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Psychosocial factors associated with sexual behaviour in early adolescence

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ABSTRACT

Objectives To compare the psychosocial characteristics of sexually inexperienced adolescents with those of youths who had had sex, whether safe or unsafe.

Methods We gathered information on self-esteem, well-being, social support, family structure, educational aspiration, parental education and sexual behaviour of 2318 adolescents (mean-age 14.3 years) attending elementary school in Slovakia. Those who reported having had first sex after a relationship shorter than one month, who reported sex after alcohol consumption, who had had four or more sexual partners or who inconsistently used a condom were considered to have engaged in unsafe sex.

Results Respondents who were younger, female, reported living in an intact family or having a higher level of social support from family were more likely to still be virgins. Adolescents who had sex, whether safe or unsafe, had similar psychosocial characteristics. Those who reported a higher level of positive self-esteem or social support from friends, but a lower level of well-being, social support from family or educational aspiration were more likely to engage in unsafe sex.

Conclusion Psychosocial features of adolescents who reported having had unsafe sex were similar to those of adolescents who had had safe sex but differed from the characteristics of adolescents who reported not to have started sexual activity.

KEYWORDS Psychosocial factors, Adolescents, Sexual behaviour, Prevention

INTRODUCTION

Adolescents often have little knowledge of sexually transmitted infections (STIs), use condoms or other contraceptives inconsistently when having sex, and may have multiple sexual partners over a short period of time, thus exposing themselves to an increased risk of STI and unintended pregnancy[1,2]. Sexual risk behaviour (SRB) tends to cumulate with other forms of health risk behaviour like the use of alcohol or drugs[3,4]. Finally, psychosocial factors like self-esteem, well-being, religiousness, social support and family structure have been shown to be associated with sexual behaviour, but evidence regarding this from Central Europe is scarce,

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with the exception of prevalence data[5–7]. According to the Health Behaviour of School-aged Children (HBSC) report 2005/2006, in Slovakia, 11% of girls and 13% of boys aged 15 years reported having had sex as compared to averages of 24% for girls and 30% for boys across all countries that participate in the HBSC study[8,9]. Studies comparing adolescents with and without sexual experience in terms of psychosocial factors are also lacking.

From health behaviour theories, including the Social Cognitive Theory[10] and the Theory of Planned Behaviour[11], possible mechanisms can be derived by which self-esteem may affect sexual risk behaviour, both directly and mediated through substance use. These theories suggest that problem behaviours, including both substance use and sexual risk, are determined by dynamic and reciprocal interactions with personality characteristics (such as self-esteem) and environmental factors (such as societal expectations). However, self-esteem should be seen not only as a single factor but also in the framework of a multidimensional theory, considering its connection with other factors as well. *Positive self-esteem* could be seen as an essential feature of mental health and also as a protective factor in the field of health and social behaviour. In contrast, *negative self-esteem* could play an important role in the development of a range of mental disorders and social problems, such as depression, anxiety, violence, high-risk behaviours and substance use[12].

Self-esteem plays an important role in risk-taking behaviour; this may also apply to SRB, but evidence regarding this is still inconclusive[13]. Several studies[14–16] support the link between low self-esteem and SRB (e.g., early sexual intercourse, inconsistent contraceptive and condom use) and the latter's possible consequences such as unwanted pregnancy and STI. Lejuez *et al.*[15] reported that low self-esteem was related to risky sexual behaviour in a sample of adults participating in a residential drug-treatment programme. Preston *et al.*[16] found that low self-esteem predicted SRB in a sample of rural men. Magnani *et al.*[17] conducted a large cross-sectional study of adolescents in Peru, and reported that low self-esteem predicted both early onset of sexual activity and unprotected sex. Wild *et al.*[18] found on the basis of a large cross-sectional sample of South African adolescents that low self-esteem was related to a number of risky behaviours, including unprotected sex.

In general, it seems that *high* self-esteem is positively associated with *less* risky sexual behaviour. However, Spencer *et al.*[19] found that the probability of having sex was linked with high self-esteem in *boys* but with low self-esteem in *girls*, though in a study by Paul *et al.*[20] girls with *higher* self-esteem were likely to have had early first sexual intercourse.

