
PUTTING THE PIECES TOGETHER: MATERNAL DEPRESSION, MATERNAL BEHAVIOR, AND TODDLER HELPLESSNESS

SUE A. KELLEY
Lycoming College

KAY DONAHUE JENNINGS
University of Pittsburgh

ABSTRACT: This study assessed relations between maternal depression, maternal behavior, and helplessness in toddlers. Helplessness was assessed behaviorally in 25- and 32-month-old toddlers while the toddlers were engaged with an impossible task. Maternal behavior (warmth, negativity, control, intrusiveness) was assessed during a mother-child teaching task when toddlers were 18 and 25 months of age. Mothers who reported more depressive symptoms on the BDI had 32-month-old toddlers who displayed more affect-related helplessness. No direct relations were found between maternal diagnosis of depression and helplessness in toddlers. Few differences emerged in the behavior of depressed and non-depressed mothers while interacting with their toddlers, and few relations were found between maternal behavior alone and toddlers' helplessness. However, results suggest that maternal behavior *moderates* the relation between maternal depression (diagnosis, recency, and symptoms) and helplessness.

RESUMEN: Este estudio evaluó las relaciones entre la depresión materna, la conducta materna, y la sensación de no tener ayuda en los infantes. Esta última sensación fue evaluada desde el punto de vista del comportamiento en infantes de 25 y de 32 meses de nacidos en momentos en que dichos infantes estaban ocupados con una tarea imposible de realizar. La conducta materna (la simpatía, la negatividad, el control, el entremetimiento) fue evaluada durante una situación de enseñanza entre la madre y sus infantes cuando éstos tenían de 18 a 25 meses de nacidos. Las madres que reportaron más síntomas de depresión en el BDI tenían infantes de 32 meses de nacidos que mostraban una más fuerte sensación de falta de ayuda relacionada con el afecto. No se encontraron relaciones directas entre el diagnóstico materno de depresión y la sensación de la falta de ayuda en los infantes. Aparecieron algunas diferencias en la conducta de las madres depresivas y no depresivas mientras interactuaban con sus infantes, y se encontraron algunas relaciones entre la conducta materna sola con la sensación de falta de ayuda en los infantes. Sin embargo, los resultados sugieren que la conducta materna aplaca la relación entre la depresión materna (diagnóstico, carácter y síntomas) y la sensación de falta de ayuda.

This study was supported by a grant from the National Institute of Mental Health (MH49419). We wish to thank the mothers and toddlers who participated in the study, and the following people who made substantial contributions to this work: Amy Abrew, Lisa, Alisia, Dana, Haylee, Chandra, Michelle, Margaret, Steven, Marissa, and Dave. Direct correspondence to: Sue A. Kelley, 700 College Place, Department of Psychology, Lycoming College, Williamsport, PA 17701; phone: 570-321-4225; fax: 570-321-4161; e-mail: Kelley@lycoming.edu.

INFANT MENTAL HEALTH JOURNAL, Vol. 24(1), 74-90 (2003)

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Published online in Wiley InterScience (www.interscience.wiley.com). DOI: 10.1002/imhj.10044

RÉSUMÉ: Cette étude a évalué les relations entre la dépression maternelle, le comportement de la mère et le sentiment d'impuissance et de vulnérabilité chez les petits enfants. Le sentiment d'impuissance a été évalué en matière de comportement chez de jeunes enfants de 25 et 32 mois alors que ces petits enfants se livraient à une tâche impossible. Le comportement maternel (chaleur, négativité, contrôle, intrusion) a été évalué durant un exercice d'enseignement mère-enfant alors que les enfants avaient 18 et 25 mois. Les mères faisant état de plus de symptômes dépressifs sur le BDI avaient des enfants de 32 mois qui faisaient état de plus d'impuissance liée à l'affect. Aucun lien direct n'a été trouvé entre le diagnostic de dépression et l'impuissance des enfants. Quelques différences ont émergé dans le comportement des mères déprimées et non-déprimées, dans leur rapport à l'enfant, et quelques liens ont été trouvés entre le comportement maternel seul et l'impuissance des enfants. Cependant, les résultats suggèrent que le comportement maternel *modère* le lien entre la dépression maternelle (diagnostic, lapse de temps écoulé depuis son apparition, et symptômes) et l'impuissance.

