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Depression and ways of coping with stress: A preliminary study

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Background:

Coping with stress is defined as all activities undertaken by a human in a stressful situation. The effect of stress on depression, its role in triggering the subsequent phases of the disease, and the factors that mediate the stress-depression relationship become more and more often subjects of research in psychiatry and psychology. Factors important for the formation of depressive symptoms and disease progression are significantly associated with coping strategies used in the face of stress.

The main aim of the study was to evaluate the most popular strategies of coping with stress in people with depression in comparison to healthy subjects.

Material/Methods:

Initial research was carried on 80 patients aged from 20 to 66 years with a diagnosis of depression. The control group consisted of 30 healthy subjects aged 22 to 57 years. Analysis of the most popular strategies of coping with stress was performed with the Multiphasic Inventory for Measuring Coping (COPE) by Carver, Scheier, and Weintraub.

Results:

In contrast with healthy people, patients with depression in stressful situations more often use strategies based on avoidance and denial and have more difficulties in finding positive aspects of stressful events.

Conclusions:

Depression may be an important factor in the negative assessment of one's own ability to cope with difficult situations and can aggravate a tendency to perceive stressful events as overwhelming.

Key words:

coping with stress • depressive disorders • stress

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Background

Stress is most often thought of as something negative and harmful. In fact, stress causes adverse effects only when it is too strong or lasts too long and thus exceeds the adaptive capacity of the individual. Moderate stress facilitates adaptation to environmental demands, thereby stimulating intellectual growth. For many researchers, this kind of stress is a primary factor in mental development. However, prolonged stress increases risk of mental disorders, in particular anxiety (neurotic) disorders and depression [1]. Too much stress can trigger PTSD (post-traumatic stress disorder) and personality disorders, and may contribute to the onset of psychosis [1–4].

Learning how to identify stressors gives the ability to eliminate causes of stress and thus to avoid or alleviate its effects. Coping with stress is defined as all activities undertaken in a stressful situation [5]. It is an adaptive process based on primary and secondary appraisals. Dealing with stress is predominantly classified as a process, strategy, or style. The process approach involves subcategories called strategies or ways of coping with stress. Process is understood as a series of strategies changing over time and depending on the psycho-physical characteristic of the individual. Style refers to the correlated set of coping strategies typically used in difficult situations. It is an individual pattern of reaction consistent across situations [5,6].

In the cognitive-transactional model, coping with stress is understood as continual cognitive and behavioral effort to deal with external and internal demands, which are assessed as excessive or overwhelming [2]. The process of coping is dynamic and responsive, and some strategies and forms of behavior can be replaced by others. In this approach, greater importance is ascribed to an individual activity than to influence of the environment [2,7].

Somatic and mental disorders have multifactorial determinants, and stress is one of them. In fact, all diseases afflicting humans are more or less related to stress. Both acute and chronic stress associated with exposure to negative experiences can trigger a wide range of diseases. Signs of improper coping with stress include inability to effectively release tension, limited control of emotional responses, and impaired functioning. It evokes anxiety, which leads to both physiological and psychological symptoms (e.g., frequent headaches, viral infections, metabolic disorders, trouble sleeping, depressed mood, and increased irritability).

Development of psycho-neuro-endocrinology and psycho-immunology enabled analysis of the relationship between the strictly biological and psychological factors that play a role in the etiology of endogenous diseases. The emotional state of

a human being affects the neurotransmission in the central nervous system (CNS) and also leads to permanent structural changes through the activation of various neuroendocrinological and immunological mechanisms [8]. As a consequence of these processes, a state of oversensitivity to particular stressful situations may occur, thereby conditioning a predisposition for the development of mental disorders, even many years later [9].

The effect of stress on depression, its role in triggering the subsequent phases of the disease, and the factors that mediate the stress-depression relationship are increasingly common topics of research in psychiatry and psychology [10]. Currently, depression is understood as a multifactorial disorder. Interacting genetic, biological and psychological factors contribute to the pathogenesis. A popular explanation of the depression etiology has recently become the “predisposition-stress” model. This approach is based on the assumption that people who have a genetically determined predisposition to a particular mental disorder can develop the disease only due to stressful life events [11]. Other factors that contribute to the occurrence of disease are incorrect cognitive constructs, created in the process of social learning [12]. As stressful life events are defined, such situations (especially loss or overstrain) can cause or exacerbate depression, depending on the individual’s personality traits [10,13].