It has been hypothesised that other factors, such as educational aspiration level and psychological well-being, are associated with (sexual) risk behaviour, but the evidence is incomplete. A higher aspiration level has mostly been shown to be associated with less SRB[21], but the few studies which have examined the association between attitude to school and teenage pregnancy have provided inconsistent findings[22]. Some studies demonstrate the important roles of certain psychological factors, particularly stress, anxiety and depressive mood, on adolescents' health risk behaviour[23,24]. If mental health is a positive attribute for health in general, then mental health promotion might contribute much to adolescent health in general.

Parents and family composition play a crucial role in defining the normative behaviour of children[25]. Parents are important role models for their children, who tend to develop similar behaviours. Living with at least *one* parent serves a protective role; living with *both* parents protects adolescents from engaging in SRB even more so[26,27]. According to Klavs *et al.*[28], not living with both parents up to the age of 15 is a factor associated with early sexual intercourse. Devine *et al.*[29] found that parental divorce during early adolescence was a significant predictor of SRB for girls in later adolescence. However, Langille *et al.*[30] did not observe any significant associations between family composition and sexual behaviours, except between living with both parents and contraception use.

Our study aimed at comparing psychological and social characteristics of sexually inexperienced adolescents with those of youths who had had sex, whether safe or unsafe.

METHODS

Sample and procedure

We gathered data on adolescents in the 8th and 9th grades of elementary schools representing the entire Slovak Republic. Schools were selected from the major cities of Bratislava (around 425,000 inhabitants, Western Slovakia), Zilina (around 157,000 inhabitants, Northern Slovakia) and Kosice (around 240,000

inhabitants, Eastern Slovakia) and from smaller cities (20,000–40,000 inhabitants) in the eastern region of Slovakia. The Ethics Committee of the Medical Faculty of the P.J. Safarik University approved this survey. The study sample consisted of 3725 adolescents (response rate: 93.5%) aged 11–17 years (mean age 14.3 years, SD 0.65), of whom 49% were boys. Non-response was due to absence for illness or another reason. To make the sample more homogeneous and to avoid the influence of age extremes, we limited our analyses to students aged 13–16 years with complete data on SRB and psychosocial factors. This reduced the study sample to 2318 students (mean age 14.3 years, SD 0.62). One quarter (23.8%) of the sample came from Bratislava, 15.8% from Zilina, 31.4% from Kosice, and 29.0% from other eastern region cities.

The schools and classes were selected randomly in each region. Directors of the schools were asked for participation. After their approval and that of parents was obtained, a team of trained researchers and research assistants collected the data between October and December 2006. The questionnaires were administered in the Slovak language during two consecutive regular 45-minute lessons (90 minutes in total), on a voluntary basis, without identifying data, and in the absence of teachers. We did not gather any information about names or addresses, and pupils could opt out any time. This was explained to them verbally and was also described in the introduction to the questionnaire.

Outcome variables

Regarding sexual behaviour and SRB, respondents were asked: (1) if they had ever had coitus (penetration of the vagina by the penis); (2) about the length of the relationship before first sex (less than a day/less than a month/less than 12 months/more than one year), (3) if they had had sex under the influence of alcohol (yes/no); (4) how many sexual partners they had had in their life (number of partners); (5) whether they used condoms during their most recent intercourse (yes/no). Risky sexual behaviour was defined as: (a) having first sex after a relationship shorter than one month, (b) having sex after alcohol consumption, (c) having had four or more sexual partners, or (d) not using condoms during the most recent last intercourse. Next, the outcome variable categories (having no sex, having safe sex and having unsafe sex) were constructed through a combination of the previous items. Those who reported behaving riskily in at least one aspect were considered to have had unsafe sex.

