

Mother's and father's monitoring is more important than parental social support regarding sexual risk behaviour among 15-year-old adolescents

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ABSTRACT **Background and objectives** There is strong evidence that parental processes such as monitoring and social support play an important role with regard to sexual risk behaviour among adolescents. We wished to explore the influence of both parents' monitoring and support on sexual risk behaviour among adolescent boys and girls.

Methods Questionnaires concerning sexual risk behaviour, parental support and parental monitoring were administered to 15-year-old students ($n = 1343$; 628 boys). Crude and adjusted logistic regression models were used to explore the effect of parents' monitoring and support on sexual risk behaviour among adolescent boys and girls.

Results Parental monitoring was more strongly associated with sexual risk behaviour than parental social support. In particular, less monitoring by the father was significantly linked to early first sexual intercourse among girls and to not using a condom during last intercourse among boys. Less monitoring by the mother was associated only with not using a condom at last intercourse among boys.

Conclusion Parental monitoring, even more than parental support, may delay the onset of sexual activity and increase the frequency of condom use among adolescents. The effects of mothers' and fathers' parenting processes on sexual risk behaviour of adolescents differ. Paternal monitoring affects condom use among boys, and initiation of sexual activity in girls.

KEY WORDS Parental monitoring; Parental social support; Sexual risk behaviour; Adolescence

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INTRODUCTION

Sexual behaviour of adolescents is strongly influenced by parenting practices¹⁻⁷. Sexual risk behaviour (SRB) during this stage of life may affect future life through unintended pregnancies and sexually transmitted infections (STIs). Parenting practices concern a system of interrelated practices like monitoring (e.g., attention, tracking and structuring context), behaviour management (e.g., negotiation, problem solving, limit-setting), and influencing social cognitions (e.g., motivation, values, goals and norms)⁸. However, studies which explored the link between parenting practices and sexual activity were often limited to only one parenting practice, such as monitoring⁹⁻¹¹. Other important parenting dimensions (e.g., parental support, social cognitions, parental trust) have been explored less frequently despite their potentially important influence^{7,12,13}.

Parental support and parental monitoring are important parenting styles in the model proposed by Maccoby and Martin¹⁴. Parental support can be characterised by warmth, responsiveness, and child-centredness. Monitoring is usually defined as the parents' knowledge of their child's whereabouts. Knowledge of the child's whereabouts does not necessarily require supervision¹. Some authors claim that this knowledge comes rather from the child's spontaneous disclosure than from active supervision¹³, though there is an assumption that these parental practices and children's disclosure influence one another in a reciprocal manner¹⁵.

Most studies have found stricter parental monitoring to be associated with a delay of first sexual intercourse and with consistent contraceptive and condom use as well^{2,9,16,17}. Studies which explored both maternal and paternal monitoring yielded heterogeneous findings. In one Japanese study, intensive mother monitoring was associated with later first sexual intercourse for girls, but no associations were found between father monitoring and the sexual behaviour of either boys or girls¹⁸. In contrast, one study concerning nine countries found that boys who reported a low level of maternal monitoring were more likely to engage in early risk behaviour than girls, while low paternal monitoring was associated with early sexual behaviour only for girls⁵.

Studies on the association of parental support with sexual behaviour have mostly found that high parental support levels (warmth, responsiveness and child-centredness) were associated with a delay of first sexual intercourse^{7,19-21}. According to one study, these

associations seem to be stronger in the youngest age groups²², while other studies have found that these associations were stronger for girls^{18,23,24}. De Graaf *et al.*⁷ observed that low levels of family cohesion precipitate romantic initiation which seems to mediate sexual initiation, but these findings pertained only to very young adolescent girls.

Results about associations between parental support and condom use are inconsistent. Talking to the mother about important things in life was positively associated with more consistent condom use for girls before age 18²⁵. Other studies have shown that young people are more likely to use contraception if they are more satisfied with their relationship with their mother or communicate well with both parents. It has also been found that greater satisfaction with the relationship with the mother may delay sexual onset in adolescents²⁶. Furthermore, a better relationship with the mother was linked with a later entrance into a sexually romantic relationship among girls. Some other studies have confirmed these associations only for steady partners²⁷, casual partners²⁸, girls only²⁹ or did not find any statistically significant associations at all³⁰.

