

## Empathy and Gender Effects on Cyber-violence among Croatian Youth

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This paper explores the effects of gender and affective and cognitive empathy on cyber-violence in youth. Data were available from 396 adolescents (202 [51%] females), aged 12 to 19 years, who completed questionnaires for empathy and cyber-violence. Analyses (2x2x2; committing and experiencing cyber-violence as dependent variables) showed that participants with a low level of empathy (either affective or cognitive) commit more, while those with a low level of cognitive empathy experience more cyber-violence. Males with a low level of empathy committed more cyber-violence than the other three groups (male with high level of empathy and female participants with both high and low level of empathy). The results indicate that both types of empathy may be protective factors from committing cyber-violence, with a higher level of cognitive empathy being connected with a lower level of experiencing cyber-violence.

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\* This is an early electronic version of the manuscript that has been accepted for publication in Psihologija journal but has not yet been technically prepared for publication. Please note that this is not the final version of the paper as it has yet to be technically prepared for publication and minor changes to the text are possible before the final print. The final version of the article can be subjected to minor changes after proof reading and before final print. Please cite as: Šincek, D., Duvnjak, I., & Tomašić Humer, J. (2020). Empathy and Gender Effects on Cyber-violence among Croatian Youth. *Psihologija*. Advance online publication. doi: <https://doi.org/10.2298/PSI190801002S>

**Key words:** cyber-violence, affective empathy, cognitive empathy, gender, adolescents

Highlights:

- Cognitive empathy and committing cyber-violence are negatively associated.
- Male adolescents low in empathy tend to commit more cyber-violence.
- Adolescents with low cognitive empathy experience more cyber-violence.

The widespread use of information and communications technology leads to certain risky behaviours, including cyber-violence. In the late nineties, cyber-violence was recognized as an example of deviant behaviour in cyberspace (Suler & Phillips, 1998). Suler (2004), mentioned invisibility in cyberspace as an important condition that not only gives the person an opportunity not to worry how they present themselves in online interactions, but also spares the person from others' non-verbal feedback. The absence of the non-verbal cues may worsen an empathic reaction and may have an impact on the quality of online interactions (Fabri, Moore, & Hobbs, 2005). In addition, absence of these cues facilitates moral disengagement and cyber-violence (Smith, 2012). Framework for risks and needs assessment approach to cyberbully and cyber-victimization (Baldry, Farrington, & Sorrentino, 2015), based on the ecological model, recognizes empathy as a possible risk factor for an individual level.

Cyber-violence has been mentioned as one of four types of cyber-crime by Wall (2003). It includes using (i.e., sending, sharing or accessing) harmful materials that can cause psychological damage to the target person, although it could even have physical consequences, like suicide attempts provoked by cyber-violence (Hinduja & Patchin, 2010). Based on traditional forms of violence among peers, cyber-violence among adolescents is named cyberbullying (Slonje & Smith, 2008). Smith et al. (2008, p. 376) form a definition of cyberbullying as a variation of Olweus' definition of bullying stated: "...an aggressive, intentional act carried out by a group or an individual, *using electronic forms of contact*, repeatedly and over time against a victim who cannot easily defend him or herself". Menesini and Nocentini (2009) stress the differences between traditional bullying and cyberbullying in that the latter can lead to victimization even after a single act of online violence which is shared many times or the fact that an imbalance of power is not necessary. However, Tokunaga (2010, p. 278) offers the following definition "cyberbullying is any behaviour performed through electronic or digital media by individuals or groups that repeatedly communicates hostile or aggressive messages intended to inflict harm or discomfort on others". Nevertheless, Dredge et al. (2014) pointed that scholars, in their attempts to define cyberbullying, focused more on the perpetrators than on the victims. Not taking the victims' perspective was something that can be ascribed not only to researchers trying to define cyberbullying, but also to cyberbullies themselves and it stresses the importance of empathy (Steffgen, König, Pfetsch, & Melzer, 2011).

Ovejero, Yubero, Larrañaga, and Moral (2016) showed the importance of knowledge based on the psychosocial perspective in explaining cyberbullying and cyber-violence,

including well known inhibitory effects of empathy on aggression and violence. The process model of cyberbullying (Lazuras, Barkoukis, Ourda, & Tsorbatzoudis, 2013), based on the theory of planned behaviour, includes components with direct and indirect effects. One of them is empathy, which has direct and indirect (by influencing beliefs and norms) effects on cyberbullying. The authors of the model found support for affective empathy, not for cognitive empathy as a factor affecting (direct and indirect) on empathy.