Psychological factors

Self-esteem was assessed by means of the Rosenberg self-esteem scale[31]. A forward-backward translated and psychometrically evaluated Slovak version of the questionnaire was used[32,33]. The scale consists of ten items (five positive and five negative ones) that form scales of positive self-esteem and negative self-esteem. Each item has a four-point scale ranging from 'strongly agree' to 'strongly disagree'. For each question, the respondents choose the statement that most closely applies to them. The sum score for the negative and positive scale of self-esteem varies from 5–20. A higher score on the positive scale indicates higher positive self-esteem and on the negative scale a higher negative SE. In our data Cronbach's alpha was 0.74 for the positive self-esteem subscale and 0.65 for the negative self-esteem subscale.

Psychological well-being was measured with the shortened 12-item version of the General Health Questionnaire (GHQ-12)[34]. A forward-backward translated and psychometrically evaluated Slovak version of the questionnaire was employed[35]. The separate items focus on various aspects of respondents' psychological dispositions, for example, problems with sleep, strain, happiness or stress. The questions compare how the respondents' present state differs from their usual state. In this study two dimensions of the GHQ-12 were used according to Sarkova *et al.*[35], namely, the anxiety/depression and problems in social functioning domains. The GHQ-12 was scored using a four-point Likert scale (0, 1, 2, 3), with sum scores for both domains anxiety/depression and problems in social functioning ranging from 0–18 for each domain. A higher score means lower psychological well-being. In our data Cronbach's alpha was 0.82 for anxiety/depression and 0.60 for problems in social functioning.

Regarding *educational aspiration*, participants were asked what kind of school they wished to complete (university/secondary or elementary).

Social factors

Family structure

Respondents were asked (1) whether their parents were divorced (yes/no) and (2) whether their

family was complete (living with mother or stepmother and father or stepfather in one household: yes/no). Those who stated that their parents were divorced ($n = 465$) or that they were living with one parent only ($n = 345$) were categorised as belonging to broken-up families.

Education level of parents

Regarding parental educational background, respondents were asked (1) about their mother's highest achieved level of education (elementary or apprentice/secondary/university) and (2) their father's highest achieved level of education (elementary or apprentice/secondary/university). These two variables were joined into one: the highest parental (mother or father) education level (elementary or apprentice/secondary/university).

Social support

This was measured using the revised 12-item Perceived Social Support Scale[36]. The questionnaire contains 12 items employing a five-point Likert-type format (1 = strongly disagree; 5 = strongly agree). The developers distinguish three sources of perceived support, namely, from family, friends, and important others. A higher score on all three scales indicates higher social support. In our data, Cronbach's alpha was 0.92 for perceived support from family, 0.91 from friends, and 0.85 from important others.

Statistical analysis

First, we analysed the sexual experience and type of sexual experience for all 2318 respondents. Gender differences were tested by means of chi-square tests

Table 1 Descriptive statistics for sexual behaviour and psychosocial factors tested by gender

	Boys (n = 1038)		*Girls (n = 1280)*		
Variable	*n*	*%*	*n*	*%*	*p-value*
Kind of sexual intercourse					
None	907	87.4	1187	92.7	<0.001[b]
Safe	31	3.0	19	1.5	
Unsafe	100	9.6	74	5.8	
Aspiration level					
Low	367	35.4	355	27.7	<0.001[b]
	Mean	*SD*	*Mean*	*SD*	
Positive self-esteem[#]	15.56	2.22	14.66	2.38	<0.001[a]
Negative self-esteem[#]	11.45	2.72	12.29	2.82	<0.001[a]
Anxiety/depression[#]	10.73	3.92	12.81	4.28	<0.001[a]
Problems in social functioning[#]	11.44	2.36	12.04	2.69	<0.001[a]
Social support from family[#]	21.52	5.44	22.13	5.37	<0.01[a]
Social support from friends[#]	20.43	5.41	23.15	4.89	<0.001[a]
Social support from others[#]	20.98	5.37	23.53	4.57	<0.001[a]
Age	14.37	0.63	14.27	0.60	<0.001[a]
	n	*%*	*n*	*%*	
Family structure					
Broken up	234	22.5	316	24.7	ns
Parental education					<0.001[b]
High	492	47.4	512	40.0	
Middle	469	45.2	620	48.4	
Low	77	7.4	148	11.6	

