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THE EFFECTS OF ECOLOGICAL FAMILY DISADVANTAGE ON MALE AND FEMALE ADOLESCENT DELINQUENCY

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The purpose of this paper is to examine the direct and serial indirect effects of ecological family disadvantage on adolescent male and female delinquency through poor parental monitoring and deviant peer association. Data used in this paper are collected on a sample of 528 Croatian high-school students (374 males) aged between 15 and 17. Participants self-reported their delinquency, and completed questionnaires about their familial disadvantage, parental monitoring, and their association with deviant peers. PROCESS macro for SPSS was used to test the proposed direct and indirect effects. The results showed that ecological family disadvantage had a direct effect on more pronounced male delinquency. There was no significant serial indirect effect of ecological family disadvantage on male delinquency through the two presumed mediators, but there was significant indirect effect of ecological family disadvantage on male delinquency through their increased deviant peer association. In females, no significant direct or indirect effects were found. The results point to gender specific mechanisms by which ecological family disadvantage contributes to adolescent delinquency, and thus make a significant contribution to the literature on this topic.

Keywords: ecological family disadvantage, delinquency, parental monitoring, peers, gender

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INTRODUCTION

Children living in an adverse family context are at an elevated risk of developing different adjustment problems. Family adversity includes a wide array of family related risk factors, including those related to different family processes (i.e. violent marital conflict, harsh parental discipline), as well as those related to ecological family disadvantage (i.e. low socioeconomic status, family stress such as legal problems, single-parent status) (Criss, Pettit, Bates, Dodge, & Lapp, 2002; Stern & Smith, 1995). Prior research indicated that different ecological familial factors have been linked with delinquent behavior of the child (for a review, see Farrington, 2011). Although studies show that these factors contribute independently to the development of delinquent behavior to some extent, there is strong evidence that the accumulation of risk factors at some point in a child's life significantly increases his or her chances of being delinquent. Therefore, in the present study we explore the effect of ecological family disadvantage as one aspect of family adversity, composed of a set of different factors which were independently linked with the delinquent behavior of the child: lower family material status (Shek, 2003), single parenthood (Singh & Kiran, 2014), parental alcoholism (Hussong et al., 2007) and parental criminal behavior (Nijhof, de Kemp, & Engels, 2009), which closely resembles the Criss et al. (2002) conceptualization of ecological family disadvantage.

The effect of ecological family disadvantage on delinquency is not yet clear. Some researchers (e.g. Blanz, Schmidt, & Esser, 1991; Haapasalo & Tremblay, 1994) propose that it exerts a direct effect on delinquency, while others (e.g. Dishion, Patterson, & Reid, 1988; Patterson, DeBaryshe, & Ramsey, 1989) suggest that a disadvantaged family context results in the delinquent behavior of the child due to its indirect effect through diminishing parenting skills and encouraging association with deviant peers. In order to have a better understanding of the effects of ecological family disadvantage on delinquency, it seems important to study whether there is a direct effect on delinquency, as well as whether there is an indirect effect through lower parental monitoring and association with deviant peers by means of testing the serial multiple mediation model. Because no study has been published investigating the serial mediation of ecological family disadvantage through parental monitoring and association with deviant peers on delinquency across gender, a separate analysis for adolescent females and males was performed.

Ecological family disadvantage and delinquency

Numerous studies have examined the relationship between the factors of ecological family disadvantage and delinquency (for overview, see Farrington, 2011). Perhaps the most exten-

sively studied factor of family disadvantage in relation to delinquent behavior is socioeconomic status (e.g. Ajduković & Rajhvajn Bulat, 2012). This factor is gauged with different measures, such as objective measures (e.g. per capita family income) and subjective ones (e.g. perceived economic hardship). Agnew, Matthews, Bucher, Welcher, and Keyes (2008) argue that objective SES per se (e.g. measured through family income, parental education and employment) is not related to delinquent behavior per se, but through economic problems that it creates on a subjective parental level. Although the results of some studies (e.g. Mistry, Banner, Tan, & Kim, 2009; Shek, 2003) suggest that subjective measures, such as adolescents' perception of economic stress are even more important than parental perception, the literature on studies in which socioeconomic status is subjectively measured is scarce. Therefore, it seems especially valuable to include adolescents' subjective experience of socioeconomic status in the ecological family disadvantage model.

A variety of other family circumstances has been linked with adolescent delinquent behavior which are related to family socioeconomic status. Children who live in poverty tend to have parents with some other characteristics of ecological disadvantage, like mental health problems, legal problems, or they have a greater prevalence of living in single parent families (Lerner, Bornstein, & Leventhal, 2015). All these ecological disadvantage familial factors have also been linked to child delinquency. For example, Rowe and Farrington (1997) found that parental criminality exerts a direct effect on the criminality of their offspring, a finding consonant with the hypothesis of shared genetic inheritance and with the hypothesis of direct imitation. Vrselja and Glavak Tkalić (2011) found a direct relationship between more frequent parental alcohol consumption and adolescent risky and delinquent behavior. Furthermore, Hussong et al. (2007) found that children with two alcoholic parents were at greatest risk of externalizing symptoms (delinquency is regarded as one type of externalizing symptom). Furthermore, multiple studies (e.g. Demuth & Brown, 2004; Dunifon & Kowaleski-Jones, 2002; Singh & Kiran, 2014) have found higher rates of juvenile delinquency in single parent families, since they are characterized by economic insecurity and a lack of time to help their children deal with the frustration of having only one parent in the home. However, it seems that the effect of single-parenting is more complex than it seems since there is evidence of high-rate delinquency in cohabitating in comparison with traditional, two biological parent households (e.g. Dunifon & Kowaleski-Jones, 2002). Also, some studies indicate that single-mother families are more vulnerable to delinquency (e.g. Comanor & Phillips, 2002),

while other highlight single-father households (e.g. Demuth & Brown, 2004). There is evidence that parental attachment may be an important protective factor in this context, especially for boys, and even in single-parent families (e.g. Ručević, 2011; Ručević & Duvnjak, 2010). However, there is no clear conclusion yet, since some studies indicate that the differences between two and single-parent families regarding adolescent delinquency diminishes after controlling for parental attachment or closeness (Demuth & Brown, 2004), while others failed to support this mediating effect (Dunifon & Kowaleski-Jones, 2002).

