

VULNERABILITY TO POSTPARTUM DEPRESSIVE SYMPTOMATOLOGY: DEPENDENCY, SELF-CRITICISM AND THE MODERATING ROLE OF ANTENATAL ATTACHMENT

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A prospective study of self-criticism and dependency as vulnerability factors to postpartum depressive symptoms in a non-clinical sample is presented. Prospective mother's attachment to the unborn baby was hypothesized to moderate the effects of the personality vulnerability factors on depression. Seventy-three first pregnancy subjects were assessed during the third trimester of pregnancy and 8 weeks postpartum. Controlling for Time 1 depression, findings support the assumption that self-criticism measured at Time 1 predicted postpartum depression. In addition, antenatal attachment scores were found to moderate this personality vulnerability: highly self-critical subjects' risk for depression was lowered if they became strongly attached to the fetus during pregnancy. Dependency was not found to be associated with postpartum depressive symptoms. Results are analyzed in the framework of Blatt's theory of depression and underscore the interaction between personality vulnerabilities and cultural aspects of childbirth and maternal role.

Research on postpartum depression supports a view of the transition to motherhood as a stressful period of change and disruption of existing patterns of adaptation and interpersonal relationships (Hopkins, Marcus & Campbell, 1984; O'Hara, Schlechte, Lewis, & Varner, 1991; Whiffen, 1992; Whiffen & Gotlib, 1993). Even though a relatively low

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number of women are treated for severe postpartum depression, a large number of new mothers experience milder forms of dysphoria and feelings of inadequacy (Gotlib, Whiffen, Mount, Milne, & Cordy, 1989; Hopkins et al., 1984). Diverse psychosocial variables such as previous or concomitant emotional problems (Gotlib, Whiffen, Wallace, & Mount, 1991), social support (Cutrona, 1984), and perceived stress levels (Hopkins, Marcus, & Campbell, 1987) have been found to be significantly associated with postpartum depression. However, dealing with discrete, particular correlations makes interpretations difficult and limits the possibility to generalize (Hopkins et al., 1984).

The study of postpartum depressive symptoms in the context of a theory of vulnerability to depression, such as the orientation-towards-self and orientation-towards-other conceptualizations (Helgeson, 1994; Robins, Hayes, Block, Kramer, & Villena, 1995), may facilitate a more coherent understanding of this phenomenon. Moreover, from the vantage point of a theory of vulnerability to depression, the transition to motherhood constitutes a normal stressful life event that may interact with personality vulnerabilities to depression, affecting outcome.

Clinical and research literature on the transition to motherhood supports the view of pregnancy and the postpartum period as a time when issues of both relatedness and self-definition come to the fore imposing a reassessment of the individual's identity, autonomy, and close interpersonal relationships (Antonucci & Mikus, 1988; Belsky, Rowine, & Fish, 1989; Gotlib & Hooley, 1988; Ruble, Brooks-Gunn, Fleming, Fitzmaurice, Stangor, & Deutsch, 1990; Whiffen & Gotlib, 1993). In the present research we explored, prospectively, the contributions of excessive preoccupation with issues of relatedness and self-definition as vulnerabilities for depressive symptomatology in the postpartum period.

THE DEPENDENCY/SELF-CRITICISM VULNERABILITY MODEL

Blatt and colleagues (1990, 1991; Blatt, Cornell, & Eshkol, 1993; Blatt, Quinlan, Chevron, McDonald, & Zuroff, 1982) proposed a dialectical model of personality development involving two basic developmental processes: relatedness and self-definition. The relatedness process is defined as "the capacity to establish increasingly mature, reciprocal and satisfying interpersonal relationships." The self-definition process relates to "the development of a realistic, essentially positive and increasingly integrated self-definition and self-identity" (Blatt, 1991, p. 453). These processes are assumed to develop basically in the context of early interpersonal relationships, but can be affected by subsequent positive or negative life experiences (Blatt, 1991). These basic modalities of hu-