[a]Independent sample t-test; [b]Pearson chi-square; SD: standard deviation; ns: not significant; [#]higher score = higher level of positive self-esteem, higher level of negative self-esteem, lower level of psychological well-being (either anxiety/depression or problems in social functioning), higher level of social support.

and t-tests (Table 1). Multinomial logistic regression was used to assess the association of predictor variables (psychological and social factors) with sexual risk behaviour (no sex, safe sex, and unsafe sex). Having had no sex was used as the reference category. We did not find any statistically significant interactions of variables by gender in multinomial regression, and hence excluded these interactions from the model. This regression resulted in odds ratios for the degree to which both remaining categories, unsafe sex and safe sex, were more or less likely than having had no sex, for adolescents in a given category of the psychological and social factors. We first assessed the crude effects for each predictor variable, and then the multivariate effects were adjusted for the effects of all other predictor variables. All analyses were performed with the SPSS 15.0 package.

RESULTS

Of the 224 respondents who had had sex:

- 76 (33.9%) reported having had sex for the first time after a relationship of less than one month duration,
- 108 (48.2%) stated they had had sex after consumption of alcohol,
- 44 (19.6%) had had four or more sexual partners, and
- 84 (37.5%) had not used condoms at their most recent last intercourse.

We found significant gender differences in all of the study variables, except family structure (Table 1). Males in comparison to females were older and had more frequently

Table 2 Crude associations of psychological and social factors with unsafe and safe sex, compared with no sex as a reference category

	Unsafe sex n = 174		*Safe sex n = 50*		*No sex n = 2094*		
Variable	*n*	*OR (95% CI)*	*n*	*OR (95% CI)*	*n*	*OR*	*p*[a]
Age		**2.19 (1.69–2.84)**		**2.10 (1.32–3.34)**			<0.001
Gender							<0.001
Females	74	1	19	1	1187	1	
Males	100	**1.77 (1.29–2.42)**	31	**2.16 (1.20–3.80)**	907	1	
Positive self-esteem[#]		1.04 (0.98–1.11)		1.08 (0.96–1.23)		1	ns
Negative self-esteem[#]		1.03 (0.97–1.09)		0.99 (0.89–1.09)		1	ns
Anxiety/depression[#]		**1.05 (1.02–1.09)**		1.01 (0.95–1.08)		1	<0.05
Problems in social functioning[#]		**1.06 (1.00–1.13)**		0.94 (0.84–1.06)		1	<0.05
Aspiration level							<0.001
Low	80	1	20	1	622	1	
High (university)	94	**0.50 (0.36–0.68)**	30	0.63 (0.36–1.13)	1472	1	
Social support from family[#]		**0.96 (0.93–0.98)**		0.96 (0.91–1.00)		1	<0.01
Social support from friends[#]		1.02 (0.99–1.05)		0.99 (0.94–1.05)		1	ns
Social support from others[#]		1.00 (0.97–1.03)		0.98 (0.93–1.03)		1	ns
Family structure							<0.001
Broken up	70	1	20	1	460	1	
Intact	104	**0.42 (0.30–0.58)**	30	**0.42 (0.24–0.75)**	1634	1	
Parental education							ns
Elementary	17	1	5	1	203	1	
Secondary	91	1.12 (0.65–1.92)	29	1.22 (0.47–3.18)	969	1	
University	66	0.86 (0.49–1.49)	16	0.71 (0.26–1.95)	922	1	

[a]*p*-value for inclusion of the variable in the model; ns: not significant; Statistically significant odds ratios ($p < 0.05$) are in **bold**; OR: odds ratio; CI: confidence interval; [#]higher score = higher level of positive self-esteem, higher level of negative self-esteem, lower level of psychological well-being (either anxiety/depression or problems in social functioning), higher level of social support.

experienced coitus. They reported a higher level of self-esteem (higher level of positive self-esteem, lower level of negative self-esteem), a higher level of psychological well-being (lower anxiety/depression, fewer problems in social functioning) and, more frequently, a low educational aspiration level. Moreover, they reported a higher educational level of their parents and less social support from family, friends and important others.

