The Comorbidity of Psychopathy and Depression: Across Different Ethnic and Sex Groups

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ABSTRACT

The aim of this research was to examine if comorbid relationships exist between psychopathy and depression in a community sample of different ethnic and sex groups. Based on some previous research, it was hypothesized that psychopathy and depression would be correlated and that secondary psychopathy would be the strongest predictor of depression regardless of different ethnic and sex belongings. The survey was carried out on the adult population in the region of Croatia populated by citizens of Croatian and Serbian minority ethnicity. The equalized convenience sample of 1100 participants, half of which were Croats and half of males. Pearson-product moment correlation coefficients were calculated as a measure of the strength and direction of linear relationships among primary and secondary and depression. In order to determine how well scores on depression could be predicted by primary and secondary psychopathy across different demographic groups, multiple regression analysis were used. It was found that both primary and secondary psychopathy were significantly correlated in a positive direction with depression in different ethnic and sex groups. However, secondary psychopathy was more correlated with depression across different ethnic and sex subsamples. The results of regression analysis revealed that secondary psychopathy was the strongest predictor of depression in all demographic subsamples. After age and school attainment were introduced into regression models, it was shown that a very small percentage of the variance is explained by the sociodemographic variables. The research suggested a significant role of secondary psychopathy in relation to a higher level of psychopathology.

Studies of the relations between psychopathy and depression in the general population are lacking despite the acknowledged relations between psychopathy and depression (Chabrol, Labeyrie, Rodgers & Levenson, 2010). The lack of interest may be the result of Cleckley's

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notion (1976) that psychopathic individuals are characteristically immune to depression and committing suicide "(Chabrol et al., 2010. p.182). Namely, from a psychodynamic point of view, psychopathy may be a kind of defensive mechanism against underlying depression (Meloy, 2004) or psychopathic traits may reflect defenses against depressive feelings (Joseph, 1960). Indeed, there is a relatively limited knowledge how psychopathy might be colored by depression (Price, Salekin, Klinger & Barker, 2013), despite the fact that a long time ago David Kennedy Henderson (1939) in his psychopathic typing scheme suggested that there was a *depressive type of psychopathy* and in the late 1950s Kurt Schneider (1958) described the individuals with *depressive psychopathy* who deplore the past and fear the future. Some research suggest mutual exclusiveness of psychopathy and depression, i.e. that there is an inverse relationship between the two clinical constructs (Blonigen, Patrick, Douglas, Poythress, Skeem, Lilienfeld, Edens & Krueger. 2010; Lovelace & Gannon, 1999; Willemsen, Vanheule & Verhaeghe, 2011), or that there is non-significant relation between psychopathy and depression (Campbell, Porter & Santor, 2004). Within the synopsis of psychiatric disorders, Kaplan & Sadock (1998) simply state that psychopaths exhibit no depression. However, there are research that reported psychopathy to be frequently comorbid with depression (Dahl, 2003; Pennington, Cramer, Miller & Anastasi, 2015; Stinson, Becker & Tromp, 2005) and some argue that *depression may be precursor to psychopathy* (Barker & Salekin, 2012) suggesting that „*more studies are needed to investigate the role of depressive symptoms in the development of psychopathic traits...*" (Chabrol et al., 2010, p.186). But the converse could also true, suggesting a reciprocal relation between psychopathy and depression. In other words, why psychopathy may not be a precursor to depression, and why more studies are not needed to investigate the role of psychopathy in the development of depression. Ashley and Holder (2014) have shown that psychopathy was associated with high levels of depression and negative affect. i.e. that psychopathy can predict a rise in depression.

