

# ROLE OF FAMILY, PEERS AND SCHOOL IN EXTERNALISED ADOLESCENT RISK BEHAVIOUR

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**Abstract:** *The aim of this paper was to examine the role of family, school and peer relations as protective factors in adolescent risk behaviour. The goal of the empirical research was to examine the frequency of risk behaviour with a focus on the significance of sociodemographic traits and relations with family, peer and school as important factors. A multidimensional survey was conducted in 2016 with 133 adolescents, 69 male (51.9%) and 64 female (48.1%). The highest reported individual risk behaviours among adolescents were "Alcohol consumption" ( $M=2.69$ ), "Socialising with problematic peers" ( $M=2.25$ ) and "Smoking cigarettes" ( $M=2.15$ ), while "Theft" ( $M=1.05$ ) and "Deliberate property destruction" ( $M=1.15$ ) were least reported. The mother's and father's educational level, the father's work status, school success and family configuration were not significant factors in relation to adolescent general risk behaviour, quality of peer relations, quality of family relations or school attainment. Age was significant for general risk behaviour ( $p<.01$ ), with older adolescents receiving higher scores. Girls reported significantly higher satisfaction with the quality of peer relationships ( $p<.05$ ). Participants with employed mothers reported higher quality of peer relations ( $p<.01$ ). Participants from vocational schools reported significantly more risk behaviour ( $p=.007$ ) than students from gymnasiums and art schools. Art school students reported most school satisfaction ( $p=.001$ ), and gymnasium students reported highest peer satisfaction ( $p=.043$ ). General risk behaviour negatively correlated with quality of family relations ( $p<.05$ ) and school attainment ( $p<.001$ ). Quality of family relations positively correlated with quality of peer relations ( $p<.01$ ) and school attainment ( $p<.001$ ). The correlation matrix on individual adolescent risk behaviour showed high positive comorbidity. Socialising with problematic peers correlated positively with all but one risk behaviour, theft. Gambling positively correlated with all risk behaviours except smoking. Smoking positively correlated with consumption of alcohol ( $p<.001$ ) and psychoactive drugs ( $p<.001$ ), while deliberate property destruction strongly correlated with theft ( $p<.001$ ).*

**Keywords:** *adolescents, risk behaviour, family relations, peer relations, school attainment, sociodemographic traits*

## INTRODUCTION

Adolescence is a time of change, a period of personal and social transition, which imposes a degree of risk taking with the goal of achieving developmental benefits associated with these changes. Transitions are times of change that present opportunities to change behaviour, as old conditions of social life are replaced by new ones. These are times when new conditions, rules, and structures are not yet clear, and the applicability of the old conditions, rules, and structures is diminished in the light of biological, psychological and social adaptation (Smelser, 1962; Berk, 2007). Experimentation with different social roles and behaviours, for example, has long been thought to be a critical component of identity develop-

ment. In that perspective, risk-taking behaviour may also facilitate increasingly salient peer-group interactions during adolescence, as well as timely emancipation from parents and family. Recent research emphasises an ambivalent role of risk behaviour as a biological or evolutionary trait, in which adolescents experiment with age-graded experiences and behaviours in order to navigate mature behaviours as a part of future adult life (Steinberg, 2008; Burnett et al., 2010; Cohen et al., 2010). The key parts of the brain involved in controlling impulses and risk behaviour do not reach maturity and functionality until about age 25 (Steinberg, 2008). Therefore, exclusive focus on the negative and destructive aspects of adolescent risk behaviour could provide an incomplete understanding of adolescence, and diminish the

important role that positive risk taking has in developmental processes during adolescence. "*During adolescence we are probably the quickest we will ever be, the crushes will never be deeper, and the thrills will never quite be the same. That is the good news. The bad news is that during this time your chances of death from putting yourself in harm's way will increase by 200% relative to your childhood*" (Dahl, 2001; Dahl and Spear, 2004). Since adolescents are hard-wired to take risks, parents should help them find healthy opportunities to do so. Positive risk taking serves as a means not only to boost self-confidence, but also to help prevent negative risk-taking behaviour. For example, a teenage girl who plays sports is less likely to have sex early and less than half as likely to get pregnant as girls who do not participate in sports, which may not be true for boys. The positive effects of teen healthy risk taking include higher self-esteem and confidence, more satisfied feelings with weight and body image, and greater likelihood of attending college (Donovan, 2011).

### Theoretical background

Following upon the classical *nature - nurture* debate, risk behaviour has been studied from a biological, psychological and sociological or ecological perspective, with theories of aetiology encompassing diverse individual traits and personality systems, the quality of social relationships, up to broader environmental factors. The *biological perspective*, initiated with C. Lombroso and F. Galton, focused on genetic, hormonal and neurological factors and their interaction with psychological, interpersonal and contextual elements in risk-taking behaviour, such as increases in arousability, excitability, and sensation/reward seeking, or hereditary genetic background (Caspi et al., 2002; Glatt and Freimer, 2002; Taylor and Kim-Cohen, 2007; Sutcliffe, 2008; Ebstein et al., 2010; Drury et al., 2014; Israel et al., 2008; Craig and Halton, 2009; Coates et al., 2009). *Psychological factors* of adolescent risk-taking behaviour are associated with certain personality traits and patterns of thinking that represent a general proneness toward risk-taking behaviour. The emotional thrill and complex experiences or sensation seeking in individuals focus on perceived benefits of risk-tak-

