

# *Acceptance, coping strategies and health behaviors in bipolar disorder patients taking and not taking lithium carbonate*

## BACKGROUND

The variety of dysfunctions in bipolar disorder (BD) affects patients' perceptions of the diagnosis, acceptance, and illness. Treatment of people with BD includes pharmacotherapy and psychotherapy. Maintaining long-term therapy is difficult, related to the patients' overall approach to health. The aim was to assess health attitudes in people with BD treated with different mood stabilizers.

## PARTICIPANTS AND PROCEDURE

The study group included 40 patients diagnosed with bipolar disorder. Participants were divided into two groups depending on the medication taken: a group taking lithium ( $n = 20$ ) and a group not taking lithium, treated with other drugs ( $n = 20$ ). The respondents were measured with psychological tests – Addenbrooke's Cognitive Examination, Illness Acceptance Scale, Health Behavior Inventory, and Coping Inventory in Crisis Situations.

## RESULTS

85% of the respondents stopped taking medication at least once without the doctor's knowledge. People taking

lithium had a significantly lower acceptance of the disease ( $t = -2.27, p = .015$ ). The study groups did not differ in terms of coping with stress and health behaviors. The correlation analysis indicated that the acceptance of disease and health behaviors are significantly associated with selected coping strategies.

## CONCLUSIONS

Attitudes towards health, understood as acceptance of the disease, coping with stress, and health behaviors are average. It is advisable to develop an optimal approach to activities connected with the daily health maintenance of the patients in order to better cope with the disease and its symptoms.

## KEY WORDS

bipolar disorder; lithium carbonate; acceptance; coping strategy; health behaviors

ORGANIZATION – Poznan University of Medical Sciences, Poznan, Poland

AUTHORS' CONTRIBUTIONS – A: Study design · B: Data collection · C: Statistical analysis · D: Data interpretation · E: Manuscript preparation · F: Literature search · G: Funds collection

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## BACKGROUND

Bipolar affective disorder (BD) is a mental disorder in which patients experience alternating hypomania/mania and depression episodes, punctuated by states of euthymia. Studies indicate that shorter periods of stable mood are associated with a deterioration in the general functioning of patients manifested by increased suicidal thoughts, more profound disability, long-term unemployment, and more hospitalizations (Peters et al., 2016). The illness affects many areas of patient functioning (social, interpersonal, emotional), impairs cognitive functioning, and impedes adaptive coping strategies (Dadic-Hero et al., 2010; Fletcher et al., 2014; Saunders & Goodwin, 2010; Wendołowska et al., 2020). The variety of dysfunctions also affects patients' perceptions of the illness and their acceptance of it and their diagnosis. Additionally to disturbances in mania or depression, BD also affects the remission period (Cooke et al., 1996). Moreover, the frequency of relapses increases with the increasing duration of the illness (Gitlin et al., 1995; Tohen et al., 1990). Factors which reduce the number of episodes include employment, higher education, and continued pharmacotherapy (Najafi-Vosough et al., 2016).

In bipolar disorder, stabilizing neurotransmitter levels in the brain and nervous system should be permanently post-treated with appropriate stabilizers. This is the element that induces a cognitive and emotional burden on patients. Furthermore, taking psychotropic drugs is often associated with side effects, e.g. headaches, drowsiness, libido disorders, difficulty in concentration, weight gain, and abdominal pain (Dols et al., 2013; Fung et al., 2019). Choosing the proper treatment is often a long process, and the first prescribed medication might not be suitable for the patient. The attitude of society towards psychotherapy and pharmacotherapy of mental illnesses is often unsupportive for patients (Jorm & Wright, 2007). Taking drugs may be seen by the patient's social environment as a weakness or inability to cope with the problem. In consequence, pharmacotherapy is often abandoned (Chakrabarti, 2016; Colom et al., 2000; Sajatovic et al., 2014). Pilot studies indicate that 70% of people surveyed have at least once stopped taking psychiatric medication for reasons other than those indicated by the doctor (Kabzińska, 2018). Negative evaluations of medications by patients exacerbate aversion to those substances. Lithium carbonate, discussed in the article, is characterized by unflattering opinions among patients, families, and clinicians. It is an element that affects many biological mechanisms in the human body (Birch, 1999; Brandish et al., 2005; Kabzińska et al., 2021). Rybakowski (2018) described difficulties in perceiving lithium as a toxic element causing more severe side effects than other drugs, directly affecting cognitive impairment. Lithium appears to patients as a last-resort treatment option,

