PSYCHIATRIKI 30 (1), 2019 49

Research article Ερευνητική εργασία

A diathesis-stress model conceptualization of depressive symptomatology

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Psychiatriki 2019, 30:49-57

epression currently constitutes the most common mental illness observed in mentalhealth services. In addition to its classical, psychiatric and phenomenological approach, a developmental, psychodynamic one has also been formed according to which there are two predisposing depressive types of vulnerability, the anaclitic and the introjective. These refer to the capacity of establishing reciprocal and mutually satisfying interpersonal relationships and to the formation of an integrated, mature and differentiated positive sense of identity, respectively. They are triggered when specific events, that match their sensitivity, occur. The personality-stress interaction with relation to depression has only scarcely been investigated so far in our country. Consequently, the purpose of the present study was to examine the relationship of the depressive vulnerability dimensions to depression. Our sample consisted of 714 subjects, 323 outpatient with depression and 391 healthy participants in the control group. They had an average age of 34.9 years and completed an improvised questionnaire on stressful events that referred to interpersonal and achievement issues, as well as the Depressive Experiences Questionnaire (DEQ), that assesses the dependent and self-critical vulnerability style, two personality constructs, focusing on issues of abandonment and self-worth. They were also administered the Beck Depression Inventory (BDI). Compared to healthy controls, patients with depression showed more severe depressive symptoms, scored higher in depressed types of vulnerability, and experienced more stressful events. Self-criticism was more strongly related to depression possibly because it represents a more articulated form of the disorder. The positive relation of self-criticism with both categories of adverse events pointed out that these vulnerable individuals are preoccupied with achievement topics and personal failures, but interpersonal quarrels and loss, as well. The hierarchical multiple regression analysis confirmed the participation of the diathesis-stress model in the prediction of depression and indicated that stress mediated the effect of personality on the depressive symptomatology. The naturalistic nature of the current study does not allow us to assign causal links between variables. Nevertheless, therapy may take into account the predominant personality type so as to design and deliver a treatment that matches the vulnerability.

Key words: Depression, vulnerability, dependency, self-criticism, stress.

Introduction

Major depression is a particularly aggravating and common mental illness.¹ The study of predisposing personality types can contribute to the investigation of its risk factors. According to Blatt's developmental psychodynamic view,² there are susceptible to depression individuals who develop this disorder when life events are introduced.

In particular, Blatt³ mentioned two developmental formations, the introjective and the anaclitic, referring to two domains, to self-definition, namely to the formation of a stable, positive sense of autonomy and identity, and to interpersonal connectedness, that is to say, the capacity for satisfactory, close, interpersonal relationships. These correspond to two kinds of depressive experiences, self-criticism and dependency. Excessive self-criticism, on the one hand, involves intense efforts to achieve goals and deal with failure. Excessively dependent people, on the other hand, are characterized by the need to rely on the important others and, consequently, by their tendency to content others so as to avoid rejection.

Diathesis refers to predisposition, i.e., biological, genetic and psychological factors that contribute to the sensitivity of a person to a psychopathological entity.⁴ Stress is conceptualized as important life events that are comprehended as unwanted⁵ and occur when the person's environmental transactions lead him to perceive a difference between the demands of a situation and his resources.⁶ According to the diathesis-stress model, adverse experiences have a particular depressing effect on vulnerable individuals.² Stressful events trigger the disorder when they acquire a special sense of threat to people with specific sensitivities. The dependent appear to be vulnerable to interpersonal issues, such as separation, divorce, and death, whereas self-critical people are more sensitive to events related to achievement and control, such as loss of promotion and work or studies failure. This model has been especially supported for depression by various surveys.⁷⁻⁹

Dependency has been significantly but moderately associated with depression as opposed to self-criticism that has been more strongly connected with depressive symptomatology.¹⁰ However, the role of predisposing personality organization in depression

is not clear.¹¹ In general, the conclusions that studies have yielded, regarding the link of depression with psychological factors and the diathesis-stress model, are neither definitive and clarified, nor widely accepted. Furthermore, to the best of our knowledge research data on this area has been sparse so far in Greece.

