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A MULTIDIMENSIONAL MODEL OF EMPATHY, AND THE OCCURRENCE OF PERSONALITY DISORDERS AND STRESS IN SOCIAL SETTINGS

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SUMMARY

Background:

Empathy has been the object of increasing attention, not only in the context of interpersonal functioning, but also in psychopathology. The contemporary model of empathy assumes that it has three components: 1) empathic concern (the capacity to share feelings and express sympathy for people who have encountered misfortune); 2) perspective taking (the tendency to understand another's point of view); 3) personal distress (taking on another person's negative feelings). The goal of our research was to analyze how the contemporary model of empathy may be related to personality disorders and the stress felt in situations of daily life.

Material/ Methods:

We used the Empathic Sensitiveness Scale (SWE), the Masculine Gender Role Stress (MGRS) Scale, the Feminine Gender Role Stress (FGS) Scale, and the IBZO-DSM-IV Inventory as a diagnostic instrument. The correlations were analyzed between empathy, personality disorders, and gender role stress. One hundred and eighty persons (110 women) participated in the research.

Results:

Personal distress correlated positively with personality disorders, while perspective taking correlated negatively. Emotional empathy correlated positively with the tendency to experience gender role stress, whereas perspective taking correlated negatively with masculine role stress.

Conclusions:

Our results confirm a relationship between disturbed mechanisms of emotional regulation (personal distress), personality disorders according to DSM-IV, and stress. Persons who share another's negative emotions have problems with realizing social expectations. The ability to grasp another person's perspective is associated with lower risk of personality disorders and gender role stress. This is essential for diagnostic and therapeutic work with persons with personality disorders.

Key words: interpersonal behavior, affective contagion, psychopathology

INTRODUCTION

The concept of empathy has recently begun to play an increasingly significant role in explaining human interpersonal behavior, as well as various phenomena in psychopathology. This interest has produced not only considerable research, but also theories of empathy in the literature, as well as an understanding of its implications for the practice of psychology and medicine. There is a consensus in the psychological literature that empathy, defined as the capacity to understand the emotions of other people and to resonate emotionally with the social environment, plays an essential role in interpersonal relation (Decety & Moriguchi, 2007; Kazmierczak, 2008), and that it is a multi-dimensional construct which includes the ability to perceive, understand, and feel the emotions manifested by other people (Singer & Lamm, 2009). Thus the contemporary model of empathy assumes that it has three components:

- empathic concern, understood as the capacity to share feelings with and express sympathy for persons who have encountered misfortune;
- perspective taking, i.e. the willingness to make the effort to understand another's point of view, a function of the capacity to move beyond one's own ego;
- personal distress, which includes one's own feelings of distress, fear, or discomfort in response to the suffering of other people (Davis, 1994; Kazmierczak, Plopa & Retowski, 2007).

There are also important differences between women and men in respect to all the components of empathy, especially the emotional (Davis, 1994). These differences can be explained on at least three levels:

- biological – temperamental sensitivity (Strelau, 2006);
- evolutionary – strategies involved in survival and reproduction (Buss, 2000);
- social – the effect of gender stereotypes (Eisenberg & Lennon, 1983).

Brook and Kosson (2012) argue that empathy basically means sharing the affective states of other people (a mechanism called “affective contagion”), something which happens automatically, outside of conscious control. The brain structures thought to be responsible for this phenomenon are the limbic system and surrounding cortical structures (Blair, 2005; Decety & Jackson, 2004; Hatfield, Cacioppo & Rapson, 1994; Smith, 2006). According to Beck (2004), the cognitive theory of disturbances emphasizes above all the role of information processing in activating the cognitive, affective, motivational, and behavioral reactions that form adjusted and maladjusted patterns of functioning. These patterns are based on genetic and evolutionary factors, and are shaped by biological temperament, developmental experience, and learning.