although it has been described as a first-line treatment for depressive and manic disorders (Kabzińska et al., 2018). An aspect that aggravates the suffering of patients is the stigmatization and discrimination of mentally ill people, which leads to behavior that is not conducive to symptom reduction (Corrigan & Watson, 2002). Patients are confronted with a vision of themselves as weak, deserving of suffering, frightening, or childish.

The immediate symptoms of BD, perception of the disease, and the treatment modalities directly impact patients' physical and mental health. 'Health behavior' is defined as the daily activities that affect an individual's health and knowledge about mechanisms that support well-being (Arendt et al., 2014). Research indicates that a multiplicity of stressful stimuli can accelerate a manic or depressive episode (Paans et al., 2018). Sensitization to stressful stimuli correlates with the duration of the illness; consequently, the possibility of a stressor triggering a relapse increases (Wendołowska et al., 2020). In disorders associated with mood swings, attention to health may be medium or low. Research indicates that a positive attitude towards one's diagnosis and its consequences will prolong euthymia (Bowskill et al., 2007). Thus, creating a positive perspective supports a more favorable course of illness.

This study assumed that pro-health attitudes would include health behaviors, acceptance of illness, and specific coping strategies for stress. The main aim was to assess these attitudes in a group of people diagnosed with BD. An essential element of the analyses was the differentiation of the group of patients in terms of the medication taken – the group taking lithium and the group not taking lithium. The patient's test results were compared with norms based on studies of healthy adults.

## PARTICIPANTS AND PROCEDURE

### PARTICIPANTS

The study group consisted of 40 patients with bipolar disorder treated with mood stabilizers (45% men and 55% women; aged 18-50 years). Participants were divided into two groups depending on the medication taken – a group taking lithium (Lithium) and a group not taking lithium, treated with other drugs (Non-lithium). Based on the inclusion criteria, participants were eligible for the study if: a) they had bipolar disorder diagnosed according to the International Statistical Classification of Diseases and Health Problems (ICD10), b) they were prescribed a mood stabilizer by a psychiatrist and had been taking it for more than three months, c) they were in remission/complete remission. Those in the Non-lithium group were taking other mood stabilizers: escitalopram, la-

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motrigine, quetiapine, trazodone, levomepromazine, valproate, clomipramine, aripiprazole, olanzapine, diazepam. Subjects who were older than 60 years were excluded from the study. The phase of the illness was determined using the Hamilton Depression Scale and the Young Mania Scale. The study group consisted of both inpatients and outpatients. Patients gave written consent to participate in the study. The Ethical Committee of the Poznan University of Medical Sciences approved the study (decision 56/17).

## MEASURES

The subjects completed selected psychological and cognitive function measurement tests.

*Addenbrooke's Cognitive Examination (ACE-III)*, Polish version – is a comprehensive screening tool for measuring cognitive functions. It consists of subscales measuring attention and orientation, memory, verbal fluency, language, and visuospatial functions. The maximum score on the total scale is 100 points.

*Illness Acceptance Scale (IAS)* – is a tool used to measure acceptance of illness. It contains eight statements describing the negative consequences of ill health. Responses are rated on a scale from 1 (*strongly agree*) to 5 (*strongly disagree*). The sum of points 8-40 is an overall measure of the degree of acceptance of the disease.

*Health Behavior Inventory (HBI)* – a general index of the intensity of health behaviors. The test refers to individual categories of these behaviors: eating habits, preventive behaviors, positive mental attitude, health practices. It contains 24 statements describing various types of health behaviors. Between 24 and 120 points can be obtained in the test.