ing behaviour while ignoring the potential cost, as youth who score high on measures of sensation seeking are more likely to engage in sexual risk behaviour, substance abuse and reckless driving, among other behaviours (Haydon et al., 2011:259). *Impulsivity*, as a tendency to act without deliberation or reflection, is one of the hallmarks of adolescence that positively correlates with sexual risk behaviour, substance use, educational underachievement, gambling and delinquency. Among *cognitive factors*, egocentrism characterised by mental errors such as "an imaginary audience" and "the personal fable" of uniqueness and immortality, may also explain proneness to risk behaviour (Arnett, 1992; Elkind, 1967). *Psychosocial conventionality*, a unifying construct of *Problem Behaviour Theory*, reflects the extent of commitment to the standards, values, and institutions of conventional adult society, representing a pattern of attitudinal and behavioural characteristics that envisage general 'proneness' to risk behaviour. Low levels of psychosocial conventionality are associated with substance use, inconsistent contraceptive use, and other risk behaviours, while high levels of psychosocial conventionality have been linked to a number of health-promoting behaviours. Additionally, dual process models propose that risk taking can occur as a result of two diverse processes -- one reasoned and deliberative, the other reactive and non-deliberative.

Ecological theories focus on the interaction of persons and environments (K. Lewin, R. Barker, U. Bronfenbrenner) with particular attention on how the features of environments require unique physical and psychological adaptations. On an *interpersonal level*, the family and peer context affect adolescent risk behaviours in a number of ways, through relationships with parents, siblings or peers, as well as through the family and peer group structure (Brown and Prinstein, 2011:236). Systems theories describe adolescents as a part of a family, a classroom or workgroup, a friendship group and a society. An adolescent is also a whole – a coordinated, complex system composed of physical, cognitive, emotional, social and self-subsystems. Richard Lerner, who has advanced the study of adolescence through developmental systems theory, emphasises the ongoing

interaction and integration of the person across many levels from the genetic to the behavioural level, within the nested contexts of the individual, family, community and culture (Lerner, 2002). Granic and Patterson (2006) applied the *dynamic systems theory* perspective to an understanding of the aetiology of antisocial behaviour, using the idea of attractors in characterising diverse types of stable patterns of parent–child interaction, and they introduced the idea of *cascading constraints*, which are behaviours that -- once organised as attractors -- structure and resist change and thereby serve to constrain future risk behaviours. Positive youth development is a strength-based perspective emerging from the convergence of several theoretical ideas: resilience, positive psychology, ecological theory and developmental systems theory. *Resilience* is a term reflecting unique patterns of life challenges and coping strategies as a capacity to recover from adversity, which theorists have identified through a small number of factors that support resilience, including relationships with high functioning, supportive adults in the family, intelligence, self-control, high self-esteem and a strong desire to have a positive impact on the environment (Garmezy and Rutter, 1983; Zimmerman et al., 2002; Rew and Horner, 2003:385; Mistry et al., 2009; Hawkins et al., 1992b).

Family structure has less importance for risk behaviour when the quality of family relations is controlled (Demuth and Brown, 2004; as cited in Andrews and Bonta, 2006). Positive parent–teen relationships are a protective factor against risk behaviour and enable parents to teach acceptable behaviours, either directly (through communication) or indirectly (through modelling). Research on adolescent risk taking has found that adolescents from single-parent households are more likely to engage in sexual intercourse, less likely to use contraception, and are at higher risk for drug use than those in two-parent households (Resnick et al., 1997; Romer, 2003; Brown and Prinstein, 2011:261). Therefore, young people without a stable family structure, such as those living in foster care or group homes, are particularly likely to engage in delinquent behaviours and sexual risk taking. Even though exact reasons are unclear, some mechanisms include lower levels of paren-

tal monitoring, disruption of an established family structure or the stress associated with repeated family transitions through parental divorce and remarriage. Adolescent risk-taking behaviour is also influenced by the quality of parent–child relationships (Crockett, 1997:35; DiClemente et al., 2009). Adolescents who perceive their parents to have high levels of responsiveness (warmth and support), demandingness (limit setting and high expectations) and parental monitoring (knowledge of the child’s whereabouts outside of home) are less likely to engage in risk-taking behaviours (risky driving, sexual behaviour, smoking, and drug and alcohol use) than those whose parents have other parenting styles.

Peer context contributes to adolescent risk taking in multiple ways, as isolation and rejection may lead to solitary or shared risk taking. Shared risk taking can be a way of establishing peer group identity, a critical developmental task during adolescence with a high correlation between individual and peer behaviour. Peer substance use has consistently been found to be one of the strongest predictors of substance use among youth, with similarities within peer groups likely being a combined result of two processes: social influence and self-selection. Therefore, individuals are influenced by modelling peer risk behaviour, which is considered socially desirable or normative (Haydon et al., 2011:261). In contrast, the self-selection model argues that adolescents tend to select friends who are similar in attitudes and behaviours. Still, it should be noted that peers also provide social support and positive influence during adolescence, serving as role models and reinforcers of healthy and prosocial behaviour. Friends’ and romantic partners’ attitudes toward academic achievement and motivation may also influence school engagement, which is in turn negatively associated with risk-taking behaviours (Wigfield et al., 2011: 18; Kobus, 2003; Niaura and Villanti, 2011).