The main goal of the present study was to investigate the connection between depressive symptomatology and the vulnerability factors in a sample of adults. Patients with depression were expected to show higher scores in the dependency and self-criticism scales^{12–14} and in stressful conditions as compared to the control group.¹⁵ We also examined whether diagnosis moderates and stressful events mediate the relation between personality dimensions and depression.

Material and method

Participants and procedure

Study subjects were 714 adults, 323 outpatients with depression recruited from outpatient clinics of general hospitals' psychiatric departments and mental health centers in Athens and 391 healthy controls recruited from the waiting areas of the health care's directorate of insured public officials, the Social Insurance Institute, and the National Bank of Greece in Athens, on a volunteer basis. Participants from both groups received no financial remuneration. The participants had an average age of 34.9 years with a range of 18-56 years and they had at least completed compulsory education. The patients met the diagnostic criteria for major depressive disorder according to DSM-IV, while only those who did not have a DSM-IV diagnosis of mental disorder were included in the group of healthy controls. In the patient group 227 participants (70.3%) had solely major depressive disorder diagnosis and 96 (29.7%) had comorbid dysthymic disorder, schizoid personality disorder, borderline., or histrionic, or narcissistic personality disorder, general anxiety disorder, panic disorder, and obsessive-compulsive disorder. All the participants offered informed consent.

Measures

Two ad hoc inventories were used, a demographic data and mental health questionnaire and a life

events questionnaire in order to examine the last year's stressful conditions, including 16 issues, eight on interpersonal relationships, such as death, loss, divorce, and illness, and eight on issues of achievement, such as unemployment and income reduction. The latter instrument was mainly based on the Social Readjustment Rating Scale.¹⁶

The Depressive Experiences Questionnaire (DEQ)¹⁷ was administered to evaluate personality types that are prone to depression. It includes 66 items, rated on a 7-point Likert scale, and three factors: efficacy, that was excluded from the study, dependency ("I constantly try, and very often go out of my way, to please or help people I am close to") and self-criticism ("There is a considerable difference between how I am now and how I would like to be"), which confirm the clinical observations of two primary sources of depression, that is relatedness and selfdefinition and which reflect preoccupation with fear of loss and failure to meet high standards, respectively. The test-retest reliability for the dependency factor ranged from 0.89 to 0.81 and the self-criticism from 0.83 to 0.75. The internal consistency as measured by the Cronbach's alpha coefficient was 0.81 for dependency and 0.80 for self-criticism.¹² Moreover, the good convergent, divergent and construct validity have been demonstrated.¹⁸ Confirmatory factor analysis was performed with AMOS (version 21) in the current research to verify the factor structure and demonstrated good fit between the data and the measurement model by the following indices x²(63)=111.46, p<0.001, CMIN/df=1.77, GFI=0.98, CFI=0.99, TLI=0.98, RMSEA=0.033. The Cronbach's alpha was 0.82 for dependency and 0.87 for self-criticism.

The Beck Depression Inventory (BDI)¹⁹ was used to assess the recent depressive symptomatology. The BDI is a 21-item instrument with a Cronbach's alpha coefficient that ranges from 0.73 to 0.92 with an average of 0.81 and 0.76 to 0.95 with an average of 0.86 in non-clinical and psychiatric populations, respectively. The test-retest reliability ranged from 0.48 to 0.86 in clinical populations and from 0.60 to 0.90 for non-clinical populations. It also has high construct, criterion-related and discriminant validity. It distinguishes major depressive disorder from generalized

anxiety disorder, dysthymic disorder and psychiatric patients from undergraduate students.²⁰

Statistical analysis

Means, standard deviations, and intercorrelations for the variables used in this research were calculated with the Statistical Package for Social Sciences (IBM SPSS-21 edition). The curve estimation of the regression analysis showed linear correlations. Hence, we examined moderating and mediating models performing hierarchical multiple regression analysis in order to investigate the interplay between characterological variables, adverse events and depressive symptoms.

Results

The patients showed higher scores in all measures (table 1). Effect size values (Cohen's d) suggested medium and large practical significance, although this has to be interpreted in a parsimonious manner,²¹ as, in large samples, the effect may have statistically significant though misleading results.²² It was also observed that the mean BDI score showed a statistically significant positive correlation with all predictive factors (table 2).