ZUSAMMENFASSUNG: Diese Studie untersucht den Zusammenhang zwischen mütterlicher Depression, mütterlichem Verhalten und der Hilfslosigkeit des Kleinkinds. Hilfslosigkeit wurde durch Verhaltensbeobachtung bei 25 und 32 Monate alten Kleinkindern untersucht, als diese vor eine unlösbare Aufgabe gestellt wurden. Mütterliches Verhalten (Wärme, Negativität, Kontrolle, Einmischung) wurde untersucht während einer Mutter – Kind Unterrichtsaufgabe im Alter von 18 und 25 Monaten des Kleinkinds. Mütter, die mehr depressive Symptome auf der BDI angaben hatten eher 32 Monate alte Kinder, die mehr gefühlsbezogene Hilfslosigkeit zeigten. Keine direkte Beziehung wurde zwischen der mütterlichen Diagnose der Depression und der Hilfslosigkeit der Kleinkinder gefunden. Wenige Unterschiede zeigten sich in dem Verhalten der depressiven und der nicht depressiven Mütter während der Interaktion mit ihren Kleinkindern und wenige Beziehungen wurden zwischen mütterlichem Verhalten selbst und der Hilfslosigkeit der Kleinkinder gefunden. Wie auch immer, die Ergebnisse weisen darauf hin, dass mütterliches Verhalten die Beziehung zwischen mütterlicher Depression (Diagnose, kurze Zeit des Zurückliegens und Symptome) und Hilfslosigkeit beeinflussen.

抄録：この研究は、母親の抑うつ、母親の行動、そして幼児の無力感の間の関係性を評価する。無力感は、25ヶ月と32ヶ月時に、幼児が不可能な課題に従事している間に、行動的に評価された。母親の行動（暖かさ、拒絶性、支配、侵入性）は、幼児が18ヶ月と25ヶ月の時の、母親が子どもに教える課題の間に、評価した。BDIで抑うつ症状をより多く報告した母親は、感情に関係した無力感をよりたくさん表した32ヶ月児を持っていた。母親の抑うつと、幼児の無力感の間に、直接の関係は見られなかった。幼児と相互作用している間に抑うつ的な母親と、抑うつではない母親に、行動の違いはほとんど現れなかった。そして、母親の行動のみと幼児の無力感の間には、ほとんど関係は見られなかった。しかし、結果から、母親の行動は、母親の抑うつ（診断、新しさ、および症状）と無力感の間の関係を、調節する moderates ことが、示唆された。

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Research has identified two main patterns of achievement behavior: mastery-oriented and helpless (Diener & Dweck, 1978, 1980). Individuals who behave in a mastery-oriented manner have high expectations for success, are eager to attempt challenging activities and tasks, persist in tasks, even following failure, and maintain positive self-appraisals. Individuals who succumb to helplessness, on the other hand, demonstrate more maladaptive achievement behaviors. Helplessness is characterized by low persistence, avoidance of challenge, withdrawal from difficulty, and negative self-evaluations and cognitions. Recent evidence suggests that some toddlers as young as 25 months of age demonstrate behaviors that are characteristic of helplessness in older children and adults (Kelley & Jennings, 2002). Helplessness appears to fall along two

distinct dimensions in toddlers: one more affective (i.e., negative affect, shame, and low persistence), and one more behavioral (i.e., task avoidance, reluctance to engage with a new task, and low persistence/shame). Given that some toddlers succumb to the negative effects of failure and thereby display helplessness, it would be interesting to investigate the origins of this maladaptive behavior. The purpose of this study was to investigate socialization influences on toddlers' helplessness, in particular, the effects of maternal depression, control, and emotional climate.