To sum up: there are indications that both a high level of parental monitoring and support correlate with: (i) a later age at first sexual intercourse^{31,32}; (ii) more consistent contraceptive use^{2,33,34}; (iii) more consistent condom use^{9,35}; and (iv) lower levels of STIs²⁹. However, most of these studies explored parental monitoring and parental support without differentiating between the mother and father. Moreover, parental monitoring and support were mostly explored as single variables. Therefore, information about which of the parents is more/less likely to influence a child's sexual behaviour is rather unclear. Finally, gender-specific information at the child's level about parental monitoring and support is contradictory. Thus, the aim of this study is to explore the relationship between parental monitoring and parental support, and sexual risk behaviour among both boys and girls.

METHODS

Sample and procedure

We used data from the 2009/2010 Health Behaviour of School-aged Children (HBSC) study³⁶. The HBSC-study is a World Health Organization collaborative cross-national study in which 43 countries participate

and collect data on 11-, 13-, and 15-year-old boys' and girls' health and well-being, social environments and health behaviours every four years. A similar methodology is used in all countries, including a two-stage sampling of first schools and then students within schools, and the use of standardised questionnaires including an obligatory and an optional part. In HBSC, data are collected using classroom-administered self-completed questionnaires in each participating school, with central requirements in terms of sampling, questionnaire items and survey administration being set out in a standardised research protocol. More details can be found on the HBSC website (<http://www.hbsc.org>).

The present analyses are based on data gathered from 15-year-old students in Slovakia in May and June of 2010. To obtain a greater homogeneity of the sample only students of that age were assessed. From a list of schools provided by the Slovak Institute for Education Information and Prognoses, 134 schools were randomly chosen with probabilities proportional to the number of students per school and with stratification per region ($n = 8$). If a selected school had more than one class per grade, one of the classes was selected at random. Schools were then approached according to their rank on the list, until the required number of students was obtained. We contacted 108 schools, 106 of which took part in our survey, representing a little over a 98% school response rate. As already mentioned the HBSC protocol requires collecting data from a sample representative for 11-, 13- and 15-year-old children. In Slovakia, children usually enter school at the age of 7 years (1st grade). Data were collected in five grades to tap advanced as well as held-back children aged 11, 13, and 15 years. Only the latter filled out questions on sexual behaviour. Classes from the 5th to 9th grades were selected randomly, one from each grade per school. We obtained data from 8491 adolescents from the 5th to 9th grade, representing 79.5% of the original sample of 10,680 youths. Non-response was primarily due to illness (10.3%). Of the 1605 participating 15-year-old students, 124 were excluded because of missing answers on the sexual intercourse question, and another 138 because of missing answers concerning parental monitoring and parental support. The final sample of 1343 15-year-old adolescents consisted of 628 boys and 715 girls. Of these respondents 28.5% were attending schools located in villages, hamlets or rural areas (less than 3000 inhabitants), 19.9% in small

towns (3000–15,000 inhabitants), 39.7% in larger towns (15,000–100,000 inhabitants) and 11.9% in cities (100,000–1,000,000 inhabitants).

The study was approved by the Ethics Committee of the Faculty of Medicine at the P.J. Safarik University in Kosice. Parents were informed about the study via the school administration and could opt out if they disagreed. Participation in the study was fully voluntary and confidential, 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

Sexual risk behaviour

Regarding sexual risk behaviour (SRB) respondents were asked: (i) if they had had sexual intercourse (yes/no), and (ii) if they had used a condom during their last sexual intercourse (yes/no).

Parental monitoring

Parental monitoring was measured by five questions separately for mother and father monitoring³⁷. In the HBSC version each item has a four-point scale ranging from 1 (she/he knows a lot), 2 (she/he knows a little), 3 (she/he does not know anything) to 4 (does not have or see father/mother)³⁸. For each question the respondents chose the statement that most closely applied to them. The items are listed in Table 1.

Parental support

Parental support was measured for both parents separately. To this end six items were used from the Parental Bonding Instrument³⁹, which was included in the HBSC survey to measure parental support/warmth. Each item has a four-point scale ranging from 1 (almost always), 2 (sometimes), 3 (never) to 4 (does not have or see father/mother). For each question the respondents chose the statement that most closely applied to them. The items are listed in Table 1.

Statistical analyses

First we carried out factor analyses on the ten questions concerning parental monitoring and the 12 questions

Table 1 Parental monitoring and parental support – factor analyses.