Widespread definitions of empathy are more directed to cognitive process and described it as an ability to understand other persons' emotional state (Hogan, 1969; Mead, 1934). Developing from it and pointing out the role of empathy in understanding children's aggression, Feshbach (1975) proposed a three-component model of empathy, including the ability to discriminate the perspective, another person's role (i.e., cognitive components), and emotional capacity and responsiveness as an affective component. While Hoffman (1977), Eisenberg (2002) and Batson with colleagues (Batson, Ahmad, Lishner, & Tsang, 2002) were interested in empathy as a cause of prosocial behaviour, Davis (1996) was more inclined in elaborating a comprehensive model of empathy. He defines empathy as a multidimensional construct that includes perspective taking, fantasy, empathic concern and personal distress, and claims that empathy consists of two dimensions – cognitive (perspective taking) and affective (reactions to others). Affective empathy includes experiencing emotions as reactions to others' emotional states. Cognitive empathy is understanding others' emotional states and knowing possible effects of those emotions on the perceiver (Ivanović, 2008).

Previous research found that cyber-victims scored higher than cyberbullies and those not involved in cyberbullying on both cognitive and affective empathy, in particular that female adolescents are superior to male adolescents in affective empathy, but they are equal in cognitive empathy (Pettalia, Levin, & Dickinson, 2013). Empathy is stated as a relevant protective factor for cyberbullying in the meta-analysis conducted by Kowalski, Giumetti, Schroeder, and Lattanner (2014). Zych, Baldry, Farrington, and Llorent (2018) pointed out that Kowalski et al. (2014) did not focus on empathy and included only five studies that explore the empathy-cyberbullying relation. Zych et al. (2018) also pointed out that empathy, as a trait, should be an antecedent, not the consequence of the cyberbullying, implying that cyberbullies are less empathic, what enables them to deliberately harm others. Most of the studies use correlational and cross-sectional design (Zych, Farrington, & Ttofi, 2019). That type of studies does not allow causal inferring. The Zych et al. (2018) also point out that victims can become more empathic toward others after they experience violence. They conclude that the relation among empathy and cyberbullying is supported, but the relation between empathy and cyber-victimization is not clear, and the type of empathy, gender and age can moderate these relations. Affective and cognitive empathy were found lowered in cyberbullies.

Gender could be an important factor related to empathy and cyberbullying, too. It is supported that male adolescents commit more cyberbullying (e.g., Li, 2006; Barlett & Coyne, 2014; Šincek, 2014). Hinduja and Patchin (2008) pointed out that cyberbullying should be regarded as an indirect form of aggression. They continued that, since indirect aggression is considered to be a female form of aggression, higher rates of females among cyberbullies could be expected. Although they expected that females will commit and experience more cyber-violence, they did not find gender differences for cyberbullying and cyber-victimization. Findings of gender differences in cyber-victimization are inconclusive. In some research, female adolescents experience more cyber-violence (e.g., Bayraktar et al., 2015), and in others,

male adolescents are more victimized on the Internet (e.g., Musharraf & Anis-ul-Haque, 2018; Šincek, 2014). On the other hand, female adolescents could show more empathy than male (Del Rey et al., 2016; Eisenberg & Lennon, 1983; Rueckert & Naybar, 2008). Gender and two types of empathy interaction could be important for cyberbullying (Ang & Goh, 2010). Ang and Goh (2010) found that three-way interaction of gender and affective and cognitive empathy is significant: that means that participants who are low in affective empathy and low in cognitive empathy (both gender), commit more cyberbullying than male adolescents and female adolescents high in both affective and cognitive empathy. For participants high in affective empathy, the results are somewhat more complicated: males low in cognitive empathy commit more cyberbullying than males high in cognitive empathy, while females with low and high levels of cognitive empathy did not differ in committing cyberbullying. Del Rey et al. (2016) found that the effects of empathy on cyberbullying were not affected by age, gender or nationality.

This study aimed to explore the effects of gender and both types of empathy on committing and experiencing cyber-violence among children and adolescents. Based on previous findings, we hypothesized following: H1 – male adolescents commit and experience more cyber-violence than female adolescents; H2a – Adolescents lower in affective empathy commit more cyber-violence than those higher in affective empathy; H2b – Adolescent lower in affective empathy will experience less cyber-violence than adolescents higher in affective empathy; H3a – Adolescents slower in cognitive empathy will commit more cyber-violence than adolescents higher in cognitive empathy, and H4 – The interaction of gender, affective and cognitive empathy is significant: Adolescents of both genders, who have low affective empathy, and who also have low cognitive empathy commit more cyber-violence than those who have high cognitive empathy. At high affective empathy, male adolescents who are also high in cognitive empathy commit more cyber-violence than male adolescents who have high cognitive empathy. Female adolescents who are high in affective empathy, and high in cognitive empathy will not differ in cyber-violence from female adolescents who are high in affective empathy, and low in cognitive empathy.