It is particularly interesting to analyze the concept of empathy not only in the context of clinical research, but also in reference to non-clinical groups. In the research on empathy, a particular role has been played by neuropsychological and neurocognitivist research. In neurocognitivist discussions it remains an open question whether empathy constitutes a unitary construct, or is rather a complex of loosely associated elements of this system, which are activated in particular

circumstances. According to Blair (2005), it is possible to speak of empathy from a neurocognitive perspective, as of a construct with cognitive, emotional, and motor components. The research done on this problem on various kinds of mental disorders involving disturbances of emotional regulation would seem to support the position that empathy is a complex of mechanisms. The reported results point to diverse deficits in emotional regulation associated with empathy in patients who present various types of disturbances (cf. Montag et al., 2007; Rogers et al., 2007; de Oliveira-Souza et al., 2008, Pastwa-Wojciechowska, 2008, Williams & Wood, 2010, Brook & Kosson, 2012), and also in children (e.g. children with ADHD, cf. Czaplewska & Lipowska, 2008).

Taking into consideration aforementioned theses, we might conclude that research on empathy has been focused on both the tendency or ability to express empathy towards others and on the structure of empathy itself. In research using neuroimaging, Benedetti et al. (2009) found stronger arousal in the right superior temporal gyrus (STG) in reference to the emotional aspect of empathy, and stronger arousal in the right posterior STG in reference to the cognitive aspect of empathy in patients with schizophrenia in comparison to the control group, which displayed the opposite pattern of arousal. Lee et al. (2010) also observed stronger arousal in the right STG in the context of cognitive empathy in a group of schizophrenic patients in comparison to their control group. Derntl et al. (2012) conducted research exploring the neuronal correlates of a dysfunctional empathic reaction, and found that the intensity of symptoms is particularly strongly associated with abnormal emotional regulation. The problem of emotional regulation associated with empathy has also been studied in reference to obsessive-compulsive disorder (OCD) by Fontenelle et al. (2009). The authors hypothesized that by including empathy in their research on OCD they would be able to distinguish types of OCD. For example, higher level of empathy may lead to over-evaluation of certain thoughts and help to explain relationship between attachment system and OCD and emotional regulation (Mikulincer & Shaver, 2010). Fontenelle et al. (2009), in their research, found that an elevated level of empathic concern could be a factor predisposing the individual to the feelings of guilt or symptoms of depression that are so frequently seen in OCD patients. These authors found a significantly higher level of empathic concern and personal distress in these patients in comparison to the control group. The emotional functioning of these patients is thus characterized by a tendency to excessive preoccupation with the emotions of other people, primarily by generating negative emotional states (the results for personal distress are especially significant). To be sure, there are also data pointing to the possibility of distinguishing an autistic type of OCD (cf. Bejerot et al., 2001), characterized by a reduced capacity to experience empathic concern.

The capacity to experience empathy also appears to be essential in research on depression and its psychological correlates, since, as shown by Baumeister and Leary (1995), the need to belong to a group and the development of competence in emotional regulation in social relations is one of the fundamental human motivations. O'Connor et al. (2002) found an especially strong association

between depression and personal distress (as a parameter of empathy), which emphasizes the role of disturbed emotional regulation as a cause of numerous difficulties in social relations. A similar type of dysfunctional emotional regulation occurs in borderline disturbances. Research by Dziobek et al. (2011) has proved not only that borderline patients are characterized by higher personal distress, but also that they manifest an impaired capacity to feel empathic concern. These patients were also less capable of perspective taking, which significantly impairs their social functioning. This research included fMRI studies. The results indicated that in borderline patients there is less activation of the STS/STG regions during stimulation associated with cognitive empathy. These patients also proved to be less capable of experiencing emotional empathy. To summarize these research results, borderline patients display deficits in their capacity for both cognitive and emotional empathy. The abnormal interpretations of the mental states of other people lead to abnormal social functioning.

It might be concluded, then, that empathy is associated with disturbances in mental functioning, through the mechanism of emotional regulation and the reduced capacity to take on the perspective of other people in understanding social situations. One example of disturbed understanding of social situations is alexithymia, which, on the basis of their review of the literature, Williams and Wood (2010) have associated with dysfunction in a number of cerebral structures, including the right hemisphere, the corpus callosum, and the frontal lobes.

