

# PARENTAL SELF-EFFICACY AND ADOLESCENT RISKY AND ANTISOCIAL BEHAVIOUR: THE MEDIATING ROLE OF PARENTAL PUNISHMENT AND SCHOOL ENGAGEMENT<sup>1</sup>

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**Abstract:** *The aim of this study was to examine direct effects of parental self-efficacy on adolescents' risky and antisocial behaviour as well as serial indirect effects through parental punishment and adolescents' school engagement. Data used in the paper were collected in a two-wave longitudinal study conducted within the research project "Parents' work, family economic hardship, and well-being of parents and children". In this paper, data collected from 193 adolescents (120 girls) and their parents were used. Adolescents completed the Self-Reported Risky and Antisocial Behaviour Scale (Vrselja et al., 2009), the School Engagement Measure (Fredricks et al., 2005), and the Punishment Subscale of the Parenting Behaviour Questionnaire (Keresteš et al., 2012). Mothers and fathers completed the Parental Self-Efficacy Subscale of the Parental Competence Scale (Keresteš et al., 2011). Process macro (Hayes, 2013) for SPSS was used to test the proposed direct and indirect effects. The results showed that paternal, unlike maternal, self-efficacy had a direct effect on adolescents' risky and antisocial behaviour. Lower self-efficacy in fathers contributed positively to more pronounced risky and antisocial behaviour in adolescents. Further, maternal self-efficacy had an indirect effect on adolescents' risky and antisocial behaviour through the maternal use of harsh punishment and lower adolescents' behavioural school engagement. There were no significant indirect effects of maternal or paternal self-efficacy on adolescents' risky and antisocial behaviour in models with emotional and cognitive school engagement as mediators. The findings of the study point to different mechanisms by which maternal and paternal self-efficacy and adolescents' school engagement contribute to adolescents' risky and antisocial behaviour.*

**Key words:** *parental self-efficacy, parental punishment, school engagement, risky and antisocial behaviour*

## INTRODUCTION

### Effects of parental self-efficacy on adolescent risky and antisocial behaviour

The self-efficacy construct originated from the Bandurian socio-cognitive theoretical framework (Bandura, 1977, 1982). As such, self-efficacy was understood as a belief or self-perception of one's own ability and skills to successfully execute particular behaviour. Parental self-efficacy can be defined as parents' confidence in their ability to perform as a competent and effective parent (Teti and Gelfand, 1991). These self-views encompass task-specific parental knowledge, confidence in an ability to perform such tasks, belief in children's responsiveness,

as well as an expectation of social support of their efforts (Coleman and Karraker, 1998). According to Bandura's socio-cognitive theory (1997), lower parental self-efficacy can directly impair children's and adolescent's developmental adjustment. The underlying mechanism lies in processes of modelling of attitudes and beliefs of adolescents, e.g. forming adolescents' self-efficacy beliefs (Ardelt and Eccles, 2001; Jones and Prinz, 2005). Through social learning processes, children and adolescents observe parents and model their behaviour as well as beliefs. Positive role modelling of parents with higher self-efficacy, regardless of their parental behaviour, may shape adolescents' confidence in their own ability (Ardelt and Eccles, 2001; Eccles et al., 1993; Ollendick, 1979; Schneewind, 1995; Whitbeck, 1987). As Jones and Prinz (2005)

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have stated, if parental beliefs about their own performance are characterised by feelings of frustration and insecurities, children's and adolescents' views of themselves could be impaired, which is in accordance with Bandura's (1997) socio-cognitive theory.

There is evidence in the literature that parental self-efficacy views can indeed undermine various aspects of child adjustment, such as problem behaviour, even in infant age (e.g. Leerkes and Crockenberg, 2002). Furthermore, lower maternal self-efficacy was found to be related to non-compliant, avoidant and negative behaviours of their toddlers (Coleman and Karraker, 2003). Bor and Sanders (2004) found that lower levels of maternal self-efficacy were highly predictive of concurrent disruptive behaviour of preschool children with high risk for developing conduct problems. Sanders and Woolley (2005) also found lower parental self-efficacy in mothers of clinically treated children aged 2-8 years with disruptive behavioural problems than in non-clinic mothers from a community subsample.

On the other hand, there is only a handful studies that examined the relationship between parental self-efficacy and problem behaviours of adolescents. Dumka et al. (2010) found that lower levels of parental self-efficacy were related to adolescent conduct behaviour. Bogenschneider et al. (1997) also showed the negative relationship between parental self-efficacy beliefs and adolescent delinquency and substance use. Hence, poorer developmental outcomes, such as engagement in risky and antisocial behaviour, may be a reflection of such weakened confidence in adolescents due to negative parental modelling. However, it can be concluded that the role of parental self-efficacy in the context of adolescent risky and antisocial behaviour is heavily overlooked given the small number of conducted studies.

### **Underlying mechanisms of parental self-efficacy effect on adolescent risky and antisocial behaviour**

In addition to the paucity of studies that link parental self-efficacy to risky and antisocial behaviour using samples of adolescents, few researchers have attempted to examine potential mediators of associations between parental self-efficacy and adolescent risky and antisocial behaviour. The conceptual model pro-

posed by Ardel and Eccles (2001), which is based on the Bandurian socio-cognitive theoretical framework (Bandura, 1997), assumes that lower parental self-efficacy may lead to less promotive parental behaviour, and that less promotive parental behaviour could, in turn, undermine adolescents' success in both academic and socio-psychological domains. Therefore, there is a possibility that less promotive parental behaviour and some academic factors are mediators between parental self-efficacy and adolescent adjustment. In this paper, we assume that harsh parenting and school engagement are mediators between parental self-efficacy and adolescent risky and antisocial behaviour. These assumptions are based on the aforementioned conceptual framework of Ardel and Eccles (2001), as well as established links between variables of interest in empirical research.