man existence have also been referred to as surrender and autonomy (Angyal, 1951), communion and agency (Bakan, 1966), and affiliation or intimacy versus achievement or power (McAdams, 1985; McClelland 1985; Winter, 1973). The gist of the model proposed by Blatt and colleagues is the assumption that normal development is characterized by a dialectical interweaving of relatedness and self-definition. Within the healthy personality, a flexible coordination of the characteristic capacities of the two processes is assumed. Moreover, the adequate balance between interpersonal relatedness and self-definition is thought to reduce stress and lead to physical well-being (Blatt et al., 1993).

While in mental health a continuous dialectic relationship between these two basic lines of development is assumed, individuals do differ as to the relative emphasis they place on each of these processes. These differences delineate two personality styles—self-critical and dependent—each with favored modes of cognition, defense, and adaptation. Disorders of the relatedness and self-definition developmental lines appear as exaggerated or distorted preoccupation with issues of interpersonal relatedness or self-definition, respectively. Overemphasis on self-critical or dependency motives results in dysfunctional attitudes and is assumed to constitute vulnerability to depression. This formulation is congruent with Beck's (1983) model of sociotropic and autonomous types of depression, or the dominant other and dominant goal depression types of Arieti and Bemporad (1980).

A considerable body of empirical research has demonstrated the relevance of self-criticism and dependency as personality vulnerabilities to depression (Klein, 1989; Ouimette & Klein, 1993; Zuroff, Igeja, & Mongrain, 1990; for a recent review, see Flett, Hewitt, Endler, & Bagby, 1995). From a personality-environment interaction perspective, researchers have explored the personality-event congruence hypothesis; that is, the assumption that excessive concerns about social relatedness or autonomous achievement will result in depressive reactions in response to negative matching events, such as stressful interpersonal or achievement experiences, respectively (Zuroff & Mongrain, 1987; Segal, Shaw, & Vella, 1989; Segal, Shaw, Vella, & Katz, 1992). These studies have provided some evidence that dependent subjects are vulnerable to depression in response to an interpersonal event while self-critical subjects are vulnerable to both stressful achievement and interpersonal events (Zuroff & Mongrain, 1987).

THE ROLE OF ANTENATAL ATTACHMENT

The mother's attachment to the unborn baby is a central developmental task involved in the process of pregnancy and childbirth. Studies of the

psychological aspects of pregnancy postulate that the emotional attachment to the fetus during pregnancy may be predictive of mother-infant relationships after birth (Fonagy, Steele, & Steele, 1991, Priel & Kantor, 1988). Maternal prenatal representations of the infant have been found to remain stable and affect the child's security of attachment (Benoit, Parker, & Zeanah, 1997; Condon, 1993; Fonagy, et al., 1991). Even though this body of research reflects a main interest in the effects of prenatal maternal attachment on infant and child development, evidence is accumulating of the positive effects of antenatal attachment on maternal well-being. For instance, Nelson and Fazio (1995) report an association between emotional attachment to the fetus during pregnancy and health related coping behaviors among pregnant women. Moreover, recent investigations of therapeutic interventions with postpartum depressed mothers (Cramer, 1993) suggest a direct association between postpartum depression and the quality of mother-infant relationships. Maternal depression was found to improve considerably following therapeutic interventions centered on the vicissitudes of the mother-infant relationships. These interventions were found to reduce depressive symptomatology and increase the mother's self-esteem.

Looking at the accumulating literature on mother-fetus attachment from the vantage point of maternal well-being, we hypothesized that prenatal bonding constitutes a protective factor for maternal psychopathological reactions during pregnancy and after childbirth. In the context of the dependency/self-criticism vulnerability model, we assumed that the capacity to create an attachment to the fetus may enhance the pregnant women's self-esteem and feelings of competence, thus moderating the vulnerability to postpartum depression among self-critical subjects.