When the psychopaths with depression were compared with those without, the former were *a more disturbed group* (Weiss, Davis, Hedlund & Cho (1983). The *depressive psychopaths* demonstrated more difficulties in intellectual functioning than the non-depressive psychopaths, and suicidal thoughts more clearly characterized the *depressive psychopaths*, compared with the non-depressive psychopaths (Weis et al., 1983). In some other research was discovered that 50 percent of criminal psychopaths had a lifetime diagnosis of a major depressive disorder (Coid, 1992). Thus, comorbidity of psychopathy and depression may predict a number of heightened and more toxic psychological and psychosocial problems (Chabrol et al., 2010; Price et al., 2012) but also may predict very serious spiritual problems indicating the existence of self-destructive sub-personality (Šram, 2017). In other words, depression may change the psychological nature of psychopathy causing greater and psychiatrically more complex personality disorders than psychopathy and depression would present alone. Even more, psychopathy is correlated with various forms of psychopathology and disruptive behavior disorders (Salekin, Leistico,

Neumann, DiCicco & Duros, 2004; Sevecke, Lehmkuhl & Krischer, 2009). Whatever, disagreement further remains about the comorbidity of psychopathy and depression.

Despite the fact that there is also a disagreement over the structure of psychopathy, mainly from two to four separate dimensions or factors proposed (Vitacco, Neumann & Jackson, 2005), we shall pay a special attention to a two-factor solution of psychopathy since we used in our study the measure of psychopathy encompassing primary and secondary psychopathy (Levenson, Kiehl & Fitzpatrick, 1995). According to Hare's Psychopathy Checklist (PCL) and its revision (PCL-R) (Hare, 1991), psychopathy is composed of two factors. Factor 1 is related to the interpersonal and affective components, whereas Factor 2 comprises traits and behaviors indicating the existence of social deviance. In other words, „psychopathy refers to pathological personality style that is interpersonally deceptive, affectively cold, behavioraly reckless, and often overtly antisocial" (Neuman & Pardini, 2014, p. 419). The Levenson Self-Report Psychopathy Scale (LSRP. Levenson et al., 1995), that we used as a measure of psychopathy in the current study, is a 26-item measure designed to assess psychopathic traits in community samples. It is composed of the primary and secondary psychopathy and constructed from items on the PCL-R in order to reflect the above-mentioned structure of psychopathy. Primary psychopathy corresponds to Factor 1, whereas secondary psychopathy corresponds to Factor 2. The primary psychopathy items were created to assess a selfish, uncaring, and manipulative toward others, and the secondary psychopathy items assess impulsivity and a self-defeating lifestyle (Levenson et al., 1995, p. 152). In other words, callous-unemotional style, selfishness and tendency to manipulate others are the characteristics of LSRP F1, and impulsive and antisocial style, lack o self-control and emotional instability are characteristic for LSRP F2. As to the relation of psychopathy and depression, only secondary psychopathy was found to be in a significant positive correlation with neuroticism (r=0.43) and with the facet depression (r=0.39, p<0.01) in the NEO-PI-R domains (Miller, Gaughan & Pryor, 2008). Some other research have shown strong and positive associations between Factor 2 or secondary psychopathy and anxiety, depression, suicidal behavior, and borderline personality disorder features (Benning, Patrick, Hicks, Blonigen & Krueger, 2003; Skeem, Johansson, Andershed, Kerr & Louden, 2007), neuroticism measured by Goldberg's International Personality Item Pool (IPIP) (Douglas, Bore & Munro, 2012), negative urgency (Anestis, Anestis & Joiner, 2009) and *poorer interpersonal functioning (irritability, withdrawal, poor assertiveness)* (Skeem et al., 2007). Emotional disturbance, social anxiety, withdrawal, moodiness, submissiveness, and low self-esteem are characteristically associated with secondary psychopathy (Blackburn, 1998). The research suggested a significant role of secondary psychopathy in relation to a higher level of psychopathology and that two factors of psychopathy should have different correlates. For instance, Burns, Roberts, Egan & Kane (2014) that *secondary psychopathy* of LSRP has been closely associated with emotional dysregulation (r=0.70), trait anxiety (r=0.68) and poor emotional skills (r=0.52). As to the biosociopsychological pathways to secondary psychopathy, Yildirim and Derksen (2015) argues that „an interaction between constitutional biology and

destructive environment...predispose to the whole range of psychopathic traits, making it the ideal candidate for the explanation of secondary psychopathy" (p. 24). Hence, the aim of the current study was to examine if comorbid relationships exist between dimensions of psychopathy and depression in a community sample of different ethnic and sex groups. *Based on the previous research, we hypothesized (1) that primary and secondary psychopathy will be positively correlated with depression, and (2) that secondary psychopathy will be much stronger predictor of depression, compared to primary psychopathy*.