A multiple regression model was tested to examine whether the association between the vulnerability types and depressive symptoms depends on the diagnosis. Initially, the two predictors, dependency and diagnosis, and their interaction were entered into a simultaneous regression model (ΔR^2 =.68, F(3, 710)=450.81, p<0.001). The results indicated that their interaction was significant and thus diagnosis (B=-0.05, t(710)=-2.18, p<0.05) was a significant moderator of the relation between dependency and depressive symptoms suggesting that the effect of the dependent vulnerability type on depressive symptomatology depended on diagnosis (figure 1). The simple slopes were for the diagnosed 0.05 and for non-diagnosed 0.01 and revealed that dependency was more strongly associated with depressive symptoms for the diagnosed than for the non-diagnosed participants (f²=1.81). The scores for the dichotomous moderator are the two scores of the variable.

Moreover, the two other predictors, self-criticism and diagnosis, and their interaction were entered into another simultaneous regression model (ΔR^2 =0.73,

Table 1. Means, standard deviations, t-tests and Cohen's d of the scales of the questionnaires BDI, DEQ and Stressful Events in the participants with and without depressive disorder.

	Depression						
	Yes		No		T-test		
	Mean	SD	Mean	SD	t-score (d.f.=712)	р	d*
BDI	23.76	7.92	5.79	4.32	36.530	<0.001	2.82
DEQ Dependency	5.39	1.15	4.59	1.18	9.219	< 0.001	0.69
DEQ Self-Criticism	4.96	1.08	3.11	0.94	24.464	< 0.001	1.83
SE Interpersonal	0.32	0.16	0.13	0.13	16.773	< 0.001	1.30
SE Achievement	0.40	0.20	0.22	0.19	12.395	< 0.001	0.92

Note. M: Mean, SD: Standard Deviation, df: Degrees of freedom, p: Statistical significance, (NS): Non-significant, d: Cohen's d, Higher score means higher level

Table 2. Correlations (Pearson's r) among the study variables.

	BDI	DEQ Dep	DEQ SC	SE Int	SE Ach
BDI Depression	1				
DEQ Dependency	0.32**	1			
DEQ Self-Criticism	0.72**	0.35**	1		
SE Interpersonal	0.53**	0.23**	0.44**	1	
SE Achievement	0.47**	0.10**	0.44**	0.58**	1

Note. BDI (Beck Depression Inventory), DEQ (Depressive Experiences Questionnaire), SE (Stressful Events). *p<0.05, **p<0.01, ***p<0.001

F(3, 710)=582.79, p<0.001). The results indicated that their interaction was significant and thus diagnosis (B=-0.05, t(710)=-2.23, p<0.05) was a significant moderator of the relation between self-criticism and depressive symptoms suggesting that the effect of the self-critical vulnerability type on depressive symptomatology depended on diagnosis (figure 2).

The simple slopes were for the diagnosed 0.14 and for the non-diagnosed 0.09 and revealed that self-criticism was more strongly connected with depressive symptoms for the diagnosed than for the non-diagnosed participants (f^2 =0.76).

Mediation was also examined in the diathesisstress model. To test this interaction with depres-

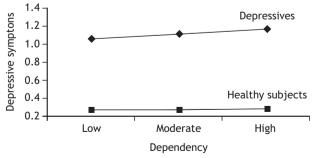


Figure 1. Simple regression slopes of dependency that predict the depressive symptoms for the depressed and the healthy subjects.

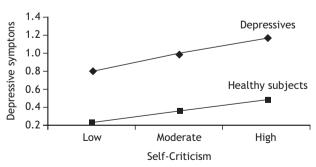


Figure 2. Simple regression slopes of self-criticism that predict the depressive symptoms for the depressed and the healthy subjects.

