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TRAUMATIC EVENTS AND PERSONALITY FEATURES IN BORDERLINE PERSONALITY DISORDER

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SUMMARY

Background: In attempting to explain borderline personality disorder (BPD) researchers have paid particular attention to biological factors, i.e. temperament, and to parental influence, especially involving early childhood trauma. The goal of our research was to determine what traumatic factors (early childhood trauma affecting attachment style, defensive dissociation, and the experience of trauma in adolescents and adulthood) and non-traumatic factors (temperament) influence the development of BPD.

Material/ Methods: The Polish version of Leischenring's Borderline Personality Inventory (BPI) was used to identify a group of persons with this disorder. Attachment style was measured using Fraley and Brenn's Experiences In Close Relationships - Revised; temperament was measured using Zawadzki and Strelau's FCZ-KT Temperament Questionnaire; the intensity and areas of dissociation were measured with Juris's Dissociation Scale; and trauma in adolescence and childhood was measured with Essenski's Trauma Questionnaire. We examined 134 students, ranging in age from 24 to 45 years; 65% were women. In this group, 37 showed signs of BPD.

Results: Step-wise regression analysis revealed that the four domains of the BPI (identity diffusion, primitive defense mechanisms, impaired reality testing, and fear of closeness) are associated with the fearful or avoidant attachment style, the use of dissociative mechanisms, and sensitivity as a feature of temperament.

Conclusions: The four dimensions of BPD are primarily conditioned by early childhood trauma and dissociation as a defense mechanism. Trauma in adolescence and adulthood did not correlate with the intensity of borderline symptoms.

Key words: early childhood trauma, trauma in adulthood, temperament, dissociation

INTRODUCTION

Much research in developmental psychopathology has been focused on clarifying the cause and effect relationships between the experience of trauma at various stages in life and the individual's mental health. Many research projects have attempted to answer two important questions:

1. What consequences for health and mental disorders are entailed by early childhood relational trauma and trauma caused by critical life events in adulthood?
2. What specific mental pathomechanisms are activated under the influence of the interaction of features of temperament or personality and the experience of trauma?

Clarifying the associations between traumatic stress and features of personality could make it possible to predict an individual's susceptibility to various mental disorders, especially borderline personality disorder (BPD), and to create adequate prevention programs (Paris, 2010; Cierpiałkowska, 2010; Yen et al., 2002).

Psychodynamic, cognitive, and integrational approaches have been used to explain how BPD is conditioned by both biological factors (especially temperament; Paris, 2010; Linehan, 1993) and the child's experience in its relationship with its mother (Kernberg, 1980, 1996; Pretzer & Beck, 1996). Taking into account the significance of an unbalanced structure of temperament and the impact of the family environment, clinicians have described both a traumatic and a non-traumatic path for the development of BPD. While the traumatic path was explained by psychoanalysis, together with the distinction of a class of mental disorders on the border between psychosis and neurosis (Grotstein, 1979), the non-traumatic path, emphasizing the importance of biological factors, has been developed relatively recently, but it has not been convincingly confirmed in research that excludes any environmental impact (Plomin et al., 2001).

In the non-traumatic path, greater importance is ascribed to the properties of the central nervous system, which manifest themselves in features of temperament that predispose the individual to very intense, often violent, persistent, and poorly restrained negative emotional reactions under the influence of relatively weak external stimuli (cf. Graybar & Boutilier, 2002; Sansone & Sansone, 2007). A non-specific biological susceptibility to emotional dysregulation may be reinforced by familial or non-familial factors, such as an environment of belittlement, which supports the development of the symptoms characteristic of BPD (Linehan, 1987, 1993).