The purpose of the present study was to analyze how empathy, understood as a multidimensional construct, is associated with personality disorders and stress experienced in situations of daily living. Based on the reports from the relevant literature presented above, we predicted that personal distress would be most strongly and positively correlated with disturbed mechanisms of functioning. We also predicted that the cognitive component of empathy – perspective taking – would be a factor protecting against the risk of disturbances in behavior and the experience of stress in various social situations. Empathic concern, as the emotional component of empathy associated with meeting the needs of others, may or may not be associated with a tendency to manifest particular disturbances or to react with stress, and so no firm predictions were formulated in this case. We chose a non-clinical sample for our research, which is methodologically appropriate for research intended to discover a universal mechanism for the co-occurrence of empathy with behavioral and emotional disturbances. In other words, in the research presented here, we examined the role of relatively stable mechanisms of empathizing, which would be a measure of the overall level of emotional maturity in reference to different kinds of disturbances.

MATERIAL AND METHODS

One hundred and eighty persons participated in the research (including 110 women, 61% of the group). The average age of our subjects was 28 years (average 28.98, SD = 11.253). Of these subjects, 91 were students and 59 had com-

pleted higher education, while the remaining persons had a secondary education (19 persons) or a vocational education (7 persons). None of the subjects had only an elementary education. Out of the 180 subjects, 46 persons (26% of the group) were married, while 66 persons (37% of the group) were in an informal romantic relationship, 62 persons (34% of the group) said that they were single, and 3 reported that they were divorced (2% of the group). There were three persons who gave no information about their marital status. Some 43 persons (24% of the group) had children, while 97 persons (54% of the group) were professionally active. The subjects were recruited by the “snowball method” by researchers' assistants who were students of psychology that had previously taken part in the study. The data remained anonymous. The subjects received no financial compensation for participating in the research. All the subjects received a set of questionnaires to be completed at home and returned them to the authors within one week. They also signed a statement declaring that they had filled out the questionnaires they received independently and accurately.

The following research tools were used according to the research model:

- the Empathic Sensitiveness Scale (SWE) (Kazmierczak, Plopa & Retowski, 2007). This is a 28-item scale to measure dispositional empathy. The scale contains three subscales measuring the three components of empathy: Empathic Concern (EC) – the other-oriented tendency to share the emotions experienced by other persons who are in a difficult situation, to show concern and sympathy for them, and as a result to offer help; Personal Distress (PD) – the self-focused tendency to take on other peoples' negative emotions, to experience other peoples' discomfort or suffering; Perspective Taking (PT) – the cognitive component of empathy, the tendency to take on another person's point of view in various social situations. All the subscales display satisfactory reliability. The subjects responded to the statements on the questionnaire using a 5-point scale.
- the IBZO-DSM-IV Inventory by Radochonski and Stanik (Stanik, 2006). This inventory “serves to measure the non-pathological syndromes of personality disorders described in the DSM-IV” (Stanik, 2006, p. 18). These disturbances manifest themselves in failure to meet social expectations regarding individual functioning, the quality of which is reduced. This instrument consists of 100 items, forming 10 subscales. Each of the subscales describes the symptoms characteristic for the various syndromes of the DSM-IV (paranoid, schizoid, schizotypal, antisocial, borderline, histrionic, narcissistic, avoidant, dependent, and obsessive-compulsive). All subscales of the questionnaire display satisfactory reliability. The subjects respond to the statements in the questionnaire by choosing one of three possible answers.
- Masculine Gender Role Stress (MGRS) (Eisler & Skidmore, 1987; Eisler, 1995; Polish adaptation by Kazmierczak, 2010). This is a 40-item scale to measure stress associated with masculine social roles. The scale is composed of five subscales: feeling physically inadequate, expressing tender emotions, being outperformed by women in male activities (subordination), being intel-

lectually inferior, and experiencing performance failure with regard to work and sexual activities. All the subscales of this questionnaire display satisfactory reliability. On a six-point scale, the subjects indicate the degree to which the particular situations described by each of the statements would be stressful for them.