In fact, the role of parental self-efficacy in promoting positive parental behaviour was well established in earlier studies (Bogenschneider et al., 1997; Dumka et al., 2010; Elder et al., 1995; Gondoli and Silverberg, 1997; Shumow and Lomax, 2002). However, studying parental self-efficacy with adolescent samples in the case of more maladaptive parenting practices, such as harsh punishment, was overlooked in previous studies. Nevertheless, studies on pre-schoolers and toddlers showed that lower parental self-efficacy is associated with the use of harsh and inconsistent discipline (Sanders and Woolley, 2005) and greater likelihood of using corporal punishment (Khoury-Kassabri et al. 2014).

Various aspects of parental behaviour were also found to be related to adolescents' school engagement (e.g. Simons-Morton and Chen, 2009; Steinberg et al., 1994). School engagement is conceptualised as a multi-faceted construct including three distinct types: behavioural, emotional and cognitive school engagement (Fredricks et al., 2004). Behavioural school engagement implies active participation in school activities, emotional refers to positive affections towards teachers and education itself, while cognitive school engagement refers to motivation to invest mental labour in school tasks (Fredricks et al., 2004). Prior studies indicated that some aspects of school engagement can be undermined by negative parental behaviour. It was found that adolescents who are exposed to ineffective parental discipline or coercive and hostile parenting show less competent behaviour

and lower academic engagement in the classroom, and tend to develop more external school motivation (DeBaryshe et al., 1993; Glasgow et al., 1997; Pettit et al., 1997). Hence, it is plausible that both behavioural and emotional as well as cognitive school engagement could be hindered in adolescents being exposed to negative parental behaviour practices, and that prior studies overlooked this by neglecting to take a multifaceted measurement approach to adolescents' school engagement in relation to parental harsh punishment.

Adolescent school engagement has also been shown to be of utmost importance in adolescent problem behaviour. A study conducted by Li and Lerner (2011) using a semiparametric mixture model showed that youth who experienced more positive developmental trajectories of behavioural or emotional school engagement were less likely to be involved in delinquency and drug abuse than were youth who followed less favourable trajectories. Similarly, Li et al. (2011) found that, based on discrete-time survival analysis, higher degrees of behavioural and emotional school engagement predicted a significantly lower risk of substance use and involvement in delinquency. Hirschfeld and Gasper (2011) showed that behavioural and emotional school engagement predicts a reduction of both school and general delinquency, while cognitive engagement, surprisingly, increased school and general misconduct. In the same way, Wang and Fredricks (2014) showed that reduction in behavioural and emotional (but not cognitive) school engagement increased delinquency and substance use over time.

### Overview of the current study

Based on the literature review, the lack of parental self-efficacy studies is especially evident in the context of adolescents' risky and antisocial behaviour. Most of the previous research was focused either on restricted examination of parental self-efficacy on parental behaviour (see Coleman and Karraker, 1998 for more in-depth review), or on effects of parental self-efficacy on behaviour of infants (e.g. Bohlin and Hagekull, 1987) or toddlers and young children (e.g. Day et al., 1994). To the best of our knowledge, there are only a small number of studies (e.g. Bogenschneider et al., 1997; Dumka et al., 2010) conducted on adolescents that have examined the role of parental self-efficacy in relation to adolescent problem behaviour, with or without consideration

of the potential mediating role of parental practices. Additionally, very little is known about potential differences in paternal vs. maternal self-efficacy effects on adolescent risky and antisocial behaviour. To the best of our knowledge, only study conducted by Bogenschneider et al. (1997) indicated the importance of fathers' self-efficacy, given its negative relationships with substance use by their sons, while mothers' self-efficacy level was also related to lower substance use by both sons and daughters as well as with lower delinquency of sons. Adolescent school engagement is often studied in regard to adolescent problem behaviour, but very little is known about its relationship with parental behaviour, especially when the multifaceted concept of adolescent school engagement (Fredricks et al., 2004) is in question.

Hence, in this study, we sought to fill the gap in the literature by simultaneously examining the relationships among parental self-efficacy, parental punishment, adolescent school engagement and adolescent risky and antisocial behaviour. In other words, we examined the direct effects of parental self-efficacy on adolescent risky and antisocial behaviour as well as the serial indirect effects through parental punishment and adolescent school engagement, separately for mothers and fathers. Based on Ardel and Eccles' (2001) conceptual model and prior studies (e.g. Bogenschneider et al., 1997) we hypothesised that maternal self-efficacy would have a direct effect on adolescent risky and antisocial behaviour, that is, lower maternal self-efficacy would predict adolescents' higher engagement in risky and antisocial behaviour (*Hypothesis 1*). Paternal self-efficacy was also expected to have a direct effect on adolescents' risky and antisocial behaviour such that lower paternal self-efficacy would predict adolescents' higher engagement in risky and antisocial behaviour (*Hypothesis 2*). Furthermore, we expected that the effect of maternal self-efficacy on adolescent risky and antisocial behaviour would be serially mediated through maternal harsh punishment and adolescent behavioural school engagement (*Hypothesis 3a*), as well as through maternal punishment and adolescent emotional school engagement (*Hypothesis 3b*), but not through maternal punishment and adolescent cognitive school engagement (*Hypothesis 3c*). A serial indirect effect of maternal self-efficacy on adolescent risky and antisocial behaviour through maternal punishment and adolescent cognitive school engagement was

not expected since prior research found that this type of school engagement was not related to adolescent problem behaviour (Wang and Fredricks, 2014) or was positively related to it (Hirschfield and Gasper, 2011). A serial indirect effect of paternal self-efficacy on adolescent school engagement was not expected through paternal punishment and adolescent behavioural school engagement (*Hypothesis 4a*), through paternal punishment and adolescent emotional school engagement (*Hypothesis 4b*), or through paternal punishment and adolescent cognitive school engagement (*Hypothesis 4c*). These expectations were based on a scarcity of earlier research, and findings that paternal self-efficacy does not reflect fathers' general self-efficacy view (Sevigny and Loutzenhiser, 2010). Hence, their parental self-efficacy might be unrelated to their parenting practices, i.e. parental punishment, and of lesser importance for fathers' general self-efficacy.