## Methods

### Participants

Data were collected as part of the Croatian national research study focusing on children's and adolescent's habits in using information and communication technologies (ICT; Šincek, Duvnjak, & Milić, 2017; Šincek, Tomašić Humer, & Duvnjak, 2017). A total of 7038 children and youths from different elementary and high schools in both rural and urban areas (non-proportional quota sampling) participated in the project. One in five participants ( $N = 1175$ ) completed the set of questionnaires for this study. The subsample ( $n = 396$ ; 202 [51%] girls) with the scores in first and fourth quartile on affective and cognitive empathy was selected for the current analyses. It allows comparing participants who are certainly, and not only marginally different in levels of cognitive and affective empathy. Their age ranged from 11 to 20 ( $M = 14.35$ ;  $SD = 2.19$ ) years. The participants were either in the sixth (31.8%) or eighth (25.3%) grade of elementary school, or in the second (28.6%) or fourth (14.3%) grade of high school.

## Instruments

**Committing and Experiencing Cyber-Violence Scale (CECVS; Çetin, Yaman, & Peker, 2011).** *The* CECVS is an adaptation of the scale and it was translated via standard forward-backward translation procedure for previous research (Đuraković, Šincek, & Tomašić Humer, 2014). General statements from the original scale were concretized (e.g., “gossip on the Internet” was replaced by “I gossip about others on the Internet”). Some behaviours more relevant to children and adolescents, such as “They wanted me off of or I was excluded from a group on the Internet”, were also added to the scale. Furthermore, some items atypical for children and adolescents (e.g., “I used the Internet for fraud”) and behaviours involving forms of communication that the younger generation rarely uses (e.g., “The use of offensive language in an e-mail” [children and young people rarely communicate by e-mail, they prefer social networks]) were excluded or replaced with items that describe insulting via social media. The Committing of the cyber-violence subscale consists of 21 items and the Experiencing cyber-violence subscale 22 items. Participants were asked to answer on a 5-point Likert-type scale (from 1 = *never* to 5 = *always*). Higher scores indicate more frequent committing or experiencing of cyber-violence. Internal consistency coefficients were  $\alpha = .89$  for experiencing and  $\alpha = .91$  for committing cyber-violence subscales. Exploratory factor analyses (EFA) were conducted separately for items from Committing and Experiencing subscales. Results of EFAs conducted on this sample for both subscales showed four latent dimensions, but analysis of factor loadings and content of items revealed that is reasonable to use one factor for each subscale. Factor loadings of items varied from .42 to .73 and explained 37.35% of total variance for experiencing and from .44 to .75 and explained 34.2%, of total variance for committing cyber-violence. Correlation between Committing and Experiencing subscales was .54 (see Table 1).

**Empathy Questionnaire (Ivanović, 2008).** The Empathy Questionnaire was used for measuring cognitive and affective empathy. It consists of 19 items, where the affective empathy subscale has 13 items and the cognitive subscale 6 items. At the time data were collected, to our knowledge, it was the only scale that measures affective and cognitive empathy among elementary school children in Croatia. Participants were asked to answer on a 5-point scale (from 0 = *it doesn't apply to me at all* to 4 = *it completely applies to me*). Internal consistency coefficients were  $\alpha = .88$  for the affective and  $\alpha = .58$  for cognitive empathy subscale. Based on the results in these subscales, participants with results in the first (low empathy) and the fourth quartile (high empathy) were selected for analyses. Results of EFA conducted on this sample showed four latent dimensions. Factor loadings indicated that it is reasonable to use a two-factor structure which also fits with the theoretical conceptualisation of affective and cognitive empathy. The first factor is called affective empathy with factor loadings of items varied from .49 to .76, and it explained 30.98% of total variance. The second factor – cognitive empathy had factor loadings of items varying from .33 to .62, and explained 10.13% of total variance. Correlation between affective and cognitive empathy was -.18 (see Table 1).

## Procedure

The ethics committee of the Department of Psychology approved this research, and informed consent was obtained from the participants and their parents. The data were collected during the fall semester of the 2015 school year at schools, during regularly scheduled class times. The researcher distributed the surveys (in a paper-and-pencil format), and students completed them independently and anonymously. Since the collection was part of a larger project, different students were allocated different sets of questionnaires (i.e., random order). The full survey took approximately 45 minutes to complete. After completing it, the students were given a small gift like a pen, pencil, or other small school item.

### Statistical Analyses

Data were analysed using the statistical package SPSS version 20.0. The collected data are shown with descriptive statistical parameters. Analysis of variance (ANOVA) was used for testing the hypotheses. The effects of gender (male/female), affective empathy (low/high) and cognitive empathy (low/high) on committing and experiencing cyber-violence were tested in separate analyses.

### Results

Descriptive statistics for these groups for committing and experiencing cyber-violence are shown in Table 2. The results of two three-way (2x2x2) ANOVAs are shown in Table 3.