The relationship between stress and depression is not unidirectional. Stressful life experiences and ways of dealing with them may predispose to mood disorders, and the depression itself may be the cause of severe stress and underdeveloped techniques to oppose it. Thus, the variables relevant to onset and course of depression remain in important relationships with coping strategies [10]. The experience of negative emotional states associated with depressive disorder narrows the attention span, reduces the ability for flexible and creative thinking, and also reduces the adaptive capacity. This limits effective coping in stressful situations in the present and in the future. The shortage of coping resources contributes to the deterioration of the quality of life, which adversely affects the health status [14].

The main aim of this study was to characterize the most popular strategies of coping with stress in people suffering from depression in comparison with healthy subjects. We generated the following hypotheses:

- Patients with depression more often use ineffective and avoidance strategies to cope with stress compared to healthy controls,
- There is an association between depression severity measured by the Hamilton Depression Rating Scale (HDRS) and particular strategies of coping with stress,
- Women and men differ significantly in preferred ways of coping with stress.

Material and Methods

We enrolled 80 patients treated in the Department of Adult Psychiatry, Medical University of Lodz, suffering from mood disorders: depressive episode (F 32) and recurrent depressive disorder (F 33). The study group included 48 women and 32 men, aged 22–66 years ($M=49.70$, $SD=11.10$); 27 patients (33.75%) were diagnosed with first episode of depression and 53 (66.25%) with recurrent depressive disorder. Severity of depressive symptoms was measured on the first day of hospitalization with the 17-point Hamilton Depression Rating Scale (HDRS) [15] and average score obtained by the whole group of patients on admission was $M=23.29$, $SD=6.38$, which corresponds to severe depression. Results of retesting at discharge after about 8 weeks of hospitalization were $M=7.01$, $SD=4.92$, which indicate lack of depressive symptoms. The control group was composed of 30 healthy individuals, 20 women and 10 men, aged 22–57 years ($M=28.93$, $SD=9.73$), with no family history of psychiatric disorders. The control subjects included community volunteers, enrolled into the study following the criteria of the psychiatric CIDI interview [16].

Our study was based on the Coping Orientations to Problems (COPE) questionnaire created by Carver, Scheier, and Weintraub and adapted by Juczyński and Ogińska-Bulik [17,18]. It is based on self-description, consisting of 60 statements to be answered on a 4-point scale: 1 – almost never, 2 – rarely, 3 – often, or 4 – almost always. This allows the evaluation of 15 strategies of coping with stress. These strategies are:

1. Active coping (taking action to try to get rid of or decrease the stressor or its consequences);
2. Planning (deliberations how handle the problem);
3. Seeking social support for instrumental reasons (asking for advice, help or information);
4. Seeking social support for emotional reasons (seeking for emotional support, sympathy or understanding);
5. Suppression of competing activities (putting aside other activities not connected to the problem in order to better deal with it);
6. Turning to religion (as a source of emotional support or signpost to positive reinterpretation and development);
7. Positive reinterpretation and growth (growing as a person as a result of the experience, seeing events in a positive light);
8. Restraint coping (waiting for the right time to do something);
9. Acceptance (accepting situation as something irreversible, trying to get used to it and learn to live with it);
10. Focus on and venting of emotions (concern about own emotions and tendency to express them);
11. Denial (ignoring, refusal to acknowledge the problems);
12. Mental disengagement (avoiding of consequences by turning to other activities like sleep, watching TV);
13. Behavioral disengagement (helplessness, abandonment of efforts to achieve goals);
14. Alcohol-drug disengagement (use of alcohol or drugs to relieve unpleasant emotions);
15. Sense of humor (as a way to relieve unpleasant emotions).

These 15 strategies of coping with stress are elements of 4 general styles: focus on the problem, avoidance behavior, seeking support, and focus on emotions. The study was conducted in accordance with the Act on Personal Data Protection, and the project was approved by the Bioethics Committee of the Medical University of Lodz (RNN/882/11/KB of 13.12.2011). Respondents gave written informed consent to participate in the study.

Results

Statistical analysis of the results was performed using STATISTICA 10.0 PL. Two-sided critical region was implied in the statistical hypothesis testing. Analysis of variables showed that there was no reason to reject the hypothesis of a normal distribution. To demonstrate the strength of the relations between analyzed variables and statistical significance of the differences between the patients treated for affective disorders and the control group, a statistical analysis was performed on the basis of Student's *t* test and the Pearson's *r* correlation coefficient. In all the methods, the statistical level of significance was $p < 0.05$.