## METHOD

### Participants

The participants for this paper were selected from the initial convenient sample of 348 students from seven elementary schools (6<sup>th</sup> to 8<sup>th</sup> grade) and four high schools (1<sup>st</sup> to 3<sup>rd</sup> grade) in the City of Zagreb and Zagreb County who participated in the research project "Parents' work, family economic hardship, and well-being of parents and children". The sample for this paper comprised only those participants who live in two-parent families, who were legal minors at the time, and who had no missing data on the study variables. The subsampling was done with regard to under/over-estimation of standard errors in regression analyses, different family dynamics and parental practices in one-parent and two-parent families, and the mere definition of antisocial/delinquent behaviour considering the age of the participants. Thus, the current sample comprised 193 students (120 girls) aged between 11 and 17 years ( $M = 15.26$ ,  $SD = 1.68$ ) and their parents. Mothers were 45 years old ( $SD = 5.30$ ) on average, while fathers' average age was 48 years ( $SD = 5.89$ ). Most of the mothers and fathers included in the current sample were employed at the time (88.6% of fathers and 87.4% of mothers), and had attained at least a high school degree (96.9% of mothers and fathers).

### Procedure

The data used in this paper come from a two-wave longitudinal study conducted within the research project "Parents' work, family economic hardship, and well-being of parents and children", financed by the Catholic University of Croatia. Only data collected in Wave 1 of the longitudinal study (May - June 2016) were used in this paper. The Croatian Ministry of Science, Education, and Sports and the Ethics Committee of Catholic University of Croatia approved the research project. Mothers' and fathers' as well as students' written informed consent for participation in the research project were obtained prior to the questionnaire administration. Parents provided their consent and filled out a self-report questionnaire at home, while students' data were collected during regular school hours by trained research assistants. All students received a small notebook as a sign of gratitude for their participation in the research project.

### Measures

**Parental self-efficacy.** Parental self-efficacy was assessed using the Parental Self-Efficacy Subscale of the Parental Competence Scale (Keresteš et al., 2011). The subscale consists of 5 items (e.g. "I can easily resolve most of the problems that I have with my child"), to which parents responded using a 4-point scale (1 – *completely disagree*, 4 – *completely agree*). An overall result on this subscale was formed as a simple linear combination of items, separately for mothers and for fathers. Higher scores indicate higher parental self-efficacy. Keresteš et al. (2011) reported good internal consistency reliability of the Self-efficacy subscale, both for mothers (Cronbach's  $\alpha = .76$ ) and fathers (Cronbach's  $\alpha = .81$ ), which was also confirmed in this study (Cronbach's  $\alpha = .77$  for mothers, Cronbach's  $\alpha = .80$  for fathers). The result of principal axis factor analysis indicated a clear one-dimensional structure of the subscale, with high loadings and 42.57% (for mothers), that is, 46.28% (for fathers) of total item variance explained.

**Parental punishment.** Parental punishment was measured using the Punishment subscale (5 items) of the Parenting Behaviour Questionnaire (Keresteš et al., 2012). Students rated the extent to which certain parental punishment behaviours (e.g. "My mother yells at me when I misbehave") resembled

their mothers' and fathers' behaviour on a 4-point scale, from 1 (*not at all like her/him*) to 4 (*completely like her/him*). An overall result on this subscale was formed as a simple linear combination of items, for mothers and for fathers separately. Higher scores indicate more severe parental punishment behaviour. The internal consistency reliability for this subscale in a prior study (Keresteš et al., 2012) was Cronbach's  $\alpha = .60$  for ratings of mothers' behaviour and Cronbach's  $\alpha = .63$  for ratings of fathers' behaviour. In this study, the reliabilities of both subscales were acceptable for research purposes (Cronbach's  $\alpha = .73$  for ratings of mothers' behaviour; Cronbach's  $\alpha = .64$  for ratings of fathers' behaviour. Principal axis factor analysis confirmed one-dimensionality of the subscale on both mothers' and fathers' ratings (36.72% and 27.46% of total item variance explained, respectively).

**School engagement.** Adolescents' school engagement was assessed using the School Engagement Measure (Fredricks et al., 2005). This measure, containing 19 items overall, assesses three different aspects of school engagement: behavioural (5 items, e.g. "I follow the rules at school"), emotional (6 items, e.g. "I feel excited by the work in school"), and cognitive (8 items, e.g. "When I read a book, I ask myself questions to make sure I understand what it is about"). Adolescents estimated their engagement level using a 5-point scale (1 – *never*, 5 – *all the time*). Three overall results for three subscales were formed as a simple linear combination of items, with higher scores indicating higher levels of school engagement. Fredricks and her colleagues (2005) reported good internal consistency reliability for all subscales of school engagement (behavioural, Cronbach's  $\alpha = .72 - .77$ ; emotional, Cronbach's  $\alpha = .83 - .86$ ; cognitive, Cronbach's  $\alpha = .55 - .82$ ). In this study, internal consistency reliability indicators were good for behavioural (Cronbach's  $\alpha = .74$ ), emotional (Cronbach's  $\alpha = .87$ ), and cognitive (Cronbach's  $\alpha = .82$ ) school engagement. Construct validity of the used measure was examined using principal axis factor analysis with Direct Oblimin rotation. Based on Kaiser-Guttman criterion, a four-factor solution was suggested (accounting for 32.46%, 7.52%, 5.26%, and 2.76% of total item variance). The results of Cattell's scree test, on the other hand, indicated possible three-factor solution, as in original validation of the scale (Fredricks et

al., 2005). Since the given four-factor solution was unclear, we ran the analysis again with the same parameters, but requesting a three-factor solution. Three retained factors accounted for 44.71% of total item variance (32.3%; 7.23%, and 5.18%, for behavioural, emotional and cognitive school engagement, respectively), with clear factor loadings, as in the original validation of the measure.