	Component*	
	Father's monitoring	Mother's monitoring
<i>Parental monitoring</i>		
<i>How much does your mother really know about...?</i>		
who your friends are	.172	.737
how you spend your money	.174	.720
where you are after school	.162	.772
where you go at night	.172	.785
what you do with your free time	.193	.746
<i>How much does your father really know about...?</i>		
who your friends are	.860	.155
how you spend your money	.854	.189
where you are after school	.876	.215
where you go at night	.861	.244
what you do with your free time	.872	.208
Eigenvalue	5.054	1.877
Explained variance		69%
<i>Parental support</i>		
<i>My mother....</i>		
helps me as much as I need	.092	.764
lets me do the things I like doing	.058	.713
is loving	.113	.778
understands my problems and worries	.153	.784
likes me to make my own decisions	.082	.647
makes me feel better when I am upset	.162	.709
<i>My father</i>		
helps me as much as I need	.897	.127
lets me do the things I like doing	.880	.110
is loving	.885	.131
understands my problems and worries	.860	.141
likes me to make my own decisions	.833	.102
makes me feel better when I am upset	.840	.155
Eigenvalue	5.266	2.649
Explained variance		66%

*Item loadings are a measure of how closely the item is identified with components. A relatively high item loading indicates that the item is closely identified with the component.

concerning parental support. To maximise the explanatory power of the extracted factors, we applied Varimax rotation, i.e., the selection of contributing questions was done in such a way that a maximum of their variance was explained by these factors. For each factor, the eigenvalue indicates the percentage of the variance in all questions accounted for by the factor concerned.

Next, we performed logistic regression analyses using the measures of SRB as outcomes and each of the factors as a predictor. We first computed bivariate associations, leading to crude odds ratios (ORs) separately for boys and girls. Next, we computed ORs with adjustment for all other parenting variables separately for boys and girls. We used routine statistical procedures

which did not account for a potential classroom effect as previous multilevel analyses showed this effect to be negligible for other outcomes (smoking, alcohol, and physical activity) in the same dataset. All statistical analyses were done using SPSS 15.

RESULTS

For parental monitoring, the Kaiser-Meyer-Olkin (KMO) statistic (indicating the appropriateness of the factor analysis on a range of 0–1 with a higher value indicating the factors found to be more appropriate) was 0.835, and the communalities were greater than 0.549 for all variables. The communality of a given variable is an estimate of the percentage of variance of that variable explained by all factors as found. Two interpretable factors were extracted with eigenvalues of 5.054 and 1.877, which accounted for 69% of the total variance. The two extracted components, items and item loadings of rotated factor matrix, are presented in Table 1. Component 1 is the factor called Father monitoring, and component 2, the factor called Mother monitoring; higher scores indicate more monitoring.

For parental support, the Kaiser-Meyer-Olkin (KMO) statistic was 0.858, and the communalities were greater than 0.425 for all variables. Two interpretable factors were extracted with eigenvalues 5.266 and 2.649, which accounted for 66% of the total variance. The two extracted components, items and item loadings of rotated factor matrix, are presented in the lower panel of Table 1. Component 1 is the factor called Father support, and component 2, the factor called Mother support; higher scores indicate more support.

Table 2 presents a crude model with associations between parental support, parental monitoring and sexual risk behaviour. Girls who reported lower levels of social support from both mother and father, and lower levels of mother and father monitoring, were more likely to report having had sexual intercourse. Regarding condom use, a lower level of mother monitoring was associated with no condom use during last sexual intercourse among boys.

Table 3 presents the adjusted model for all variables. Less monitoring from father was significantly correlated with early first sexual intercourse among girls and with not using a condom during last intercourse among boys. Less monitoring from mother was associated only with boys not using a condom during last intercourse. Social support from either father or mother was not linked with any type of SRB. Compared to

the crude model, the effect of social support from either mother or father on the probability of having sex among girls disappeared in the adjusted model. Similarly, the effect of monitoring by the mother on the probability of having sex in boys as well as in girls disappeared in the adjusted model. On the other hand, the effect of monitoring by the father on condom use by boys became significant in the adjusted model.

DISCUSSION

The aim of this study was to examine the relationship between parental monitoring and parental support from both parents and SRB among boys and girls. We found that both less parental (mother and father) monitoring and support were strongly associated with early onset of sexual behaviour among girls. In addition, less monitoring by the mother was associated with early first sexual behaviour and not using a condom at last intercourse among boys.