These studies clearly show that children who grow up in a family context characterized by any of the negative family circumstance factors have an increased chance of being a delinquent. The addition of more than one factor further increases the odds of misbehavior, known as a cumulative effect, which is supported by the reviews of several authors (e.g. Farrington, 1990; Lytton, 1990). Therefore, the best approach to studying children's adjustment problems is one that recognizes that risk factors occur in conjunction with one another (Luthar, 1993; Seifer, Sameroff, Baldwin, & Baldwin, 1992). This approach, which is characterized by high face validity and consistency in predicting adjustment, is used in this study by conceptualizing ecological family disadvantage as a construct that includes several indicators which have been linked with child antisocial behavior, i.e. the lower material status of the family as perceived by the adolescent, parental criminal behavior, parental drinking problems, and the single-parent status of the family.

Underlying mechanisms of the effect of ecological family disadvantage on delinquency

There is no consensus in the literature regarding the mechanism by which ecological family disadvantage translates into child delinquency. One possibility is that ecological family disadvantage can represent an additional source of stress for adolescents (Ho, 1991), and therefore have a direct effect on delinquency. However, there is little literature on delinquency studies investigating the direct effect of the ecological family disadvantage measure composed as a set of different indicators, as we did in our study. Most of the studies investigated whether there is a direct effect of independent family disadvantage factors on delinquency (e.g. Hussong et al., 2007; Nijhof et al., 2009; Shek, 2003; Singh & Kiran, 2014).

On the other hand, some researchers (Dishion et al., 1988; Patterson et al., 1989) propose that the effect of ecological family disadvantage on delinquency is indirect and mediated through parenting and peer variables. This proposition is in line with the work of Patterson et al. (Dishion et al., 1988;

Patterson et al., 1989) on the family mediation model of delinquency in adolescents, according to which ecological family disadvantage impairs parental ability to monitor their children's behavior. Parental monitoring is an increasingly important aspect of parenting from middle childhood through to adolescence. The core component of most definitions of parental monitoring is parents' knowledge of their children's whereabouts, companions, and activities (e.g. Fletcher, Darling, & Steinberg, 1995). There are several ways in which parents gain knowledge of this: through active involvement in, and regulation of, their children's after-school activities, through behavioral control, or solicitation. Through active involvement in, and regulation of, children's after-school activities, parents may exert positive socialization influences and thus reduce maladaptive behavioral patterns, including delinquency. Inadequate parental monitoring, resulting from family adversity, is thought to increase the risk of juvenile delinquency because it allows young people to associate with delinquent peers (Dishion, Patterson, Stoolmiller, & Skinner, 1991; Snyder, Dishion, & Patterson, 1986). Deviant peers are suggested to exert its influence on delinquency through modeling, through adoption and reinforcing antisocial attitudes, or by providing opportunities for delinquent behavior (Dishion, Patterson, & Griesler, 1994).

The proposed indirect mechanism through which ecological family disadvantage affects adolescent misconduct has been partially supported by the empirical evidence of Dishion et al. (1988), showing that parental substance use predicts the decreased monitoring of the adolescent's activities, which, in turn, predicts association with drug-using peers. Association with drug-using peers, in turn, predicts adolescent drug use. Similarly, the results of Chassin, Pillow, Curran, Molina, and Barrera (1993) and Chassin, Curran, Hussong, and Colder (1996) confirm these indirect mechanisms through which paternal and maternal alcoholism affect adolescent substance use. However, to the best of the authors' knowledge, there is no study investigating proposed mediation model with ecological family disadvantage measure composed as a set from different familial disadvantaged indicators, as well as investigating this model separately on males and females.

Current study

A literature review suggests that it is not yet clear whether ecological family disadvantage exerts a direct or/and an indirect effect on delinquency serially through parenting and peer variables. In order to have a better understanding of the mechanisms through which ecological family disadvantage exerts its effect on delinquency, further study of the relationship

between ecological family disadvantage, parental monitoring, deviant peers, and delinquency is needed.

Potential gender differences in this context represent additional raising issue that needs to be mentioned. For example, maladaptive peer associations were found to be more related to adolescent male delinquency (Bowman, Prelow, & Weaver, 2007; Piquero, Gover, MacDonald, & Piquero, 2005), poorer parental monitoring was more in conjunction with females' delinquency (Bowman et al., 2007), while O'Donnell, Richards, Pearce, and Romero (2011) in their study found just the opposite pattern of relationship. Inconsistencies in the contribution of ecological family disadvantage to the delinquent behavior of adolescent males and females were also found in prior studies (e.g. Ho, 1991; Lempers, Clark-Lempers, & Simons, 1989; Steinberg & Silverberg, 1986). These potential gender differences, along with inconsistent research findings, call for separate analysis on adolescent males and females.

In summary, in the present study, we seek to contribute to the extant literature by addressing two research objectives: (1) whether ecological family disadvantage has a direct effect on the adolescent males' and females' delinquency; (2) whether ecological family disadvantage exerts its indirect effect on the delinquent behavior of adolescent males and females through lower parental monitoring and more deviant peer association.

METHOD

Participants

The sample consisted of 528 students (374 males) aged between 15 and 17 years ($M = 15.93$, $SD = 0.81$). The participants in the study were high-school students (1st to 3rd grade), attending schools located in the City of Zagreb. The sample was relatively even regarding the types of school participants attending (40.3% vocational, and 59.7% gymnasium), and their grade (25.9% 1st, 36.3% 2nd, and 37.8% 3rd grade). Most of the participants attending vocational high-schools were males (96.2%), while gymnasium students were equally represented by both males (53.7%) and females (46.3%). The majority (84,8%) of participants lived in a two-parent family. The majority of the participants' parents had attained at least a 4-year high-school education degree (86.5% mothers and 85% fathers). Two-thirds of the sample (68%) reported an average perceived family socioeconomic status (SES), 25.2% a somewhat higher SES, 1.5% a very high SES, 4.7% a somewhat lower family SES and 0.6% a very low family SES.