Retrospective and prospective research usually confirms the hypothesis that personality disorders arise from the experience of traumatic events in early childhood, or even later in life (cf. Weber, Rockstroh, Borgelt et al., 2008; Masten et al., 2005; Van Dijke et al., 2012). The formation of the disorder is explained primarily by the consequences of the individuals' experience of a major stress load in early childhood, i.e. emotional neglect, rejection or abandonment, physical or

mental mistreatment, or sexual abuse (cf. Kernberg, 1976, 1996; Van der Kolk, 2005; Graybar & Boutilier, 2002). Attention has also been drawn to the correlation between stress overload in early childhood and an increased susceptibility to emotional problems in adolescence, which increase the risk of mental disorders, including personality disorders, that may manifest themselves later in life. A high level of stress may effect the functional and structural systems of the brain that are just taking shape in childhood and adolescence, including the neuroendocrinological system. Representatives of object-relation theory argue that early childhood trauma involving relationships leads to the formation of internal operational models of non-secure attachment (Dozier, Stovall & Albus, 1999; Blatt, Auerbach & Levy, 1997), which co-occur with primitive defense mechanisms, such as dissociation, projection, and projective identification (Kernberg, 1996; Holmes, Brown & Mansell et al., 2005), and this determines the patterns of the individual's cognitive, emotional, and social behaviors towards self and others. For example, in research by Fonagy et al. (1996) as many as 75% of persons with BPD were found to have the preoccupied attachment style, while in other research the percentage was even above 80% (cf. Buchheim & Lamott, 2003). Non-secure operational attachment models - the preoccupied style ("ambivalent" in the terminology of Lyddon & Sherry, 2001) to a greater extent than the fearful style - cause serious difficulties in the regulation of emotions, either as a result of hyperactivization of the model of attachment (that is, excessive concentration on searching for the object of attachment as a necessary condition for regaining equilibrium) or disactivization (turning attention away from thoughts and feelings associated with the availability of the caregiver). Such difficulties in regulating emotions can take on the form of either internalizing or externalizing disorders (Greenberg, 1999).

Presently, an effort is also underway to describe and explain the genesis and course of BPD as a result of traumatic stress in adulthood. This path for the development of a pathology of character leads through the appearance of symptoms of Post-Traumatic Stress Disorder (PTSD), first acute and then chronic, which then becomes permanent features of personality. If, under the influence of unfavorable personality and situational factors, the symptoms of PTSD persist for two years or more, then the pathomechanism of "complex PTSD" (Herman, 1992) may appear, which may be expressed in the form of somatoform and dissociational disorders or disorders of affect regulation, which activate behaviors intended to assuage pain and mental suffering (Briere & Scott, 2010). As previously mentioned, Linehan (1993) maintained that persistent mechanisms of emotional dysregulation lead to the formation of BPD.

The goal of our research was to determine the importance of the following factors for the explanation of the source of BPD, defined in accordance with the premises of Otto Kernberg (1996):

- features of temperament;
- the experience of early childhood trauma, indicated by attachment styles and symptoms of dissociation;
- trauma in later stages of the individual's development.

Kernberg (1967, 1996, 2004), one of the creators of object relation theory, has developed the most original concept of the preconditions for the development of BPD and borderline personality organization. His conclusions have served not only to describe the symptoms of BPD, consistent with the clinical picture presented in DSM-IV (1996), but also to reach conclusions regarding its preconditions and pathomechanisms. Kernberg's concept demonstrates how this organization comes about from childhood to adulthood, pointing to the importance of both temperamental factors and early childhood trauma in the relation between mother and child. Kernberg gave particular attention to explaining the dependency between trauma and dissociation, which to a certain extent has been confirmed by the research of a group of Viennese psychoanalysts (Löffler-Stastka, Szerencsics & Blüml, 2009). A stress overload caused by such events in childhood as the experience of inconsistency in parental behavior, mental violence, and sexual abuse, show the strongest correlation with various forms of dissociation.

MATERIAL AND METHODS

A group of persons with BPD was selected in accordance with the criteria suggested by Kernberg (1996) and Gunderson (cf. Gunderson & Kolb, 1978), using Leichsenring's Borderline Personality Inventory (BPI), in a Polish adaptation by Cierpiałkowska (Leichsenring, 1999; Cierpiałkowska, 2001). This instrument serves to diagnose BPD according to the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV; APA, 1996), as well as borderline personality organization. The BPI contains four scales measuring the symptoms of BPD in the following dimensions:

- Identity diffusion;
- Primitive defense mechanisms, such as dissociation, projection, and projective identification;
- Impaired reality testing (differentiating external from internal reality);
- Fear of closeness.