Depending on school attainment and academic success, positive or negative experiences may change children’s lives and impact motivation in a variety of positive and negative ways. These experiences include specific school-related tasks and activities, relations between individual students and teachers, practices that impact entire classes

of students and organisational issues that impact all of the students attending a given school. Entry into secondary school represents a central event in the lives of adolescents, who are balancing pubertal changes, cognitive and emotional maturation and the expansion of social relationships. Adolescents might experience multiple concerns in their adaptation to new school environments, such as keeping up with schedules, greater academic demands, managing extracurricular activities, crowded hallways, dealing with older peers, adapting to different testing and grade reporting systems as well as adjusting to a more impersonal school environment (Brown and Prinstein, 2011:263). During this transitional period, young people become more aware of physical gender differences, they are more sensitive to their body image and how others perceive them, they experience stress related to personal safety and they develop a stronger need for peer group affiliation (Stice et al., 2011; Brown and Prinstein, 2011:155). Transitioning into high school also brings new challenges for adolescents as they experience greater academic competition, adapt to a broader and more impersonal context than before, and choose among a multitude of curricular and extracurricular activities. Research shows that greater involvement in school activities and extracurricular or after-school activities might lead to lower grades and increased absenteeism at school (Lerner and Steinberg, 2009). On a broad cultural and community level, risk taking crosses all socioeconomic boundaries, so neighbourhoods with high population density, residential mobility, physical deterioration, low levels of attachment to neighbourhood and high rates of adult crime also have high rates of juvenile crime. Negative media impact, content or portrayed models (Bushman and Huesmann, 2006:350; Greenfield and Yan, 2006), as well as restrictive policy or legal influences such as scaffolding approaches and quality youth leisure time, have also been correlated to risk behaviour prevalence (Eccles et al., 2003; Irby and Tolman, 2002; Mahoney et al., 2005).

First articulated by Travis Hirschi in 1969, *Social Control Theory* proposes delinquency to be a result of weakened bonds to conventional society, people, and institutions, and the absence of these bonds greatly reduces restraints on delin-

quent behaviours. Social Control Theory assumes all individuals to have the capacity and inclination to engage in delinquent acts, with only the strength of the social bonds, such as attachment, commitment, involvement, and belief, preventing them from doing so. According to Social Control Theory, conventional activities (e.g. educational attainment, occupational success) are a significant investment of time and energy (personal cost) that comprise an additional "check" against socially deviant or delinquent behaviour. The *Social Development Model* (Weis and Hawkins, 1981; Hawkins and Weis, 1985; Catalano and Hawkins, 1996) extends Social Control Theory by proposing that risk behaviour can result not only from the absence of conventional bonds, but from the presence of anti-social bonds, as well. The premise is that children and adolescents learn patterns of behaviour from repeated involvement with (and perceived reinforcements from) family, school, peers, community, and other institutions and individuals, with the relative importance of each varying with the stage of development. These interactions, if consistent, lead to the formation of a social bond between the child/adolescent and the socialising agent. If the people and institutions to which the individual is bonded demonstrate antisocial norms, values, and behaviours, then that individual will be more likely to engage in antisocial activities. Conversely, if the behaviours and values of the socialising agents are largely prosocial, the individual will be less likely to engage in antisocial conduct.

*Problem Behaviour Theory*, first proposed by Richard Jessor, is the most widely applied theoretical model of adolescent risk behaviour, defined as behaviours viewed as problematic or undesirable during adolescence by society depending on the context and personal or social consequences. Jessor and colleagues argued that involvement in such behaviours signals – to both self and to others – the transition from adolescent to adult status, so risk behaviour is viewed as purposive and even functional. The theory also specifies significant covariation among adolescent risk behaviours, that is, comorbidity supported by empirical evidence (Jessor and Jessor, 1977; D'Amico, 2005; Eaton et al., 2010; De la Haye et al., 2014). Behaviour results from dynamic and continuous interactions

between the person and his or her environment, defined and predicted by *three major systems*. Firstly, the personality system (expectations of achievement, locus of control, intolerance of deviance, self-efficacy and religiosity), then the perceived environment system (support, control and expectations from parents and peers) and finally the behaviour system (both conventional, e.g., church attendance, and unconventional behaviours, e.g., substance use and abuse). The balance between instigations (factors increasing risk-taking behaviour) and controls (factors decreasing their likelihood), within and across these three systems, determines an individual's 'proneness' for engaging in behaviours that violate social norms and are deemed problematic by society.

The recent findings of Casey and Caudle (2013) suggest that adolescents can show remarkable restraint in controlling habitual responses, but tend to fail when controlling habitual responses to salient positive cues in the environment. Specifically, adolescents have comparable or even better impulse control than some adults in neutral contexts. However, in emotional contexts, adolescents' impulse control ability is severely taxed relative to children and adults (Casey and Caudle, 2013). This behavioural pattern is paralleled by exaggerated responses in teenagers' reward-related circuitry, which are presumably are difficult to regulate due to less mature prefrontal control regions. This tension between motivational and control processes during adolescence can vary by individual, leading to enhanced or diminished self-control. Collectively, studies on adolescents as more risk prone in high-arousal conditions (Figner et al., 2009; Dahl, 2001; Spear, 2010) indicate that although adolescents often reason and behave like adults, in certain contexts there are differences in their cognitive strategy and/or in their response to risk and reward, especially under conditions of heightened emotional arousal. Casey and Sudle (2013) claim the phrase about adolescence as "*all gasoline, no brakes, and no steering wheel*" (Bell and McBride, 2010) is a disservice to this essential phase of typical development. If indeed the objective of adolescence is to gain independence from the family unit, then providing opportunities for adolescents to engage in new responsibilities

is essential. Without opportunities and experiences to help shape their brain and behaviour optimally, the objectives of this developmental phase will not easily be met.

## RESEARCH AIM

The aim of this empirical research was to examine the frequency of risk behaviour among adolescents with special focus on the significance of sociodemographic traits as well as family, peer and school relations.