Children of depressed mothers are at an increased risk for a wide range of problems (see Beardslee, Bemporad, Keller, & Klerman, 1983; Downey & Coyne, 1990; Goodman & Gotlib, 1999; Kochanska, 1991; Politano, Stapleton, & Correll, 1992), some of which are quite similar to the maladaptive behaviors indicative of helplessness. Infants and toddlers of depressed mothers exhibit depressive, withdrawn behavioral styles across a variety of settings (Field et al., 1988), and have difficulty regulating negative emotions (Zahn-Waxler, Cummings, Iannotti, & Radke-Yarrow, 1984). School-aged children of depressed mothers tend to have negative self-perceptions, display helpless attributional styles (Jaenicke et al., 1987), and have attentional problems and greater intellectual impairment on academic-cognitive tasks (Cohler, Grunebaum, Weis, Gamer, & Gallant, 1977). Children of depressed mothers also tend to be inhibited, fearful, anxious, and often succumb to frustration which reduces their ability to effectively regulate their emotions (Garber, Braafladt, & Zeman, 1991; Kochanska, 1991; Malatesta-Magai, 1991; Politano et al., 1992) and perhaps also increases their tendency to succumb to helplessness. Further, some researchers propose that helplessness is an attributional style that underlies depression (e.g., Peterson & Seligman, 1984). Depressed mothers who exhibit helplessness may pass along their maladaptive self-cognitions to their children.

Depressed mothers may transfer helplessness to their children in two ways: (a) through genetic or biologic structures (e.g., Nolen-Hoeksema, 1987), or (b) through maternal behavior. The current study will focus on the latter possibility. Several studies suggest that the effects of maternal depression are mediated by maternal behavior (e.g., Cummings & Davies, 1994; Gelfand & Teti, 1990; Nolen-Hoeksema, Wolfson, Mumme, & Guskin, 1995). For instance, maternal depression may affect maternal behavior and it may be through these differences in behavior that maternal depression affects the development of helplessness in children. Depressed parents tend to be more negative, unsupportive, intrusive, and less warm with their children when compared to nondepressed parents (Cohn, Campbell, Matias, & Hopkins, 1990; Cox, Puckering, Pound, & Mills, 1987; Field, Healy, Goldstein, & Guthertz, 1990; Gordon, Burge, Hammen, Adrian, Joenicke, & Hiritto, 1989; Jaenicke et al., 1987; Lucas, Lauren, Montgomery, Richardson, & Rivers, 1984; Nolen-Hoeksema et al., 1995). Further, research suggests that children who are positively involved with their mothers are less withdrawn during family observations than children who are negatively involved (Pettit & Bates, 1989) and that socialization contexts that are overly controlling hinder children's feelings of control which attenuates motivation and induces a helpless response to challenging tasks (Lepper & Cordova, 1992). In sum, depressed mothers may be more negative, intrusive, and controlling, and thus, be more likely to have toddlers who demonstrate helplessness, or may be more passive and withdrawn, thus modeling helplessness.

Although maternal behavior may *mediate* the relation between maternal depression and helplessness in toddlers, it is also possible that maternal behavior *moderates* this relationship. In other words, helplessness may not be affected by maternal depression or maternal behavior alone, but rather, by maternal depression coupled with particular types of maternal behavior. Moderation implies that the relation between two variables (i.e., maternal depression and helplessness) changes as a function of another variable (Baron & Kenny, 1986). Perhaps maternal behavior moderates the relation between maternal depression and helplessness in toddlers.

The effect of maternal depression on child outcomes is not as clear as the previous paragraphs suggest. Although several studies have found relations between maternal depression and child outcomes, there are also several that fail to find such associations (e.g., Kochanska, Radke-Yarrow, Kuczynski, & Friedman, 1987; Lovejoy, 1991). One potential explanation for these seemingly disparate findings is that different studies use different measures of depression (Frankel & Harmon, 1996; Frankel, Lindahl, & Harmon, 1992). Some studies use diagnostic criteria from psychiatric interviews to classify mothers as “depressed” and “nondepressed” (e.g., Nolen-Hoeksema et al., 1995; Tarullo, DeMulder, Ronsaville, Brown, & Radke-Yarrow, 1995), whereas others use self-report measures of current mood (e.g., Goldsmith & Rogoff, 1995; Redding, Harmon, & Morgan, 1990). Some of the studies that have used *both* diagnostic interviews and self-report measures have failed to find relations between maternal diagnosis (i.e., “depressed” vs. “nondepressed”) and maternal/child outcomes, but have found relations between current depressive symptoms (i.e., Beck Depression Inventory scores, Center for Epidemiological Studies Depression Scale) and these outcomes (e.g., Campbell, Cohn, & Meyers, 1995; Frankel et al., 1992; Hammen, Adrian, Gordon, Burge, & Jaenicke, 1987). Thus, a diagnosis of depression alone may not necessarily have an adverse effect on toddlers’ behavior. As a result, the current study used a clinical interview as well as a self-report measure of current depressive symptoms to examine depression in mothers.