Depending on the severity of the borderline disturbances, the dimensions of the pathology of character can be placed on a continuum from least to most severe. Leichsenring used factor analysis to distinguish six aspects of the functioning of persons with BPD. The items which had the highest values of factor loading in describing these various domains of functioning were used to create the four scales mentioned above. The items with the highest discriminative power were used by Leichsenring to create a shortened version of the BPI, known as the Cut-20. A score of 20 or more points on the full questionnaire, or 10 or more points on the Cut-20, justifies a diagnosis of borderline personality organization (Leichsenring, 1999).

The characteristics and profile of temperament were tested using the Formal Characterization of Behavior – Temperament Questionnaire (Formalna Charakterystyka Zachowania – Kwestionariusz Temperamentu – FCZ-KT) by Zawadzki

and Strelau (1997). Consistent with the regulatory theory of temperament, the FCZ-KT measures one of the dimensions of personality that manifests itself in the formal features of behavior: energy and time. The questionnaire consist of six scales, each of which measures one of the following features of temperament:

- liveliness;
- perseveration;
- sensory sensibility;
- emotional reactivity;
- resilience;
- activity.

The questionnaire consists of 120 items (each scale has 20 items), to which the subject answers yes or no. The higher the score, the greater of the intensity of the feature of temperament it tests. All the scales have satisfactory validity and reliability (Zawadzki & Strelau, 1997).

In order to examine attachment style we used a scale entitled Experiences In Close Relationships - Revised (ECR-R) by Fraley, Waller and Brennan (2000), in a Polish adaptation by Zielona-Jenek (2006). This instrument are based on the assumptions of the model of attachment developed by Bartholomew and Horowitz (1991), in which the internal operational models of attachment are characterized in two types of relationships with other persons: fearful and avoidant. The ECR-R consists of 36 items that describe different convictions, expectations, and experiences in partner relations; each of the subscales measuring fearfulness and avoidance has 18 items.

The Dissociation Scale (Jurys, 2002) measures the intensity of one of the dimensions of emotional regulation, which consists in the application of the following defense mechanisms in response to concrete stimuli:

- not remembering essential information;
- dispersion of somatic sensations;
- a feeling of the unreality of one's own body;
- a feeling that one's own thoughts and sensory experiences are alien.

The causes of such a way of reacting to stressful stimuli are thought to lie in stressful and traumatic events experienced in early childhood and/or a later period in life. The scale consist of 75 statements describing dissociative experiences in various forms, derived from three scales:

- The DES by Bernstein and Puttnam (1986);
- The PAS by Sanders (1986);
- The DIS-Q by Vanderlinden et al. (1993).

The Dissociation Scale measures 9 dimensions, using the following subscales:

- Feeling of continuity of self (PCJ);
- Feeling of internal coherence (PWS);
- Ambitendency (AT);
- Body perception (SC);
- Body feeling (OC);

- Sensory experiences (DZ);
- Control (KN);
- Absorption in reality (AR);
- Attitude towards reality (SR).

In order to measure the type and intensity of traumatic events and the symptoms of Post-Traumatic Stress Disorder (PTSD) and Acute Stress Disorder (ASD) in our subjects, we used the Essenski Trauma Inventory (ETI; Tagay, Erim, Mollering & Senf, 2007). This questionnaire consists of five parts and contains a total of 58 questions or descriptions of traumatic events. Part I consists of 14 descriptions of traumatic events and one further item which enables the subject to mention an event they have experienced that is not included in the questionnaire. Part II makes it possible to classify traumatic events in time and to indicate which of them is the worst. The consequences of experiencing this "worst event" are tested by the next three sections, which serve to identify the magnitude and intensity of the symptoms of PTSD and ASD.

Research group

The results presented in this article were obtained as part of a larger research program conducted in the Department of Health Psychology and Clinical Psychology at the Adam Mickiewicz University in Poznań, Poland, led by the first author of the present study. This research was designed to verify a set of assumptions regarding the factors conditioning personality disorders, especially BPD. The subjects were residential and non-residential students of various subjects, ranging from 24 to 45 years of age, of whom 65% were women and 35% were men.

The analysis below involves data gathered from 134 people. They were divided into groups based on the intensity of any borderline symptoms, as measured by the BPI (Leichsenring, 1999; Polish adaptation by Cierpiałkowska, 2001), which covers symptoms in four dimensions:

- Identity diffusion;
- Primitive defense mechanisms;
- Impaired reality testing;
- Fear of closeness.