- Feminine Gender Role Stress (FGRS) (Gillespie & Eisler, 1992; Polish adaptation by Kazmierczak, 2010). This is a 39-item scale to measure stress associated with feminine social roles, comprised of 5 subscales: developing non-emotional relationships, feeling physically unattractive, being exposed to the potential harm of violence (victimization), behaving assertively, and not being nurturant. All the subscales of this questionnaire display satisfactory reliability. On a six-point scale, the subjects indicated the degree to which the particular situations described by each of the statements would be stressful for them. We asked both women and men to complete both the MGRS and the FGRS (cf. Kazmierczak, 2010).

RESULTS

In this study we present the results for women and men together, since the directions of correlation between the variables in both groups were identical.

The first results to be presented here come from the measurement of personality disorders and their relationship with empathy. Table 1 presents the means for the research variables along with a conversion into sten scores. As can be seen, the results placed in the fourth sten score (low) and the fifth and sixth sten

Table 1. Mean results from the IBZO-DSM-IV with conversion to decile norms in the women's and men's groups

Personality disorder (IBZO-DSM-IV)	Women		Men	
	means (standard deviations)	sten scores	means (standard deviations)	sten scores
Paranoid	5.34 (4.388)	5	5.125 (5.069)	4
Schizoid	4.57 (4.012)	5	5.212 (4.002)	5
Schizotypal	4.078 (3.348)	5	3.864 (4.217)	5
Antisocial	3.056 (3.129)	5	4.803 (4.49)	5
Borderline	6.267 (4.97)	6	3.955 (3.998)	5
Histrionic	6.579 (4.144)	6	4.167 (3.736)	5
Narcissistic	5.804 (4.471)	6	5.328 (4.251)	5
Avoidant	5.009 (4.471)	5	3.424 (2.79)	4
Dependent	8.189 (4.713)	5	5.652 (4.446)	5
Obsessive-compulsive	8.00 (4.44)	5	7.046 (4.621)	4

score (average). It is noteworthy that the low results were obtained only by the men in the subscales for paranoid, avoidant, and obsessive-compulsive personality disorders. We have used the mean scores for the syndromes identified in the IBZO-DSM-IV as a context and introduction to the statistical analysis, as in our previous publications (Kazmierczak, 2010).

Additional comparative analyses for the independent groups showed that the men displayed a higher level of antisocial personality disorder ($p < .01$) than the women, while the women had higher scores than the men for borderline personality ($p < .01$), histrionic personality ($p < .01$) and dependent personality ($p < .01$) disorders; the difference in avoidant personality disorder was significant at the level of $p = .05$.

Since the results from the IBZO-DSM-IV did not show normal distribution, a Spearman's rho correlation analysis was then conducted between empathy and the syndromes identified in the IBZO-DSM-IV. The results are presented in Table 2.

The results of the correlation analysis confirmed our expectations. The only dimension that correlated positively with personality disorders was personal distress. Perspective taking and – to some extent – empathic concern correlated negatively with the subscales of the IBZO-DSM-IV. Additional comparative analysis for the independent groups showed that the women achieved significantly higher scores than the men on all three dimensions of empathy (EC and PD, $p < .01$; PT, $p < .05$).

