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Profile of moral reasoning in persons with bipolar affective disorder

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Summary

Aim: The subject of the research presented in this paper was to analyze the relationships between bipolar disorder (BD) and the profile of moral reasoning according to the concept of James Rest.

Material and methods: 86 persons took part in the research, including 43 bipolar patients and 43 healthy individuals. To measure the severity of depression and mania symptoms the following scales were used: Hamilton Rating Scale for Depression (HAM-D), Montgomery- Asberg Depression Rating Scale (MADRS) and Young Rating Scale for Mania (YMRS). Profile of moral reasoning was defined on the basis of the results obtained in the Defining Issue Test (DIT) by James Rest.

Results: Statistical analysis showed that there is a relationship between bipolar disorder (and its phases) and the profile of moral reasoning: bipolar patients significantly less often than healthy individuals chose answers indicating the postconventional thinking (p=0,000) – and more often – answers indicating stage 3 and those belonging to the anti-institutional thinking index (p=0,000). There was also a relationship shown between the development of moral reasoning and the phase of bipolar disorder: patients in mania less often than persons in euthymia chose answers indicating the final stage of moral thinking (p=0,050). There were no significant differences between the results of patients with a depressive episode and the results of patients in mania and between the results of patients with a depressive episode and the results of patients in euthymia.

Conclusions: The results suggest that the psychological state of the individual may have an impact on the process of moral reasoning – bipolar disorder may to some extent influence the way of thinking about moral dilemmas. The collected data also seem to emphasize the specificity of the manic phase which is especially worth exploration when conducting further studies.

Key words: morality, development of moral reasoning, bipolar affective disorder

Introduction

The issue of morality in bipolar disorder still remains an area that needs in-depth examination. There have been reports outlining the moral image of emotionality in bipolar patients pointing to the existence of some deviations from the norm in this group on the ability of empathizing, tendency to feel shame and guilt [1-5]. There are fewer studies demonstrating such behavioral tendencies in people with a diagnosis of bipolar disorder that express themselves in the proceedings resulting in crossing standards widely regarded as some determinants of what is morally right and proper [6, 7]. It should be noted that emotions and behaviour are only two-thirds of what can be understood by the term 'human morality'. An equally important part of it – untested so far on the basis of psychiatry – is the cognitive component, described in terms of moral reasoning: understanding of the values, resolving dilemmas and making choices in ethically ambiguous situations.

The research aims to present the issues of the development of moral reasoning diagnosed with bipolar disorder from the perspective of the concept of James Rest – a leading representative of neo-Kohlbergian approach in psychology of morality [8-10]. Rest, like Kohlberg [11], presented a model of moral development composed of six stages, showing the successive levels of moral thinking development (Table 1.). A very important element of the concept of Rest is putting pressure on the cognitive construction of social reality [12] – each person constructs and understands categories such as: right, fault, justice, social order and reciprocity in their own way. It is equally important that changes in moral thinking, which take place during the life of the individual, are developmental – successive stages are characterized by more mature forms of understanding the rules governing social intercourse. Reaching a new stage of development, the person can better recognize what is right and consistent with the principles of justice and due to that cope better in a complex social reality [9, 10]. Thus, starting from the level when private needs and desires of a person are most important to him/her (reasoning is dominated by the so-called *personal interests schema*: stages 2 and 3), he/she reaches the point where he/she begins to perceive the surrounding reality from the perspective of a member of a social group – then sees the greatest value in caring for the welfare of society (*the maintaining norms schema*: stage 4). Although the vast majority of people stop at this stage, some part of them manages to get to the next one, where abstract values (not the rules set by society and institutions) – for example human life and dignity – are reliable indicators of what is morally correct (*postconventional schema*: stages 5 and 6). According to Rest [10], the mentioned schemas are developmentally ordered ways to answer the question of how to function in society to live properly.