*Coping Inventory in Crisis Situations (Mini-COPE)* – is used to measure dispositional coping, i.e., assessing typical ways of reacting and feeling in situations of intense stress. It consists of 28 statements consisting of 14 strategies (2 statements in each strategy).

Subjects also completed the author's sociodemographic questionnaire and scales for mania and depression severity. In the Hamilton Depression Scale, a score of fewer than 7 points is taken as no disturbance, up to 12 as mild depression, up to 17 as moderate depression, between 18 and 29 points are the severe stage, and above 30 points as very severe. In Young's Mania Scale, a maximum of 60 points can be obtained; symptomatic remission is found in people who score up to 8 points.

Statistical analysis was performed using Excel and IBM SPSS Statistics version 26. The Kolmogorov-Smirnov test was used to test the normality of the distribution. Statistical analyses were performed using appropriate tests of differences (Student's *t*-test for independent groups, Mann-Whitney test). Spearman's rank coefficient was used for correlation anal-

ysis. Results were assessed using a confidence level of 95% and a statistical significance of  $p < .05$ .

## RESULTS

Two study groups were distinguished: a group taking lithium ( $n = 20$ ) and a group not taking lithium ( $n = 20$ ), treated with a different mood stabilizer. The gender structures in the groups were very similar, as well as the age distribution. The mean age for the group on lithium was 35.1 years, for the group without lithium 41.7 years. Fifteen subjects suffered from chronic diseases, i.e., celiac disease, hypertension, diabetes, cardiac arrhythmia, psoriasis, asthma. One person had a co-existing diagnosis of obsessive-compulsive disorder. There were no people with intellectual or physical disabilities in the groups. The subjects reported at least one hospitalization, being under psychiatric care (90%) – privately or from the national health fund in the form of regular visits. Fewer people (77.5%) use psychological or psychotherapeutic help. Here the frequency of visits is also lower, sometimes occasional. 85% of respondents stated that they stopped taking the medication at least once during treatment without the doctor's knowledge. The severity of depression measured by the Hamilton Rating Scale did not indicate a clinical decrease in mood (Lithium mean = 6.95, Non-lithium mean = 5.90). Young's Mania Scale scores did not indicate a manic episode (Lithium mean = 3.45, Non-lithium mean = 3.00). The ACE-III test assessed cognitive functioning. Subjects scored high overall: Lithium mean = 88.22, Non-lithium mean = 82.35 (groups not statistically significantly different  $t = 1.59$ ,  $p = .120$ ). An analysis of subscales extracted within the test was also conducted – attention, memory, verbal fluency, language, spatial functions. No statistically significant differences were found for these scales either.

The mean IAS score was 23.49 points, indicating average acceptance of the disease. Patients taking lithium scored 20.75 ( $SD = 7.52$ ) and those not taking lithium scored 26.37 ( $SD = 7.97$ ). Analysis of the differences between the means indicates that the groups are significantly different. Patients taking lithium have a lower level of acceptance of the disease ( $t = -2.27$ ,  $p = .015$ ). The standard deviation is approximately 36%, indicating a relatively large discrepancy in the results. The minimum score among the respondents was 8, and the maximum score was 40. Table 1 presents the exact distributions of responses for specific elements of the test.

The analysis showed statistically significant differences between groups. For the responses "I have trouble adapting to the limitations imposed by the illness" ( $z = 2.11$ ,  $p = .035$ ), "Because of my condition I am not able to do the things I enjoy most" ( $z = -1.98$ ,  $p = .048$ ), "The illness sometimes makes me feel unnecessary" ( $z = -2.91$ ,  $p = .004$ ) and "I will

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**Table 1**

Mean scores of IAS test items in group with lithium (n = 20) and group without lithium (n = 20)