**Adolescent risky and antisocial behaviour.** Adolescents' risky and antisocial behaviour was assessed using the Self-Reported Risky and Antisocial Behaviour Scale (Vrselja et al., 2009). This scale was developed by shortening and adapting the Self-Reported Social Deviations and Antisocial Behaviour Scale (Šakić et al., 2002), which was based upon Elliot and Huizinga's (1982) Self-Reported Delinquency Scale. Adolescents rated the frequency of their engagement into 16 different risky and antisocial activities in the past year, ranging from risky behaviours (e.g. being drunk in a public place) to more severe antisocial behaviours (e.g. intentionally damaging or destroying school property) on a 6-point scale (1 – *never*; 2 – *once*; 3 – *two times*; 4 – *three to five times*; 5 – *six to twelve times*; 6 – *more than twelve times*). Since there was a small number of students who had engaged in certain activities more than once or twice in the past year, which was expected from a general sample of elementary and high school students, the overall result was formed by summing the number of antisocial activities in which students engaged. Hence, the overall result varies between 0 and 16, with higher score indicating engagement in a higher number of antisocial activities. A prior study (Vrselja et al., 2009) reported good internal consistency reliability of the scale (Cronbach's  $\alpha = .81$ ), and reliability in this study was satisfactory for research purposes (Cronbach's  $\alpha = .68$ ).

**Control variables.** Data on adolescents' sex (male/female), age (calculated in months) and family socio-economic status were used as control variables in the statistical analysis. Family socio-economic status was operationalised as a monthly income per household member on a 5-point scale (1 – less than 1,500 kunas, 2 – from 1,501 to 2,500 kunas, 3 – from 2,501 to 3,500 kunas, 4 – from 3,501 to 4,500 kunas, 5 – from 4,501 to 5,500 kunas, 6 – more than 5,501 kunas). Mothers' and fathers' estimations were averaged into one indicator of family socio-economic status.

*Data analysis strategy*

Basic descriptive data and inter-correlation analysis are presented first. The results of serial multiple mediation analyses, obtained by using the PROCESS macro (Hayes, 2013) in SPSS, are shown next. Utilising the macro, we tested whether there are direct effects of parental self-efficacy on adolescents' risky and antisocial behaviour and/or serial indirect effects through parental punishment and school engagement. Three models were tested, with each type of school engagement (behavioural, emotional, or cognitive) as a presumed mediator. Because these three models were tested separately for mothers and for fathers, altogether six mediation analyses were conducted. Adolescents' sex, age and family socioeconomic status were controlled in all six models. The PROCESS macro, in contrast to other methods of mediation testing (for example, Baron and Kenny (1986) method), gives the opportunity to test the statistical significance of indirect effects through a bootstrapping process. In other words, through repeated data sampling and calculation of the magnitude of indirect effect in each resampled data set, we can build an empirical sampling distribution of an indirect effect and estimate confidence intervals (CI) for it (Hayes, 2013). In this study, we used 5000 bootstrap samples with 95% CI. If a given CI does not contain zero, it can be concluded that an indirect effect is statistically significant.

**RESULTS****Descriptive analysis**

Descriptive statistics and inter-correlations between study variables are presented in Table 1. Both mothers' and fathers' estimations of their parental self-efficacy were above the scale average. On the other hand, their usage of parental punishment, as estimated by their children, ranged around lower scale values. Adolescents in general reported relatively high levels of behavioural school engagement, while their estimates on emotional and cognitive school engagement ranged around mean scale values. On average, adolescents reported involvement in only a few risky and antisocial activities during the past year.

Considering inter-correlations between study variables (Table 1) only for the sample of mothers, it can be seen that lower perceived parental self-efficacy is positively related to harsh parental punishment. Mothers' and fathers' parental self-efficacy was not related to adolescents' behavioural, emotional, or cognitive school engagement, nor was it related to adolescents' risky and antisocial behaviour. Paternal, but not maternal, use of harsh punishment was correlated with lower adolescents' behavioural and emotional, but not cognitive, school engagement. Both maternal and paternal use of harsh punishment was related to more pronounced adolescents' risky and antisocial behaviour. The more adolescents were behaviourally, emotionally, and cognitively engaged

**Table 1.** *Descriptive Data and Inter-correlations for Study Variables*

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
1. Adolescents' sex	1	-.20**	.13	.02	.15*	.04	.15*	.01	.02	.02	.06
2. Adolescents' age		1	-.03	-.03	-.03	-.20**	-.19*	-.18*	-.17*	-.18*	.07
3. Family SES			1	.03	.06	-.02	-.06	.00	-.02	.03	.02
4. Maternal self-efficacy				1	.35**	-.19**	-.09	.06	.10	.04	-.12
5. Paternal self-efficacy					1	-.07	.03	-.05	-.04	-.04	-.12
6. Maternal punishment						1	.67**	-.14	-.10	.03	.27**
7. Paternal punishment							1	-.23**	-.18*	-.05	.30**
8. Behavioural SE								1	.56**	.51**	-.39**
9. Emotional SE									1	.52**	-.18*
10. Cognitive SE										1	-.19*
11. Adolescents' RAB											1
M	-	183.17	3.31	16.76	16.22	9.18	8.85	20.37	15.9	20.62	2.44
SD	-	20.18	1.45	2.04	2.33	3.31	2.82	3.15	5.18	6.71	2.06
Min - Max	-	134-215	1-6	10-20	8-20	5-19	5-18	7-25	6-30	8-40	0-12