## HYPOTHESES

Based on the research aim, the following hypotheses were established:

- H1:** *sociodemographic traits are significant in relation to adolescent risk behaviour*
- H2:** *family relations, peer support and positive school attainment present protective factors in relation to risk behaviour*
- H3:** *significant comorbidity of risk behaviour is expected*

## METHOD

### Instrument

A multidimensional 5-part questionnaire was constructed for the purpose of this research. No standardised instruments were implemented. The **first part** consisted of 10 general questions concerning sociodemographic traits (1. Age, 2. Gender, 3. Father's educational level, 4. Mother's educational level, 5. Father's work status, 6. Mother's work status, 7. Family configuration, 8. School type, 9. Grade, 10. School success [grade point average, GPA]). The rest of the questionnaire consisted of 5-item Likert scale agreement statements (1-never; 2-rarely; 3-sometimes; 4-often; 5-always). The **second part** consisted of an 11-question scale concerning general risk behaviour (1. Socialising with problematic peers, 2. Smoking cigarettes, 3. Alcohol consumption, 4. Psychoactive drug consumption (marijuana, speed, ecstasy), 5. Verbal confrontation with authority, 6. Violent problem solving, 7. Deliberate school truancy, 8. Theft, 9. Deliberate property destruction, 10. Gambling behaviour, 11.

*Risky sexual behaviour*). The **third part** consisted of a 4-question scale concerning peer relationships (1. *I am happy with my friends*, 2. *My friends support me*, 3. *I can talk to my friends about problems*, 4. *I confide in my friends in private matters*). The **fourth part** consisted of a 6-question scale on school attainment (1. *School grades are important to me*, 2. *I follow the school rules*, 3. *I feel happy at my school*, 4. *School is not boring*, 5. *School is not a waste of time*, 6. *School is not a problem for me*). The final **fifth part** consisted of a 4-question scale on the quality of family relations (1. *Members of my family get along well*, 2. *My family is a source of support and help*, 3. *My parents understand my emotions and needs*, 4. *My parents support my decisions*). Five composite variables were formed, with high reliability analysis scores. The family relations variable ( $\alpha=.84$ ), the peer relations variable ( $\alpha=.81$ ), the school attainment variable ( $\alpha=.75$ ) and the general risk behaviour variable ( $\alpha=.82$ ) were composited, with high reliability and a satisfactory Cronbach's alpha coefficient.

## Participants

The convenience sample was chosen to reflect the characteristics of the adolescent population. The research was conducted with 133 adolescent participants aged 15 (22.6%), 16 (10.5%), 17 (18.8%), 18 (45.1%), and 19-20 (3%). There were 69 male (51.9%) and 64 female (48.1%) participants from gymnasiums (N=45; 33.8%), vocational schools (N=38; 28.5%) and art schools (N=50; 37.6%).

## Procedure

The research was conducted in autumn of 2016 with high school students in the city of Osijek in the Osječko-baranjska region in Croatia. All participants were informed about the research goals and were guaranteed complete anonymity in line with the *Ethical Code of Research with Children* (2003). After written consent was obtained from the participants and their parents, a paper survey was administered in schools during regular school activities. The results were analysed using SPSS Advanced Statistics (version 20) with descriptive statistics, *t* test for independent samples, one-way ANOVA and correlation analysis.

## RESULTS AND DISCUSSION

### Sample sociodemographics

There were 133 participants in four high schools, with 69 (51.9%) male and 64 (48.1%) female adolescents.

**Table 1.** Distribution of school types in the sample

School type	N	%
Gymnasium	45	33.8
Vocational school	38	28.5
Art school	50	37.6
Σ	133	100

The 133 participants had a GPA of 3.9 with a total of 25.6% (N=34) achieving a grade of "C" (good); 52.6% (N=70), a grade of "B" (very good); and 21.1% (N=28), a grade of "A" (excellent).

**Table 2.** Family configuration overview

Family configuration	N	%
Two parents	106	79.7
Mother	20	15.0
Someone else	7	5.3
Σ	133	100

A total of 75.2% (N=100) of participants have fathers working full-time, 7.5% (N=10) have fathers working part-time, 1.5% (N=2) have unemployed fathers and 12.8% (N=17) have fathers who have retired. A total of 63.2% (N=84) of participants have mothers working full-time, 13.5% (N=18) have mothers working part-time, 20.3% (N=27) have unemployed mothers and 2.3% (N=3) have mothers who have retired.

**Table 3.** Mother's educational level

Mother's education	N	%
Not qualified (incomplete elementary school)	2	1.5
Qualified (elementary school)	5	3.8
High school education	70	52.6
Bachelor's degree	13	9.8
Graduate school / master's degree	42	31.6
Unknown	1	0.8
Σ	133	100

A total of 3.8% (N=5) participants reported that their fathers had only elementary school education; 64.7% (N=86), that they had finished high school;

**Table 4.** Descriptive statistics on adolescent risk behaviour

Variable	N	Min	Max	M	SD
Socialising with problematic peers	133	1	5	2.25	1.01
Smoking cigarettes	133	1	5	2.15	1.52
Alcohol consumption	133	1	5	2.69	1.12
Psychoactive drug consumption (marijuana, speed, ecstasy)	133	1	5	1.56	1.18
Verbal confrontation with authority	133	1	5	1.91	1.03
Violent problem solving	133	1	5	1.50	.83
Deliberate school truancy	133	1	5	1.42	.80
Theft	133	1	4	1.05	.30
Deliberate property destruction	133	1	5	1.15	.57
Gambling behaviour	133	1	5	1.36	.77
Risky sexual behaviour	133	1	5	1.27	.80

8.3% (N=11), that they had a university degree; and 22.6% (N=30), that they were highly educated.