METHOD

PARTICIPANTS

Participants were a consecutive sample of pregnant women attending routine checkups at their community Well Baby Clinic in a middle-class, urban area in Israel. Participants were volunteers. In order to control for psychosocial factors known to affect depression in the postpartum period, we included in our sample only first natural pregnancies among married women without previous psychiatric history, and without previous miscarriages. High-risk pregnancies were also excluded. Of the women we approached, 85% agreed to take part in this research.

The final sample included only those subjects who subsequently had normal childbirth and healthy babies. Infants' health status was defined

according to their Apgar scores. These are scores determined by means of a pediatric evaluation that assesses heart rate, respiratory effort, skin color, muscular tone and reflex response in an effort to determine the newborn's well being. Each of these parameters is evaluated twice, 1 and 5 minutes after birth, on a 3-point scale ranging from 0 to 2. Apgar scores of 8 and higher are the criteria accepted as reflecting normality in newborns (Nelson, 1987). In the present study we included only mothers of babies whose first Apgar score was higher than 8 and the second Apgar score equal or higher.

Six women were excluded from the final sample because they had a Cesarean section or because of severe illness in the child; three additional subjects could not be found at Time 2. Thus, our final sample included 73 women with a mean age of 23.3 ($SD = 3.4$), and 10 to 17 years of education (mean = 12.3; $SD = 1.52$).

MEASURES

The Depressive Experiences Questionnaire (DEQ). The DEQ was used to assess vulnerability to depression. The DEQ (Blatt, D'Affliti, & Quinlan, 1976) is a 66-item scale containing statements about feelings and experiences of the self and interpersonal relations. Subjects are asked to agree or disagree with statements on a 7-point scale. This questionnaire was devised to evaluate patterns of experiences that constitute a predisposition to depressive states, and is therefore appropriate to be used with a non-clinical population. Three primary factors were identified by a principal-components factor analysis: the first, dependency, reflects preoccupation about abandonment and separation, feelings of being unloved and fear of loss. The second factor, self-criticism, reflects concerns with failure and guilt, self-definition, and being unable to meet high standards set by the self and by others. The third factor, efficacy, reflects feelings of pride, self-confidence, satisfaction with oneself, and strength. (Scores on this third factor were not used in the present study since efficacy is not a risk factor for depression). These factors are highly stable; intratest homogeneity, and test-retest reliability are adequate as well (Blatt et al., 1982).

In the present investigation we analyzed the obtained data according to the two factors assumed to assess vulnerability to depression: self-criticism and dependency. Items were converted to z scores and each item z score was multiplied by the factor weight coefficient, according to Israeli norms. These norms were obtained in a previous study with a sample of 454 young adults, 329 women and 125 men, using a Hebrew version of the American items of the DEQ (Priel & Shmueli, 1994).

The original English version of the DEQ was translated by two independent bilingual translators and this translation was retranslated into English by a third bilingual translator. The adopted Hebrew version consisted of those items that remained as close as possible to the original version when retranslated into English. The correlations between the scores obtained using the original American factors and the new scoring in the normative study were .91 ($p < .001$) for self-criticism and .73 ($p < .001$) for dependency. In the current sample the internal consistency coefficient, Cronbach's α , was .90; mean scores were -.46 ($SD = 1.07$) for self-criticism and .10 ($SD = .92$) for dependency.

The Center for Epidemiological Studies Depression Scale (CES-D). The CES-D (Radloff, 1977) was used to measure depressive symptoms during pregnancy and 8 weeks after delivery. This widely used 20-item scale was designed to measure current levels of depressive symptomatology in the general population. Items, assessed on a scale from 0 to 3, are: depressed mood; feelings of guilt and worthlessness; feelings of helplessness and hopelessness; psychomotor retardation; loss of appetite, and sleep disturbances (Radloff, 1977). This scale has been shown to be valid and reliable in many different samples, including pregnancy and postpartum research (see, e.g., Campbell & Cohn, 1991; Fleming, Ruble, Flett, & Van Wagner, 1990). The Cronbach alpha for CES-D scores in the present study was .85. CES-D average scores in normal populations are below 16 in 80% of the cases; in clinical populations, average scores are around 39, with very few scores of 16 or below.