-Table 1. here-

-Table 2. here-

The analysis showed the main effect of cognitive empathy for both committing ( $F(1, 393) = 19.63, p = .000, \eta_p^2 = .048$ ) and experiencing ( $F(1, 393) = 19.59, p = .000, \eta_p^2 = .048$ ) cyber-violence. The main effects of gender ( $F(1, 393) = 6.57, p = .011, \eta_p^2 = .017$ ) and affective empathy ( $F(1, 393) = 10.24, p = .001, \eta_p^2 = .026$ ) were found for committing cyber-violence. The interaction of affective empathy and gender ( $F(1, 393) = 4.87, p = .028, \eta_p^2 = .012$ ), and interaction of cognitive empathy and gender ( $F(1, 393) = 8.21, p = .004, \eta_p^2 = .021$ ) were significant for committing, but the interaction of the two empathies and three-way interaction were insignificant. Although significant main effects and interactions were found, the sizes of partial eta squared (all lower than .06) indicate a small effect size.

Gender main effect for committing cyber-violence, as can be seen from Table 1, suggests that male participants ( $M_m = 28.34, SD_m = 11.69$ ) commit more cyber-violence than female participants ( $M_f = 25.41, SD_f = 6.58$ ). There is no gender difference in experiencing cyber-violence.

Participants low in cognitive empathy (committing  $M_{LCE} = 29.46, SD_{LCE} = 12.39$ ; experiencing  $M_{LCE} = 33.18, SD_{LCE} = 11.61$ ) commit and experience more cyber-violence than those high in cognitive empathy (commit:  $M_{HCE} = 25.04, SD_{HCE} = 6.35$ ; experience:  $M_{HCE} = 28.16, SD_{HCE} = 8.01$ ).

The main effect of affective empathy was found only for committing cyber-violence – subjects low in affective empathy ( $M_{LAE} = 28.17, SD_{LAE} = 11.17$ ) commit more cyber-violence than those high in affective empathy ( $M_{HAE} = 25.46, SD_{HAE} = 7.21$ ).

- Figure 1. here –

A significant interaction of affective empathy and gender on committing cyber-violence is shown in Figure 1. As can be seen from it, male participants low in affective empathy commit more cyber-violence than male participants high and female participants both low and high in affective empathy. The interaction of cognitive empathy and gender was also significant (Figure 2.)

- Figure 2. here –

A similar pattern of results to those found in the aforementioned interaction was found, where male participants low in cognitive empathy commit more cyber-violence than female participants from both groups and male participants high in cognitive empathy.

## Discussion

Empathy and gender are known to influence committing cyber-violence (Zych et al., 2018). Ang and Goh (2010) found that levels of cognitive and affective empathy and gender interactively influence cyberbullying. Although the effects of empathy were explored in many studies regarding cyberbullying and behaviour of bystanders to cyber-violence, there is a significant gap in study interest for the relation of both types of empathy and experiencing cyber-violence. Zych et al. (2018) stress the potential reason – if empathy is viewed as a personality trait, it should be an antecedent of committing cyber-violence. On the other hand, empathy connections to cyber-victimization could mean developing higher empathy after a negative experience. The same causal status is given to empathy in Lazuras et al. (2013) process model of cyberbullying, while Baldry et al. (2015) propose it as one of the risk factors on an individual level, although they state that low empathy is a characteristic in a cyber-bully's profile, while low self-esteem is more characteristic for a cyber-victim's profile. The similar was found in our study. Those adolescents low in cognitive or affective empathy were committing more cyber-violence, while those low in cognitive empathy experience more cyber-violence. Although effect size was small, cognitive empathy explained the most dependent variables' variance – almost 5%. Affective empathy explained 2.6% of the variance of committing cyber-violence, and did not reach significance for experiencing cyber-violence. The higher relevance of cognitive empathy than affective empathy is found also in Zych et al. (2018). If the definition of two types of empathy is taken into account, a potential explanation could be found. Cognitive empathy is more in line with the traditional definition of empathy – taking other persons' perspectives than affective empathy or experiencing others' emotions. The former could be more helpful, as it is more based on cognition, to promote persons' self-control (and deciding not to engage in cyber-violence as the perpetrator). In addition, as Zych et al. (2018) suggest, the possible explanation of differences in empathy in victims is that they empathize more after being victimized. Our data suggest an opposing explanation – those who have lower cognitive empathy experience more cyber-violence. If we have empathy in mind as a personality trait and an antecedent, this could reflect the relation of empathy and victimization in those known as provocative victims (or cyberbullies/cyber-victims). Their lack of empathy (meaning they do not understand or do not care what others experience) could lead them to hurt others, but also to provoke others' hurtful reactions toward themselves. Although they did not differentiate between the two types of empathy, Steffgen et al. (2011) found that cyber-victims

and non-cyber-victims do not differ, although cyberbullies had a lower level of empathy than non-cyberbullies. It is in line with the notion by Baldry et al. (2015) that, for cyber-victims, empathy is less or non-relevant.