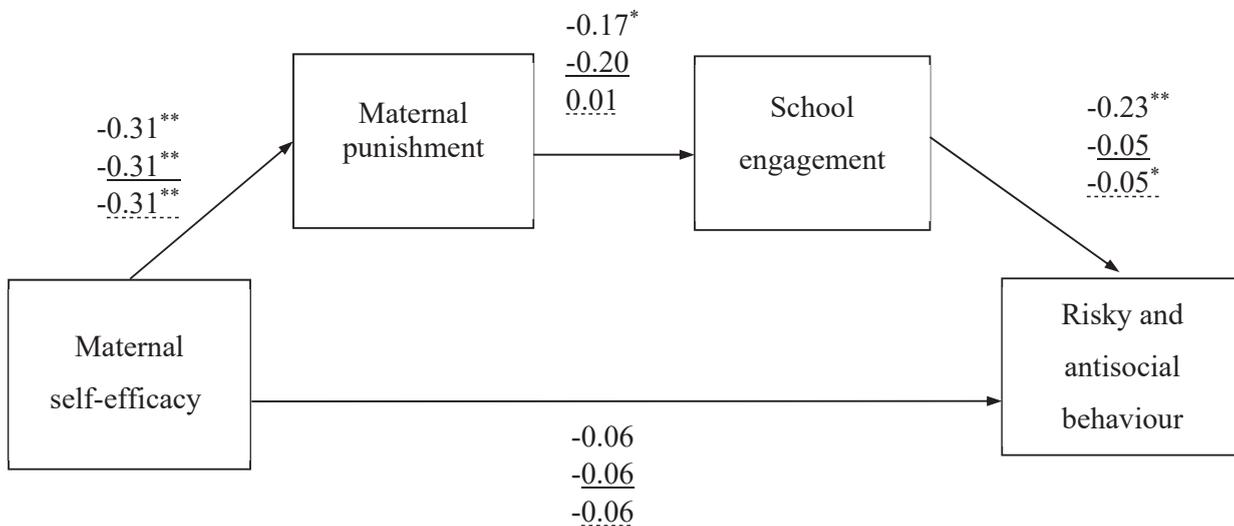
\* $p < .05$ ; \*\* $p < .01$ .

Note. Age is calculated in months. SE - school engagement; RAB – risky and antisocial behaviour

**Table 2.** Results of Bootstrap Analysis of Magnitude and Statistical Significance of Serial Indirect Effect of Maternal Self-Efficacy on Adolescents' Risky and Antisocial Behaviour Through Maternal Punishment and Adolescents' School Engagement

Model	B	SE	BCa 95% CI	
			lower	upper
Behavioural school engagement	<b>-0.01</b>	<b>0.01</b>	<b>-0.0389</b>	<b>-0.0024</b>
Emotional school engagement	-0.00	0.00	-0.0154	0.0004
Cognitive school engagement	-0.00	0.00	-0.0057	0.0058

Note. BCa - bias-corrected and accelerated. Confidence intervals (CI) that do not contain a zero indicate significant indirect effect, and they are printed in **bold**.



$$R^2 = .20; F(6,186) = 8.21; p < .01$$

$$R^2 = .11; F(6,186) = 3.96; p < .01$$

$$R^2 = .13; F(6,186) = 4.57; p < .01$$

Note. Non-standardised path coefficients are presented. Coefficients for emotional (straight) and cognitive (dotted) school engagement appear underlined. \* $p < .05$ ; \*\* $p < .01$ .

**Figure 1.** The Model of Relationships Among Maternal Self-efficacy, Maternal Punishment, Adolescents' School Engagement (Behavioural, Emotional and Cognitive), and Adolescents' Risky and Antisocial Behaviour ( $n=193$ )

in their school activities, the less they engaged in risky and antisocial behaviours.

**Direct and indirect effects of parental self-efficacy on adolescents' antisocial behaviour**

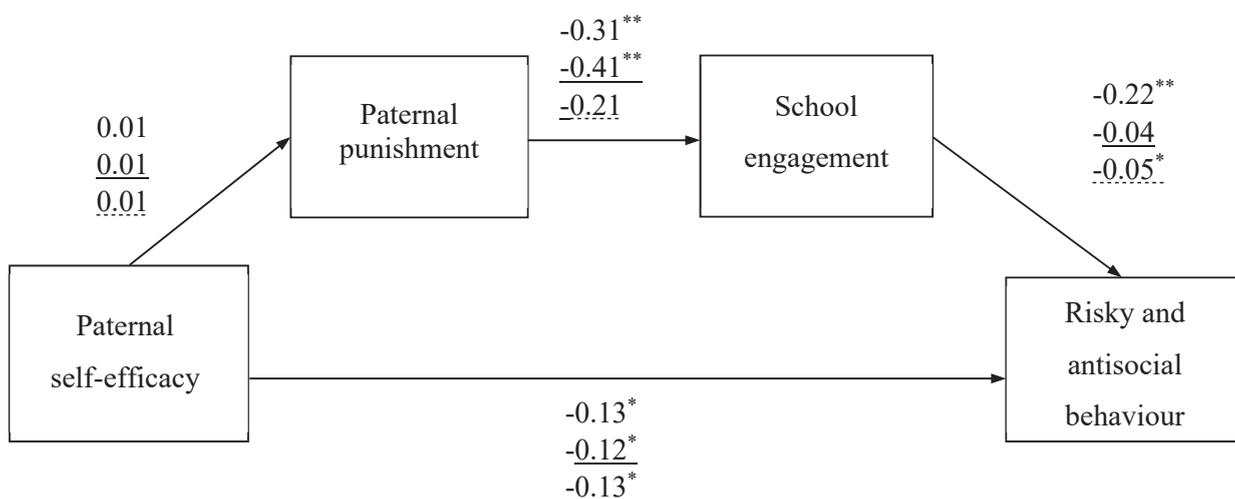
As can be seen in Figure 1, the direct effect of maternal self-efficacy on adolescents' risky and antisocial behaviour was not significant in any of the three tested models with school engagement (behavioural,  $t = -0.85, p > .05$ ; emotional,  $t = -0.80, p > .05$ ; cognitive  $t = -0.85, p > .05$ ).

In contrast, the serial indirect effect of maternal self-efficacy on adolescents' risky and antisocial behaviour through parental punishment and school engagement was found to be significant, but only in the model with behavioural school engagement (Table 2). Higher maternal self-efficacy predicted more use of maternal punishment, which then predicted lower adolescents' behavioural school engagement; lower behavioural school engagement predicted increased engagement in risky and antisocial behaviours among adolescents.