METHOD

Participants and procedure

We carried out the survey on the adult population in the region of Croatia populated by citizens of Croatian nationality (a great majority belonging to the Roman Catholic Church) and Serbian ethnic minority (most who belong to the Serbian Orthodox Church). The equalized convenience sample consisted of 1100 participants, half of which were males and half of Croatian nationality. The mean age of participants was 43.5 (SD=15.3). The sample was somewhat skewed toward above-average educational attainments because such research required an adequate literacy of respondents (elementary school: 8.7%; a three-year vocational school for skilled workers: 18.7%; a four-year secondary school: 41.4%; college: 12.1%; university degree: 19.1%). This research report is a part of a much larger investigation from the field of political science, sociology, psychology, and psychiatry, carried out in the late autumn of 2013. The self-report questionnaires - of over 500 manifest variables - were administered to respondents in their own homes by the interviewers. The respondents were asked to fill the questionnaire by themselves. The filled questionnaires were picked up by the interviewers the next day.

Measures

Psychopathy was measured by the Levenson Self-Report Psychopathy Scale (LSRP) (Levenson, Kiehl & Fitzpatric, 1995) consisting of 26 items that assess both primary and secondary psychopathy. Sixteen items are designed to measure interpersonal and affective features (primary psychopathy) in addition to ten items designed to measure impulsivity and a self-defeating lifestyle. Each item was assessed on a 4-point Likert scale: (1) disagree strongly, (2) disagree somewhat, (3) agree somewhat, (4) agree strongly. The LSRP is considered as a reliable and valid means of assessing psychopathic traits in non-institutionalized (Lynam, Whiteside & Jones, 1999). The alpha coefficient for primary psychopathy was 0.79 and was somewhat lower than in Levenson and colleagues' research (alpha=0.82) but almost identical with another study where alpha for primary scale was 0.78 (Chabrol, Labeyrie, Rodgers & Levenson, 2010). The alpha coefficient for secondary psychopathy domain of the LSRP was higher in the current study (alpha=0.69) then in the original Levenson et colleagues' (1995) research (alpha=0.63), similar to Lynam and colleagues' (1999) study (alpha=0.68), and much higher than in Chabrol et colleagues' (2010) research where alpha was 0.54. Correlation between primary and secondary psychopathy was much higher in our study (r=0.57) then in Levenson and colleagues' original

work (r=0.40) or in some other studies (Hong, Kim, Han, Lee & Hyun, 2016; Miller, Gaughan & Pryor, 2008) where the correlations between these two construct were r=0.34, r=0.46, respectively), indicating a substantial association between the two dimensions of psychopathy. The total score of LSRP and both primary and secondary psychopathy were normally distributed (skewness=0.17, 0.16, 0.19; kurtosis= -0.37, -0.45, -0.23, respectively). The mean total score for the LSRP was 51.50 (SD=10.63); the mean score for primary psychopathy was 31.33 (SD=7.30); the means score for secondary psychopathy was 20.22 (SD=4.61).