Tab.1. **Stages of moral reasoning by James Rest**

Stage 1. The morality of obedience (relates in particular to children) Individual is self-centered and cannot take someone else's perspective. The basic rule is obeying the immutable laws derived from the caregivers (seniority rule). Failure to comply with the rules should be punished.
Personal Interests Schema
Stage 2. Instrumental Egoism and Simple Exchange Person begins to perceive the needs and interests of others. The beginnings of cooperation, which is a favor for a favor exchange, are established. Person believes that the law should be respected only when it is beneficial and associated with the achievement of a particular purpose. Stage 3. Interpersonal Concordance Moral behavior is driven by care for the approval of others. Important limitation of this stage is that the cooperation between the units takes place only if they establish a relationship of friendship.
The Maintaining Norms Schema
Stage 4. Law and Duty to the Social Order Everyone is obliged to comply with the law and at the same time is protected by it. There is a formal organization of the social roles performed by the regulations, which enable the determination of the applicable standards. Compliance with the law applies regardless of the individual circumstances.
Postconventional Schema
Stage 5 (5A and 5B). Societal Consensus What is important is the choice of an appropriate and fair system of cooperation (5A) and respect for the fundamental rights of every human ("intuitive humanism", 5B). Stage 6. Nonarbitrary Social Cooperation Morality is more than the effect of social consensus. Resorting to abstract moral principles (for example: life, dignity) Man is considered to be an end in itself, not a means to achieve another good.

Order of the stages of moral development is immutable – that means, firstly, that changes always lead 'to the top' and secondly, that the individual who has reached a certain stage, could not miss any of the intermediate steps. However, pace of development and its final point can be differentiated [12, 13]. It should be noted that when a person goes to higher levels of reasoning, he/she does not lose the ability to use the schemes characterizing the previous stages – but begins to show a preference for values appropriate to the new developmental stage. Each level of moral reasoning is associated with different ways of interpreting the moral dilemmas and different assessment of their essential aspects [8].

The main aim of the research was to answer the question whether people with a diagnosis of bipolar disorder differ in terms of moral reasoning from healthy controls. The next goal was to investigate whether moral thinking is associated with the phase of the disease, and if so – what is the nature of this relation.

Material and methods

The research was conducted with the approval of Commission on Research Ethics at the Institute of Psychology Jagiellonian University. 86 persons took part in the research, out of whom half were patients diagnosed with the bipolar disorder (according to the criteria of ICD-10) treated in a stationary or ambulatory mode (n=43), and half – healthy volunteers. The group of healthy subjects included 18 men and 25 women (average age was 38.3 years), of which 31 persons had higher education and 12 had secondary education. The group of people with bipolar disorder included 14 men and 29 women (average age was 43.3 years), of which 30 persons had higher education, 10 had secondary education and one had vocational education. These groups did not differ significantly in terms of the structure of sex, age and level of education. The group of patients was further divided into three subgroups: (a) persons with a depressive episode (n=13), (b) persons in mania (n = 13) and (c) persons in euthymia (symptomatic remission) (n=17). The criterion for the division was the stage of the disease during the study. Patients were included in the specific subgroups on the basis of a diagnosis by a psychiatrist and obtained the appropriate number of points in the scales of depression and mania.

To measure the severity of depressive symptoms the following scales were used: Hamilton Rating Scale for Depression (HAM-D) [14, 15] and the Montgomery-Asberg Depression Rating Scale (MADRS) [15, 16]. The minimum amounts of points, which meant inclusion of a person to the subgroup of patients with a depressive episode, were: 7 points for HAM-D and 11 points for MADRS. A patient was considered a person in a phase of depression only if he (or she) obtained designated minimum amount of points in both scales simultaneously.

The presence and severity of manic symptoms were measured using the Young Rating Scale for Mania (YMRS) [17]. The threshold for the test to include a person to a group of people with symptoms of mania was the number of 12 points.

Subjects diagnosed with bipolar disorder that did not obtain the minimum point values to allow their inclusion in the subgroup of patients with depression or patients with mania, were classified, following a psychiatric examination, to the subgroup of persons in euthymia.