### Descriptive overview of adolescent risk behaviour

On average, the highest reported individual risk behaviours among adolescents (*Table 4*) were "Alcohol consumption" (M=2.69), "Socialising with problematic peers" (M=2.25) and "Smoking cigarettes" (M=2.15), while "Theft" (M=1.05) and "Deliberate property destruction" (M=1.15) were least reported. A more thorough analysis (*Table 5*) shows the frequency of individual risk behaviours in the sample.

Some 12% (N=16) of adolescents regularly socialise with problematic peers, 24% (N=31) are addicted to cigarettes while only 57.1% reported never smoking. The most prevalent risk behaviour among adolescents was alcohol consumption: 21% (N=28) reported regular consumption, while only 15.8% reported never having consumed alcohol. Out of 133 participants, 10.6% (N=14) reported using psychoactive drugs regularly. Violent problem solving as a method of conflict resolution was relatively rare (2.4%), while 44.4% of adolescents reported never having verbal confrontations with authority, and 9% (N=12) reported having regular problems. Deliberate truancy never occurred for 70.7% (N=94) of participants, while around 30% reported deliberate truant behaviour, with around 5% (N=6) regularly leaving school. Most participants never committed theft (96.2%) or property destruction (89.5%), but 21.8% have gambled and 2.4% are addicted to gambling. A total of 12.8%

reported risky sexual intercourse under the influence of drugs or alcohol, with 3.8% reporting this as a regular activity.

### Sociodemographic traits and risk behaviour

Our research results show multiple statistical differences and correlational aspects in relation to age, gender, school type affiliation and parental employment. Still, our research found no significant relationship of *mother's* or *father's* educational level, *father's* work status, *family configuration*, or *adolescent school success* with adolescent general risk behaviour, quality of peer relations, quality of family relations or school attainment. The surprising lack of relationship in the case of *adolescent school success* may be due to sample size limitations.

In general, males reported higher general risk behaviour (M=18.97) and more satisfaction with family relations (M=16.66), while females reported higher school attainment (M=20.68). The *t* test for gender in our research showed significant differences between boys and girls only in the quality of peer relationships, with girls reporting higher satisfaction (M=16.87). These findings are in line with previous studies that have found that girls report more positive qualities in their relationships with best friends (Kenny et al., 2013), higher levels of support (Helsen

**Table 5.** Descriptive statistics on adolescent risk behaviour

Variable		Never	Rarely	Sometimes	Often	Always	Σ
Socialising with problematic peers	N	32	55	30	12	4	133
	%	24.1	41.4	22.6	9.0	3.0	100
Smoking cigarettes	N	76	12	13	13	19	133
	%	57.1	9.0	9.8	9.8	14.3	100
Alcohol consumption	N	21	36	48	18	10	133
	%	15.8	27.1	36.1	13.5	7.5	100
Psychoactive drug consumption	N	102	10	7	5	9	133
	%	76.7	7.5	5.3	3.8	6.8	100
Verbal confrontation with authority	N	59	41	21	9	3	133
	%	44.4	30.8	15.8	6.8	2.3	100
Violent problem solving	N	88	28	14	1	2	133
	%	66.2	21.1	10.5	0.8	1.5	100
Deliberate school truancy	N	94	28	5	5	1	133
	%	70.7	21.1	3.8	3.8	0.8	100
Theft	N	128	4	0	1	0	133
	%	96.2	3.0	0	0.8	0	100
Deliberate property destruction	N	119	11	1	0	2	133
	%	89.5	8.3	0.8	0	1.5	100
Gambling behaviour	N	104	14	12	2	1	133
	%	78.2	10.5	9.0	1.5	0.8	100
Risky sexual behaviour	N	116	6	6	2	3	133
	%	87.2	4.5	4.5	1.5	2.3	100

**Table 6.** Analysis of gender differences using the *t* test

Variable	Gender	N	M	SD	t
General risk behaviour	M	69	18.97	6.82	1.18
	F	64	17.70	5.36	
School attainment	M	69	20.01	4.21	-.85
	F	64	20.68	4.95	
Quality of peer relations	M	69	15.39	3.80	-2.49*
	F	64	16.87	2.98	
Quality of family relations	M	68	16.66	2.91	1.21
	F	64	15.90	4.17	

Note:  $p < .05^*$ ;  $p < .01^{**}$ ;  $p < .001^{***}$

et al., 2000) and self-disclosure (Pagano and Hirsch, 2007). No significant gender differences were established in the reported quality of family relations, school attainment or general risk behaviour.

The *t* test for age established a significant difference between participants in general risk behaviour,  $t(131) = -2.91$ ,  $p < .01$ , with older adolescents receiving higher scores than younger participants ( $M=16.20$ ). This is consistent with previous research findings (Gullone and Moore, 2000; Camacho et al., 2014). For example, Gullone and Moore (2000) found that older adolescents per-

ceived negative behaviours to be less risky and also reported participating in them more frequently than younger adolescents. Significant age differences were not established for school attainment, quality of peer relations or quality of family relations.