Antenatal Emotional Attachment Questionnaire (AEAQ; Condon, 1993). Antenatal maternal attachment was assessed using the Quality of Attachment scale of the AEAQ. This scale consists of 10 items focused specifically on attitudes, feelings, and behaviors toward the fetus rather than the pregnancy state, maternal role, etc. This scale assesses affective experiences such as closeness, tenderness, or positive feelings about the fetus, and a desire to know about it, as well as vivid internal representations of the future baby. Subjects' responses conform to 5-point scales, with higher values indicating greater antenatal attachment. The internal consistency coefficient in the present sample was .80. The quality of attachment scores will be referred to as antenatal attachment.

PROCEDURE

Two waves of measurement were performed. Participants who fulfilled the demographic and clinical criteria completed self-report measures during the last trimester of pregnancy (mean = 28.9 weeks, $SD = 4.53$) and approximately 8 weeks after childbirth. At Time 1, subjects completed the

TABLE 1. Correlations Between Personality Variables, Antenatal Attachment, and Assessments of Depression Symptomatology

	Dependency	CESD-1 ^a	CESD-2 ^b	Antenatal Attachment
Self-Criticism	.39***	.24*	.40***	-.23
Dependency	—	-.13	-.12	-.06
CESD-1	—	—	.45***	-.23*
CESD-2	—	—	—	-.36**

Note. *N* = 73 (two-tailed tests).

^aCESD-1 = Depression measured at Time 1.

^bCESD-2 = Depression measured at Time 2.

p* < .05; *p* < .01; ****p* < .001.

CES-D, DEQ and AEAQ. Time 2 assessments included the CES-D. The order of presentation of the questionnaires in Time 1 was randomized. Depression assessments before and after giving birth will be referred to as CES-D1 and CES-D2, respectively.

RESULTS

The mean score of depressive symptoms was 14.41 (*SD* = 8.98) among pregnant women and 14.76 (*SD* = 8.89) after childbirth; the difference was non-significant. The norms established for the CES-D in community samples indicate 16 as the cut off point for depressive symptomatology; in our sample 33% of the pregnant women and 36% of the new mothers had scores above 16. The mean for antenatal attachment scores was 46.47 (*SD* = 2.89). The correlation between depressive symptom assessment in Time 1 and 2 was .45 (*p* < .001), indicating a moderately constant level of depressive symptoms during pregnancy and after birth.

Table 1 presents the correlations between dependency, self-criticism, antenatal attachment and assessment of depression before and after birth. As can be seen in Table 1, self criticism and dependency are significantly associated, but only self-criticism correlates with depression both at Time 1 and 2; correlations at Time 2 are considerably stronger. The correlation between antenatal attachment and self-criticism is negative but not significant. The correlation between dependency and antenatal attachment is non-significant. A significant negative correlation was found between antenatal attachment and both CES-D1 and CES-D2; however, the correlation is stronger with CES-D2.

In order to assess the contribution of dependency, self-criticism and antenatal attachment to the prediction of postpartum depression (CES-D2), we performed a hierarchical multiple regression analysis. Entering CES-D1 in the first step of the regression enabled us to con-

trol for subjects' baseline level of depression, thus eliminating confounding effects when interpreting significant associations between independent and dependent variables. In addition, entering both dependency and self-criticism in the second step allowed us to assess the effects of each of these personality variables separately while controlling for the other.