The use of Leichsenring's score enabled us to distinguish two groups of persons with BPD:

- Non-clinical BPD, consisting of 37 persons whose BPI score was 20 points or higher;
- Non-BPD, consisting of 97 persons whose score was 19 points or less.

RESULTS

Our first hypothesis was that there exists a connection between attachment style (specifically, the fearful and avoidant styles) and the intensity of four BPD symptoms: identity diffusion, primitive defense mechanisms, impaired reality test-

ing, and fear of closeness. A secure attachment style was manifested by 54 persons, the preoccupied style by 68, the avoidant style by only 6, and the fearful style by 15. A single-variable analysis of variance was applied, and the F and p values thus obtained are presented in Table 1.

The means in the subgroups when sorted in respect to attachment style differ significantly, which means that in the tested domain there are significant dependencies among the variables. The individuals with secure and non-secure (preoccupied, fearful, or avoidant) attachment styles differ significantly from each other in their scores on all dimensions of the BPI, and the pattern of dependency is identical. The lowest intensity of symptoms in respect to all four dimensions of the BPI were found in the group of persons with a secure attachment style, and a similar level was found in persons with preoccupied and fearful styles, while the highest scores were obtained by the subjects with an avoidant style. This is in contrast to the results obtained in other research, where persons with borderline symptoms have usually been found to manifest predominantly the preoccupied style.

One of the important tasks we set ourselves in this research probject was to analyze the dependency between the genetically conditioned features of temperament and the intensity of the four dimensions of BPD symptoms indicated by Kernberg (1967). Table 2 presents the direct r-Pearson correlation factors between the dimensions of temperament and the dimensions of BPD in the entire research group.

These results indicate clearly that, of all the measured dimensions of temperatment, the ones that best explain the variance in the dimensions of BDI are emotional reactivity and liveliness. The strength of the association between emotional reacitivity and the four dimensions of the BPI ranges from 0.239 in the case of impaired reality testing to 0.503 in the case of primitive defense mechanisms. These are positive correlations, which means that an increase in emotional reactivity (i.e. the intensity with which the individual reacts to stimuli that

Table 1. Analysis of variance of the dimensions of the BPI in groups differentiated by attachment styles

		Idenity diffusion		Primitive defense mechanisms		Impaired reality testing		Fear of closeness	
		M	SD	M	SD	M	SD	M	SD
secure (n=45)		1.39	0.37	1.58	0.47	1.27	0.39	1.46	0.34
preocc (n=68)		1.95	0.61	2.16	0.60	1.51	0.51	1.99	0.49
dismiss (n=6)		2.28	1.06	2.48	0.78	1.75	0.94	2.50	0.86
fearful (n=15)		1.91	0.53	2.33	0.70	1.58	0.60	2.41	0.53
ANOVA	F	11.28		12.44		3.33		22.60	
	Signficance	0.000		0.000		0.022		0.0000	

Table 2. Correlation coefficients for the variables of temperament and the dimensions of the BPI (n=134).

	Idenity diffusion	Primitive defense mechanisms	Impaired reality testing	Fear of closeness	Overall result
Liveliness	-.319**	-.333**	-.256**	-.286**	-.328**
Perseveration	.256**	.365**	.153*	.274**	.288**
Sensory sensibility	-.143*	-0.141	-.153*	-0.079	-0.126
Emotional reactivity	.369**	.503**	.239**	.406**	.418**
Resilience	-.261**	-.330**	-0.075	-.298**	-.315**
Activity	-0.128	-0.123	-0.030	-0.124	-0.066

** Correlation significant at the level of of $p < 0.01$ (one-tailed).
* Correlation significant at the level of of $p < 0.05$ (one-tailed).

evoke emotions) brings an increased intensity of BPI symptoms. This pattern of dependency is entirely as expected and confirms the results obtained by other researchers.