The preceding analyses indicate that there is the co-occurrence of empathy and clinical disorders. It also seemed interesting to ask whether empathy is associated with the stress we all experience in various social situations, or more specifically with stress relating to the failure to meet social expectations associat-

Table 2. Empathy and the personality disorders differentiated in the IBZO-DSM-IV

Personality disorder (IBZO-DSM-IV)	Empathic concern	Personal distress	Perspective taking
Paranoid	-.164*	.308**	-.425**
Schizoid	-.383**	.211**	-.324**
Schizotypal	.012	.283**	-.215**
Antisocial	-.260**	.01	-.314**
Borderline	-.04	.483**	-.275**
Histrionic	.143	.281**	-.125
Narcissistic	-.033	.189*	-.235**
Avoidant	-.087	.431**	-.255**
Dependent	.098	.529**	-.221**
Obsessive-compulsive	-.024	.196*	-.084

* $p < .05$, ** $p < .01$, two-tailed. N varies between 164 and 175 for particular correlations

ed with gender roles. Pearson's r correlation analyses were conducted for the Empathic Sensitiveness Scale (SWE) and the MGRS and the FGRS scales. The results are presented in tables 3 and 4.

The results presented in tables 3 and 4 once again indicate that personal distress is a factor associated with emotional dysfunction, which in this case tends to

Table 3. Empathy and masculine gender role stress

MGRS subscales	Empathic concern	Personal distress	Perspective taking
feeling physically inadequate	-.106	.142	-.178*
expressing tender emotions	-.143	.181*	-.214**
being outperformed by women in male activities /subordination/	-.122	.195*	-.253**
being intellectually inferior	-.016	.244**	-.088
experiencing performance failure with regard to work and sexual activities	-.008	.127	-.088
MGRS general score	-.111	.231**	-.250**

MGRS = Masculine Gender Role Stress. *p<.05, ** p<.01, two-tailed. N varies between 166 and 179 for particular correlations

Table 4. Empathy and feminine gender role stress

FGRS subscales	Empathic concern	Personal distress	Perspective taking
developing non-emotional relationships	.167*	.116	.126
feeling physically unattractive	.229**	.345**	.007
being exposed to the potential harm of violence /victimization/	.290**	.337**	.051
behaving assertively	.094	.319**	.024
not being nurturant	.174*	.134	.136
FGRS general score	.260**	.317**	.09

FGRS = Feminine Gender Role Stress. *p<.05, ** p<.01, two-tailed. N varies between 166 and 179 for particular correlations

increase the level of stress in various daily situations. Surprisingly, it was only in the case of the MGRS that perspective taking played a “protective role” (negative correlations). It should be emphasized that perspective taking correlates negatively with the subscales of the MGRS that described stress in association with a feeling of weakness, i.e. being worse in the functioning stereotypically identified as masculine (described by strength, resilience, or the feeling of superiority). Empathic concern in turn is positively associated with stress in situations in which the individual has a feeling of having failed to meet social expectations in regard to behavior stereotypically identified as feminine (for example, an inability to form close, carrying emotional relationships, or caution). Additional comparative analyses showed that the women had higher scores on the FGRS, both globally and on all the subscales. As observed in earlier research (Kazmierczak,2010), the MGRS is not sex-specific, and the men have a greater tendency to experience only the stress associated with feeling physically inadequate ($p=.05$), which was consistent with the results reported by other authors (van Well et al., 2005).

DISCUSSION

The results of our research suggest that the risk of personality disorders and stress correlate positively with the dimensions of empathy in a multidimensional model. These correlations are especially strong and persistent for personal distress. We would emphasize that in our research model both personality disorders and stress were associated with an abnormal realization of social expectations. We understood personality disorders in the manner proposed by the authors of the IBZO-DSM IV (Radochonski & Stanik, 2006; cited by Stanik, 2006) as a permanent pattern of behaviors that diverge from these expectations, whereas stress results from the failure to meet the standards associated with the realization of gender roles. Our results confirm that there is a connection between dysfunctional emotional regulation and disorders, although our subjects did not constitute a clinical group. In the research cited in the Introduction to the present study persons having a diagnosis of OCD, borderline personality, or schizophrenia showed a consistent pattern of abnormal emotional functioning, and to some extent cognitive functioning as well, especially in respect to personal distress (Benedetti et al., 2009; Dziobek et al., 2011; Fontenelle et al., 2009). The application of both a clinical measure of personality disorders and a scale to measure the intensity of stress felt in various social situations made it possible to demonstrate that there was a different pattern of effects for empathic concern and perspective taking in terms of the category of behaviors that were taken under consideration. According to the studies cited in the introduction (Dziobek et al., 2011), higher scores on the disorder scales are associated with reduced capacity for perspective taking, which is a dimension of empathy that indicates a high level of social maturity (Hoffman, 2000). However, when we take into account functioning in roles associated with gender stereotypes, cognitive empathy correlates negatively only with those behaviors which are stereotypically thought to