Our results on mother's work status showed significance only in the reported quality of peer relations, with participants whose mothers were employed reporting statistically higher scores,  $t(131)=2.79$ ,  $p < .01$ . Results from several studies (Hoffmann, 1974; Montemayor and Clayton, 2001; Paulson et al., 2016) suggest an ambivalent impact



**Table 7.** Analysis of age differences using the *t* test

Variable	Age	N	M	SD	t
General risk behaviour	Younger (15,16)	44	16.20	4.65	<b>-2.91**</b>
	Older (17-20)	89	19.42	6.57	
School attainment	Younger (15,16)	44	21.22	5.45	1.58
	Older (17-20)	89	19.89	4.04	
Quality of peer relations	Younger (15,16)	44	16.18	3.76	.17
	Older (17-20)	89	16.06	3.38	
Quality of family relations	Younger (15,16)	44	15.43	4.22	-1.97
	Older (17-20)	88	16.72	3.16	

Note:  $p < .05^*$ ;  $p < .01^{**}$ ;  $p < .001^{***}$

**Table 8.** Analysis of mother's work status using the *t* test

Variable	Mother's work status	N	M	SD	t
General risk behaviour	Employed	84	17.72	5.30	-1.07
	Unemployed	48	18.79	5.82	
School attainment	Employed	84	20.05	4.48	-1.06
	Unemployed	48	20.93	4.72	
Quality of peer relations	Employed	84	16.70	3.09	<b>2.79**</b>
	Unemployed	48	14.97	3.90	
Quality of family relations	Employed	84	16.46	3.52	.71
	Unemployed	48	16.00	3.71	

Note:  $p < .05^*$ ;  $p < .01^{**}$ ;  $p < .001^{***}$

of mother's employment on adolescent development. On one hand, participants with employed mothers reported higher risk behaviour prevalence (which was not found in our research). On the other hand, the mother's employment had a strong impact on family and peer relationships, more so for girls than boys, with girls of employed mothers showing an adult-like lifestyle (Douvan and Adelson, 1966; Propper, 1972; as cited in Montemayor and Clayton, 2001). Paulson et al. (2016) found that sons reported greater closeness with fathers when mothers were employed, and daughters reported greater closeness with parents when mothers were not employed or were employed part-time. Mothers, for their part, reported greater closeness to sons when they were employed, but reported greater closeness to daughters when they were not employed or were employed part-time.

Children's educational and social outcomes—their cognitive skills, grades, and educational attainment—are closely linked to their parents' level of education and professional status. As Harding et al. (2015) claim, having better-educated parents means a higher household income, which

for kids translates into attending better schools or having more opportunities to socialise, travel and learn, among many other benefits. Parents that are more educated are likely to marry before having kids and stay married long-term, so their kids reap the benefits of family stability. Furthermore, since intelligence is linked to educational attainment and is partially heritable, children of college-educated parents may have inborn, genetic advantages over other children. But the effects of parents' education do not boil down to these factors alone; their education—particularly a mother's education—also has a causal impact on children's outcomes through many separate mechanisms linked by a three-part framework: the mother's and father's human capital, cultural capital and social capital (Harding et al., 2015; Hernandez and Napierala, 2014).

One-way ANOVA was implemented in the analysis of the importance of school type that the participants attended. Participants from gymnasiums and vocational schools differed significantly in general risk behaviour,  $F(2,130)=5.22$ ,  $p=.007$ , with vocational students reporting more risk behaviour ( $M=20.34$ ). Similarly, previous work showed that

**Table 9.** Analysis of school type differences using ANOVA

Variable	School type	N	M	SD	F
General risk behaviour	Gymnasium	45	16.17*	4.06	
	Vocational	38	20.34*	7.84	<b>5.22**</b>
	Art school	50	18.82	5.81	
School attainment	Gymnasium	45	18.84	4.68	
	Vocational	38	19.73	3.60	<b>7.21**</b>
	Art school	50	22.14 (*>1.2)	4.62	
Quality of peer relations	Gymnasium	45	16.86*	2.66	
	Vocational	38	14.97*	3.70	<b>3.22*</b>
	Art school	50	16.28	3.83	
Quality of family relations	Gymnasium	45	16.40	3.69	
	Vocational	37	16.86	2.38	1.00
	Art school	50	15.78	4.18	

Note:  $p < .05^*$ ;  $p < .01^{**}$ ;  $p < .001^{***}$

**Table 10.** Correlation analysis of risk behaviour and protective factors

Variable		1	2	3	4
General risk behaviour - 1	R	-	-.378***	-.063	-.188*
School attainment - 2	R	-.378***	-	.134	.356***
Quality of peer relations - 3	R	-.063	.134	-	.280**
Quality of family relations - 4	R	-.188*	.356***	.280**	-
	N	132	132	132	132

Note:  $p < .05^*$ ;  $p < .01^{**}$ ;  $p < .001^{***}$

attendance at a more advanced type of school played protective roles in relation to risk behaviours among Croatian secondary school students (Pavic Simetin et al., 2013). Furthermore, Richter and Leppin (2007) reported that German students at schools representing the lowest educational level faced higher risk of smoking cigarettes than students at schools representing the highest educational level. A significant difference in school attainment was established among all three schools,  $F(2, 130)=7.21, p=.001$ , with art school students reporting most satisfaction ( $M=22.14$ ). Finally, a significant difference between gymnasium and vocational schools was reported,  $F(2, 130)=3.22, p=.043$ , with gymnasium participants reporting higher quality of peer relations ( $M=16.86$ ).

### Correlation of risk and protective factors

A correlational analysis showed significant relations between general risk behaviour and the most important protective factors (Table 10). General risk behaviour had a negative weak correlation with the quality of family relations  $r(130) = -.19, p < .05$

and a moderate negative correlation with school attainment  $r(130) = -.38, p < .001$ . These findings are in line with previous research (Camacho et al., 2014; Rovis et al., 2015). Rovis et al. (2015) found that students with greater school bonding and students with a lower assessment of disturbed family relationships show significantly fewer risk behaviours. Similarly, results of research conducted among Portuguese high school students demonstrate that young people who dislike school and have difficult communication with parents tend to consume more alcohol and show more violent behaviour (Camacho et al., 2014).