The level of moral development, both in the group of healthy subjects and in group of patients, was assessed using the Defining Issue Test (DIT) by James Rest [8-10] in Polish translation of Adam Niemczyński. This test consists of six short stories, each of which presents a kind of moral dilemma. The task of the subjects is to check how

– in their opinion – the hero of the story should behave in the face of this dilemma, and then – to look closely at the twelve issues extracted by the author and determine how are they important when solving the problem. The analysis of the answers given by the individual makes it possible to know the essence of his/her moral reasoning by identifying the contribution of different stages separated by Rest in his/her thinking about moral dilemmas (apart from stage 1, not included in the DIT). There are three additional indexes: P index – reflecting the share of postconventional schema in the whole moral thinking of individual, A index – which is a measure of the so-called anti-institutional thinking expressed in showing opposition to the prevailing social order, and M index – including meaningless issues (too frequent identifying them as important is equivalent to incorrect completion of the test and is a prerequisite for its rejection). After estimating the importance of the question, tested person is asked to select four most important of all twelve and check which of them is – in his/her opinion – first, second, third and fourth as to the validity. The procedure is the same for each story.

When analyzing the responses obtained during the testing with DIT, we should calculate percentage of various stages of development throughout the moral reasoning of the subject. As a result, it becomes possible to outline profile of that reasoning and comparison of profiles relevant to particular groups of respondents.

Results

Diagnosis of bipolar disorder and the profile of moral reasoning.

Statistical analysis included the results obtained by the two treatment groups: a group of subjects with a diagnosis of bipolar disorder (n=43) and a group of healthy individuals (n=43). Analysis of the link between bipolar disorder and the profile of moral reasoning was performed using Student's t-test for independent groups. The results are shown in Table 2.

Table 2. **The results of the Student's t test for independent groups: a group of healthy subjects and a group of patients**

Stage of moral reasoning	Average percentage of responses representing different stages in moral reasoning of subjects		The value of t; the significance of differences		
	Healthy individuals	Persons with bipolar disorder	t	df	p
Stage 2	5.34	6.05	-0.650	84	0.518
Stage 3	20.31	24.92	-2.641	84	0.010
Stage 4	29.47	29.15	0.127	83.658	0.899
Stage 5A	22.48	16.86	3.376	84	0.001

table continued on the next page

Stage 5B	10.54	4.95	4.765	84	0.000
Stage 6	7.33	5.7	1.725	84	0.088
P index	40.35	27.33	5.683	84	0.000
A index	2.40	5.74	-3.860	84	0.000

The presence of significant differences between the groups in terms of stages: 3 (p=0.010), 5A (p=0.001) and 5B (p=0.000) and also in terms of the P index, defined as the sum of responses appropriate to the stage 5A, 5B and 6 (p = 0.000), and the A index (p=0.000) has been indicated. For stage 3 and the A index significantly higher results were obtained by bipolar patients whereas in the case of stages: 5A, 5B, and the P index, better results were achieved by healthy persons. In the case of stages 2, 4 and 6, there were no significant differences between the average scores of both groups.

A comparison of moral reasoning in the three subgroups of patients and the group of healthy individuals

The next step was to compare the results obtained by patients in different phases of the disease with the results of healthy subjects. Analysis was performed using the nonparametric Mann – Whitney U test (due to the different sizes of examined groups). The results are shown in Tables 3-5.

Table 3. **The results of the Mann – Whitney U test for a group of persons with depression and healthy subjects**

Stage of moral reasoning	Average percentage of responses representing different stages in moral reasoning of subjects		The significance of differences between the results of different groups (Mann – Whitney U test)		
	Persons with depression	Healthy persons	U	Z	p
Stage 2	6.55	5.34	264.5000	0.284379	0.776120
Stage 3	25.13	20.31	181.5000	1.897687	0.057738
Stage 4	26.92	29.47	258.5000	-0.398453	0.690296
Stage 5A	17.18	22.48	190.5000	-1.72252	0.084977
Stadge 5B	3.82	10.54	114.0000	-3.21873	0.001288
Stage 6	6.41	7.33	232.0000	-0.920592	0.357264
P index	27.18	40.35	99.00000	-3.49880	0.000467
A index	7.05	2.40	143.0000	2.908545	0.003631