Measures[1]

Delinquency

A modified version of the Youth Self-Reported Delinquent and Risk Behaviors Questionnaire (Ručević, Ajduković, & Šincek, 2009) was used to measure delinquency. Respondents were asked to indicate on a 5-point scale how many times in their life (0 – *never*, 1 – *one to four times*, 2 – *five to ten times*, 3 – *eleven to twenty times*, 4 – *twenty-one and more times*) they had committed each of the 49 delinquent acts in the questionnaire. This questionnaire also contains a weight ponder for each delinquent act, ranging from 2 (*less severe delinquent behavior*) to 9 (*the most severe delinquent behavior*). The overall result on the questionnaire is formed as the sum of the products of frequency of every delinquent act in the questionnaire and its weight ponder. A higher score indicates more pronounced delinquency. This method of forming the overall results is the preferred method in comparison to other methods (e.g. the sum of the frequency of behavior or the sum of declared behavior (1 – *behavior is manifested*, 0 – *behavior is not manifested*), because it results in the higher sensitivity of the questionnaire (Nunnally & Bernstein, 1994; Ručević et al., 2009). In this study, the internal consistency of this questionnaire was good, $\alpha = 0.88$.

Ecological family disadvantage

The ecological family disadvantage measure reflected the additive risk of adolescent-reported low perceived family socio--economic status, parental alcoholism, parental criminality, and single-parent status. Adolescents rated their family socio--economic status by answering the question *How much is your family rich or poor*? on a 5-point scale (1 – much poorer than most other families, 2 – slightly poorer than most other families, 3 – like most other families, 4 – slightly richer than most other families, 5 – much richer than most other families). They also provided information on parents' marital status (1 – married, 2 – divorced, 3 – cohabitation, 4 – widowed father and/or widowed mother, 5 – other). Adolescent-reported parental alcoholism and criminal history was assessed through two dichotomous questions: *Did anyone in your family have any problems with alcohol*? and *Did anyone in your family have any problems with the law*? after which they indicated who had those types of problems and their opened answers were coded afterwards. For each ecological family disadvantage factor, families were assigned a "1" if they were at risk (i.e. below-average family material status perceived by adolescents, single-parent families, mother and/or father criminality, mother and/or father alcoholism) and a "0" if they were not at risk (i.e.

average or above-average perceived family material status, parents married or cohabitating, mother and/or father without a history of criminal behavior, and mother and/or father without a history of alcoholism). Considering the possibility that widowed or divorced parents could be re-married, as well as that married or cohabitating partners could be separated or that one of the parents could be absent from home, we used information about who the adolescent lived with (seven dichotomous variables for father, mother, brother/s, sister/s, stepfather, stepmother, children's home) in order to double check the single-parent status of the family and re-allocate them to the correct category. Inter-correlation between the aforementioned factors of ecological family disadvantage were low and ranged between $r_\varphi = 0.04$ and $r_\varphi = 0.23$.2 The ecological family disadvantage index can range from 0 to 4, with higher values being indicative of more pronounced ecological family disadvantage.

Poor parental monitoring

Poor parental monitoring was measured with the poor monitoring/supervision scale of the Croatian version of the child--report Alabama Parenting Questionnaire (APQ) (Vrselja, 2013), which is a slightly modified version of the original APQ (Frick, 1991). Namely, based on a prior validation analysis (Vrselja, 2013), four items of the original APQ were excluded from the poor monitoring/supervision scale due to the cultural differences and factor analysis results. Thus parenting behavior was rated on a 5-point scale, ranging from 1 (*never*) to 5 (*always*). The overall result was formed as the mean item response on six items (i.e. *You stay out in the evening past the time you are supposed to be home*; *Your parents do not know the friends you are with*), with higher scores indicating more inefficient parental monitoring/supervision. The internal consistency in this study was acceptable, $\alpha = 0.70$.

Association with deviant peers

Association with deviant peers was assessed by the Association with Deviant Peers Questionnaire (ADPQ) (Vrselja, 2013). The ADPQ has 23 items describing different deviant behaviors, ranging from deviant acts that are considered normative for the adolescent period (e.g. getting drunk) to serious delinquent acts (e.g. selling drugs). Participants are asked to indicate how many of their friends have committed each of these behaviors on a scale ranging from 1 (*none*) to 5 (*all of them*). The result was formed as the average number of deviant friends, with a higher score indicating higher association with deviant friends. The internal consistency in this study was excellent, $\alpha = 0.92$.

Procedure

Following parental consent to the participation of their children in the study, students' consent to participation was also obtained. Overall, 25 parents did not give their consent for the participation of their child in the study, seven students refused to participate in the study, and two students withdrew from the research during the administration of the questionnaire. A wide array of measures was group-administered by trained research assistants in classrooms, during regular school hours. The administration of the whole set of measures lasted one school hour (cca 45 minutes).

RESULTS

Descriptive analysis

Table 1 contains descriptive statistics and inter-correlations among the study variables. In general, the study participants came from families that did not have severe familial ecological disadvantages ($M = 0.38$, $SD = 0.67$) and whose parents had a relatively good level of parental control and supervision over their behavior ($M = 2.12$, $SD = 0.72$). They also did not have any or had only a few deviant peers in their peer group ($M = 1.89$, $SD = 0.58$) and their total score on delinquency revolved around lower scale values ($M = 51.25$, $SD = 59.52$). As can be seen in Table 1, adolescent males, in comparison to adolescent females, reported poorer parental control ($t = 6.21$, $p < 0.01$), higher deviant peer association ($t = 4.70$, $p < 0.01$) and higher delinquency ($t = 4.78$, $p < 0.01$). There were no gender differences in regard to familial ecological disadvantages ($t = 0.53$, $p > 0.05$).