Adjustment for the other parenting variables shows that less monitoring by the father was associated with early sexual onset among girls, and not using a condom during last intercourse among boys. Also now, less mother monitoring was associated with not using a condom at last intercourse among boys. In this adjusted model no associations were found between parental support and SRB.

Role of parental monitoring

A simple reason for the greater influence of parental monitoring in comparison with parental support on SRB might be that if parents with children in this particular age group monitor their whereabouts, the children may simply have fewer opportunities to have sex at an early age. It is often unplanned, and thus dependent on having an opportunity to stay together as a couple during the night, etc.

Our results on parental monitoring are in line with those of other investigators who had found that high parental monitoring was associated with later onset of sexual activity and with condom use. However, when we compare our findings to those studies which explored *separately* monitoring by mothers and fathers, some differences become apparent. Lenciauskiene and Zaborskis⁵, in a survey conducted in nine European countries, observed that weak maternal monitoring had greater consequences with regard to boys' early

Table 2 Crude associations between parental support and parental monitoring and sexual experience and condom use by genderw: odds ratios (ORs) and 95% confidence intervals (CIs).

	Ever had sex – yes		Condom use – no	
	Boys (n = 89) OR(CI)	Girls (n = 70) OR(CI)	Boys (n = 32) OR(CI)	Girls (n = 27) OR(CI)
Mother support	1.14 (0.94–1.38)	1.48 (1.21–1.81)***	1.04 (0.77–1.40)	1.14 (0.79–1.64)
Father support	1.15 (0.93–1.42)	1.38 (1.12–1.71)**	1.04 (0.71–1.53)	1.28 (0.82–1.98)
Mother monitoring	1.23 (1.01–1.50)*	1.52 (1.23–1.87)***	1.45 (1.01–2.07)*	1.19 (0.79–1.79)
Father monitoring	1.11 (0.89–1.39)	1.59 (1.28–1.98)***	1.38 (0.94–2.04)	1.52 (0.96–2.41)

* $p < .05$; ** $p < .01$; *** $p < .001$; OR, odds ratio; CI, 95% confidence interval.

sexual behaviour, while weak paternal monitoring had a greater influence on that of girls. Our study confirms that paternal monitoring is important but associated especially with girls', and *not* with boys' early sexual initiation. Moreover, maternal monitoring showed very weak or no associations with boys' or girls' early start of sexual activity. Also, Coley *et al.*⁶ and Rodgers⁴⁰ reported that a father's parenting (e.g., monitoring) plays an important role in adolescents' sexual risk behaviour, especially among girls. However, Ramirez-Valles *et al.*⁴¹ observed that a father's parenting was strongly associated with timing of first intercourse among boys but not among girls.

As in other countries involved in the HBSC study, Slovak adolescents more frequently find it easy to talk with their mother than with their father, and whereas there are no gender differences in reporting easy communication with the mother, there are more boys than girls reporting easy communication with the father³⁶.

According to ours and previous results we may state that girls during adolescence seem to be more sensitive

to monitoring, especially from fathers. Or, in other words, parenting, particularly the father's monitoring, may be more protective for girls than for boys. There are several possible explanations for such behaviour: (i) girls with regard to their sexual behaviour are more likely than boys' to respond to active parenting^{39,42}; (ii) differences between parenting and children's behaviour can be explained by girls' greater responsiveness to emotional support and communication with parents⁴³; (iii) according to Parke⁴⁴, fathers play a special role in socialising the child's functioning, and in promoting individuation and differentiation. Moreover, fathers appear to be more important than mothers in supporting the sex-types roles of children, and teaching the child discipline, autonomy and individuation⁴⁵.

Role of parental support

We found that social support was more weakly associated with SRB than has been proposed by other authors^{31,32}. However, in the *crude model*, when both variables (father's

Table 3 Adjusted association model for all variables between parental support and parental monitoring and sexual experience and condom use by gender.