Finding that male adolescents commit more cyber-violence is in line with previous findings (e.g., Barlett & Coyne, 2014). It seems important to stress that gender main effect was significant only on a 5% confidence level and that it explained only 1.7% of committing cyber-violence variance. Thus, in spite of the fact it is a robust finding, as can be seen from previous research, our data suggest it is not very potent. In the case of experiencing cyber-violence, no gender difference was found. Previous studies were somewhat inconclusive about this gender difference. In her systematic review, Elin Gustafsson (2017) points that there is a slightly higher likelihood for female adolescents to become victimized, but some authors (e.g., Hinduja & Patchin, 2008) did not find gender differences in cyber-victimization.

Overall, our results indicate that gender and its interaction with both types of empathy are irrelevant for experiencing cyber-violence, the same as the affective empathy itself. For committing cyber-violence, we found some support for the Ang and Goh (2010) data, as our two-way interactions of gender and affective empathy and gender and cognitive empathy were significant. Data suggest that male participants low in either cognitive or affective empathy commit more violence than male participants high in (cognitive/affective) empathy and female participants (both low and high in two types of empathy). This points out that the male adolescents low in cognitive/affective empathy are the group at the highest risk to become perpetrators of cyber-violence. A word of caution should be said here since these interactions explained 1.2% (for gender\*affective empathy interaction) and 2.1% (for gender\*cognitive empathy interaction) of committing cyber-violence variance. It means that, although they reach statistical significance, their impact in the real world is doubtful. Planning the programs of prevention and intervention tailored for male adolescents low in (cognitive/affective) empathy could be beneficial, but excluding male adolescents high in (cognitive/affective) empathy or female adolescents from such programs would be detrimental.

Since we did not find three-way interaction of gender and two types of empathy, as Ang and Koh (2010) did, we cannot support their findings in this part. Unlike our findings, affective empathy had a more important role in predicting cyberbullying in their research – cognitive empathy per se did not contribute to the explanation of cyberbullying variance, only in interaction with affective empathy and in three-way interaction of affective empathy and gender. Also, gender per se was an insignificant predictor in first two steps and became significant in the third step, after three-way interaction was introduced. The effects' size of their findings was quite similar to ours – affective empathy explained 4% of cyberbullying variance, and combined contribution of gender and significant interactions was 3%, in total 7% of cyberbullying variance was explained. Much like our research, although these results are interesting and helpful in understanding the nature of cyberbullying, their power is limited and indicates that empathy is an important, but distant, factor influencing cyberbullying. Also, it should be taken into account that both our and Ang and Koh (2010) study were conducted on both children and adolescents. Lovett and Sheffield (2007) state that, due to age and problems with measuring empathy in children based on self-reports, relation of empathy and (traditional) aggression is not clear in that age group, while it is clearly established among adolescents.



The limitations of our and Ang and Koh (2010) findings direct future research to other factors, as stated in the model by Lazuras et al. (2013). One of the factors is moral disengagement which, jointly with affective empathy, explained 20% of cyberbullying variance. Other factors are important others' norms and similarity to peers which explained an additional 25% of cyberbullying variance in Lazuras et al. (2013) research. This is in line with the findings of Ang, Li, and Seah (2017) that normative beliefs about aggression are a partial mediator of the relation of both affective and cognitive empathy with cyberbullying. Besides empathy, gender, and moral disengagement, Baldry et al. (2015) point future research of cyber-violence engagement toward self-esteem, impulsivity, previous (cyber)bullying experience, parental monitoring, and engagement with peers (including their attitudes toward cyber-violence), etc. One important notion about possible limitations should be given to our study too. First, self-reports were used for exploring cyber-violence and empathy. Although Ručević (2008) concluded that self-reports of delinquent behaviours could be a valid way of measuring delinquency, we should keep in mind Moffitt's (1993) explanations that a life-course-persistent delinquent will have impaired verbal intelligence ability, too, which can influence their understanding and answering on self-report measures. Although male adolescents low in empathy and prone to committing cyber-violence cannot be treated as life-course persistent delinquents, some caution in explaining our and Ang and Koh (2010) findings should be administered due to the use of self-reported measures. Especially if we have in mind Eisenberg and Lennon (1983) findings that the use of less subjective measures than self-report leads to diminishing of gender differences in empathy (self-reported measures show that females are more empathic than males). It is hard to implement observational techniques in a study of cyber-violence, and it can raise some ethical questions, but it is not impossible, at least for overt forms of behaviour (e.g. public shaming). Covert behaviours (e.g., cyber-violence that occurs in private messages) could also be studied, with the cooperation of a perpetrator or a target (if they allow researchers to analyse their messages). It could be combined with self-reported measures to gain better insight.