^{*}Cohen's d with a value of 0.2 means a small size effect, 0.5 medium and 0.8 large

sion, multiple regression analyses were performed with the personality factors as the predicting variable and depressive symptomatology as the dependent variable. The Baron and Kenny²³ criteria were followed. The 95% confidence interval of indirect effects was obtained by the bootstrap estimation approach with 1000 samples.^{24–26}

In particular, results indicated that dependency had a significant effect on interpersonal stressful events (path a: F(1, 712)=40.65, p<0.001, $R^2=0.05$) $\beta=0.23$, t(712)=6.38, p<0.001, and was a significant predictor of depressive symptomatology (path c: F(1, 712)=81.97, p<0.001, $R^2=0.10$) β =0.32, t(712)=9.05, p<0.001, and that interpersonal stress had a significant effect on depression (path b: F(2, 711)=169.32, p<0.001, R^2 =0.32) β =0.48, t(711)=15.17, p<0.001. Dependency was a significant predictor of depressive symptomatology after controlling for the mediator but the coefficient was lower (path c: F(2, 711)=169.32, p<0.001, R^2 =0.32) β =0.21, t(711)=6.60, p<0.001. The results support the partial mediational hypothesis (figure 3). Approximately 32% of the variance in depression was accounted for by the predictors. These results indicated the indirect effect of personality vulnerability on depression, ab=0.05, BCa CI (Bias-Corrected and Accelerated percentile 95% Confidence Interval) (0.03, 0.06). The amount of total effect explained by the mediator is PM=0.35. The statistical significance of the mediation was also checked by the sobel test (z=5.87, p<0.001, $\kappa^2 = 0.05$).

Furthermore, results indicated that self-criticism had a significant effect on depression (path c: F(1, 712)=770.95, R²=0.52, p<0.001) β =0.72, t(712)=27.77, p<0.001, and after controlling for the mediator (path c': F(2, 711)=434.30, R²=0.55, p<0.001) β =0.64, t(712)=22.80, p<0.001, supporting the partial media-

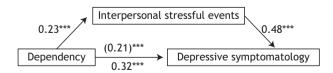


Figure 3. Adjusted regression coefficients for the relation between dependency and depressive symptomatology mediated by the interpersonal stressful events. *p<0.05, **p<0.01, ***p<0.001.

tional hypothesis (figure 4). Self-criticism also had a significant effect on achievement-related stressful events (path a: F(1, 712) = 434.30, R²=0.19, p<0.001) β =0.44, t(712)=166.49, p<0.001, and achievement-related stress on depression (path b: F(2, 711)=434.30, R²=0.55, p<0.001) β =0.19, t(711)=6.89, p<0.001. Approximately 55% of the variance in depression was accounted for by the predictors. These results indicated the indirect effect of personality vulnerability on depression, ab=0.03, BCa CI (0.02, 0.04). The amount of total effect explained by the mediator is PM=0.12. The statistical significance of the mediation was also checked by the sobel test (z=6.07, p<0.001, κ ²=0.12).

Discussion

The objective of this study was to investigate the relationship of depressive disorder with personality and stress. Initially, research hypotheses were verified as depressed patients showed higher scores compared to healthy controls in all symptoms and all psychological measures. These findings provided support for Blatt's theory. Similarly, other studies have demonstrated higher levels of dependency and self-criticism in patients, even after remission, in comparison with healthy subjects, and connection between vulnerability types and the severity of depressive symptoms. 12,13,27,28

There was a greater association of stressful conditions with diagnosed depressed than with healthy controls and therefore the research hypothesis, which has been highlighted by others, ²⁹ was confirmed. Monroe and Hadjjiyannakis³⁰ proposed that stress affects the duration of depressive symptoms, remission and recurrence of the disorder. In fact, the relation between stress and the first depressive episode has been especially noted, ³¹ and it has also

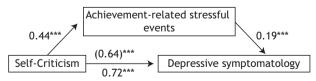


Figure 4. Adjusted regression coefficients for the relation between self-criticism and depressive symptomatology mediated by the achievement-related stressful events. *p<0.05, **p<0.01, ***p<0.001.

been shown that acute life events precipitate a depressive episode³² or are a risk factor for relapse to depressed patients in remission.³³