	Ever had sex – yes		Condom use – no	
	Boys (n = 89) OR(CI)	Girls (n = 70) OR(CI)	Boys (n = 32) OR(CI)	Girls (n = 27) OR(CI)
Mother support	1.03 (0.82–1.30)	1.21 (0.92–1.61)	0.98 (0.68–1.42)	1.03 (0.66–1.61)
Father support	1.15 (0.82–1.62)	0.88 (0.60–1.29)	0.57 (0.29–1.11)	0.85 (0.40–1.80)
Mother monitoring	1.21 (0.96–1.52)	1.32 (0.99–1.76)	1.53 (1.01–2.34)*	1.15 (0.7–1.90)
Father monitoring	0.99 (0.69–1.42)	1.77 (1.19–2.65)**	2.14 (1.09–4.20)*	1.73 (0.8–3.73)

* $p < .05$; ** $p < .01$; *** $p < .001$; OR, odds ratio; CI, 95% confidence interval.

and mother's monitoring, father's and mother's support) were explored separately, our results (namely, that both the mother's and the father's support contribute to delaying the onset of sexual activity of their adolescent daughters) were in line with those of most other studies^{15,22}. But, in the *adjusted model* mother's and father's support were no longer significantly associated with any type of SRB. This may indicate the central role of parental *monitoring* regarding SRB, with other factors being mostly associated with monitoring. Nevertheless, it might be assumed that parental support is inevitable for effective parental monitoring in this age group.

Therefore, we underwrite the hypothesis formulated by Grossmann *et al.*⁴⁶ and Russell and Saebel⁴⁷ that fathers especially play a salient role in promoting the exploratory side of their daughters' development and provide them a safe arena wherein to learn to interact with the other sex. It has been suggested that girls are assumed to learn feminine behaviours by complementing their father's masculine behaviour⁴⁷. According to this, the quality of the relationship with the father may serve as a reference to other relationships, including romantic relationships. This was confirmed by Dalton and co-authors⁴⁸, who reported that fathers' parenting was related to the quality of the current relationship of college students with a romantic partner.

Strengths and limitations

This study has several strengths and limitations. Its first strength is the size of the sample we surveyed, and the fact that the latter was assembled from different regions in Slovakia. The second strength is the design of the study, whereby the links between parental support and monitoring with SRB of adolescents were assessed separately. We should also mention that we achieved a very high response rate (79.5%), limiting the likelihood of selection bias. Yet we cannot exclude some information bias, although we did implement specific measures to guarantee confidentiality.

The main limitation of this study is its cross-sectional design, which limits the potential for inferences on causality. In this model we assumed that parental processes preceded sexual behaviour and sexual health, but it could have been the other way around. We also did not include into the explored model any other sociological and psychological variables which may provide an extensive explanation for developing certain sexual behaviours. Exploring these processes and variables

provides an opportunity for future studies. In addition, it seems interesting to explore the moderating effect of support on parental monitoring.

An early age at sexual initiation is considered to be a form of sexual risk behaviour that is very important in adolescence, and it seems to be correlated to other risky behaviours and their consequences such as a greater number of sexual partners, inconsistent contraception use, unintended pregnancies, higher rates of STIs, and gynaecological problems^{49–53}. How much our findings might apply to late adolescence needs to be explored further, but some studies indicate an important role of family environment, including parental monitoring and support, on the sexual behaviour of late adolescents⁵⁴.

Implications

Adolescents from families with less parental monitoring and support in particular should be the target group for health promotion and prevention programmes. It is important to strengthen a positive family environment as it may be protective against early sexual initiation and risky sexual behaviour. In addition to controlling the child's whereabouts, parents should try to optimise conditions for the child to disclose information about his or her own experiences¹³. To know how adolescents feel and think can result in a dialogue that may encourage children to share their lives with their parents. Presumably the quality of monitoring relies on that of communication⁵⁵, which is very much related to parental support in terms of warmth, responsiveness and child-centeredness. This pathway may explain the differences in the crude and adjusted models, where monitoring is the key variable associated with sexual risk behaviour among adolescents.

Unanswered questions and future research

Very little is known about differences between the mother's and the father's views concerning their adolescent children's sexual demeanour; these views may serve as a source of new information. A closer focus on parental monitoring seems to be most effective when aiming at reducing adolescent SRB.

CONCLUSION

Parental monitoring and parental support may effectively delay the age at first sexual intercourse and

increase the frequency of condom use among adolescents. It seems that parental monitoring, rather than parental support, influences the sexual behaviour of these youths. Yet there are differences between parenting by the father and that by the mother with regard to their effect on the sexual risk behaviour of their children. Paternal monitoring affects aspects of sexual behaviour among boys (condom use) different from those in girls (initiation of sexual activity).

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