Depression was measured on the scale developed and constructed on the basis of the Beck Depression Inventory-II (The BDI-II) (Beck, Steer & Brown, 1996). Depression can be thought of as having two components: the affective component and the physical or somatic component. The BDI-II reflects this and can be separated into two sub-scales. This is a 21-item self-report instrument to assess the severity of depression. The items are self-rated on a 4-point scale ranging from 0 to 3. For example, the sadness item was measured by the following scale: 0=I do not feel sad, 1=I feel sad much of the time, 2=I am sad all the time, 3=I am so sad and unhappy that I can't stand it. Our depression measure (DEPRES-1) was constructed using only the statements that indicated the most severe degree of sadness, for instance:. „I am so sad and unhappy that I can't stand it". We did the same for all depression inventory items, except the 21st item which indicated the loss of interest in sex. The respondents were asked to describe the extent to which they agree or disagree with each statement that described the most severe degree of the depression inventory item. The responses were rated on a 5-point Likert scale: (1) disagree strongly, (2) disagree, (3) neither agree nor disagree, (4) agree, (5) strongly agree. Exploratory factor analysis, using Promax rotation, was performed in order to find out the dimensionality of the DEPRES-1. Two factors were extracted explaining 59.74% of the variance. The first factor was labeled *Affective/cognitive* dimension of depression comprising the items (factorial loadings are put in the parentheses): 3. past failure (0.87), 2. pessimism (0.84), 6. punishment feeling (0.80), 1. sadness (0.79), 5. guilt dislike (0.78), 7. self-dislike (0.77) 8. self-criticalness (0.76), 4. loss of pleasure (0.64), 9. suicidal thoughts or wishes (0.58), 10. crying (0.51). The second factor was labeled *Somatic* dimension of depression comprising the items: 19. concentration difficulties (0.86), 16. changes in sleeping pattern (0.83), 20. tiredness and fatigue (0.83), 18. changes in appetite (0.74), 15. loss of energy (0.72), 17. irritability (0.72), 12. loss of interest (0.63), 14. worthlessness (0.53), 13. indecisiveness (0.49), agitation (0.40). The two latent variables of depression served as the basis for the construction of the composite variables employed in a further multivariate analysis. Alpha coefficients for the total depression scale (DEPRES-1), affective/cognitive depression scale and somatic depression scale were 0.95, 0.92, 0.92, respectively, indicating an excellent level of internal consistency. The total score of the DEPRES-1 and both affective/cognitive and somatic depression was somewhat skewed toward lower scores (skewness=0.94, 1.00, 0.89; kurtosis=0.48, 0.67, 0.19, respectively). The mean total score for the DEPRES-1 was 38.17 (SD=16.29); the mean score for the affective/cognitive depression scale was 19.31 (SD=8.51); the mean score for the somatic depression scale was

18.97 (SD=8.62). Not only the great correlation between the latent dimensions of depression (r=0.74) and its excellent internal consistency (Cronbach's alpha=0.95), but also the magnitude of eigenvalue (10.72), percentage of explained variance (53.61) and the factor loadings on the first principal component (15 items ranging between 0.70 and 0.79, 4 items ranging between 0.62 and 0.67, and 1 item with factor loading of 0.57) have proven that a measure of depression (DEPRES-1) can be used as a unidimensional composite variable, as we did in the current research.

RESULTS AND DISCUSSION

Correlations among dimensions of psychopathy and depression across different ethnic and sex groups

We wanted to see how the subscales for the psychopathy measure were correlated with depression (DEPRES-1) as a unidimensional construct. It is critical to ensure that the subscales of psychopathy do not have differential associations with the criterion variable (i.e. depression) in different ethnic and sex groups. Pearson-product moment correlation coefficients were calculated as a measure of the strength and direction of linear relationships among primary and secondary psychopathy and depression. In tables 1, 2, 3, and 4 we can see that primary and secondary psychopathy are positively correlated within the Croatian sample (0.41, 0.56, respectively), within the Serbian minority sample (0.31, 0.56, respectively). within male sample (0.35, 0.56 respectively), and within female sample (0.40, 0.54, respectively). Despite the fact that both primary and secondary psychopathy are positively associated with depression regardless of nationality and sex belongings, *we can see that secondary psychopathy is more strongly correlated with depression in Croatian, Serbian ethnic minority, male, and female samples*. We can also notice *that in the Croatian and female samples primary psychopathy is more strongly correlated with depression* compared to the Serbian minority and male subsamples. Given the strength of associations between primary and secondary psychopathy with depression, we can conclude that *Croats and females are more likely to express co-occurrence between a general psychopathy and depression* compared to Serbian ethnic minority and males.