TABLE 1
Means, standard deviations, intercorrelations and gender differences between study variables

	1	2	3	4
1 Ecological family disadvantage	-	0.01	0.18**	0.18**
2 Poor parental monitoring	0.01	-	0.28**	0.41**
3 Association with deviant peers	0.08	0.28**	-	0.60**
4 Delinquency	0.09	0.49**	0.49**	-
M (*SD*) adolescent males	0.39 (0.70)	2.24 (0.72)	1.96 (0.60)	60.24 (63.52)
M (*SD*) adolescent females	0.35 (0.62)	1.83 (0.64)	1.72 (0.51)	29.42 (41.10)
t	0.53	6.21**	4.70**	4.78**

Note. Correlations for adolescent males' sample (n = 374) are presented above the diagonal and for adolescent females' sample (n = 154) below the diagonal.
*$p < 0.05$, **$p < 0.01$

Adolescent males who reported more severe familial ecological disadvantages and poorer parental monitoring also had more deviant peer associations and had more delinquent behavior. Higher delinquency was also associated with having more deviant peer associations. On the other hand, higher adolescent female delinquency was associated only with poorer parental monitoring and more deviant peer associations. Additionally, adolescent females who reported poorer parental monitoring associated more with delinquent peers. As can be seen in Table 1, statistically significant correlations were low to moderate in their strength and lay between $r = 0.18$ and $r = 0.60$.

Direct and indirect effects of ecological family disadvantage on delinquent behavior

In order to test whether the ecological family disadvantage – delinquency relationship is serially mediated through poor parental monitoring/supervision and deviant peer association, PROCESS macro (Hayes, 2012) was utilized, separately for adolescent boys and girls. Also, transformed (*log10*) delinquency scores ($M = 1.43$, $SD = 0.72$) were used in all of the inferential statistics procedures due to the highly positive skewed data distribution.

In the adolescent male sample (Figure 1a), there was a significant direct effect of ecological family disadvantage on delinquency ($B = 0.09$, $SE = 0.04$), while controlling for poor parental monitoring skills and deviant peer association. Additionally, familial ecological disadvantage exerted an indirect effect on the adolescent males' delinquency (Table 2a) through deviant peer association ($B = 0.10$, CI [0.0424, 0.1597]). More severe familial ecological disadvantage predicted more frequent deviant peer association ($B = 0.16$, $SE = 0.04$) which, in turn, predicted more severe delinquent behavior ($B = 0.62$, $SE = 0.05$), as shown in Figure 1a. Given that the second indirect pathway through poor parental monitoring skills was not significant ($B = 0.00$, CI [-0.0297, 0.0330]), a serial multiple indirect effect was not supported ($B = 0.00$, CI [-0.0155, 0.0175]). It seems that familial ecological disadvantage is not related to monitoring adolescent males ($B = 0.01$, $SE = 0.05$). Overall, it can be argued that the relationship between familial ecological disadvantage and the adolescent males' delinquency is partially mediated through association with their delinquent peers.

Considering the adolescent female sample, the direct effect of familial ecological disadvantage on delinquency was not significant ($B = 0.06$, $SE = 0.07$), as shown in Figure 1b. There was also no evidence of the indirect effect of familial ecological disadvantage on delinquency through any of the

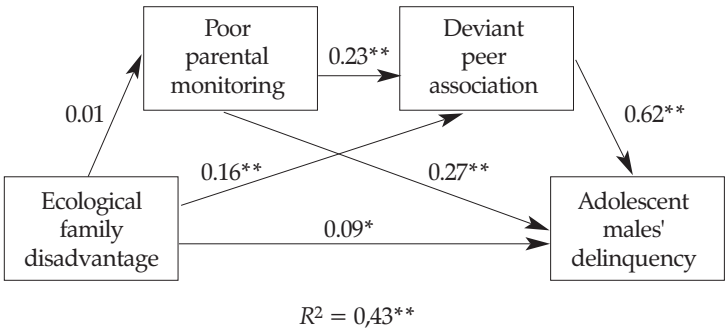
three potential pathways (Table 2b). Familial ecological disadvantage did not exert effects on poor parental skills and deviant peer association ($B = 0.01$, $SE = 0.08$; $B = 0.07$, $SE = 0.06$, respectively). It seems that the adolescent females' delinquency is more dependent on poor parental monitoring ($B = 0.38$, $SE = 0.07$) and deviant peer association ($B = 0.48$, $SE = 0.09$), undermining the role of severe familial ecological disadvantage in the adolescent females' delinquency.

TABLE 2A
Bootstrap analysis of magnitude and statistical significance of indirect effects of ecological family disadvantage on adolescent males' delinquency

Indirect effect through	*B*	*SE*	BC[a] 95% CI lower	BC[a] 95% CI upper
Poor parental monitoring	0.00	0.02	-0.0297	0.0330
Both poor parental monitoring and association with deviant peers	0.00	0.01	-0.0155	0.0175
Association with deviant peers	*0.10*	*0.03*	*0.0424*	*0.1597*

Note. BC[a] – bias corrected and accelerated. Confidence intervals (CI) that do not contain a zero indicate significant indirect effects, and they are printed in *italic*.

FIGURE 1A
Relationship between ecological family disadvantage, parental monitoring, deviant peer association, and adolescent males' delinquency (n = 374)



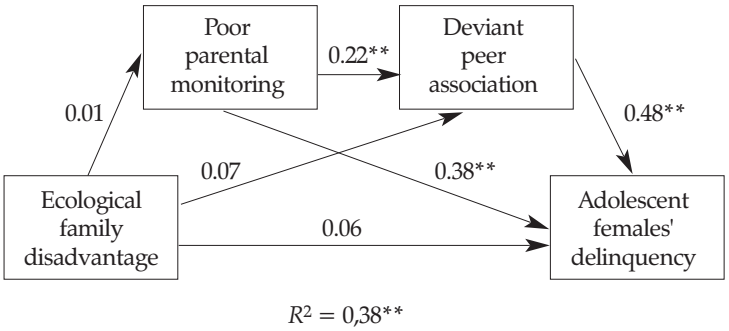
Note. Unstandardized path coefficients are presented.
*$p < 0.05$; **$p < 0.01$.

TABLE 2B
Bootstrap analysis of magnitude and statistical significance of indirect effects of ecological family disadvantage on adolescent females' delinquency

Indirect effect through	*B*	*SE*	BC[a] 95% CI lower	BC[a] 95% CI upper
Poor parental monitoring	0.00	0.03	-0.0571	0.0695
Both poor parental monitoring and association with deviant peers	0.00	0.01	-0.0169	0.0222
Association with deviant peers	0.03	0.03	-0.0217	0.1038

Note. BC[a] – bias corrected and accelerated.