**Table 3.** Results of Bootstrap Analysis of Magnitude and Statistical Significance of Serial Indirect Effect of Paternal Self-Efficacy on Adolescents' Risky and Antisocial Behaviour Through Paternal Punishment and Adolescents' School Engagement

Model	B	SE	BCa 95% CI	
			lower	upper
Behavioural school engagement	0.00	0.01	-0.0110	0.0158
Emotional school engagement	0.00	0.00	-0.0032	0.0056
Cognitive school engagement	0.00	0.00	-0.0016	0.0038

Note. BCa - bias-corrected and accelerated. Confidence intervals (CI) that do not contain a zero indicate significant indirect effect.



$$R^2 = .23; F(6,186) = 9.07; p < .01$$

$$R^2 = .14; F(6,186) = 4.99; p < .01$$

$$R^2 = .15; F(6,186) = 5.54; p < .01$$

Note. Non-standardised path coefficients are presented. Coefficients for emotional (straight) and cognitive (dotted) school engagement appear underlined. \* $p < .05$ ; \*\* $p < .01$

**Figure 2.** The Model of Relationships Among Paternal Self-efficacy, Paternal Punishment, Adolescents' School Engagement (Behavioural, Emotional and Cognitive), and Adolescents' Risky and Antisocial Behaviour ( $n=193$ )

Paternal self-efficacy, as can be seen on Figure 2, had a direct effect on adolescents' risky and antisocial behaviour in all three tested models with school engagement (behavioural,  $t = -2.33, p < .05$ ; emotional,  $t = -2.04, p < .05$ ; cognitive,  $t = -2.10, p < .05$ ). More specifically, lower paternal self-efficacy predicted increased engagement in risky and antisocial behaviours among adolescents. The serial indirect effect of paternal self-efficacy on adolescents' risky and antisocial behaviour

through parenting punishment and adolescents' school engagement was not significant in any of the three tested models (Table 3).

## DISCUSSION

In this study, we explored whether there is a direct link between parental self-efficacy beliefs and adolescents' risky and antisocial behaviour, separately for mothers and fathers. Also, we examined the possibility that parental self-efficacy

exerts its effect on adolescent risky and antisocial behaviour indirectly through harsh parental punishment and adolescents' school engagement.

### **Direct effect of parental self-efficacy on adolescent risky and antisocial behaviour**

Our first hypothesis was that lower maternal self-efficacy would predict adolescents' risky and antisocial behaviour. According to Bandura's socio-cognitive model (1997), parental self-efficacy should be directly related to developmental outcomes of adolescents, such as risky and antisocial behaviour, due to the underlying mechanism by which adolescents model their parents' beliefs. This assumption was supported in studies conducted on toddlers (e.g. Bor and Sanders, 2004; Coleman and Karraker, 2003; Sanders and Woolley, 2005). However, supporting evidence on adolescent samples in the literature is still scarce. Only a handful of studies have examined and initially supported this negative relationship between maternal self-efficacy beliefs and adolescent behavioural problems (Bogenscheider et al., 1997; Dumka et al., 2010). Contrary to the theoretical assumptions and our expectations, we found no evidence for the direct effect of maternal self-efficacy on adolescent risky and antisocial behaviour. It could be that the direct effect of maternal self-efficacy on adolescent risky and antisocial behaviour depends on the way the self-efficacy is measured. In the realm of parenting, it may be that maternal self-efficacy beliefs at the task level (e.g. ability to discipline or comfort one's child) are directly related to adolescent risky and antisocial behaviour, whereas maternal self-efficacy beliefs at the domain level (mothers' perception of their competency as a parent) are not (Coleman and Karraker, 1998).

Interestingly and contrary to the findings in our mothers' sample, paternal self-efficacy did exert a direct effect on adolescent risky and antisocial behaviour, which is in line with our second hypothesis. To the best of our knowledge, the only other study to assess self-efficacy separately for fathers and mothers in regard to adolescent problem behaviour is one of Bogenscheider et al. (1997). In line with our findings, their results indicated that lower paternal self-efficacy was related to higher adolescent substance use. Considering the distinc-

tive role of mothers and fathers in the development of children (Cabrera et al., 2000; Lewis and Lamb, 2003; Paquette, 2004), one of the most prominent tasks for fathers is to encourage and teach their children how to take risks (e.g. engage in a new game or activity) and cope with problems in the environment, usually through engagement in different kinds of games and physical activities. At the same time, fathers need to discipline the child, set the boundaries for the child's behaviour and create a safe environment for taking risks. Fathers can do this by being role models for their children and by using appropriate parenting practices. If fathers have negative beliefs about themselves as role models and/or parents, they will not be able to fulfil their paternal role and tasks in a desired and positive way. This can eventually reflect in adolescents' inability to regulate their behaviour, especially in situations when they are exposed to potential engagement in risky and antisocial behaviours. In addition, parents' beliefs about their role as parents may influence their personal investment in that role (Sigel and McGillicuddy-De Lisi, 2002). Research shows that fathers' investment, involvement, and presence in their child's life is related to educational attainment, delinquent behaviour and psychological well-being (Cabrera et al., 2000; Harris et al., 1998). Thus, if fathers have low self-efficacy, they may not invest into their parenting as much as in other life domains and roles, which may have a negative effect on the development of their children.

### **Indirect effect of parental self-efficacy on adolescent risky and antisocial behaviour**

Results regarding the indirect effect of parental self-efficacy on adolescent risky and antisocial behaviour are discussed for each parent separately, starting with mothers.