Table 2 shows the crude associations of psychological and social factors with unsafe sex or safe sex compared to no sex, which was the reference category. Respondents who were younger, female, or reported living in an intact family were more likely to still be virgins. Those who reported lower well-being (anxiety/depression or problems in social functioning), or a lower level of social support from family were more likely to have had unsafe sex.

Table 3 shows the mutually adjusted associations of psychological and social factors with unsafe or safe sex compared to the no-sex category. Respondents who were younger, female, reported living in an intact family or having greater social support from their family were more likely to still be virgins. Those who reported a higher level of positive self-esteem or social support from friends, but a lower level of well-being (anxiety/depression), social support from their family or low educational aspiration were more likely to be engaged in unsafe sexual behaviour. Differences between the reference category and the unsafe and safe sex categories group were greatest for family structure, family social support and educational aspiration level. Adolescents reporting less social support from their family were more likely to behave unsafely compared to the no-sex category; however, the difference between the reference

Table 3 Mutually adjusted associations of psychological and social factors with unsafe and safe sex, compared with no sex as the reference category. The associations of psychological and social factors after putting them into a single model

	Unsafe sex n = 174		*Safe sex n = 50*		*No sex n = 2094*		
	n	*OR (95% CI)*	*n*	*OR (95% CI)*	*n*	*OR*	*p*[a]
Age		**1.87 (1.43–2.45)**		**1.85 (1.15–2.96)**			<0.001
Gender							<0.001
Females	74	1	19	1	1187	1	
Males	100	**2.19 (1.52–3.15)**	31	**2.33 (1.22–4.48)**	907	1	
Positive self-esteem[#]		**1.12 (1.03–1.22)**		1.10 (0.95–1.28)		1	<0.05
Negative self-esteem[#]		0.99 (0.92–1.06)		0.98 (0.86–1.11)		1	ns
Anxiety/depression[#]		**1.07 (1.02–1.12)**		1.07 (0.98–1.16)		1	<0.05
Problems in social functioning[#]		1.03 (0.96–1.11)		0.92 (0.81–1.04)		1	ns
Aspiration level							<0.01
Low	80	1	20	1	622	1	
High (university)	94	**0.56 (0.40–0.79)**	30	0.82 (0.44–1.50)	1472	1	
Social support from family[#]		**0.93 (0.89–0.97)**		**0.93 (0.87–0.99)**		1	<0.001
Social support from friends[#]		**1.08 (1.02–1.14)**		1.05 (0.96–1.15)		1	<0.05
Social support from others[#]		1.01 (0.96–1.07)		1.00 (0.91–1.10)		1	ns
Family structure							<0.001
Broken up	70	1	20	1	460	1	
Intact	104	**0.45 (0.32–0.62)**	30	**0.43 (0.24–0.77)**	1634	1	
Parental education							ns
Elementary	17	1	5	1	203	1	
Secondary	91	1.30 (0.73–2.29)	29	1.33 (0.49–3.60)	969	1	
University	66	1.14 (0.62–2.08)	16	0.80 (0.27–2.37)	922	1	

[a]*p*-value for inclusion of the variable in the model; ns: not significant; Statistically significant odds ratios ($p < 0.05$) are in **bold**; OR: odds ratio; CI: confidence interval; [#]higher score = higher level of positive self-esteem, higher level of negative self-esteem, lower level of psychological well-being (either anxiety/depression or problems in social functioning), higher level of social support.

category and the unsafe and safe sex categories increased when adjusted for the effects of the other variables. We also tested the differences between the unsafe and the safe group, but the outcome was not significant (not presented in the table).

DISCUSSION

We found that family structure and social support from the family discriminate between adolescents who *have had* sex (either unsafe or safe) and adolescents who *have not*, but that these variables *do not* discriminate between adolescents who have had *unsafe sex* and those who have had *safe sex*. Those who reported living in an intact family and receiving higher social support from their family were more likely not to have had sexual intercourse. Regarding psychological factors, we found that a higher likelihood of having had unsafe sex was associated with a higher level of positive self-esteem, a higher level of anxiety/depression, and a low educational aspiration level. With regard to social factors, we found that a higher likelihood of having had unsafe sex was associated with a higher level of social support from friends.