As can be seen in Table 2, CES-D1 explained 20% of the total variance while dependency and self-criticism, entered in the second step, added 14% ($p < .01$) to the explained variance ($F_{change} [3,69] = 6.92, p < .01$). The β values for dependency and self-criticism are .41 ($p < .001$) and $-.24$ ($p < .05$) respectively, indicating a positive association between self-criticism and depression and a negative significant association between dependency and depressive symptomatology when controlling for the common variance with self-criticism. In the third step antenatal attachment added an additional 4% to the explained variance ($F_{change} [4,68] = 5.06, p < .05, \beta = -.22, p < .05$). The interaction between dependency and self-criticism in step 4 did not add to the explained variance. In step 5, the interactions of antenatal attachment with self-criticism and with dependency contributed 12% to the explanation of the common variance ($F_{change} [7,65] = 7.97, p < .001$), but only the antenatal attachment \times self-criticism interaction variable added significantly to the explained variance at Time 2 ($\beta = -3.72, p < .01$). The triple interaction (dependency \times self-criticism \times antenatal attachment) was non-significant. The complete model explained 51% of the variance of depressive symptomatology at Time 2. That is, holding CES-D1 constant, all the remaining variables in the regression together added 31% to the explanation of the variance of postpartum depressive symptomatology.

A similar analysis with attachment entered in the second step, after controlling for CES-D1, produced similar findings. Attachment in the second step added 7% to the explained variance ($F_{change} [2,70] = 13.13, p < .001, \beta = -.27, p < .02$) and the DEQ variables, entered in the third step, added an additional 11% to the explanation of the common variance ($F_{change} [4, 68] = 6.10, p < .004; \beta$ for self-criticism = $.37, p < .02$ and β for dependency = $-.24, p < .03$). Steps 4, 5, and 6 were the same as in the analysis presented in Table 2.

The interaction between self-criticism and antenatal attachment is represented in Figure 1. As can be seen in Figure 1, antenatal attachment moderates the effects of self-criticism on depressive symptomatology scores: participants high in both self-criticism and antenatal attachment are significantly less depressed than those high in self-criticism but low

TABLE 2. Hierarchical Multiple Regression Analysis of Time 2 Depressive Symptomatology

Predictor variable	Multiple R	R-Square	F Change	Overall F	df	β
1. Time 1 Depressive Symptomatology	.45	.20	18.26***	18.26***	1,71	.45***
2. DEQ	.58	.34	6.92**	11.72***	3,69	-.24*
Dependency						.41***
Self-Criticism						-.22*
3. Antenatal Attachment	.62	.38	5.06*	10.6***	4,68	-.09
4. Dependency \times Self-Criticism	.62	.39	.62	8.5***	5,67	-.199
5. DEQ \times Antenatal Attachment	.71	.51	7.97***	9.64***	7,65	-3.72**
Dependency \times Antenatal Attachment						-.86
Self-Criticism \times Antenatal Attachment						
6. Dependency \times Self-Criticism \times Antenatal Attachment	.72	.51	.42	8.41***	8,64	

Note. N = 73 (two-tailed tests).

* $p < .05$; ** $p < .01$; *** $p < .001$.

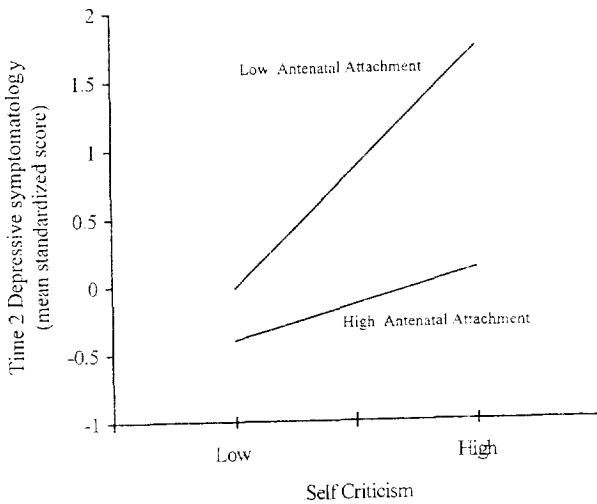


FIGURE 1. Interaction Between Self-Criticism and Antenatal Attachment on Time 2 Depressive Symptomatology

on antenatal attachment. Among participants with low self-criticism, the difference in depressive symptoms between those reporting high or low antenatal attachment is relatively small.

