed that females exhibit greater emotional self-disclosure to a parent than males (Papini et al. 1990). In a qualitative study, the authors found that adolescent boys tend to restrict emotional expressions, while adolescent girls, on the other hand, increase their emotional expression (Polce-Lynch et al. 1998). According to the Social Learning Theory, which is known because of Albert Bandura's studies (1977), gender differences begin in a child's socialization. Children are socialized and learn into roles by observing and communicating with adults, mostly parents (Mcnaughton 2000). Studies show that parents talk more about emotions with girls than with boys and the communication is even more open with girls (Garner et al. 1997; Mcnaughton 2000).

A number of prevention and intervention programmes focusing on reducing emotional and behavioural problems in adolescence already exist. These programmes should include parents and parent-child relationship for better outcomes, as family is one of the most important sources of positive as well as negative influence. Cognitive behavioural therapy of emotional and behavioural problems in adolescence can be more beneficial when parents are involved and when family processes, such as family communication, are targeted in the therapeutic programme (Queen et al. 2013; Podell and Kendall 2011). A parenting programme that promotes positive parent-child relationship and healthy parenting practices can reduce emotional and behavioural problems in children (Doyle et al. 2018). However, further research may examine the need for targeting gender differences in adolescents in prevention and intervention programmes.

Strengths and limitations

The HBSC study is a unique cross-sectional survey that enables exploration of young people's social environments as determinants of their health and well-being, providing a

detailed picture of the whole social context in which they live. The strength of the study includes its large representative sample of adolescents and assessment of both positive and negative aspects of family environment. The study is limited by the cross-sectional design. There is no way to establish causality in the complex interactive relationship between family structure, family support, family communication and emotional and behavioural problems in adolescents. Details on the nature of support and communication between parents and children are not known. Further research should explore what aspects of the support and communication between parents and adolescents are most protective. A longitudinal study could establish the causal pathways between family characteristics and emotional and behavioural problems as well as considering the role of gender differences. Another limitation of the study is its reliance on self-report measures of emotional and behavioural problems and subjective perceptions of the quality of parental support and communication. Corroborating data from parents would have provided a more complete account of links between family support and communication and emotional and behavioural problems.

Conclusions

Our findings suggest the important role of family composition, family support and family communication on emotional and behavioural problems among adolescents. We found a moderating role of gender between family communication and emotional and behavioural problems, showing that family communication lowers the occurrence of emotional and behavioural problems only in girls. Further work may clarify the role of a gender in association with family composition and family functioning characteristics. A qualitative study could lead to a better understanding of the associations found in this study. Further inquiry may use these findings to investigate the relationship between family characteristics and emotional and behavioural problems among adolescents, with the evident role of gender. More thorough research may then lead to the examination of parenting strategies and the development of prevention and intervention programmes to decrease emotional and behavioural problems in adolescence, while taking the crucial role of family composition and functioning characteristics into consideration. Programmes could be focused not only on the family as a whole but also on parent–child communication strategies, emphasizing the importance of differences in the behavioural needs of boys and girls.

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Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

Ethical approval All procedures performed in the study were in accordance with the 1964 Declaration of Helsinki and its later amendments or comparable ethical standards. The study was approved by the Ethics Committee of the Medical Faculty at the P. J. Safarik University in Kosice (No: 9/2012). Parents were informed about the study via the school administration and could opt out if they disagreed with their child's participation. Participation in the study was fully voluntary and anonymous, with no explicit incentives provided for participation.

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