Negative consequences of ill health – IAS test statements	Group	M	SD	Mann-Whitney test
1. I have trouble adapting to the limitations imposed by the disease	Lithium	2.43	1.45	$z = 2.11$
	Non-lithium	3.54	1.34	$p = .035$
2. Due to my health condition I am not able to do what I like most	Lithium	2.56	1.49	$z = -1.98$
	Non-lithium	3.68	1.52	$p = .048$
3. Illness sometimes makes me feel unnecessary	Lithium	2.12	1.41	$z = -2.91$
	Non-lithium	2.87	1.49	$p = .004$
4. Health problems make me more dependent on others than I want to be	Lithium	2.73	1.32	$z = 0.03$
	Non-lithium	2.82	1.61	$p = .976$
5. The illness makes me a burden on my family and friends	Lithium	2.31	1.24	$z = 1.67$
	Non-lithium	3.25	1.47	$p = .095$
6. My state of health does not make me feel full of myself	Lithium	2.62	1.55	$z = 1.67$
	Non-lithium	3.51	1.57	$p = .095$
7. I will never be as self-sufficient as I would like to be	Lithium	2.62	1.29	$z = 2.42$
	Non-lithium	3.76	1.40	$p = .016$
8. I think that people staying with me are often embarrassed by my illness	Lithium	2.81	1.27	$z = 0.87$
	Non-lithium	3.15	1.35	$p = .384$

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Note. IAS – Illness Acceptance Scale.

**Table 2**

Correlation analysis of IAS test scores and individual stress coping strategies from the Mini-COPE test (n = 40)

Results	N	Spearman's r	p
IAS & Active coping	40	.48	.002
IAS & Planning	40	.45	.004
IAS & Positive reframing	40	.39	.014
IAS & Acceptance	40	.39	.014
IAS & Sense of humor	40	.42	.008
IAS & Turn to religion	40	.11	.510
IAS & Seeking emotional support	40	-.01	.931
IAS & Seeking of instrumental support	40	.02	.884
IAS & Self-distraction	40	.16	.328
IAS & Denial	40	-.11	.525
IAS & Venting	40	-.60	< .001
IAS & Substance use	40	-.06	.704
IAS & Behavioral disengagement	40	-.44	.005
IAS & Self-blame	40	-.62	< .001

Note. IAS – Illness Acceptance Scale; Mini-COPE – Coping Inventory in Crisis Situations.

**Table 3**

*Level of the health behavior index in the study group of people with bipolar disorder (N = 40)*

Sten scores	Interpretation of result	N	% of observation
1-4	Low	16	40
5-6	Average	16	40
7-10	High	8	20

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never be self-sufficient to the extent I would like to be" ( $z = 2.42, p = .016$ ) the lithium receiving group had a significantly lower mean response. Of all the areas of acceptance of illness, the lowest scores were generally given to the sense of being needed (general mean for both groups = 2.49), being a burden on the family (general mean = 2.77), and the sense of being dependent (general mean = 2.77). The highest rating was given to the chance of being sufficient to the patient's satisfaction (general mean = 3.18).

Correlation analysis indicated a relationship between acceptance of the disease and selected coping strategies (Table 2). With a higher level of acceptance of the disease, patients were more likely to use strategies, i.e., active coping, planning, positive reevaluation, acceptance, sense of humor. Discharge, cessation of activities, and blaming oneself are higher

when acceptance is lower. The correlations were weak and moderate.

Table 3 shows the distribution of scores for the HBI test and the conversion of raw scores to a sten scale.

The mean health behavior score for the whole group was 78.31 points ( $SD = 14.76$ ). The difference between the groups is not statistically significant. The score is 79 for lithium and 77.58 for non-lithium users, respectively. The score is on the average level. Low and average levels were achieved by 40% of the respondents; only 20% of the respondents achieved sten 7-10. The minimum score among the respondents was 55, while the maximum score was 110. There were no statistically significant differences among the selected subscales either. Among people treated with lithium, work practices were rated highest ( $M = 3.51, SD = 0.58$ ), while people not treated with lithium rated preventive behaviors highest ( $M = 3.33, SD = 0.80$ ). Both groups rated proper eating habits lowest (Lithium:  $M = 3.02, SD = 0.94$ ; Non-lithium:  $M = 3.01, SD = 0.84$ ). The results obtained in the study were compared with the standards presented by Juczyński and Ogińska-Bulik (2012). Statistical analysis showed no differences between the norms for adults and the results for the subjects.