A somewhat weaker, but still significant association was revealed in the case of liveliness, i.e quick reaction, maintaining the tempo of activity and easy changes of behavior into forms appropriate to changes in the environment. For this feature of temperament the coefficients of correlation with the dimensions of the BPI fell within the interval between -0.256 and -0.333. The negative associations in this case mean that the lower the level of liveliness, the greater the frequency of BPD in all four dimenions: identity diffusion, primitive defense mechanisms, impaired reality testing, and fear of closeness. The associations between the dimensions of the BDI and resilience were similar, although the correlation with impaired reality testing proved to be non-significant.

The feature of temperament that was least associated with the dimensions of the BPI was activity, i.e. the tendency to engage in highly stimulative behaviors or behaviors intended to provide external stimulation. None of the correlation coefficients for this variable reached the assumed level of statistical significance.

Since the present study was focused on persons with BPD, Table 3 presents the coefficients of correlation between the dimensions of temperament and the dimensions of the BPI, but with division into groups. The coefficients for the non-clinical borderline group and the healthy group (no BPD symptoms) are presented separately.

It turned out that the pattern of dependency between variables changes significantly. The associations between liveliness and the dimensions of the BPI that are significant when the entire research group is included proved to be non-significant when the groups are analyzed separately. The relation between liveliness and fear of closeness was still significant, but only for the non-clinical borderline group. A very similar thing occurred in the relation between activity and the dimensions of the BPI. As in the case of liveliness, the correlation be-

Table 3. Correlation coefficients for the variables of temperament and the dimensions of the BPI with divisions into groups

		Idenity diffusion	Primitive defense mechanisms	Impaired reality testing	Fear of closeness
Liveliness	Non BPD (n=97)	-.182*	-0.166	-0.137	0.006
	Non-clinical BPD (n=37)	-0.130	-0.234	-0.183	-.336*
Perseveration	Non BPD (n=97)	.186*	.256**	0.157	.224*
	Non-clinical BPD (n=37)	-0.007	0.270	-0.110	-0.063
Sensory sensibility	Non BPD (n=97)	-0.032	-.169*	-0.062	0.072
	Non-clinical BPD (n=37)	-0.142	0.144	-0.189	-0.102
Emotional activity	Non BPD (n=97)	.372**	.438**	.215*	.202*
	Non-clinical BPD (n=37)	0.030	.372*	0.016	.453**
Resilience	Non BPD (n=97)	-.240**	-.301**	-0.065	-0.085
	Non-clinical BPD (n=37)	0.040	-0.047	0.170	-.330*
Activity	Non BPD (n=97)	-0.133	-0.150	-0.013	-0.087
	Non-clinical BPD (n=37)	-0.251	-0.185	-0.073	-.361*

** Correlation significant at the level of of $p < 0.01$ (one-tailed).
* Correlation significant at the level of of $p < 0.05$ (one-tailed).

tween activity and fear of closeness turned out to be significant in the persons who had score of 20 or higher on the BPI. This may indicate that there is a certain threshold, and when it has been crossed, there is a linear – indeed proportional – relationship between these variables.

The relations between perseveration and the dimensions of the BPI remained significant, but only in the group without any BPD symptoms. This result would justify the conclusion that there is a positive linear dependency between perseveration and both primitive defense mechanisms and fear of closeness, but beginning at a certain level of the tendency to perseveration there is no further increase in the intensity of BPD symptoms.

Interesting changes also occured in the case of resilience. This variable turned to out to correlate positively with primitive defense mechanisma and identity diffusion in the group with no BPD, and with fear of closeness in the group with non-clinical BPD. Thus, once the threshold on the BPI regarded as essential for diagnosing BPD has been crossed, further intensification of BPD is not accompanied by a progressive reduction of resilience. It seems important, however, to point out that resilience is inversely proportional to the intensity of fear of closeness, just as in the case of liveliness and activity.

In the case of emotional reactivity, though the strength of association with the dimensions of BPI went down in both groups, still, the direction of dependence remained the same.

In the next phase of analysis, we found that traumatic events in adolescence and adult life had occurred in both the group of persons with BPD and the com-

parative group. In the whole research group, 21.6% had not experience any traumatic events, while 78.4% had experienced at least one, and the remainder, two or more. These last two groups either personally experienced or witnessed the following traumatic events:

- serious illness – 53.9%;
- loss or death of a friend or family member – 40.4%;
- physical or mental violence from strangers – 36.3%;
- a serious accident – 32.4%;
- a natural disaster – 19.6%;
- rejection or neglect by a friend or family member – 14%;
- limitation of personal freedom – 10.8%;
- violence within the family during adolescence – 8.8%;
- sexual abuse – 2%.