In line with our initial expectations (*Hypothesis 3a*), the results indicated that effect of maternal self-efficacy on adolescent risky and antisocial behaviour was serially mediated through maternal harsh punishment and behavioural school engagement. In other words, the more self-efficacious mothers felt, the less they incorporated harsh punishment practices in their parental routine, which contributed to their children being more

behaviourally engaged in school and in the end, less engaged in risky and antisocial behaviour. The results also indicated no significant serial indirect effect of maternal self-efficacy on adolescents' risky and antisocial behaviour through maternal harsh punishment and adolescent cognitive school engagement, which is in line with our initial expectations (*Hypothesis 3c*). However, contrary to our expectations (*Hypothesis 3b*), the effect of maternal self-efficacy on adolescents' risky and antisocial behaviour was not serially mediated through maternal harsh punishment and adolescents' emotional school engagement. Earlier studies also found similar relational patterns between studied variables, although not in this more comprehensive serial manner.

First, prior studies on pre-schoolers and toddlers have shown that greater likelihood of using corporal punishment (Khoury-Kassabri et al., 2014) as well as the use of harsh and inconsistent discipline (Sanders and Woolley, 2005) are related to lower maternal self-efficacy. Similarly, the results of our study indicated that maternal self-efficacy views were negatively related to the use of harsh parental practices. In other words, the more the mothers felt they were self-efficacious parents, the less they used harsh parental practices. Hence, our results contribute to the prior findings by confirming that this relationship pattern can also be extended to the adolescent population.

Second, earlier studies also established the link among coercive and hostile parenting and less competent classroom behaviour of adolescents (Pettit et al., 1997), their lower academic engagement in the classroom (DeBaryshe et al., 1993), and more external school motivation (Glasgow et al., 1997). Even though those studies were not measuring adolescent school engagement per se, we can argue that they partially tapped into the concept of behavioural and cognitive school engagement. To the best of our knowledge, no prior studies examined the emotional aspects of school engagement in relation to harsh parenting practices. Even though it is plausible to expect that a more negative familial context in which adolescents are exposed to harsh parental discipline could undermine all three facets of adolescent school engagement, our results support only a link between maternal

harsh punishment and adolescents' behavioural school engagement. In other words, we found that maternal use of harsh punishment is linked to more inappropriate adolescent behaviour in school (e.g. not following rules at school, not paying attention in class), while their emotional ties to the school and motivational capacity to invest mental labour in school tasks were not significantly affected by use of harsh maternal punishment. Differences between our studies and previous ones may reflect that earlier studies did not use a multifaceted measure of school engagement, nor did they differentiate between the maternal and paternal use of harsh punishment. More in-depth analysis of the relationship between parental harsh punishment and different types of adolescent school engagement, including examination of potential mediator or moderator variables, is suggested for further research.

Third, the link among adolescents' behavioural and emotional school engagement and adolescent delinquency (Hirschfield and Gasper, 2011; Li and Lerner, 2011; Li et al., 2011; Wang and Fredricks, 2014) and drug use (Li and Lerner, 2011; Li et al., 2011; Wang and Fredricks, 2014) is established in prior longitudinal studies. The cognitive aspect of school engagement, on the other hand, was mostly overlooked and showed to be unrelated to adolescent delinquent behaviour (Wang and Fredricks, 2014) or, surprisingly, positively related to it (Hirschfield and Gasper, 2011). Our results showed a predictive role for both behavioural and cognitive school engagement in explaining adolescent risky and antisocial behaviour. In other words, adolescents with lower behavioural and cognitive school engagement were more inclined to engage in risky and antisocial activities. While our findings regarding behavioural school engagement are in line with initial expectations and earlier findings, our results on the role of emotional (or lack thereof) and cognitive school engagement create uncertainty about the nature of their relationship with adolescent problem behaviour. The inconsistencies between our results and previous findings may potentially relate to our cross-sectional research design as well as our use of a more general measure of adolescent risky and antisocial behaviour, in contrast to earlier delinquency measures.

Regarding the indirect effect of paternal self-efficacy on adolescent risky and antisocial behaviour, results of the present study confirmed initial expectations. The effect of paternal self-efficacy on adolescent risky and antisocial behaviour was not serially mediated through paternal harsh punishment and adolescent behavioural school engagement (*Hypothesis 4a*), through paternal punishment and adolescent emotional school engagement (*Hypothesis 4b*), or through paternal punishment and adolescent cognitive school engagement (*Hypothesis 4c*). As expected, paternal self-efficacy was not predictive of paternal use of harsh punishment practices, making the entire serial mediation chain insignificant in the end.

Our results come as no surprise if we consider the findings of Sevigny and Loutzenhiser (2010), which indicated that paternal self-efficacy, in contrast to maternal self-efficacy, does not reflect fathers' general self-efficacy. They reason that fathers' perception of parental skills is conceptually different from their perception of skills that are required in other life domains. Hence, it may be that fathers' self-efficacy level was not predictive of their use of harsh parental punishment simply because their perception of parenting self-efficacy is understood differently than (and is of less importance for) their general self-efficacy. In that way, their tendency to use inappropriate parental practices may be less dependent on parental self-efficacy beliefs, in contrast to their general self-efficacy. Our findings about the indirect effect of mothers' self-efficacy, in contrast to fathers' self-efficacy, on adolescent risky and antisocial behaviour support the notion from the literature about the intervening role of specific parenting practices in the relation between mothers' self-efficacy and developmental outcomes of their children (e.g. Coleman and Karraker, 1998; Sigel and McGillicuddy-De Lisi, 2002). The results suggest that mothers' sense of their effectiveness may play an important role in their ability to select appropriate discipline methods and to manifest their beliefs in everyday discipline encounters with their adolescents (Sigel and McGillicuddy-De Lisi, 2002). Further, if mothers use harsh punishment, their adolescents will have problems in regulating their behaviour in different life domains, namely school and peer groups

(where risk-taking behaviour usually takes place during adolescence), as our results suggest. When mothers use inappropriate methods of discipline, they do not teach their children how to regulate their behaviour in an appropriate way and do not give them opportunities to learn to do so. In addition, our results support the notion that problem behaviour and risky behaviour have a tendency to co-occur (e.g. Allen et al., 1994): if adolescents show problems in behaviour in the school context, they will be more inclined to engage in risky and antisocial behaviour.