Table 1, Correlations among subscales of psychopathy and depression in the Croatian sample (N=560)

	1	2	3
1 Primary psychopathy	1.00		
2 Secondary psychopathy	0.54***	1.00	
3 Depression (DEPRES-1)	0.41***	0.56***	1.00

***p<0.001

Table 2 Correlations among subscales of psychopathy and depression in the Serbian minority sample (N=550)

	1	2	3
1 Primary psychopathy	1.00		
2 Secondary psychopathy	0.58***	1.00	
3 Depression (DEPRES-1)	0.31***	0.53***	1.00

***p<0.001

Table 3, Correlations among subscales of psychopathy and depression in the male sample (N=513)

	1	2	3
1 Primary psychopathy	1.00		
2 Secondary psychopathy	0.58***	1.00	
3 Depression (DEPRES-1)	0.35***	0.56***	1.00

***p<0.001

Table 4, Correlations among subscales of psychopathy and depression in the female sample (N=595)

	1	2	3
1 Primary psychopathy	1.00		
2 Secondary psychopathy	0.57***	1.00	
3 Depression (DEPRES-1)	0.40***	0.54***	1.00

***p<0.001

Our first hypothesis that both primary and secondary psychopathy are positively and significantly correlated with depression in different ethnic and sex groups was confirmed. These findings are in line with those arguing the existence of a *depressive type of psychopathy* (Henderson, 1939) or *depressive psychopathy* (Schneider, 1958). The magnitude and direction of correlations between primary and secondary psychopathy and depression are in line with research that reported psychopathy to be frequently comorbid with depression (Dahl, 2003; Pennington et al., 2015; Stinson et al., 2005). The findings of current study are contrary to those who claim that psychopathy and depression are mutually exclusive or that there is an inverse relationship between the two clinical constructs (Blonigen et al., 2010; Lovelace et al., 1999; Willemsen, 2011), and does not support Kaplan and Sadock's (1998) simple statement that psychopaths simply exhibit no depression. Given the strength of correlations between primary and secondary psychopathy within Croatian, Serbian, male and female subsamples, we can assume that each component is a lower-order marker of a higher-order psychopathy dimension. Since the LSRP total score was significantly positively correlated with depression, within Croatian, Serbian, male and female subsamples, we have an evidence of the existing comorbidity of psychopathy and depression, regardless of national and national and sex belongings. It is

evident that psychopathy can predict a rise in depression (Ashley & Holder, 2014). However, we could notice that within different ethnic and sex groups *secondary psychopathy has proven to be more strongly correlated with depression* in relation to primary psychopathy.

Primary and secondary psychopathy as predictors of depression across different ethnic and sex groups

In order to determine how well scores on depression could be predicted by primary and secondary psychopathy across different ethnic and sex groups, we performed multiple regression analysis (Table 5). As in correlational analysis, composite variables were used in the regression equations. Having depression in a criterion position within Croatian and Serbian ethnic minority samples, significant models emerged: $F_{(2,514)}=129.68$, $p<0.001$; $F_{(2,478)}=97.53$, $p<0.001$, respectively. *We can see that secondary psychopathy is the strongest predictor of depression in both Croatian and Serbian sample*. However, there is a difference within these two ethnic groups. Namely, besides secondary psychopathy, in the Croation sample, primary psychopathy proved to be a statistically significant predictor of depression but to a much smaller degree. About 33% and 29% of the variance of depression were explained mainly by secondary psychopathy in different ethnic groups. Having depression in a criterion position within male and female samples, significant models emerged: $F_{(2,455)}=108.52$, $p<0.001$; $F_{(2,535)}=122.43$, $p<0.001$, respectively. Here again, *secondary psychopathy proved to be the strongest predictor of depression within male and female samples*. However, there is a difference in a sense that within the female sample primary psychopathy also contributes to depression, but to a much smaller degree. About 32% and 31% of the variance of depression were explained by secondary psychopathy within different sex groups. We can see that *secondary psychopathy is the strongest and most significant contributor to depression* in all four regression models.