➲ FIGURE 1B
Relationship between ecological family disadvantage, parental monitoring, deviant peer association, and adolescent females' delinquency (n = 154)



Note. Unstandardized path coefficients are presented.
$^*p < 0.05$; $^{**}p < 0.01$.

DISCUSSION

The primary purpose of this study was to examine concurrent relations among ecological family disadvantage, poor parental monitoring/supervision, association with deviant peers, and delinquency in a sample of adolescent males and females separately. Emphasis was placed on exploring how ecological family disadvantage exerts its effect on delinquent behavior: (1) is that effect still significant after controlling for the effects of parental monitoring and deviant peer association (direct effect); or (2) is it jointly mediated by the latter two factors (serial indirect effect)?

With regard to the direct effects, the results indicate that higher ecological family disadvantage exerts a direct effect on delinquency only in the sample of adolescent males. This is in line with evidence that a disadvantaged family context results in favor of adolescent females, by means of developing more emotional autonomy and self-reliance in adolescent females than in adolescent males (Steinberg & Silverberg, 1986). According to Flanagan (1990), adolescent males tend to have more conflicts with their parents under these circumstances. On the other hand, this finding is contradictory to the results of some researchers who have found that an adverse family context is related to female delinquency (e.g. Ho, 1991). Ho's (1991) explanation of linkage between an adverse family context and female delinquency included more pronounced exposure to family discord in adolescent females than adolescent males, resulting from the fact that adolescent males tend to spend more time with peers outside the home than adolescent females. In contrast to studies on gender differences reviewed at this point, some have found non-significant effects of a disadvantaged family context on delinquent behavior for both adolescent males and females. For example, Lempers et al. (1989) examined the direct and the indirect effects

of economic hardship on the delinquent behavior of adolescent males and females. Their results showed no direct effect of economic hardship on delinquency and drug use. Rutter, Giller, and Hagell (1998) suggest that there may be a possibility that adolescent males are more vulnerable to psychosocial hazards. For example, there is some evidence that adolescent males are slightly more vulnerable to the psychological risks associated with family discord, but the difference does not apply to all psychosocial hazards (Rutter et al., 1998). Therefore, it is possible that the indicators included in the measure of ecological family disadvantage are more important for adolescent males than females, and that this gender difference may not exist if different indicators are measured. Further research on this topic is needed.

With regard to the serial mediation model, the results of this study also show that poor parenting/supervision and deviant peer association did not serially mediate the link between ecological family disadvantage and delinquent behavior of either adolescent males or females. Although most of the relations between variables studied in this tested mediation chain were significant and in the expected way (poor monitoring/supervision-more deviant peers-more delinquency), ecological family disadvantage did not predict poor monitoring/supervision. This non-significant path from ecological family disadvantage to poor parental monitoring/supervision is contrary to the findings reported in some previous research (e.g. Larzelere & Patterson, 1990; Pettit, Laird, Dodge, Bates, & Criss, 2001). In many studies, the dependency of effective parenting on numerous forms of ecological family advantages has been consistently emphasized (e.g. Bogenschneider, Small, & Tsay, 1997). A prospective longitudinal study by Pettit et al. (2001) showed that mothers' and adolescents' reports of monitoring are associated with early ecological family factors as a set consisting of higher SES and intact marital status. In finding an explanation for our non-significant ecological family disadvantage – poor monitoring/supervision linkage, perhaps we can turn to the measure of poor monitoring/supervision which was used in our study. This measure reflects elements of structured rules and regulations imposed by parents, as well as their tracking of children's behavior. This is in line with the conceptualization of monitoring, which can usually be found in literature. In spite of this, Dishion and McMahon (1998) suggest that effective parental monitoring at later stages of the child's life should include skills in communication and effective listening which would make it easier for them to track their child's peer behavior and lead to obedience to family rules regarding the use of private time. Research with measures which include such communication and listening

skills show this relationship between ecological family disadvantage and poor monitoring. Additionally, it should also be noted that the perceived ecological family disadvantage measure was used, which could potentially explain the non-significant link between ecological disadvantage and parental monitoring.

Although we did not find a serial mediation link, we found significant relations between the measured variables similar to other studies in Croatia (e.g. Livazović & Ručević, 2012; Šincek & Ajduković, 2012). More specifically, it was shown that poor parenting/supervision, as well as more deviant peer association, is related to the delinquency of both adolescent males and females. In both adolescent males and females, deviant peer association mediates the link between poor monitoring/supervision and delinquent behavior. Although the relationships between these variables are well documented in literature (e.g. Henry, Tolan, & Gorman-Smith, 2001), it is somewhat surprising that they are similar for both adolescent males and females. Namely, prior studies showed the gender specific, but inconsistent, effects of parental monitoring and deviant peer association on delinquency (e.g. Bowman et al., 2007; Piquero et al., 2005; O'Donnell et al., 2011). The results of this study, conversely, underscore the gender-neutral effects of both parental monitoring and deviant peer association on delinquency. The use of different delinquency measures, different sources, and parent specific data regarding parental monitoring, as well as cultural differences, may all have contributed to the incompatible findings. Further research is needed to clarify the aforementioned inconsistencies in gender neutral/specific mediation pathways in this context.

The results of the present study should be interpreted with caution due to the number of its methodological limitations. First, due to the cross-sectional nature of the data, the study cannot provide answers regarding the causal nature of the tested relationships between variables. To answer these questions of causality, longitudinal studies are needed. Second, all data were from the same source, i.e., they were self-reported by adolescents. However, in line with other research (e.g. Salzinger, Rosario, & Feldman, 2007), we believe that the adolescents' perception of parental monitoring is more valuable than the parents' perspective. Data were gathered at schools, so adolescents with serious conduct problems and delinquency were probably not included in the sample (since they frequently play truant or were not attending the regular secondary schools). Third, the study addresses only one outcome – adolescent delinquency – and did not differentiate between violent delinquency and other types of delinquency nor distinguish between early and late starters. Also, other parental

addictions and mental health problems are a valuable source of information on experienced family stress, along with parental alcoholism and criminality, which we overlooked in our cumulative measure of ecological family disadvantage. Furthermore, adolescents were instructed to indicate how many of their friends have committed different behaviours while close friends' self-reports, as well as friendship mutuality, highlighted by Vitaro, Brendgen, and Tremblay (2000), were overlooked in association with deviant peer measure. However, some of the authors in the research field, such as Patterson, Forgatch, Yoerger, and Stoolmiller (1998) highlight the role of deviant peers, not close friends in this context. Also, delinquent adolescents' friendships were found to be unstable with short duration and inferior quality (Snyder, 2002).