Table 4. **The results of the Mann – Whitney U test for a group of persons in manic phase and healthy subjects**

Stage of moral reasoning	Average percentage of responses representing different stages in moral reasoning of subjects		The significance of differences between the results of different groups (Mann – Whitney U test)		
	Persons in manic phase	Healthy persons	U	Z	p
Stage 2	7.44	5.34	191.5000	1.714197	0.086493
Stage 3	26.54	20.31	167.0000	2.180845	0.029196
Stage 4	29.23	29.47	274.5000	-0.087482	0.930289
Stage 5A	15.51	22.48	111.5000	-3.26192	0.001107
Stage 5B	5.51	10.54	145.0000	-2.61657	0.008882
Stage 6	3.08	7.33	122.5000	-3.05958	0.002217
P index	23.85	40.35	58.50000	-4.28522	0.000018
A index	5.26	2.40	174.5000	2.124409	0.033637

Table 5. **The results of the Mann – Whitney U test for a group of persons in euthymia and healthy subjects**

Stage of moral reasoning	Average percentage of responses representing different stages in moral reasoning of subjects		The significance of differences between the results of different groups (Mann – Whitney U test)		
	Persons in euthymia	Healthy persons	U	Z	p
Stage 2	4.61	5.34	352.5000	-0.207264	0.835804
Stage 3	23.53	20.31	276.5000	1.456168	0.145347
Stage 4	30.78	29.47	348.5000	-0.271175	-0.271175
Stage 5A	17.65	22.48	237.5000	-2.09813	0.035894
Stage 5B	5.39	10.54	183.0000	-2.99981	0.002702
Stage 6	6.57	7.33	351.5000	-0.223886	0.822846
P index	30.10	40.35	199.0000	-2.72731	0.006386
A index	5.10	2.40	228.5000	2.828577	0.004676

The presence of significant differences was indicated in the following variables: 1) for a group of persons with depression and a group of healthy subjects – in stage 5B (p=0.001), P index (p=0.000) A index (p=0.003); 2) for a group of persons

in manic phase and a group of healthy subjects –in stage 3 (p=0.029), 5A (p=0.001), 5B (p=0.008), 6 (p=0.002), P index (p = 0.000) and A index (p = 0.03); 3) for a group of people in euthymia and a group of healthy subjects – in stage 5A (p=0.035), 5B (p=0,002), P index (p=0.006) and A index (p=0.005).

All reported differences in stage 3 and A index came out in favor of persons with bipolar disorder while differences in the postconventional reasoning (stages: 5A, 5B, 6, and P index) – in favor of healthy individuals.

The phase of the disease and profile of moral reasoning

The aim of the analysis was to examine whether there are statistically significant relationships between the phase of the disease and the percentage share of responses indicating different stages of moral reasoning, and if so, for which the phase results are significantly higher or lower than for the other phases. For this purpose, a one-way analysis of variance (ANOVA) for independent groups was performed. The results are shown in Table 6.

Table 6 **Results of the analysis of variance for independent groups (persons in euthymia, in depression and in the manic phase)**

Stage of moral reasoning	Average percentage of responses representing different stages in subjects' moral reasoning			The significance of differences between the results of different groups			
	Euthymia	Depr.	Mania	F	df between groups	df within groups	p
Stage 2	4,61	6,55	7,44	1,536	2	40	0,228
Stage 3	23.53	25.13	26.54	0.493	2	40	0.614
Stage 4	30.78	26.92	29.23	0.409	2	40	0.667
Stage 5A	17.65	17.18	15.51	0.317	2	40	0.730
Stage 5B	5.39	3.82	5.51	0.658	2	40	0.523
Stage 6	6.57	6.41	3.08	3.415	2	40	0.043
P index	30.10	27.18	23.85	1.713	2	40	0.193
A index	5.10	7.05	5.26	0.639	2	40	0.533

On the basis of the profiles of moral reasoning profiles of persons in euthymia, depression and mania, it can be stated that there are statistically significant differences in terms of stage 6 of this reasoning (p = 0,043). A post hoc analysis using the Bonferroni test (Table 7) showed that people in the manic phase significantly less than those

in euthymia choose the responses appropriately for this stage (p=0,05). There were no differences between the average results obtained by depressive patients and subjects in euthymia as well as between the average scores of patients with depressive episode and patients in the manic phase.