Some studies indicate that high levels of self-esteem are protective against several types of sexual risk behaviours[37,38]. In most of these studies self-esteem was measured by means of the global self-esteem scale[31]. However, in our study we used both a positive and a negative subscale of self-esteem, and found that adolescents reporting high levels of positive self-esteem are more likely to engage in risky sexual practices (rather than not to engage in sex) compared with those with low levels of positive self-esteem. These findings are partially in line with those of Spencer *et al.*[19] and Paul *et al.*[20], which indicated that higher scores of self-esteem were associated with more sexual activity among boys and girls. However, these studies resorted to a single global scale for self-esteem that differs from the subscales we used. Moreover, in our study negative self-esteem was not associated with any type of sexual behaviour. Therefore, we may suppose that a positive perception of one's self brings more confidence into sexual initiation. After this initiation, positive self-esteem is not further associated with either a safe or a risky sexual behaviour.

As we had done for self-esteem we used two separate subscales – instead of one general (global) scale – for measuring psychological well-being. This approach revealed that only high levels of depression/anxiety are associated with a higher probability of SRB compared with having no sex, whereas the problems in the social functioning factor remains insignificant. This is partially in line with the findings of Mazzaferro *et al.*[39], who observed that adolescent girls with high levels of depression were more likely to report SRB. According to these authors[39] adolescent girls are more vulnerable to psychosocial risk factors than young adults, this vulnerability being possibly associated with psychosocial skills which are not yet sufficiently developed at this age.

Respondents who plan to study at the university are less likely to have sexual intercourse, which is in line with the findings of studies that explored the role of educational aspiration and teenage pregnancy[21]. Only girls were studied; the role of educational aspiration among males was not investigated. In this relationship the role of parental educational background may also play a role. However, in our study, adolescents' sexual behaviour was not linked to the education levels of their parents. This is in contrast to studies by Carvajal *et al.*[40] and Santelli *et al.*[41], which showed higher education of parents to be a factor associated with a lower likelihood of having had sexual intercourse.

We found that those who reported living in a divorced or broken-up family were more likely to have had sex, either safe or unsafe. This finding is consistent with previous research of Santelli *et al.*[41] but not with that of Vukovic *et al.*[6] The latter authors concluded that family structure was not related to having been sexually active, but only to sexual risk behaviour.

Social support by the family and support from friends played different roles. While youths who report much family support are less likely to initiate sexual activity, those with greater support from their friends are more likely to have had sex. Also Mazzaferro *et al.*[39] had shown that deficient social support is associated with SRB. However, in their study social support was scored as one factor; it was not specified by whom the social support was provided. From our results we may conclude that in this age group the specific sources of social support are quite important, as behaviours differ depending on the source.

Strengths and limitations

This study has several strengths and limitations. We obtained a very high response rate (94%), by using the setting of lectures, so that selection bias is very unlikely

to have occurred. Moreover, the research sample, covering all regions of the country and focusing on adolescents, provides useful information concerning sexual behaviour at an early age, and its links with psychosocial factors. However, although we did use specific measures to guarantee confidentiality, we cannot rule out information bias. The main limitation of this study, in addition to the self-reported nature of the data, is its cross-sectional design which limits the potential for inferences on causality. It should also be noted that our sample included only adolescents from cities. Our findings therefore may not apply to adolescents living in rural areas and should be confirmed by the assessment of other groups of adolescents. As we focus on young teenagers, the number of those who had had sex is relatively small, which could limit the significance of our study as well.

Implications

Our results show that adolescents' sexual behaviour is very sensitive to their psychosocial environment. According to our results, adolescents with safe and risky sexual practices do not differ with respect to psychosocial factors. In addition to sexual education highlighting the need for consistent use of condoms, avoidance of STIs, and desirability of lasting relationships, prevention should also address psychosocial influences. Further research is needed on the role of psychological well-being and, in particular, on that of negative/positive self-esteem. It seems that the use of two separate indicators instead of one gives a better explanation of the association between psychological well-being, self-esteem and the patterns of sexual behaviour. This may greatly contribute to the prevention of sexual risk behaviour and thus be of benefit to public health.

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