Our results show a positive moderate correlation between quality of family relations and peer relations  $r(130) = .28, p < .01$ , and between quality of family relations and school attainment  $r(130) = .36, p < .001$ . Supportive parenting and parental supervision are essential to adolescent development (Compas et al., 1995), and may protect against smoking (Nowlin and Colder, 2007) and drinking (Petrie et al., 2007; Cohen, 1994:71; Steinberg, 1994:95). The social

units in which these processes occur on the prosocial path include household members who do not use drugs and are not involved in criminal activity, members of extended support systems that participate in the child's socialisation, and other caretakers. However, much evidence suggests that the relationships among delinquents and drug-involved youth are not always characterised by negative affect (Agnew, 1991; Cairns et al., 1988; Gillmore et al., 1992; Giordano et al., 1986). Moreover, evidence on adolescent use of tobacco and alcohol indicates that attachment to parents interacts with parents' own use of alcohol and tobacco in predicting adolescents' use of these drugs. High attachment to parents who use alcohol or tobacco legally leads to adolescent drug use behaviour consistent with parents' use, not necessarily to the legal alternative of abstinence (Foshee and Bauman, 1992). This indicates that bonding to a family involved in drug use can be positively associated with drug-using behaviour.

During this period, the school joins the family as an important socialising environment. Teachers and classroom peers join parents, siblings, and other adult caretakers as important agents of socialisation. Thus, external constraints in the school environment, specifically classroom management practices and school policies, join family management practices as important indicators of this exogenous variable. Again, imposing clearer, more consistent, and more immediate reinforcement and consequences of drug use and delinquency leads to

greater adolescent perception of incentives *not* to engage in these behaviours and lower perception of incentives to engage in them, which translates to greater learning of prosocial skills. Studies of adolescent delinquency show that parental influences are less strongly predictive of adolescent delinquent behaviour than is involvement with delinquent peers (Elliott et al., 1985). However, poor parental monitoring of children who are age 10 is predictive of antisocial peer involvement by children at age 12 (Dishion et al., 1991), suggesting that good family management practices may moderate early involvement with peers in predicting antisocial behaviour.

### Risk behaviour correlation

The correlation matrix on individual adolescent risk behaviour shows a uniform, positive, significant relation between the examined antisocial behaviour styles, as no negative significant correlations were established, with high comorbidity between the studied risk behaviours (*Table 11*). The role of problematic peers is emphasised, as socialising with problematic peers correlates positively with all but one risk behaviour, theft. Research on predictors of drug use and crime has consistently found strong correlations between association with others engaged in antisocial behaviours and involvement in crime and drug abuse (Brook et al., 1990; Dembo et al., 1979; Elliott et al., 1985). Perceived physical and psychological effects of drugs following drug use initiation have been

**Table 11.** Correlation matrix on adolescent risk behaviour

Variable		1	2	3	4	5	6	7	8	9	10	11
1	R	-	.276**	.326***	.363***	.464***	.401***	.375***	.125	.370***	.276**	.329***
2	R	.276**	-	.548***	.572***	.218*	.196*	.436***	-.033	.102	.146	.218*
3	R	.326***	.548***	-	.500***	.298**	.091	.432***	-.085	.133	.231**	.157
4	R	.363***	.572***	.500***	-	.199*	.248**	.455***	.084	.191*	.348***	.354***
5	R	.464***	.218*	.298**	.199*	-	.356***	.381***	.037	.327***	.208*	.126
6	R	.401***	.196*	.091	.248**	.356***	-	.288**	.367***	.482***	.281**	.449***
7	R	.375***	.436***	.432***	.455***	.381***	.288**	-	.092	.444***	.324***	.241**
8	R	.125	-.033	-.085	.084	.037	.367***	.092	-	.677***	.459***	.397***
9	R	.370***	.102	.133	.191*	.327***	.482***	.444***	.677***	-	.468***	.445***
10	R	.276**	.146	.231**	.348***	.208*	.281**	.324***	.459***	.468***	-	.364***
11	R	.329***	.218*	.157	.354***	.126	.449***	.241**	.397***	.445***	.364***	-

1. Socialising with problematic peers, 2. Smoking cigarettes, 3. Alcohol consumption, 4. Psychoactive drug consumption (marijuana, speed, ecstasy), 5. Verbal confrontation with authority, 6. Violent problem solving, 7. Deliberate school truancy, 8. Theft, 9. Deliberate property destruction, 10. Gambling behaviour, 11. Risky sexual behaviour

Note:  $p < .05^*$ ;  $p < .01^{**}$ ;  $p < .001^{***}$

shown to be important determinants of the maintenance of drug use (Bailey et al., 1992). The antisocial outcomes predicted during this developmental period are the diversity and frequency of drug use and delinquent behaviours.

Similarly, our research shows gambling behaviour is positively correlated to all risk behaviours except smoking. Smoking cigarettes most positively correlates with alcohol,  $r(130) = .55, p < .001$  and psychoactive drug consumption,  $r(130) = .57, p < .001$ . The single strongest positive correlation was established between deliberate property destruction and theft,  $r(130) = .68, p < .001$ . These findings are in line with previous studies that found positive, significant correlations among different risk behaviours, suggesting that adolescents who participate in one type of risk behaviour also engage in other risk behaviours (Essau, 2004; Bailey et al., 2011). For example, Bailey and associates (2011) reported correlation between different risk behaviours, including tobacco dependence, alcohol abuse and dependence, illicit drug abuse and dependence, involvement in crime in the preceding year, and HIV sexual risk behaviour among adolescents. It is clear empirically that numerous biological, psychological and social factors at multiple levels in different social domains -- that is, within the individual and in the family, school, peer group, and community -- all contribute to some degree to the prediction of delinquency and drug use. Risk factors for drug abuse and criminal behaviour include community norms favorable to these behaviours, neighbourhood disorganisation, extreme economic deprivation, family history of drug abuse or crime, poor family management practices, family conflict, low family bonding, parental permissiveness, early and persistent problem behaviours, academic failure, peer rejection in elementary grades, association with drug use or delinquent peers or adults, alienation and rebelliousness, attitudes favourable to drug use and crime, and early onset of drug use or criminal behaviour (Hawkins et al., 1992b; Loeber et al., 1991; Simcha-Fagan et al., 1986).