The group treated for mood disorders (first depressive episode and recurrent depressive disorder) received the highest scores in the following ways of coping with stressful situations:

- focus on emotions,
- active coping,
- planning,
- seeking social support for instrumental reasons,
- restraint coping.

The subjects in the control group in difficult situations usually resorted to the following strategies:

- active coping,
- planning,
- seeking social support for instrumental reasons,
- seeking social support for emotional reasons,
- suppression of competing activities,
- positive reinterpretation,
- focus on emotions,
- acceptance.

The analysis of differences between average scores of the 15 analyzed items in the compared groups revealed statistical significance for the majority of variables. The results are presented in Table 1.

Table 1. Results of The Coping Orientations to Problems Questionnaire in tested groups.

	M (Patients with depression)	SD (Patients with depression)	M (Control group)	SD (Control group)	t	p
Active coping	10.63	2.09	12.00	1.39	−3.33	0.001
Planning	10.21	2.68	12.90	2.17	−4.91	0.000
Seeking social support for instrumental reasons	10.28	2.86	11.73	2.08	−2.55	0.012
Seeking social support for emotional reasons	9.46	3.00	10.77	3.43	−1.95	0.054
Suppression of competing activities	9.89	2.45	10.97	1.65	−2.22	0.028
Turning to religion	9.17	4.62	8.37	4.29	0.83	0.407
Positive reinterpretation	9.60	2.48	12.03	1.96	−4.83	0.000
Restraint coping	10.36	2.06	9.90	1.45	1.13	0.261
Acceptance	9.64	2.75	10.50	3.00	−1.43	0.156
Focus on emotions	11.76	2.39	10.93	2.35	1.63	0.107
Denial	7.31	2.12	6.13	1.81	2.70	0.008
Mental disengagement	8.51	1.74	7.93	2.10	1.47	0.145
Behavioral disengagement	9.26	2.80	5.87	2.15	6.00	0.000
Alcohol-drug disengagement	6.25	3.43	5.30	2.34	1.40	0.165
Sense of humor	5.83	1.99	7.07	2.64	−2.65	0.009

M – average; SD – standard deviation; t-value of Student's – t test; p – level of statistical significance.

Differences in preferred coping strategies were also analyzed by the type of diagnosis. The group with a first episode of depression, compared to healthy subjects, significantly less often used strategies of: planning ($t=3.87$, $p=0.000$), positive reinterpretation ($t=3.41$, $p=0.001$), and acceptance ($t=2.66$, $p=0.01$), and were more likely to use behavioral disengagement ($t=4.22$, $p=0.000$). Patients with a diagnosis of recurrent depressive disorders in stressful situations were less likely to use the following mechanisms: active coping ($t=4.12$, $p=0.000$), planning ($t=4.86$, $p=0.000$), seeking instrumental support ($t=2.75$, $p=0.007$), seeking emotional support ($t=2.48$, $p=0.015$), suppression of competitive activities ($t=2.57$, $p=0.012$), positive reinterpretation ($t=5.03$, $p=0.000$), and a sense of humor ($t=3.06$, $p=0.003$), and were more likely to use denial ($t=2.79$, $p=0.007$) and behavioral disengagement ($t=6.31$, $p=0.000$).

To analyze the association of severity of disease measured by the Hamilton Depression Rating Scale (HDRS) with particular strategies of coping with stress, statistical analysis of the Pearson's r correlation was performed. Results show that higher level of severity of the symptoms is significantly associated with only 2 strategies: behavioral disengagement ($r=0.28$,

$P<0.05$) and a sense of humor ($r=-0.38$, $p<0.05$). Greater severity of depression was associated with decreased activity and less frequent use of humor. The results are presented in Table 2.

Gender of respondents had little impact on the type of strategies used to cope with stressful situations. Differences were important only in 3 of these methods. Women more often reported focus on emotions ($t=2.47$, $p=0.015$), seeking emotional support ($t=3.33$, $p=0.001$), and turning to religion ($t=3.46$, $p=0.001$).

Discussion

The presented preliminary results show that patients with depression more often use ineffective and avoidance strategies to cope with stress compared to healthy controls. Depressed patients strongly focused on emotions and the need to relieve them.