DISCUSSION

A main challenge to research on vulnerability to depression is the potential item overlap in scales assessing vulnerability (such as self-criticism) and depression. To overcome this, we controlled for initial levels of depression and explored prospectively the conditions under which the potential for depression actualizes. Since the contribution of high self-criticism to the prediction of depression was computed using this rather conservative analytic procedure, the obtained results support a view of first childbirth as a stressful transition that seems to affect mainly self-critical women, who are preoccupied with issues of self-esteem and identity. Dependency does not seem to constitute a vulnerability to postpartum depressive symptoms. Moreover, while controlling for depressive symptoms during pregnancy and for the shared variance of dependency and self-criticism, we found that high self-criticism and *low* dependency were associated with postpartum depression (see Table 2). To some extent at least, dependency seems to protect women's well-being around childbirth. The findings of this study join an accumulating literature on the issue

of the differences between dependency and self-criticism as vulnerability factors. In a review of studies with different populations, Helgeson (1994) presented extensive evidence for orientation-towards-self as a vulnerability factor in mental health. At the same time, a primary orientation towards others among women does not seem to constitute a mental health vulnerability at all, even though it may be a diathesis for physical illness (Helgeson, 1994).

Self-critical women are likely to be especially self-critical when facing motherhood, a new role that is different from anything they have done before. In addition, pregnancy and caring for an infant entails compromises about autonomous functioning that may be especially difficult for women that define themselves in terms of competence. Research in this area also relates the experiences of loss of identity and self-worth to factors during pregnancy and childbirth such as becoming a patient, retiring from paid work, and becoming a housewife (Ussher, 1992). These changes are socially constructed as a lowering of a previous status, affecting the identity and status of self-critical subjects who are preoccupied about these issues. These changes may not distress highly dependent subjects, who may enjoy an increase of familial support during pregnancy and immediately after childbirth. The results of the present study are congruent with Fedele, Golding, Grossman and Pollak (1988) who find that the transition to motherhood creates significant distress among autonomous, but not among affiliative, women. The capacity of highly dependent women to enroll social support (Helgeson, 1994) may be the core of their relative resilience before, and after, childbirth.

A main finding of this study is the moderating role antenatal attachment has on the effects of self-criticism in postpartum depressive symptomatology: higher antenatal attachment scores predicted considerably less postpartum depressive symptoms among self-critical subjects. These findings indicate the importance of the earliest signs of bonding for the self-critical mother herself. Self-critical subjects' preoccupation with their new identity and loss of freedom seem to be well compensated by the capacity to create an affectional bond to the baby already before birth. This capacity may be experienced by self-critical subjects as valuable proof of competence.

From a clinical point of view, the group at greater risk for postpartum depression seems to include self-critical pregnant women who may feel very uncomfortable in a position of increased dependence and passivity and who, in addition, are unable to relate meaningfully to their unborn baby. Our findings indicate that the facilitation of the creation of an af-

fective bond to the fetus may constitute a worthwhile measure in the prevention and treatment of milder forms of postpartum depression.

The main limitation of this study is the exclusive reliance on self-reports. The use of self-report measures in the study of vulnerability to depression has been criticised since it may produce spurious correlations (Monroe & Simons, 1991). For instance, the evaluation of self-criticism may include items such as assessments of inadequacy, that are closely related to depression. In the present study we addressed this problem by partialling out depression at Time 1 before assessing the links between self-criticism at Time 1 and depression at Time 2. Further, since a measure of antenatal attachment is intended to assess a relationship that is largely imaginary, it may require more sophisticated evaluation techniques. A more open and ideographic approach, such as the use of semi-structured interviews or projective techniques, may prove useful in order to advance the study of antenatal attachment. To this effect, a new approach to the assessment of antenatal attachment is now being developed in our laboratory.

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