Despite these limitations, this study contributes to the growing research that identifies the links between ecological family factors, peers, and delinquency in adolescent males and females. As such, the presented findings may have implications for the development of treatment and intervention programs. More specifically, the results show that adolescent males with ecological familial disadvantaged background are a target group for prevention. Additionally, prevention programs aimed at increasing the role of conventional non-delinquent peer models may be of importance in both adolescent males and females.

NOTES

[1] No instrument used in this study is categorized as a specially protected psychodiagnostic instrument.

[2] Inter-correlation between family material status and single-parent status, single-parent status, parental alcoholism, and parental criminal behaviour were $r_\varphi = 0.04$ ($p > 0.05$), $r_\varphi = 0.14$ ($p < 0.01$), $r_\varphi = 0.09$ ($p = 0.05$), respectively. The correlation between single-parent status and parental alcoholism and parental criminality were $r_\varphi = 0.14$ ($p < 0.01$), $r_\varphi = 0.12$ ($p < 0.01$), respectively, while the correlation between parental alcoholism and criminality was $r_\varphi = 0.23$ ($p < 0.01$).

REFERENCES

Agnew, R., Matthews, S. K., Bucher, J., Welcher, A. N., & Keyes, C. (2008). Socioeconomic status, economic problems, and delinquency. *Youth & Society, 40*(2), 159–181. https://doi.org/10.1177/0044118X08318119

Ajduković, M., & Rajhvajn Bulat, L. (2012). Doživljaj financijskog statusa obitelji i psihosocijalno funkcioniranje srednjoškolaca [Perception of family financial status and high school students' psychosocial functioning]. *Revija za socijalnu politiku, 19*(3), 233–253. https://doi.org/10.3935/rsp.v19i3.1075

Blanz, B., Schmidt, M. H., & Esser, G. (1991). Familial adversities and child psychiatric disorders. *Journal of Child Psychology and Psychiatry, 32*(6), 939–950. https://doi.org/10.1111/j.1469-7610.1991.tb01921.x

Bogenschneider, K., Small, S. S., & Tsay, J. C. (1997). Child, parent, and contextual influences on perceived parenting competence among parents of adolescents. *Journal of Marriage and the Family, 59*(2), 345–362. https://doi.org/10.2307/353475

Bowman, M. A., Prelow, H. M., & Weaver, S. R. (2007). Parenting behaviors, association with deviant peers, and delinquency in African American adolescents: A mediated-moderation model. *Journal of Youth and Adolescence, 36*(4), 517–527. https://doi.org/10.1007/s10964-006-9117-7

Chassin, L., Curran, P. J., Hussong, A. M., & Colder, C. R. (1996). The relation of parent alcoholism to adolescent substance use: A longitudinal follow-up study. *Journal of Abnormal Psychology, 105*(1), 70–80. https://doi.org/10.1037//0021-843X.105.1.70

Chassin, L., Pillow, D. R., Curran, P. J., Molina, B. S. G., & Barrera Jr., M. (1993). Relation of parental alcoholism to early adolescent substance use: A test of three mediating mechanisms. *Journal of Abnormal Psychology, 102*(1), 3–19. https://doi.org/10.1037//0021-843X.102.1.3

Comanor, W. S., & Phillips, L. (2002). The impact of income and family structure on delinquency. *Journal of Applied Economics, 5*(2), 209–232. Available at https://ageconsearch.umn.edu/bitstream/44078/2/comanor.pdf

Criss, M. M., Pettit, G. S., Bates, J. E., Dodge, K. A., & Lapp, A. L. (2002). Family adversity, positive peer relationships, and children's externalizing behavior: A longitudinal perspective on risk and resilience. *Child Development, 73*(4), 1220–1237. https://doi.org/10.1111/1467-8624.00468

Demuth, S., & Brown, S. L. (2004). Family structure, family processes, and adolescent delinquency: The significance of parental absence versus parental gender. *Journal of Research in Crime and Delinquency, 41*(1), 58–81. https://doi.org/10.1177/0022427803256236

Dishion, T. J., & McMahon, R. J. (1998). Parental monitoring and the prevention of child and adolescent problem behavior: A conceptual and empirical formulation. *Clinical Child and Family Psychology Review, 1*(1), 61–75. https://doi.org/10.1037/e495502006-010

Dishion, T. J., Patterson, G. R., & Griesler, P. C. (1994). Peer adaptations in the development of antisocial behavior: A confluence model. In L. R. Huesmann (Ed.), *Aggressive behavior: Current perspectives* (pp. 61–95). New York: Plenum Press. https://doi.org/10.1007/978-1-4757-9116-7_4

Dishion, T. J., Patterson, G. R., & Reid, J. R. (1988). Parent and peer factors associated with drug sampling in early adolescence: Implications for treatment. In E. R. Rahdert, & J. Grabowski (Eds.), *Adolescent drug abuse: Analyses of treatment research, Rockville* (pp. 69–93). MD: National Institute on Drug Abuse.

Dishion, T. J., Patterson, G. R., Stoolmiller, M., & Skinner, M. L. (1991). Family, school, and behavioral antecedents to early adolescent involvement with antisocial peers. *Developmental Psychology, 27*(1), 172–180. https://doi.org/10.1037//0012-1649.27.1.172

Dunifon, R., & Kowaleski-Jones, L. (2002). Who's in the house? Race differences in cohabitation, single parenthood, and child development. *Child Development, 73*(4), 1249–1264. https://doi.org/10.1111/1467-8624.00470

Farrington, D. P. (1990). Implications of criminal career research for the prevention of offending. *Journal of Adolescence, 13*(2), 93–113. https://doi.org/10.1016/0140-1971(90)90001-N

Farrington, D. P. (2011). Family influences on delinquency. In D. W. Springer, & A. R. Roberts (Eds.), *Juvenile justice and delinquency* (pp. 203–222). Sudbury, MA: Jones and Bartlett Publishers.