The relationship between stress and the occurrence of mood disorders like depression is described very broadly in the

Table 2. Statistical significance between severity of depression (HDRS) and coping with stress strategies (COPE).

	Statistical analysis	p
Active coping & HDRS	$r=0.01$	0.903
Planning & HDRS	$r=-0.01$	0.922
Seeking social support for instrumental reasons & HDRS	$r=-0.07$	0.522
Seeking social support for emotional reasons & HDRS	$r=-0.09$	0.433
Suppression of competing activities & HDRS	$r=0.09$	0.422
Turning to religion & HDRS	$r=-0.06$	0.626
Positive reinterpretation & HDRS	$r=-0.18$	0.116
Restraint coping & HDRS	$r=0.10$	0.369
Acceptance & HDRS	$r=0.14$	0.228
Focus on emotions & HDRS	$r=0.02$	0.830
Denial & HDRS	$r=0.05$	0.652
Mental disengagement & HDRS	$r=-0.06$	0.595
Behavioral disengagement & HDRS	$r=0.28$	0.012
Alcohol-drug disengagement & HDRS	$r=-0.13$	0.249
Sense of humor & HDRS	$r=-0.38$	0.049

r – Pearson's correlation coefficient; p – level of statistical significance; HDRS – Hamilton Depression Rating Scale; COPE – The Coping Orientations to Problems Questionnaire.

literature. Available studies primarily concern associations between stress and the onset of depression, its role in the induction of subsequent phases of the disease, and all the factors that mediate the stress-depression relationship. The basic concept used by researchers are significant life events like loss or overstrain, which as so-called “triggers” can cause or change the course of depression [10]. The percentage of cases in which stressful life events are associated with the onset of affective disorders in different studies ranges from several to 100% [3,19,20]. Particular importance is attributed to life events such as death of a loved one, marital and family conflicts, tragedy, changes in family status, interpersonal conflicts, difficult family situation, problems with children, and health problems [10,13].

Previous reports confirm the link between environmental stress in childhood and the future occurrence of affective disorders [19,20]. Epidemiological studies indicate that children exposed to severe adverse experiences are more likely to develop depression and/or anxiety disorders [19]. Induced persistent CNS

sensitization as a consequence of severe stress in childhood may be an essential biological basis of increased sensitivity to stress and the development of depression and anxiety disorders [19]. Symptoms of the so-called ‘major depression’ and anxiety disorders, including post-traumatic stress disorder and panic disorder, are more common in people with a history of childhood abuse [3,4,21].

According to Harkness and Monroe [22], endogenous depression was diagnosed twice as often in people who have a history of physical abuse, sexual abuse, neglect, or even quarreling in the family. Severe sexual trauma was associated with endogenous guilt and psychomotor retardation, as well as more serious suicidal thinking.

In the literature, little attention is paid to the analysis of strategies to cope with stress among patients with depression. We found only a few reports in which the COPE questionnaire was used in the evaluation of this group of patients. Kossakowska [23] assessed the styles of coping with stress among 197 women at 4–12 weeks postpartum: 113 women without symptoms of postpartum depression and 84 women with postpartum depression. The following methods were used to find answers to the research questions: Edinburgh Postnatal Depression Scale (EPDS), COPE questionnaire, and the scale for measuring social support. Women with symptoms of postpartum depression reported greater satisfaction with support provided by midwives rather than from family members. Depressive women chose less active ways of coping and they were more likely to use active strategies when they were satisfied with received social support.

There are some studies in the literature concerning coping strategies based on different research tools than those we used in the present study. Research by Benedysiuk and Tartas [13] on a group of 35 persons treated for major depressive disorder compared with 35 healthy subjects showed differences in ways of coping with stress. Researchers applied Moos' Coping Responses Inventory to evaluate the strategies and styles of coping with stress. People suffering from depression in the face of stressful events tended to use both confrontational and evasive coping strategies. More often, however, they used the strategy of cognitive avoidance and acceptance/resignation. These findings are in line with our results.