Second, extreme groups design was used (only those with 25% of lowest and highest results in empathy were included) which allows for more methodological clarity. At the same time, using extreme groups enhances the possibility of finding differences among groups, even if it is small. However, hierarchical regression conducted on the whole sample resulted in similar results with additional significant interaction (two- and three-way interaction were just above the significance threshold for committing cyber-violence as a criterion). These barely significant results could direct the perception of readers to overamplify the role of empathy in explaining committing and experiencing cyber-violence. Third, it should be considered that internal consistency coefficient for cognitive empathy subscale is on the lower bound (just below 0.6), which should also be further examined. However, such findings appear in the studies similar to this one, and according to some authors (Hair, Anderson, Tatham, & Black, 1998) this Cronbach alpha level of 0.6 may be acceptable depending on the area of research.

### **Conclusion**

The significant effects of gender and both types of empathy on committing cyber-violence were found. Affective and cognitive empathy have negative effects on committing cyber-violence – those with low level of empathy (i.e., cognitive or affective) commit more cyber-violence. Male adolescents tend to commit more cyber-violence. The interactions of gender and affective/cognitive empathy were significant suggesting that male participants low

in either affective or cognitive empathy are more prone to commit cyber-violence than males high in these types of empathy or female participants regardless of the levels of empathy. Although it is interesting, as it gives some important insights into the role of empathy as a (distal) factor important for committing cyber-violence, effects sizes warn that if a child or an adolescent is not a boy low in (affective/cognitive) empathy, it cannot be a criterion for exclusion from prevention or intervention programs. However, these data have some practical value – it would be beneficial to tailor preventive programs or interventions to increase the level of (affective/cognitive) empathy. Certainly, an increase in empathy level should not be the only aim of these programs.

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Empatija i efekat pola na sajber nasilje među mladima u Hrvatskoj

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U ovom radu se ispituje efekat pola i afektivne i kognitivne empatije na sajbernasilje među mladima. Podaci se odnose na 396 adolescenata (202 [51%] ženskog pola), uzrasta od 12 do 19 godina, koji su popunjavali upitnike za procenu empatije i sajbernasilja. Analize (2x2x2; vršenje i doživljavanje sajbernasilja kao zavisne varijable) su pokazale da učesnici sa niskim nivoom empatije (bilo kognitivne, bilo afektivne) čine više sajbernasilja, dok oni sa niskim nivoom kognitivne empatije doživljavaju više sajbernasilja. Mladići sa niskim nivoom empatije čine više sajbernasilja u odnosu na preostale tri grupe (muškaraca s visokim nivoom empatije i ženskih učesnika i sa visokim i sa niskim nivoom empatije). Rezultati ukazuju da obe komponente empatije mogu biti protektivni faktori u odnosu na vršenje sajbernasilja, dok je viši nivo kognitivne empatije povezan sa nižim nivoom doživljavanja sajbernasilja.

**Ključne reči:** sajbernasilje, afektivna empatija, kognitivna empatija, pol, adolescenti

RECEIVED 01.08.2019.

REVISION RECEIVED 29.11.2019.

ACCEPTED 01.12.2019.



Table 1

*Descriptive statistics for the Committing and Experiencing Cyber-Violence Scale*

Gender	Affective Empathy (AE)	Cognitive Empathy (CE)	Committing	Experiencing
			<i>M (SD)</i>	<i>M (SD)</i>
Male	Low AE	Low CE, <i>n</i> = 45	36.69 (17.02)	35.38 (12.49)
		High CE, <i>n</i> = 92	25.64 (6.42)	28.29 (7.59)
		Total, <i>n</i> = 137	29.27 (12.18)	30.62 (10.01)
	High AE	Low CE, <i>n</i> = 36	27.58 (12.26)	30.44 (10.93)
		High CE, <i>n</i> = 21	23.62 (4.07)	27.67 (7.86)
		Total, <i>n</i> = 57	26.13 (10.18)	29.42 (9.93)
	Total	Low CE, <i>n</i> = 81	32.64 (15.68)	33.18 (12.01)
		High CE, <i>n</i> = 113	25.26 (6.09)	28.18 (7.61)
		Total, <i>n</i> = 194	28.34 (11.69)	30.27 (9.98)
Female	Low AE	Low CE, <i>n</i> = 18	27.05 (4.82)	32.56 (12.18)
		High CE, <i>n</i> = 48	25.46 (9.35)	27.33 (8.72)
		Total, <i>n</i> = 66	25.89 (8.35)	28.76 (9.96)
	High AE	Low CE, <i>n</i> = 63	26.05 (6.93)	33.36 (11.11)
		High CE, <i>n</i> = 73	24.42 (3.87)	28.68 (8.18)
		Total, <i>n</i> = 136	25.18 (5.54)	30.85 (9.89)
	Total	Low CE, <i>n</i> = 81	26.27 (6.51)	33.18 (11.28)
		High CE, <i>n</i> = 121	24.83 (6.60)	28.15 (8.39)
		Total, <i>n</i> = 202	25.41 (6.58)	30.17 (9.94)
Total	Low AE	Low CE, <i>n</i> = 63	33.94 (15.20)	34.57 (12.37)
		High CE, <i>n</i> = 140	25.58 (7.52)	27.96 (7.98)
		Total, <i>n</i> = 203	28.17 (11.17)	30.01 (10.01)
	High AE	Low CE, <i>n</i> = 99	26.61 (9.20)	32.30 (11.08)
		High CE, <i>n</i> = 94	24.24 (3.91)	28.46 (8.08)
		Total, <i>n</i> = 193	25.46 (7.21)	30.43 (9.90)
	Total	Low CE, <i>n</i> = 162	29.46 (12.39)	33.18 (11.61)
		High CE, <i>n</i> = 234	25.04 (6.35)	28.16 (8.01)
		Total, <i>n</i> = 396	26.85 (9.54)	30.22 (9.94)