They also spontaneously mentioned other events, most commonly parental divorce and/or breaking up with a partner. The events they regarded as most burdensome were the loss or death of a friend or family member, breaking up with a partner, a serious illness, an accident, rejection or serious neglect by the family, or violence by strangers in adolescence.

Table 4 presents the results of our effort to the verify the hypothesis that there is a dependency between the occurrence of traumatic events in one's personal history and an intensification of the four dimensions of the BPI: identity diffusion, primitive defense mechanisms, impaired reality testing, and fear of closeness.

It turned out that the presence of traumatic events significantly differentiated the level of three out of the four dimensions of the BPI: identity diffusion, primitive defense mechanisms, impaired reality testing. The only dimension for which the level of statistical significance was not reached was fear of closeness, which, given the assumptions, seems to confirm the hypothesis that later trauma is of less importance for changes in the internal operating models of attachment. In the remaining cases persons experiencing difficult, critical, and traumatic events displayed a significantly higher level of symptoms characteristic for the four dimensions of the BPI.

Table 4. Significance of differences in the intensity of the dimensions of the BPI between the groups of persons with and without traumatic experiences

		Idenity diffusion		Primitive defense mechanisms		Impaired reality testing		Fear of closeness	
		M	SD	M	SD	M	SD	M	SD
with traumatic events		1.87	0.71	2.13	0.68	1.52	0.57	1.95	0.64
without traumatic events		1.66	0.46	1.84	0.57	1.36	0.44	1.8	0.48
t-Test for equality of means	t	2.012		2.666		1.786		1.505	
	df	125.2		132		132		130.8	
	sig. (1-tailed.)	0.023		0.005		0.038		0.068	

In order to determine the extent to which such independent variables as early childhood trauma (operationalized in the categories of attachment style), various syptoms of dissociation, features of temperament, and the magnitude of trauma experienced in adolescence and adulthood explain the variance of results in the four dimensions of the BPI (the dependent variables), we used step-wise regression analysis. Among the independent variables the following dissociative symptoms measured by the Dissociation Scale were included:

- feeling of continuity of self (PCJ);
- feeling of internal coherence (PWS);
- ambitendency (AT);
- body perception (SC);
- body feeling (OC);
- sensory experiences (DZ);
- control (KN);
- absorption with reality (AR);
- attitude towards reality (SR).

The results presentd below concern the group of persons with the "psychometric" diagnosis, i.e. a group with non clinical BPD (n=37). For each of the tested dimensions of the BPI, a different set of independent variables explained the highest percentage of variance in the results. In one instance (primitive defense mechanisms) only one independent variable proved to be a significant predictor. The results are presented in Table 5.

Attention should be drawn to the fact that all four models displayed good statistical parameters. The percentage of variance explained for the four dimensions of the BPI ranged from 31.9% to 49.7% Three of the dimensions of the BPI (identity diffusion, impaired reality testing, and fear of closeness) were explained by the variables of dissociation, temperament features, and attachment (in terms of anxiety and avoidance). The variable of trauma experienced in adolescence

Table 5. Models of multiple regression for the dependent variable of the dimensions of the BPI: non-clinical group

	Idenity diffusion	Primitive defense mechanisms	Impaired reality testing	Fear of closeness
Variables in the model	Attitudes towards reality (-0.446) Anxiety (0.515) Feeling of internal coherence (-0.451)	Ambitendency (-0.586)	Feeling the body (-0.635) Sensibility (0.310)	Feeling of continuity of self (-0.516) Avoidance (0.356)
R-squared	0.551	0.343	0.688	0.439
Corrected R-squared	0.497	0.319	0.473	0.396
F	10.222	14.112	11.661	10.184
Signficance	0.000	0.001	0.000	0.001

and adulthood did not explain the symptoms of BPD. In the case of identity diffusion, the significant variables proved to be attitude towards reality, feeling of internal coherence (inversely proportional), and anxiety (positive). In the case of fear of closeness, the essential predictors were the feeling of continuity of self (negative) and avoidance (directly proportional). Among all the dimensions of dissociation the most fully represented domain included the feeling of continuity and coherence of the self, which is comprised in the following subscales:

- feeling of continuity of self;
- feeling of internal coherence;
- ambitendency.