The correlation analysis indicated an association, a weak to moderate relationship between the HBI test score and active coping, planning, a sense of humor, seeking instrumental support, and attending to something else (Table 4).

**Table 4**

*Correlation analysis of HBI test scores and individual stress coping strategies from the Mini-COPE test*

Results	N	Spearman's <i>r</i>	<i>p</i>
HBI & Active coping	40	.39	.014
HBI & Planning	40	.46	.003
HBI & Positive reframing	40	.18	.264
HBI & Acceptance	40	.22	.179
HBI & Sense of humor	40	.38	.018
HBI & Turn to religion	40	-.03	.870
HBI & Seeking emotional support	40	.24	.137
HBI & Seeking of instrumental support	40	.39	.016
HBI & Self-distraction	40	.47	.003
HBI & Denial	40	-.30	.068
HBI & Venting	40	-.04	.816
HBI & Substance use	40	-.21	.204
HBI & Behavioral disengagement	40	-.20	.216
HBI & Self-blame	40	.39	.014

Note. HBI – Health Behavior Inventory; Mini-COPE – Coping Inventory in Crisis Situations.

**Table 5***Statistical analysis of mean results of Mini-COPE test for both groups (N = 40)*

Coping strategies	N	M	SD
Active coping	40	1.94	0.65
Planning	40	1.96	0.67
Positive reframing	40	1.56	0.66
Acceptance	40	1.85	0.79
Sense of humor	40	1.18	0.80
Turn to religion	40	1.35	1.12
Seeking emotional support	40	1.85	0.80
Seeking of instrumental support	40	1.83	0.78
Self-distraction	40	1.71	0.80
Denial	40	1.18	0.81
Venting	40	1.56	0.64
Substance use	40	0.73	0.96
Behavioral disengagement	40	1.09	0.68
Self-blame	40	1.65	0.84

*Acceptance, coping strategies and health behaviors in bipolar disorder patients**Note.* Mini-COPE – Coping Inventory in Crisis Situations.

In Table 5, the results for individual coping strategies (Mini-COPE test) are presented.

The mean score for the Mini-COPE test was 20.90, for the group on lithium 20.83 points and for the group without lithium 20.98 points. Active coping strategy ( $M = 1.94$ ) and planning ( $M = 1.96$ ) achieved the highest mean for all subjects. Psychoactive substance use ( $M = 0.73$ ) and cessation ( $M = 1.09$ ) were rated lowest. Statistically significant differences between the study groups were found for the strategy turning to religion ( $z = -2.98, p = .003$ ). People taking lithium less frequently turn to religion as a strategy for coping with difficult situations. Mean scores were compared with adult norms (Juczyński & Ogińska-Bulik, 2012). Statistically significant differences were observed for the strategies sense of humor ( $t = 2.81, p = .008$ ) and seeking instrumental support ( $t = 2.19, p = .035$ ) compared to the norm, as were the strategies preoccupation with something else ( $t = 2.85, p = .007$ ), denial ( $t = 4.25, p < .001$ ), discharge ( $t = 5.40, p < .001$ ), use of psychoactive drugs ( $t = 2.35, p = .024$ ), cessation ( $t = 4.70, p < .001$ ) and blaming oneself ( $t = 3.36, p = .002$ ) – patients in the study groups obtained significantly higher scores than healthy adults.

## DISCUSSION

Bipolar disorder has a global impact on patients' functioning. This study aimed to determine the degree of

acceptance of the illness, general health behaviors and coping with stress in two groups divided according to the medication received. Research indicates that high scores in health attitudes, adaptive coping strategies, and coping with stress positively impact bipolar affective disorder (Fletcher et al., 2014). Additionally, mood stability influences the approach to treatment. The frequency of medication withdrawal without medical indication is high for most psychiatric disorders (Budziński et al., 2016; Colom et al., 2000; Kabzińska, 2021). The present study confirms this trend. As many as 85% of the study participants have independently discontinued medication at least once. Considering the importance of pharmacotherapy in BD, this factor can significantly hinder the maintenance of remission.