Table 7. **Bonferroni test results for the dependent variable: stage 6**

(I) phase	(J) phase	The difference of averages (I-J)	Standard error	Significance	confidence interval (95 %)	
					The lower limit	The upper limit
euthymia	depression	0.64688	1.54036	1.000	-3.2023	4.4960
	mania	3.85226*	1.54036	0.050	0.0031	7.7014
depression	euthymia	-0.64688	1.54036	1.000	-4.4960	3.2023
	mania	3.20538	1.63984	0.173	-0.8923	7.3031
mania	euthymia	-3.85226*	1.54036	0.050	-7.7014	-0.0031
	depression	-3.20538	1.63984	0.173	-7.3031	0.8923

* The difference is significant at the level of 0.05

Discussion of results

The relationship between bipolar disorder and the profile of moral reasoning

Analysis of the results relating to the hypothesis about the relationship between bipolar disorder and moral reasoning allowed the confirmation of the existence of this type of dependence for most variables. The first significant difference was observed in terms of stage 3: persons with a diagnosis of bipolar disorder obtained significantly higher scores than healthy individuals.

It is worth to recall one of the assumptions of Rest saying that the development of moral reasoning remains strictly dependent on cognitive development [12, 18] – thus, if the progress in the development of structures of thought is a difficulty for the individual, the difficulty will also be shifted upward in moral reasoning. It is known, otherwise, that bipolar disorder is often accompanied by loss of performance in terms of cognitive functioning – compared to the state of being healthy – regarding both content and form (that is precisely the structure) of thinking [19, 20]. It is therefore possible that people diagnosed with bipolar disorder more frequently than healthy subjects reasoned in a manner corresponding to stage 3, because the transition to the next stage was problematic for them due to a limitation of cognitive functioning.

It may be interesting to look at the qualitative characteristics of stage 3, in which it is important to care about the relationship with others and care for the approval of these others for the personality of the individual [8]. As suggested by the results of studies, persons with bipolar disorder experience some changes (compared to healthy subjects) in the functioning of moral emotions – including shame and empathy [5, 21]. The feeling of shame is often due to a sense that a person is morally inadequate [3, 21, 22]. What is more, patients with bipolar disorder often underestimate their abilities to adopt the other's perspective and feel empathic concern [5], which attempted to explain their tendency to compare themselves with healthy people [23]. The appearance of this type of considerations suggests that establishing positive relationships is an intrinsic value for individuals with bipolar disorder. It is also likely that the maintenance of any of this type of relationship will result in an increase in their sense of own competence in social functioning and will provide them a proof that their critical approach to themselves is not justified. This may to some extent explain the preference of group of patients for selecting the principles characterizing stage 3.

Other statistically significant differences relate to stages: 5A, 5B and P index (each of them fell to the detriment of people with bipolar disorder). Also at this point it is worth to refer to the thesis that the development of moral reasoning depends on cognitive development [12, 18], which appears to be particularly important in the case of reasoning at the postconventional level. Formulating moral judgments corresponding to the guidelines of postconventional schema requires efficient use of abstract concepts such as generally prevailing values or timeless and universal norms. It is therefore largely understood that bipolar patients may have difficulty in reaching this level of moral thinking.

Another interesting result is the relationship between bipolar disorder and the number of responses indicating the A index which suggests that bipolar patients may have an increased tendency to oppose the prevailing social order. Therefore, it may be that manifestations of anti-social and non-conformist behaviour observed in this group [6, 7] have their origin at the level of thinking – in the negative cognitive representation of social reality and rejection of the existing order.

Finally, it is worth noting that stage 4 was reached by a comparable number of persons with bipolar disorder and healthy individuals, and that in the case of both these groups it is the dominant stage. This is consistent with the results of numerous studies suggesting that in the reasoning of adults prevails thinking in accordance with the conventional level described by Kohlberg [11], the characteristics of which include the essence of *the maintaining norms schema* presented by Rest [24].