Table 2

*Results of ANOVA (2x2x2) for the Committing and Experiencing Cyber-violence Scale scores*

	Committing			Experiencing		
	<i>F</i>	<i>p</i>	Partial Eta Squared	<i>F</i>	<i>p</i>	Partial Eta Squared
Gender	6.57	.01	.017	0.00	.97	.000
Affective Empathy	10.24	< .01	.026	0.58	.44	.001
Cognitive Empathy	19.63	< .01	.048	19.59	< .01	.048
Gender x Affective Empathy	4.87	.03	.012	2.99	.09	.008
Gender x Cognitive Empathy	8.21	< .01	.021	0.00	.99	.000
Affective Empathy score x Cognitive Empathy	2.94	.09	.008	1.18	.28	.003
Gender x Affective Empathy score x Cognitive Empathy	2.98	.089	.008	0.71	.40	.002



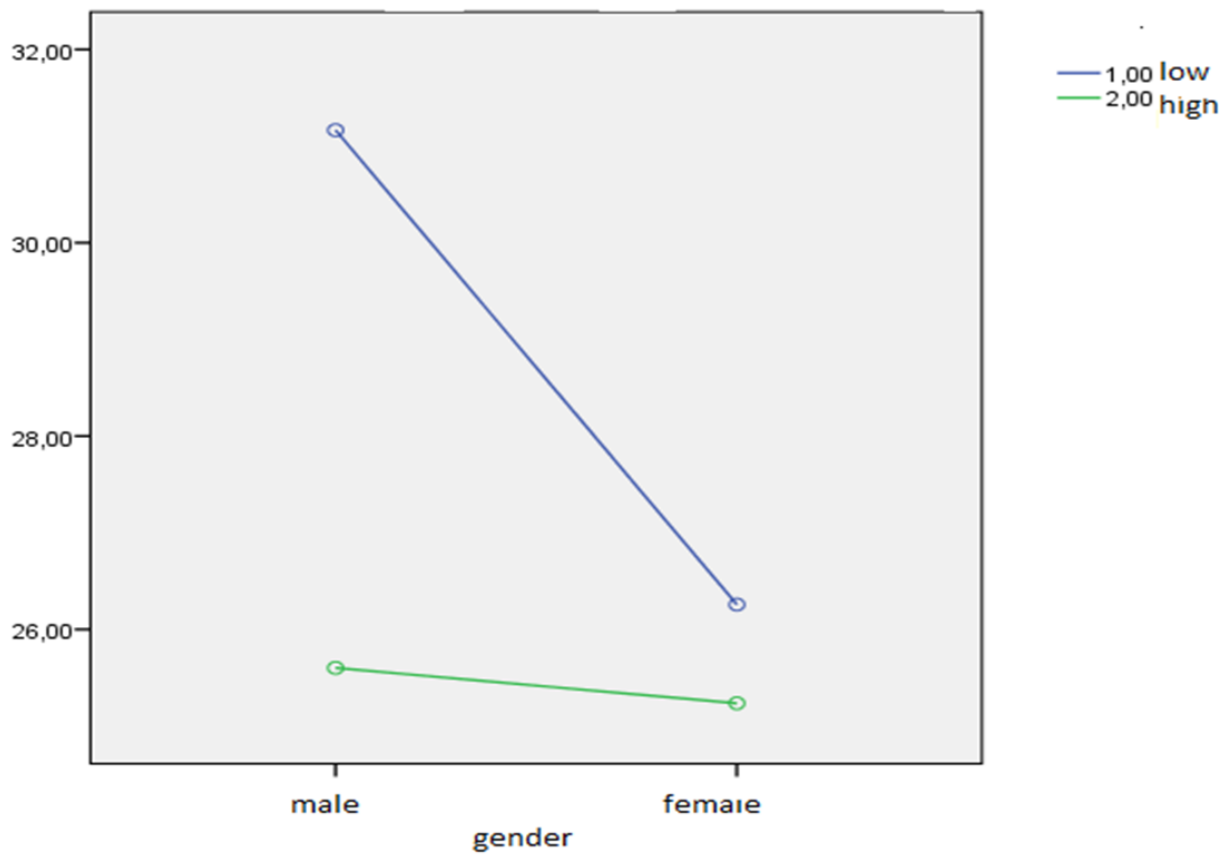


Figure 1. Gender and affective empathy interaction – on committing cyber-violence (estimated marginal means).

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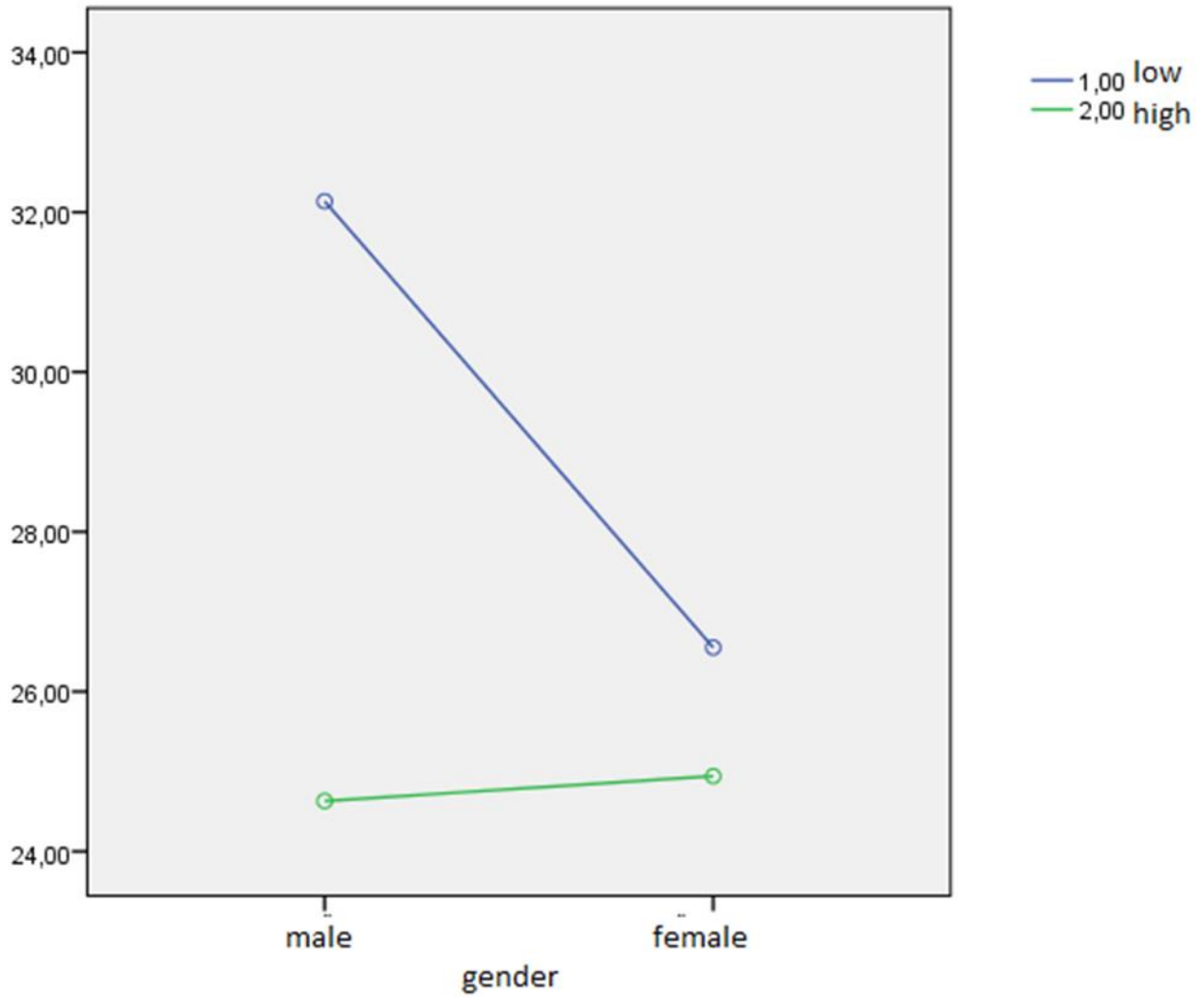


Figure 2. Gender and cognitive empathy interaction – on committing cyber-violence (estimated marginal means).