### Study limitations and future directions

There are several limitations of this study that need to be considered, with domain-level measurement of parental self-efficacy being one of them. In particular, the Bandurian approach to measuring self-efficacy includes more task-oriented assessment (Bandura, 1989). Thus, measurement of self-efficacy in the context of particular behaviours, such as parenting, should combine estimation of efficacy on the numerous related tasks, instead of analysing only general domain-level efficacy. Hence, having a broader instead of more specific measure of parental self-efficacy could bias our results, which needs to be considered when interpreting the results. Thus, further studies should incorporate different levels of self-efficacy measurement (task, domain, and general) to get a deeper insight into potential differences. A second and more important shortcoming of the present paper is the mere fact that causal conclusions cannot be drawn considering the cross-sectional nature of the data. Even though Dumka et al. (2010) in their longitudinal study found stronger evidence for maternal self-efficacy being an antecedent of their parental practices, their data to some extent also support the reverse relationship. Evidence for the reciprocal relationship between school engagement and adolescent problem behaviour was also found in earlier longitudinal studies (e.g. Hirschfield and Gasper, 2011; Wang and Fredricks, 2014). Since our proposed model is more comprehensive and includes all of the aforementioned constructs, further studies should try to replicate the results using longitudinal data and examine the potential transactional nature of this more inclusive model. Future studies

should also include different types of adolescent problem behaviour since earlier studies are difficult to compare due to the conceptual and measurement differences in regard to aforementioned constructs. Studying the potential mechanism through which emotional and cognitive school engagement contribute to adolescent problem behaviour is also needed. Further studies should examine potential overlap and/or interplay among three dimensions of school engagement with regard to different types of adolescent problem behaviour in order to see potential differences and facilitate comparison with earlier findings. In addition, forthcoming studies should take into account the bidirectional nature of the parent-child relation because previous studies suggest that a child's behaviour influences parental beliefs, behaviour, and practices (Sigel and McGillicuddy-De Lisi, 2002).

In spite of these limitations, this study represents a significant contribution to the growing literature on parenting in the context of adolescent school and socio-emotional adjustment. The role of parental self-efficacy is still underexplored and neglected; thus it requires more research attention. This is especially true in the context of adolescent behavioural problems, where only a small number of studies considered its importance. Even more neglected are potential differences between moth-

ers and fathers regarding the effect of their self-efficacy on adolescent developmental outcomes. As such, we sought to fill the gap in the existing literature by considering those important issues in this paper in a more comprehensive way. The findings of this study point to different processes by which fathers' and mothers' parenting, namely self-efficacy, impacts and contributes to adolescent risky and antisocial behaviour. Cognitive determinants of parenting practices and behaviours should not be overlooked, considering that they could play an important role in intervention programmes targeting parents as the easiest prevention focus point. The factors that influence adolescents' engagement in risky and antisocial behaviour range from biogenetic and dispositional factors to factors emerging from the culture in which adolescents live (e.g. Harakeh et al., 2012), and they have different levels and strengths of influence (Petraitis et al., 1995). If socialisation-related risk factors and their effects on the development of risky and antisocial behaviour in adolescence are recognised and identified, interventions and programmes can be developed to influence these factors in order to prevent adolescent engagement in such behaviour - since it is logical to hypothesise that it is easier to intervene on the level of socialisation than on the level of genetics.

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## RODITELJSKA SAMOEFIKASNOST I RIZIČNO I ANTISOCIJALNO PONAŠANJE ADOLESCENATA: POSREDUJUĆA ULOGA RODITELJSKOG KAŽNJAVANJA I ŠKOLSKE UKLJUČENOSTI

**Sažetak:** Cilj ovog istraživanja bio je ispitati izravne i serijalne neizravne, kroz roditeljsko kažnjavanje i školsku uključenost adolescenata, učinke roditeljske samoefikasnosti na rizično i antisocijalno ponašanje adolescenata. Podaci korišteni u ovom radu prikupljeni su unutar longitudinalnog istraživanja s dva mjerenja provedenog u sklopu projekta "Rad roditelja, ekonomske teškoće obitelji i dobrobit roditelja i djece". U ovom radu korišteni su podaci 193 adolescenata (120 djevojaka) i njihovih roditelja. Adolescenti su ispunili Skalu samoiskaza o rizičnom i antisocijalnom ponašanju (Vrselja i sur., 2009), Mjeru školske uključenosti (Fredricks i sur., 2005) te subskalu Kažnjavanja iz Upitnika roditeljskog ponašanja (Keresteš i sur., 2012). Majke i očevi su ispunili subskalu Roditeljske samoefikasnosti iz Skale roditeljske kompetentnosti (Keresteš i sur., 2011). S ciljem testiranja predloženih izravnih i neizravnih učinaka korišten je Process makro za SPSS (Hayes, 2013). Rezultati su pokazali kako samoefikasnost očeva, za razliku od samoefikasnosti majki, ostvaruje izravan učinak na rizično i antisocijalno ponašanje adolescenata. Niža samoefikasnost očeva predviđala je izraženije rizično i antisocijalno ponašanje adolescenata. Nadalje, samoefikasnost majki imala je neizravan učinak, kroz izraženije korištenje roditeljskog kažnjavanja kod majki i nižu ponašajnu školsku uključenost adolescenata, na rizično i antisocijalno ponašanje adolescenata. Neizravni učinci samoefikasnosti majki i očeva na rizično i antisocijalno ponašanje adolescenata nisu utvrđeni u modelima s emocionalnom i kognitivnom školskom uključenosti kao medijatorima. Rezultati ovog istraživanja upućuju na različite mehanizme putem kojih samoefikasnost majki i očeva, kao i školska uključenost adolescenata, doprinose rizičnom i antisocijalnom ponašanju adolescenata.

**Ključne riječi:** roditeljska samoefikasnost, roditeljsko kažnjavanje, školska uključenost, rizično i antisocijalno ponašanje