### Limitations

This study involved a small convenience sample; therefore, broader conclusions and generalisation of

results are outside the scope of this study. Second, the extent of underreporting or overreporting of behaviours cannot be determined, although the survey questions in our research demonstrate good intercorrelational reliability. Health risk behaviours and quality of family and peer relations as well as school attainment measures were self-reported, but previous studies have shown these measures to be valid (Smith et al., 1995, Stanton et al., 1996).

### CONCLUSION

Due to sample size and features, our results show ambivalent data relations. The challenge for theory is to specify clearly the mechanisms by which identified risk and protective factors for drug abuse and crime interact in the aetiology of these behaviours. Relationships across social structures and levels of analysis must be specified if community, family, school, peer, and individual effects are all to be considered in a general theory of antisocial behaviour. Social competence promotion is an intervention that addresses this goal. Using skills-training techniques, students of all racial/ethnic backgrounds and socioeconomic and risk statuses have been successfully trained to develop skills that are hypothesised to promote prosocial involvement (Elias and Weissberg, 1990; Presseisen, 1988). The W. T. Grant Consortium on the School-Based Promotion of Social Competence (1992) recommends that social competence promotion interventions during the high school period include training in recognising the consequences of risky behaviour, protecting self from negative outcomes, planning a career, initiating and maintaining cross-gender friends and romantic relationships, making a realistic academic plan, being responsible at social events and parties, and understanding the importance of government and community service. In social development terms, these skills are hypothesised to directly enhance the probability of successful performance in prosocial settings, decrease antisocial interactions, and indirectly increase the development of prosocial commitment and attachment through the promotion of skillful performance in prosocial relationships at school and in the community.

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## POVEZANOST OBITELJSKIH, VRŠNJAČKIH I ŠKOLSKIH ODNOSA S EKSTERNALIZIRANIM RIZIČNIM PONAŠANJIMA ADOLESCENATA

**Sažetak:** Cilj rada je ispitati ulogu kvalitete obiteljskih, školskih i vršnjačkih odnosa kao zaštitnih čimbenika u rizičnom ponašanju adolescenata. Svrha empirijske analize je proučavanje učestalosti rizičnih ponašanja s posebnim naglaskom na značajnost sociodemografskih obilježja, te kvalitete obiteljskih, školskih i vršnjačkih odnosa mladih. Primijenjen je višedjelni anketni upitnik s kojim je ispitano ukupno 133 ispitanika, 69 mladića (51,9%) i 64 djevojke (48,1%) tijekom 2016. godine. Rezultati istraživanja pokazuju da su najčešća rizična ponašanja mladih konzumacija alkohola ( $M=2,69$ ), druženje s problematičnim vršnjacima ( $M=2,25$ ) i pušenje cigareta ( $M=2,15$ ), dok su krađa ( $M=1,05$ ) i namjerno uništavanje tuđe imovine ( $M=1,15$ ) najrjeđi. Naobrazba majke i oca, radni status oca, školski uspjeh adolescenata i struktura obitelji nisu utvrđeni kao statistički značajni čimbenici u odnosu na opće rizično ponašanje mladih, kvalitetu obiteljskih, školskih i vršnjačkih odnosa. Stariji ispitanici značajno češće iskazuju opću sklonost rizičnom ponašanju ( $p<.01$ ). Djevojke izvještavaju o značajno većem zadovoljstvu vršnjačkim odnosima ( $p<.05$ ), kao i ispitanici čije su majke zaposlene ( $p<.01$ ). Ispitanici koji pohađaju stručne škole značajno su skloniji rizičnom ponašanju ( $p=.007$ ) od učenika gimnazija i umjetničkih škola. Učenici umjetničkih škola najzadovoljniji su odnosom prema školi ( $p=.001$ ), a gimnazijalci najzadovoljniji vršnjačkim odnosima ( $p=.043$ ). Opće rizično ponašanje mladih negativno je povezano s kvalitetom obiteljskih odnosa ( $p<.05$ ) i kvalitetom odnosa prema školi ( $p<.001$ ). Kvaliteta obiteljskih odnosa pozitivno je povezana s kvalitetom vršnjačkih odnosa ( $p<.01$ ) i kvalitetom odnosa prema školi ( $p<.001$ ). Korelacijska matrica ukazuje na značajan pozitivni komorbiditet rizičnih ponašanja mladih. Druženje s problematičnim vršnjacima pozitivno je značajno povezano sa svim rizičnim ponašanjima osim krađe. Kockanje je značajno pozitivno povezano sa svim rizičnim ponašanjima osim pušenja cigareta. Pušenje cigareta značajno je pozitivno povezano s konzumacijom alkohola ( $p<.001$ ) i uporabom opijata ( $p<.001$ ), dok je namjerno uništavanje imovine snažno značajno povezano s krađom ( $p<.001$ ).

**Ključne riječi:** adolescenti, rizično ponašanje, obiteljski odnosi, vršnjački odnosi, odnos prema školi, sociodemografske značajke