Flanagan, C. A. (1990). Change in family work status: Effects on parent-adolescent decision making. *Child Development, 61*(1), 163–177. https://doi.org/10.2307/1131056

Fletcher, A. C., Darling, N. E., & Steinberg, L. (1995). Parental monitoring and peer influences on adolescent substance use. In J. McCord (Ed.), *Coercion and punishment in long-term perspectives* (pp. 259–271). Cambridge: Cambridge University Press. https://doi.org/10.1017/CBO9780511527906.016

Frick, P. J. (1991). *The Alabama Parenting Questionnaire*. Available at https://cyfar.org/sites/default/files/PsychometricsFiles/Parenting%20Questionnaire-Alabama%20(parents%20of%20children%206-18)_0.pdf

Haapasalo, J., & Tremblay, R. E. (1994). Physically aggressive boys from ages 6 to 12: Family background, parenting behavior, and prediction of delinquency. *Journal of Consulting and Clinical Psychology, 62*(5), 1044–1052. https://doi.org/10.1037//0022-006X.62.5.1044

Hayes, A. F. (2012). *PROCESS: A versatile computational tool for observed variable mediation, moderation, and conditional process modeling.* Available at http://imaging.mrccbu.cam.ac.uk/statswiki/FAQ/SobelTest?action=AttachFile&do=get&target=process.pdf

Henry, D. B., Tolan, P. H., & Gorman-Smith, D. (2001). Longitudinal family and peer group effects on violence and nonviolent delinquency. *Journal of Clinical Child & Adolescent Psychology, 30*(2), 172–186. https://doi.org/10.1207/S15374424JCCP3002_5

Ho, C. S. N. (1991). *Economic hardship, family relationships, and adolescent distress*. Available at http://lib.dr.iastate.edu/cgi/viewcontent.cgi?article=10531&context=rtd

Hussong, A. M., Wirth, R. J., Edwards, M. C., Curran, P. J., Chassin, L. A., & Zucker, R. A. (2007). Externalizing symptoms among children of alcoholic parents: Entry points for an antisocial pathway to alcoholism. *Journal of Abnormal Psychology, 116*(3), 529–542. https://doi.org/10.1037/0021-843X.116.3.529

Larzelere, R. E., & Patterson, G. E. (1990). Parental management: Mediator of the effect of socioeconomic status on early delinquency. *Criminology, 28*(2), 301–324. https://doi.org/10.1111/j.1745-9125.1990.tb01327.x

Lempers, J. D., Clark-Lempers, D., & Simons, R. L. (1989). Economic hardship, parenting, and distress in adolescence. *Child Development, 60*(1), 25–39. https://doi.org/10.2307/1131068

Lerner, R. M., Bornstein, M. H., & Leventhal, T. (2015). *Handbook of child psychology and developmental science: Ecological settings and processes.* Hoboken, NJ: John Wiley & Sons. https://doi.org/10.1002/9781118963418

Livazović, G., & Ručević, S. (2012). Rizični čimbenici eksternaliziranih ponašanja i odstupajućih navika hranjenja među adolescentima [Externalizing behaviors and eating disorder risk factors in adolescents]. *Društvena istraživanja, 21*(3), 733–752. https://doi.org/10.5559/di.21.3.07

Luthar, S. S. (1993). Methodological and conceptual issues in research on childhood resilience. *Journal of Child Psychology and Psychiatry, 34*(4), 441–453. https://doi.org/10.1111/j.1469-7610.1993.tb01030.x

Lytton, H. (1990). Child and parent effects in boys' conduct disorder: A reinterpretation. *Developmental Psychology, 26*(5), 683–697. https://doi.org/10.1037//0012-1649.26.5.683

Mistry, R. S., Benner, A. D., Tan, C. S., & Kim, S. Y. (2009). Family economic stress and academic well-being among Chinese-American youth: The influence of adolescents' perceptions of economic strain. *Journal of Family Psychology, 23*(3), 279–290. https://doi.org/10.1037/a0015403

Nijhof, K. S., de Kemp, R. A. T., & Engels, R. C. M. E. (2009). Frequency and seriousness of parental offending and their impact on juvenile offending. *Journal of Adolescence, 32*(4), 893–908. https://doi.org/10.1016/j.adolescence.2008.10.005

Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory*. New York, NY: McGraw Hill.

O'Donnell, P., Richards, M., Pearce, S., & Romero, E. (2011). Gender differences in monitoring and deviant peers as predictors of delinquent behavior among low-income urban African American youth. *The Journal of Early Adolescence, 32*(3), 431–459. https://doi.org/10.1177/0272431610397661

Patterson, G. R., Forgatch, M. S., Yoerger, K. L., & Stoolmiller, M. (1998). Variables that initiate and maintain an early-onset trajectory for juvenile offending. *Development and Psychopathology, 10*(3), 531–547. https://doi.org/10.1017/S0954579498001734

Patterson, G. R., DeBaryshe, B. D., & Ramsey, E. (1989). A developmental perspective on antisocial behavior. *American Psychologist, 44*(2), 329–335. https://doi.org/10.1037/0003-066X.44.2.329

Pettit, G. S., Bates, J. E., Dodge, K. A., & Meece, D. W. (1999). The impact of after-school peer contact on early adolescent externalizing problems is moderated by parental monitoring, perceived neighborhood safety, and prior adjustment. *Child Development, 70*(3), 768–778. https://doi.org/10.1111/1467-8624.00055

Pettit, G. S., Laird, R. D., Dodge, K. A., Bates, J. E., & Criss, M. M. (2001). Antecedents and behavior-problem outcomes of parental monitoring and psychological control in early adolescence. *Child Development, 72*(2), 583–598. https://doi.org/10.1111/1467-8624.00298

Piquero, N. L., Gover, A. R., MacDonald, J. M., & Piquero, A. R. (2005). The influence of delinquent peers on delinquency. Does gender

matter? *Youth & Society, 36*(3), 251–275. https://doi.org/10.1177/0044118X04265652

Rowe, D. C., & Farrington, D. P. (1997). The familial transmission of criminal convictions. *Criminology, 35*(1), 177–202. https://doi.org/10.1111/j.1745-9125.1997.tb00874.x

Ručević, S. (2011). Povezanost privrženosti roditeljima s rizičnim i delinkventnim ponašanjem kod adolescenata [Relationship between parental attachments and delinquent and risk-taking behaviors]. *Društvena istraživanja, 20*(1), 167–187. https://doi.org/10.5559/di.20.1.09

Ručević, S., & Duvnjak, I. (2010). Povezanost reaktivne i proaktivne agresije, privrženosti i samopoštovanja adolescenata [Relationship between reactive and proactive aggression, parental and peer attachments, and adolescent self-esteem]. *Psihologijske teme, 19*(1), 103–121.