The remaining two domains of dissociation (the one referring to body perception and body-related experiences), as well as a third domain dealing with the understanding of reality, are represented by one variable each. Both the variables that refer to attachment style, i.e. fearfulness and avoidance, appeared in the tested models, although they were significant for different sections of the BPI. Fear of bonding and closeness better explained disturbances of identity, while avoidance of the objects of bonding explains fear of closeness in BPD. One feature of temperament - sensibility - proved to be significant for the explanation of impaired reality testing, along with the variable indicating dissociation of bodily experiences. A higher level of sensibility causes stronger emotional reactions, and this does not support adequate testing of internal and external reality.

DISCUSSION AND CONCLUSIONS

Contemporary theory and research aimed at explaining the causes of BPD claim that both biological and family factors are essential (Paris, 2010; Kernberg, 1996; Linehan, 1993). Among the biological causes, a particularly important role is assigned to features of temperament, especially non-harmonized structure (Górska, 2006), which manifests itself in the form of a strong tendency to overstimulation. Among the familial and non-familial factors, the most important seems to be the experience of early childhood trauma or trauma later in life. The most important role is assigned to a specific style of parenting and/or significant deficits in this respect, which consequently take on the significance of traumatic events. The child's experience in its relationship with its mother affects the formation of interior working models of attachment and a specific mechanism of emotional regulation that continues to be shaped by primitive defense mechanisms (Fonagy et al., 1996). Our research was intended to determine the importance of such independent variables as attachment style, features of temperament, dissociative defense mechanisms, and trauma experienced in adolescents and adulthood for the appearance of symptoms of BPD, as described by Kernberg (1967) in four dimensions: identity diffusion, impaired reality testing, primitive defense mechanisms, and fear of closeness.

The research was conducted on a non-clinical group. Using Leichsenring's BPI, we identified a group of persons with borderline personality organization

(on the entire scale they had scores of 20 points and more) and a comparison group, which had 19 points or less on the entire scale. The comparison group included 97 persons, while the research group had 37. In order to answer the question regarding the source of the symptoms of personality disorder on the four dimensions of the BPI, we compared the average results in respect to such variables as features of temperament, symptoms of dissociation in different domains of functioning, attachment styles, and the type of traumatic events in adolescents and adulthood. The non-secure attachment style (Bowlby, 1973, cited by Dozier, Stovall & Albus, 1999) and strong symptoms of dissociation (cf. Kernberg, 1996, 2004) were regarded as indications of the occurrence of trauma in early childhood.

A comprehensive analysis of the results indicated that the percentage of variance explained for the four dimensions of the BPI ranged from 31.9% to 49.7% Identity diffusion, impaired reality testing, and fear of closeness are explained by the variables of dissociation, features of temperament, and attachment styles in terms of fearfulness and avoidance. In the case of identity diffusion, the significant predictors proved to be the attitude towards reality, the feeling o internal coherence, and anxiety. In the case of fear of closeness, the significant predictors were feeling of continuity of self and avoidance. The fear of bonding and closeness better explains disturbances of identity, whereas the avoidance of objects of bonding better explains the fear of closeness in BPD. Sensibility as a feature of temperament proved to be significant for explaining disturbances of impaired reality testing, along with dissociation of bodily experiences. Higher levels of sensibility cause stronger emotional reactions, intensifying emotional dysregulation, which impairs adequate testing of external and internal reality.

The variable of trauma experienced in adolescence and adulthood did not prove to be a predictor of BPD. This would indicate that the experience of early childhood trauma, which in our study was operationalized by attachment style, is a significant factor of the formation, first of emotional dysregulation, and then of the pathomechanisms of BPD, more so than traumatic experiences in a later period of life. We obtained different results in research on a clinical group of persons with BPD, since for them the experience of trauma in adolescents and adulthood had great significance in the pathomechanism of their disorder (Cierpiałkowska & Pasikowski, 2012). This problem requires further research and inter-group comparisons.

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