With regard to the association between psychological measures, positive correlations were found between the vulnerability types and depression. Correspondingly, the two scales of DEQ have been linked to depressive emotion in students, in crosssectional¹⁸ and longitudinal studies.³⁴ Additionally, in this study self-criticism was more strongly correlated with depression than dependency. Blatt et al¹² and Klein et al¹⁴ have also reported higher correlation of depression with self-criticism. Shahar et al³⁵ reached the same conclusions in a longitudinal study of male and female teens. Luyten in 2002, as reported by Blatt,² hypothesized that self-criticism may be a more general dimension in various disorders, whereas dependency is exclusively associated with depression and in some cases only one of its two subfactors, namely neediness, but not connectedness.³⁶ Moreover, dysphoria connected with issues of dependency is not easily articulated by the individuals and is expressed in the form of somatic complaints, which are not assessed in depth by the BDI. In contrast to the findings of the present study, Luyten et al³⁷ in a study with depressive, mixed psychiatric patients, university students and adults from the community observed that dependency was more strongly related to major depressive disorder, while there was no difference between groups of depressed and psychiatric patients in their self-criticism scores.

The two depressive types manifested significant correlation to each other, as opposed to a study by Zuroff et al,³⁴ which reported statistically insignificant, minimal correlation between them for both sexes. The relevance which was also found between stressful conditions and depression has been highlighted by many studies.^{15,38,39} On the other hand, it has been displayed in other studies that the correlation coefficient between the life-changing unit and the total value of the disease, is generally low and ranges from 0.11 to 0.13.⁴⁰

Dependency was more relevant to the recent adverse interpersonal conditions, while self-criticism was associated to the same extent with events concerning recent interpersonal and self-esteem is-

sues. It seems that dependent people are engaged in acquiring and maintaining close, caring and protective interpersonal relationships when faced with recent stress of interpersonal content such as rejection, quarrels or separation from important others. On the contrary, self-critical individuals are engaged in establishing a positive self-esteem when experiencing recent failures such as loss of work, failure in examinations, and poor grades⁴¹ as well as when facing interpersonal conflicts. This finding may also be due to the specific relationship between self-criticism and interpersonal issues noted in studies, e.g. Alden and Bieling⁴² suggested that self-criticism is linked to interpersonal issues but possibly different from those linked with dependency. Campos et al⁴³ highlighted the relationship between self-criticism and issues of interpersonal content, such as experiences of lack of parental care and high overprotection. Having negative early experiences, self-critics are possibly afraid of failing to meet the expectations that their controlling, demanding and intervening parents have set for them and therefore of losing their acceptance.

In conclusion, our results offer support to the implication of the diathesis-stress model in the pathway to depression. It actually seemed that the stressful conditions mediated the relationship of personality dimensions to the disorder. Therefore, previous findings on this interaction were confirmed. Therefore, previous findings on this interaction were

A number of methodological limitations such as the use of ad hoc and non-validated tools, the exploratory nature of the study and its cross-sectional design, which renders it difficult to draw conclusions on causal relationships, should be mentioned. In addition, the patient group was heterogeneous, sampling was not random and patient and control groups were not matched, as far as demographic

factors are concerned. Despite its limitations, the present work has significant advantages, namely the large sample, the existence of a control group and the new, dimensional approach of the depressive disorder. It is clear from the literature that similar research has led to a better understanding of the events and personality variables, that are tied with depression, and to the differentiation of treatment of anaclitic and introjective individuals.^{49,50}

The therapists who are aware of the patients' dominant vulnerability would be able to address more effectively relevant issues as part of their therapy.² In future research, the inference of more solid conclusions about diathesis-stress agreement in the prediction of depression would require randomized, controlled or experimental design studies with repeated measurements, e.g. before and after therapeutic or experimental intervention.