Ručević, S., Ajduković, M., & Šincek, D. (2009). Razvoj upitnika samoiskaza rizičnog i delinkventnog ponašanja mladih (SRDP-2007) [Development of Youth Self-Reported Delinquency and Risk Behaviors Questionnaire (SRDP-2007)]. *Kriminologija i socijalna integracija, 17*(1), 1–96.

Rutter, M., Giller, H., & Hagell, A. (1998). *Antisocial behavior by young people: A major new review*. Cambridge, UK: Cambridge University Press.

Salzinger, S., Rosario, M., & Feldman, R. S. (2007). Physical child abuse and adolescent violent delinquency: The mediating and moderating roles of personal relationships. *Child Maltreatment, 12*(3), 208–219. https://doi.org/10.1177/1077559507301839

Seifer, R., Sameroff, A. J., Baldwin, C. P., & Baldwin, A. (1992). Child and family factors that ameliorate risk between 4 and 13 years of age. *Journal of the American Academy of Child & Adolescent Psychiatry, 31*(5), 893–903. https://doi.org/10.1097/00004583-199209000-00018

Shek, D. T. L. (2003). Economic stress, psychological well-being and problem behavior in Chinese adolescents with economic disadvantage. *Journal of Youth and Adolescence, 32*(4), 259–266. https://doi.org/10.1023/A:1023080826557

Singh, A., & Kiran, U. V. (2014). *Effect of single parent family on child delinquency*. Available at http://www.ijsr.net/archive/v3i9/U0VQMTQ0MA%3D%3D.pdf

Snyder, J. (2002). Reinforcement and coercion mechanisms in the development of antisocial behavior: Peer relationships. In J. B. Reid, G. R. Patterson, & J. Snyder (Eds.), *Antisocial behavior in children and adolescents: A developmental analysis and model for intervention* (pp. 101–122). Washington, DC: American Psychological Association. https://doi.org/10.1037/10468-005

Snyder, J. J., Dishion, T. J., & Patterson, G. R. (1986). Determinants and consequences of associating with deviant peers during preadolescence and adolescence. *The Journal of Early Adolescence, 6*(1), 29–43. https://doi.org/10.1177/0272431686061003

Steinberg, L., & Silverberg, S. B. (1986). The vicissitudes of autonomy in early adolescence. *Child Development, 57*(4), 841–851. https://doi.org/10.2307/1130361

Stern, S. B., & Smith, C. A. (1995). Family processes and delinquency in an ecological context. *Social Service Review, 69*(4), 703–731. https://doi.org/10.1086/604154

Šincek, D., & Ajduković, M. (2012). Razlike među mladićima s ranim i kasnim javljanjem društveno neprihvatljiva ponašanja [Differences among male adolescents with early- and late-onset of risk behavior]. *Društvena istraživanja, 21*(2), 421–441. https://doi.org/10.5559/di.21.2.07

Vitaro, F., Brendgen, M., & Tremblay, R. E. (2000). Influence of deviant friends on delinquency: Searching for moderator variables. *Journal of Abnormal Child Psychology, 28*(4), 313–325. https://doi.org/10.1023/A:1005188108461

Vrselja, I. (2013). *Provjera teorija delinkvencije s ranim i kasnim početkom* [*Validation of theories of delinquency with early and late onset*] (Unpublished doctoral dissertation). Filozofski fakultet: Zagreb.

Vrselja, I., & Glavak Tkalić, R. (2011). Odnos između rizičnog i delinkventnog ponašanja, nekih obiteljskih kontekstualnih čimbenika i roditeljskih odgojnih metoda [Relationship between risk and delinquent behaviour, certain contextual factors related to family and parenting methods]. *Kriminologija & socijalna integracija: časopis za kriminologiju, penologiju i poremećaje u ponašanju, 19*(1), 51–63.

Učinci nepovoljnih obiteljskih okolnosti na delinkvenciju muških i ženskih adolescenata

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Cilj ovog rada jest ispitati izravne i neizravne učinke ekoloških obiteljskih nepovoljnih prilika na delinkventno ponašanje mladića i djevojaka kroz loš roditeljski nadzor i druženje s devijantnim vršnjacima. Podatci upotrijebljeni u ovom radu prikupljeni su na uzorku od 528 hrvatskih srednjoškolaca (374 mladića) između 15 i 17 godina. Kako bi se provjerili pretpostavljeni izravni i neizravni učinci, uzet je PROCESS makro za SPSS. Rezultati su pokazali da ekološke obiteljske nepovoljne prilike imaju izravan učinak na izraženije delinkventno ponašanje mladića. Nije pronađen značajan serijalni neizravni učinak ekoloških nepovoljnih obiteljskih prilika na delinkventno ponašanje mladića kroz dva pretpostavljena medijatora, ali je utvrđen neizravan učinak ekoloških nepovoljnih obiteljskih prilika na delinkventno ponašanje mladića kroz njihovo izraženije druženje s devijantnim vršnjacima. Na uzorku djevojaka nisu pronađeni ni značajni izravni ni neizravni učinci. Rezultati upućuju na spolno

specifične mehanizme kroz koje ekološke nepovoljne obiteljske prilike pridonose delinkventnom ponašanju adolescenata i važan su doprinos literaturi na ovom području.

Ključne riječi: ekološke nepovoljne obiteljske prilike, delinkvencija, roditeljski nadzor, vršnjaci, spol