be masculine. In the situation when the individual fails to meet social expectations associated with the creation of close emotional bonds, there were no negative correlations with any of the components of empathy. This result is understandable given the definition of empathy, the central aspect of which is the ability to form close interpersonal relationships. This interpretation of the results is confirmed by the significant and positive correlations between empathic concern and Feminine Gender Role Stress. The importance of empathic concern should also be emphasized, since on the one hand it constitutes a positive potential for emotional regulation, but on the other hand it carries an increased risk of experiencing negative emotions, e.g. a feeling of guilt in OCD patients (Fontenelle et al., 2009).

The research cited above seems to point to three essential problems:

- the role of empathic capacity in various types of mental disturbances, where the primary issue becomes the ability to resonate emotionally with the environment and the tendency for negative emotional states to appear in the person who has made contact with others, transferring concentration from others to self;
- the role of neuronal and neurocognitive mechanisms, where the regions of arousal differ for patients and healthy persons, in the presence of stimuli that should arouse both the cognitive and emotional aspects of empathy;
- the role of the situational factor in reinforcing empathic capacity, especially in situations that are heavily loaded emotionally.

Furthermore, in research on empathy it is also necessary to take account of the lowered intellectual capacities that result from early injuries (Bidzan et al., 2008). There is research that indicates a lower intellectual level in children with negative perinatal experiences (Bidzan et al., 2008), which may reduce the capacity for empathy and the effectiveness of adaptation in social situations.

In our opinion an important contribution to the discussion of the role of empathy in social relations has been made by Rostowski (2009), who emphasizes the importance of the situational factor in arousing empathic capacity, and, in terms of neurocognitive mechanisms, calls attention to mirror neuron systems. Our results seem to confirm Rostowski's thesis about the importance of mirror neurons for the internal regulation of mental states (feelings, desire, aims etc.). In his opinion, neural structures play a particular role in emotional regulation, disorders of which lead to maladapted or even pathological functioning.

The results of our analysis can contribute to research on the neurological correlates of different aspects of psychological functioning (Blazek & Pastwa-Wojciechowska, 2010). An analysis of the neuronal correlates of perspective taking as one of the components of empathy points to the activation of the anterior cingulate cortex (ACC) and anterior insula, which appears both when the individual feels pain and when it is observed in other people (Botvinick et al., 2005; Jackson et al., 2006).

Connection between mirror neuron systems and affective processes was also discovered by Pfeifer et al. (2008). The capacity for empathy in a group of children turned out to activate mirror neurons (the pars opercularis in the IFG). This

correlation indicates that the internal reflection of affective reactions may form a mechanism that makes it possible to feel more precisely what another person feels. Therefore, such mechanisms enable a synchronization between persons in respect to nonverbal communication, such as facial expressions, hand gestures, or posture. The mimetic reflection of the feelings of another person is connected with the activity of mirror neurons (Blair, 2005; Carr, Iacoboni, Dubeau, Mazziotta & Lenzi, 2003; Decety & Jackson, 2006).

CONCLUSIONS

Personal distress co-occurs in a predictable manner with both pathological and non-pathological (but symptomatic) patterns of social behavior. The dysfunctionality of emotional regulation constitutes one of the most important factors in both personality disorders and the stress felt by the individual in daily life. Empathic concern as a dimension connected with particular sensitivity to the feelings of other people can be a positive factor, but it can also have a negative impact on social functioning. The complex mechanism of cognitive empathy reduces the risk of disordered functioning as defined by DSM-IV.

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