An integral part of the experience of illness is its acceptance. It includes awareness of limitations caused by the illness, knowledge of treatment options and recovery prospects, perception of resources, combating stigma and discrimination (Mizock & Russinova, 2016). It is necessary to sustain the individual in long-term treatment. The above studies show that there is no complete acceptance of the disease in patients – in both groups, it is at an average level. The mean response values range from 2.4 to 3.2, indicating patients' indecision about the statements presented. Patients may not reflect on acceptance of the diagnosis. Education about the disease and its consequences is one of the critical issues related to stabi-

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lizing the disease, e.g., by influencing the knowledge about the need for psychopharmacotherapy (Budziński et al., 2016). Moreover, people taking lithium are characterized by significantly lower agreement with the diagnosis. It can be speculated that the very perception of the drug taken will influence the perception of the illness. Lithium carbonate is perceived as a toxic drug, causing severe side effects (Rybakowski, 2018). Increased acceptance will result in a decrease in psychological discomfort. Analysis of the data indicated that acceptance of the disease also correlates with other behaviors that can be considered conducive to maintaining health – it supports active coping strategies. It negatively correlates with maladaptive coping strategies – as the level of acceptance of the illness increases, the tendency to discharge, stop activities, and blame decreases. The blaming and robust emotion avoidance strategies are common among individuals diagnosed with BD. However, it seems essential to consider other variables that may be relevant in this aspect. The severity of the episodes, the difficulty of diagnosis or changes in medication may affect acceptance of the diagnosis. Further research is needed to take all variables into account. Working on illness acceptance may influence the development of adaptive coping strategies and reduce those that will perpetuate psychopathology.

Research indicates that active implementation of health-seeking behavior is influenced by demographic factors, personal resources of the individual (Gruszczyńska et al., 2015; Kubiak, 2009; Zielińska, 2008), and awareness of one's behavior (Sheeran et al., 2013). The subjects were characterized by low or average levels of health behavior. Promoting proper eating habits, preventive examinations, activity, and a positive mental attitude increase people's quality of life and improves their well-being (Inman et al., 2011). In the face of affective illness, it can relieve the burden on patients, increasing the likelihood of maintaining a state of euthymia. Research confirms that a higher score on the HBI scale positively correlates with coping strategies (active coping, planning, humor, seeking instrumental support, and attending to something else).

People with BD are exposed to more stressors than those in the healthy population (Fletcher et al., 2014; Wendołowska et al., 2020). The above studies show that patients use both adaptive and non-adaptive ways of coping with stress. However, they most often actively approach aversive stimuli. It is advisable to pay attention to this aspect of functioning in clinical practice because some strategies, i.e., denial, discharge, use of psychoactive substances, blaming, seeking instrumental support (which, according to research, are more frequent in patients than in the healthy population), affect the maintenance of psychopathology (Granek et al., 2018).

The limitations of this study were the relatively small sample of people surveyed. The sociodemo-

graphic questionnaire should also be extended to include the age of onset of the first episode and the duration of the disease. It is worth extending the set of research measurements to include objective health status measurements in further research. The research shows the psychological side of patients' functioning, and the topic can be developed more interdisciplinarily. In addition, the variety of drugs taken and their heterogeneity can also be considered a weakness. However, bipolar disorder is a complex problem that is challenging to treat with a single medication.

Trends in contemporary science tend towards interdisciplinarity, and this approach is essential when working with psychiatric patients. An informed and developed attitude towards health behavior is one of the crucial elements that can maintain the well-being of patients. Accepting the diagnosis, developing adaptive coping strategies, and eliminating negative beliefs about medication can go a long way in maintaining patients' treatment. Optimizing these behaviors will support individuals' well-being and, most importantly, those struggling with clinical mood variability.

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