Η θεώρηση της καταθλιπτικής συμπτωματολογίας μέσω του μοντέλου διάθεσης-ψυχοπίεσης

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Ψυχιατρική 2019, 30:49-57

Η κατάθλιψη αποτελεί σήμερα τη συχνότερη ψυχική ασθένεια που παρατηρείται στις υπηρεσίες ψυχικής υγείας. Πέρα από την κλασική, ψυχιατρική και φαινομενολογική προσέγγισή της έχει διατυπωθεί και μια αναπτυξιακή, ψυχοδυναμική, σύμφωνα με την οποία υπάρχουν δύο προδιαθεσικοί καταθλιπτικογόνοι τύποι ευαλωτότητας, ο ανακλητικός και ο ενδοβλητικός. Αυτοί αναφέρονται στην ικανότητα δημιουργίας αμοιβαίων και αλληλοπαθώς ικανοποιητικών διαπροσωπικών σχέσεων και στη διαμόρφωση μιας ολοκληρωμένης, ώριμης και διαφοροποιημένης θετικής αίσθησης ταυτότητας, αντιστοίχως, και ενεργοποιούνται όταν συμβαίνουν συγκεκριμένα γεγονότα που ταιριάζουν με την ευαισθησία τους. Η αλληλεπίδραση της προσωπικότητας και της ψυχοπίεσης σε σχέση με την κατάθλιψη έχει μόνο ελάχιστα διερευνηθεί μέχρι στιγμής στον ελληνικό χώρο. Κατά συνέπεια, σκοπός της παρούσας έρευνας ήταν να μελετήσει τη σχέση τους με την κατάθλιψη. Το δείγμα 714 ατόμων, συστάθηκε από 323 εξωνοσοκομειακούς ασθενείς με κατάθλιψη και 391 υγιείς συμμετέχοντες της ομάδας ελέγχου. Είχαν μέση ηλικία τα 34,9 έτη και συμπλήρωσαν ένα αυτοσχέδιο ερωτηματολόγιο ψυχοπιεστικών γεγονότων, που αναφέρονταν σε θέματα διαπροσωπικά και σε επιτεύγματα, και το Ερωτηματολόγιο Καταθλιπτικών Εμπειριών (Depressive Experiences Questionnaire, DEQ), που αξιολογεί το εξαρτητικό και το αυτοκριτικό στιλ ευαλωτότητας, δηλαδή δύο εννοιολογικές κατασκευές για την προσωπικότητα που επικεντρώνονται σε θέματα εγκατάλειψης και αυτοαξιολόγησης. Χορηγήθηκε επίσης το Ερωτηματολόγιο Κατάθλιψης του Beck (Beck Depression Inventory, BDI). Οι ασθενείς με κατάθλιψη σε σύγκριση με τους υγιείς μάρτυρες εκδήλωσαν περισσότερο σοβαρά καταθλιπτικά συμπτώματα, σημείωσαν υψηλότερες τιμές στους καταθλιπτικογόνους τύπους ευαλωτότητας και αντιμετώπισαν περισσότερα ψυχοπιεστικά γεγονότα. Η αυτοκριτική συνδέθηκε περισσότερο με την κατάθλιψη γιατί ενδεχομένως αντιπροσωπεύει μια περισσότερο εκπεφρασμένη μορφή της διαταραχής. Η θετική συσχέτιση της αυτοκριτικής με τις δύο κατηγορίες των αντίξοων συνθηκών έδειξε ότι αυτά τα ευάλωτα άτομα ανησυχούν για θέματα επίτευξης και για προσωπικές αποτυχίες, αλλά και για διαπροσωπικές φιλονικίες και την απώλεια, επίσης. Από την ιεραρχική ανάλυση πολλαπλής παλινδρόμησης επιβεβαιώθηκε η συμμετοχή του μοντέλου διάθεσης-στρες στην πρόβλεψη της κατάθλιψης και φάνηκε ότι η ψυχοπίεση διαμεσολάβησε στην επίδραση της προσωπικότητας επί της καταθλιπτικής συμπτωματολογίας. Ο νατουραλιστικός χαρακτήρας της τρέχουσας μελέτης δεν μας επιτρέπει να αποδώσουμε αιτιώδεις σχέσεις μεταξύ των μεταβλητών. Ωστόσο,

η ψυχοθεραπεία μπορεί να λαμβάνει υπόψη τον κυρίαρχο τύπο προσωπικότητας ώστε να σχεδιάζει και να προσφέρει μια παρέμβαση που να ταιριάζει με την ευαλωτότητα.

Λέξεις ευρετηρίου: Κατάθλιψη, ευαλωτότητα, εξαρτητικότητα, αυτοκριτική, στρες.

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