Table 5, Multiple regressions of composite variables of dimensions of primary and secondary psychopathy on depression across ethnic and sex groups

	Depression			
	Croats	**Serbian ethnic minority**	**Males**	**Females**
Predictors	**(beta)**	**(beta)**	**(beta)**	**(beta)**
Primary psychopathy	0.14**	0.01	0.04	0.13**
Secondary psychopathy	0.48***	0.53***	0.54***	0.47***
**p<0.01, ***p<0.001	R2=0.33	R2=0.29	R2=0.32	R2=0.31

Dimensions of psychopathy, age, and school attainment as predictors of depression across different ethnic and sex groups

We also wanted to investigate the predictors entered after age and school attainment were introduced into the regression equations within different ethnic and sex groups so that we could determine whether the primary and secondary psychopathy account for meaning variance in the

criterion (i.e. depression) variable, above and beyond demographics. We can see in table 6 that in all regression models secondary psychopathy accounts the greatest amount of variance in depression, and primary psychopathy was proven to be a significant predictor of depression within Croats and females after age and school attainment were entered into regression models. Age was proven to be a significant predictor variable of depression within Croats, Serbs, and females. School attainment was proven to be a significant but very weak predictor of depression only within Croats and females. We can see that there are similar structures of regression models within Croatian and female samples. Psychopathy, especially its secondary domain, is a strong predictor of depression within Croatian females of older age and somewhat lower school attainment. However, a small percentage of the variance of depression was explained by age and school attainment within different ethnic and sex groups. After introducing age and school attainment into regression models, neither age nor school attainment contributed significantly to the explanation of depression. As to Croats, Serbs, and females, 2%, 1%, 4% of the variances are additionally explained after entering age and school attainment.

Table 6, Multiple regressions of composite variables of dimensions of psychopathy, age, and school attainment on depression across ethnic and sex groups

	Depression			
	Croats	Serbian ethnic minority	Males	Females
Predictors	(beta)	(beta)	(beta)	(beta)
Primary psychopathy	0.17***	0.02	0.05	0.16***
Secondary psychopathy	0.45***	0.50***	0.51***	0.43***
Age	0.10**	0.11**	0.04	0.15***
School attainment	-0.08*	-0.06	-0.06	-0.07*
*$p<0.05$, **$p<0.01$, ***$p<0.001$	R2=0.35	R2=0.30	R2=0.32	R2=0.35

Our second hypothesis was also confirmed: the results of multiple regression analysis have shown that second psychopathy was much stronger predictor of depression compared to primary psychopathy within different ethnic and sex groups that is line with the findings of other research (Benning et al., 2003; Blackburn, 1998; Miller et al., 2008; Skeem et al., 2007). The current research suggests a significant role of secondary psychopathy in relation to mood disorders and emotional dysregulation (Burns et al. 2014). A very small percentage of the variance of depression explained by age a school attainment indicated that secondary psychopathy accounts for meaningful variance in the criterion (i.e. depression). Since the comorbidity of psychopathy and depression may predict a number of more toxic and psychosocial problems (Chabrol et al., 2010; Price et al., 2012) and even very serious spiritual problems (Šram, 2017), it was important to find the way and degree to which psychopathy and depression interact to help psychologists and psychiatrists in understanding what is being measured. However, it is not possible, as Craig S. Neumann told me in personal communication (2017), to study causal relations between

psychopathy and depression with cross-sectional data. We can say therefore that a limitation of the current study is its cross-sectional design that prevents causal relationships and developmental interpretations. More research should be carried out to investigate the role of psychopathy, especially its secondary component, in the development of depression or, perhaps, vice versa in order to diagnose the existence of depressive psychopathy. An important limitation of this study is with regards to the measures of psychopathy and depression if treated as multidimensional constructs of different models of psychopathy and depression.

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