Moral reasoning of people in different phases of bipolar disorder and moral reasoning of healthy individuals

The results of an analysis, which was to compare the moral thinking of people with bipolar disorder in different phases to moral thinking of healthy persons, are consistent with the previously discussed results of a comparison of the group of all patients with non-clinical control group. There were differences in the stage 3 (for manic phase), postconventional reasoning (for each phase) and A index (for the phase of depression and euthymia) whereas there were no differences between the average values of other variables. On the basis of these results it can be assumed that characteristics of moral reasoning of people with bipolar disorder is quite similar in individuals undergoing different phases, although there are some subtle differences between their profiles of moral thinking. These differences are discussed below.

The relationship between the phases of bipolar disorder and the various stages of moral reasoning

Statistical analysis showed that persons in the manic phase are characterized by a significantly lower percentage of responses appropriate to the stage 6 than those in euthymia (there were no significant differences between the groups of subjects in euthymia and in the depression phase, and between the results of persons in the depression phase and persons in the manic phase). This may be a result of the fact that the subjects in the phase of mania could have some disorders in the area of cognition which usually appear in this particular episode of the disease. Patient's thoughts become then inconsistent, fragmented and sometimes delusional [19, 20, 25]. Therefore, referring logically to abstract concepts can be for them very difficult or even impossible – in such a case they cannot reach the highest level of moral reasoning [12, 18].

The results seem to be somewhat consistent with the description of the behaviour of people with a manic episode. Patients in this phase of the disease may be characterized by excessive impulsivity, which is often considered not only in terms of the instantaneous state, but also in terms of the feature [26, 27] and by the manifestation of aggressiveness and antisocial behaviour [6, 7]. Impulsivity seems to be to some extent explanation of the lower tendency of manic patients to use the postconventional schema associated with the necessity of making a rational judgment based on indisputable conviction of the rightness of some abstract principles. Even if these patients have the potential ability of reasoning at stage 6, it can be suppressed and obscured by the tendency to act impulsively.

Interestingly, there was no significant relationship between the phase of bipolar disorder and the results concerning the other stages of moral reasoning (2, 3, 4, 5A and 5B) and the A index, although differences in the behaviour of persons undergoing different episodes could suggest the existence of differences in their thinking on

moral issues. Slight differences in mean scores between the phases of the disease and significantly lower results obtained by all bipolar patients compared to healthy subjects, may be another reflection of the potentially worse cognitive functioning of diagnosed individuals at all.

At the end it is worth noting that the failure to demonstrate significant relationships between more variables is not necessarily due to the fact that they do not exist. Important limitation of the presented study was the small size of the groups – perhaps examination of more people would allow to obtain additional interesting data. It would also be interesting to test the same person in different phases of the disease and review the issue of variability of understanding moral dilemmas in a given person. Moreover, there is the possibility that the obtained results were influenced by the choice of method for the measurement of moral reasoning. To complete DIT, the subject must focus on the presented dilemmas and related issues, what makes this test difficult and demanding, especially for people with a diagnosis of bipolar disorder. Undoubtedly, these are issues that need to be looked at in future studies.

Conclusions

Analysis of data collected during the above study allowed to show relations between bipolar disorder and the profile of moral reasoning. Essential seems to be the diagnosis of bipolar disorder, the symptoms of which, like: cognitive impairment, emotional changes and behavioral changes, may be closely related to the moral reasoning. Analyzing the third (cognitive) component of morality of people with bipolar disorder may contribute to a better understanding of their psychosocial functioning, and consequently, to developing more effective methods of improving the quality of such functioning.

An important clue, that should be taken into account during further research, is noticing the differences in the moral reasoning among patients undergoing different phases of the disease. Although the observed relationships are weak and the differences occur only between the phase of mania and euthymia, such results are a good starting point for future exploration, which may contribute to increased knowledge concerning both the nature of moral development, and the specifics of bipolar disorder.

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