Pu et al. [7] assessed the styles of coping with stress used by 26 patients with major depressive disorder in comparison to 30 healthy subjects, investigating the activity of prefrontal regions of the brain during cognitive verbal fluency exercises. Coping styles were assessed on the basis of the Coping Inventory of Stressful Situations (CISS). Monitoring regional hemodynamic changes during verbal tasks checking verbal fluency were performed with the 52-channel near-infrared spectroscopy

(NIRS). Patients with depression mainly presented emotion-oriented style, while the task-oriented style and avoidance in this group were used significantly less often compared with the control group. Emotions -oriented style positively correlated with the subjective assessment of the severity of depression. Regional hemodynamic activity was significantly lower in depressive patients compared to the control group in the areas of the prefrontal cortex, and was positively correlated with task-oriented styles of coping. These results suggest that ways of coping with stress can be considered as an important source of information for patients who struggle with depression and specialists who work with them.

People with depression more often perceive life events as threatening and difficult to deal with. This view is consistent with the concept of Lazarus' Cognitive Appraisal Theory [10,13], which states that the event is regarded as stressful depending on the importance assigned to it by the individual. The reason for such negative assessment of life events may be dysfunctional cognitive schema used by patients with depression [10].

The depressive symptoms negatively correlate with proactive coping, described as one of the most effective strategies focused on the future and expanding personal resources, including autonomous and individual goal-setting, and their consequent realization [24,25]. Research conducted among immigrants, teachers, retirees, and the elderly [26,27] have shown that depressed mood, everyday life difficulties, somatic complaints, and dysfunctions are not favorable to proactive coping. In addition, people experiencing depressive symptoms are more likely to perceive their jobs and living conditions as stressful [26,28].

Antonovsky's salutogenic concept suggests that people with depression are characterized by a low sense of coherence (SOC), which, according to the author, is under the influence of multiple stressful events (eg, changes in one's life) is further reduced [12]. In a stressful encounter, low SOC for resourcefulness in people with depression may be responsible for the limited perception of available resources to deal with the problem. This limitation may be responsible for the tendency to use avoidance strategies.

Thus far, the dispute is whether the symptoms of depression contribute to choosing less effective ways to deal with stress, or maybe these strategies are used by the patients before the onset of the disease and this way become risk factors for depression. Our study revealed statistically significant differences between the patients and control group in most of the analyzed coping strategies. We found that longer duration of a recurrent depressive disorder was associated with greater differences in coping strategies preferred by patients, but the severity of depressive symptoms was not significantly associated

with the set of picked coping mechanisms. This may suggest an important contribution of personality traits in the selection of ways of coping with stress. Coping styles are defined as an individual's established and typical approaches to dealing with problems, and coping strategy relates to personal reactions in a particular situation [1,25].

Therefore, to solve the above dilemma, parallel studies should be reviewed, in which coping strategies in populations of patients at risk of developing depressive disorder would be assessed before the onset and during the exacerbation and remission of symptoms, but no such reports exist in the current literature. Coulston et al. [29] found that personality traits of patients with affective disorders play an important role in choosing ways to deal with stress. Compared to patients with bipolar disorder, patients with depression received worse results in terms of coping with stress. In total, 96 subjects with a diagnosis of bipolar disorder and 77 subjects with depression were included into the study. Researchers assessed the severity of depressive symptoms, anxiety, stress, personality traits, ways of coping with stress, social adjustment, level of self-esteem, dysfunctional attitude, and concerns about the critical assessment.

Compared to subjects with depression, those with bipolar disorder reported significantly higher level of extraversion, more positive self-esteem, and more adaptive ways of coping, and had lower level of anxiety and lower fear of negative evaluation. Extraversion positively correlated with high self-esteem and adaptive coping style, and negatively with the level of anxiety and fear of negative assessment. The authors concluded that the differences in the course of the disease and the type of depression are likely to influence the selection of coping strategies by patients. Due to the protective role of extraversion, which promotes choosing more favorable ways of coping, subjects with bipolar disorder manage much better in difficult situations.

This preliminary study shows significant differences in the strategies used to cope with stress among subjects with depression compared to healthy subjects. An important limitation of the presented initial results is difference in the average age between study groups. This research is being continued and selection of respondents is ongoing to create a control group comparable in every aspect required for further analyses.

Conclusions

Patients treated for depressive disorders in stressful situations more often than healthy people use coping strategies based on behavioral disengagement and problem denial, and have more difficulties in positive reinterpretation of stressful events.

In the entire population, women and men do not significantly differ in preferred ways of coping with stress. Mood disorders like recurrent depressive disorder or depressive episode may

be an important factor contributing to the negative assessment of ability to cope with difficult situations and a greater tendency to perceive stressful events as overwhelming.

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