Another potential explanation for the divergent findings regarding maternal depression is that some studies have failed to examine the *type* of depression that the mother experiences (Frankel & Harmon, 1996). For instance, Frankel and Harmon (1996) found that depressed and nondepressed mothers did not differ on observational measures of mother–child interaction; however, differences were found when subtypes of depression were compared. Specifically, mothers who were “doubly depressed” (i.e., experienced dysthymia as well as an episode of depression) were less emotionally available and displayed more negative affect and behavior while interacting with their preschool children. Perhaps depressed mothers with a baseline of dysthymic mood are less able to overcome the negative cognitions and affect associated with their depression and thus interact with their children in less positive ways. Mothers who experience an episode of depression without a baseline of dysthymic mood, on the other hand, may be better able to subdue their negative cognitions and affect when interacting with their children. Because of the potential differential effects of different aspects of depression, the present study included several measures of depression: diagnosis (depressed versus not depressed), type of depression (“double depression” vs. depression only), recency of depression, and depressive symptomatology.

In sum, the goals of this study were to determine: (a) whether maternal depression related to toddlers’ helplessness, (b) whether maternal depression related to maternal teaching style, (c) whether maternal teaching style related to toddlers’ helplessness, (d) whether maternal teaching style mediated any relationship found between maternal depression and toddlers’ helplessness, and (e) whether maternal teaching style moderated any relationships between maternal depression and toddlers’ helplessness.

METHOD

Participants

One-hundred thirty-four mothers and their toddlers participated in this study. Mothers’ depression was assessed with the Structured Clinical Interview for DSM-IV (SCID; First, Spitzer, Gibbon, & Williams, 1995). When assessed at the initial (18 month) visit, 71 mothers had

experienced a clinical depression within the child's lifetime and 33 had never experienced depression.

The depressed and nondepressed groups were matched on socio-economic status, ethnicity, father in the home, parity, and child gender. All depressed mothers had sought treatment and almost all of them were recruited through clinicians or through posters describing the study at a large university psychiatric center. Five mothers were recruited as nondepressed but met criteria for inclusion in the depressed group, and one mother was referred by a friend. The nondepressed mothers were recruited through a large obstetrics hospital, and one control mother responded to the posters describing the study.

The majority of the toddlers were Caucasian (89.5%), although there were a few African American (4.8%) and biracial (5.6%) toddlers. The sample was predominantly middle-class (mean Hollingshead = 2.02, $SD = 1.07$); however, each level of the Hollingshead index (one to five) was represented. Mothers ranged in age from 20 to 46 years, with a mean age of 33.7.

Design and Procedure

Mothers and toddlers were visited in their home and seen at the university playroom when toddlers were approximately 18, 25, and 32 months of age. Families were paid \$25 for their participation after each of the first two sets (i.e., home and playroom) of visits and \$50 after the final set of visits were completed.

During each home and playroom visit (each lasted approximately 2.5 hours), mothers and toddlers participated in a number of activities. During the home visit; the final toy presented was conceptually and motorically difficult for the toddlers to complete by themselves (a shape sorter at 18 months and a cash register at 25 months). Mothers were asked to show their toddlers how the toy worked but were given no further instructions. This teaching task was videotaped and lasted approximately 5 minutes.

During the 25- and 32-month playroom visits, toddlers were seated at a small table with a female experimenter. Mothers were seated nearby but were busy completing questionnaires and thus were unable to interact with the toddlers. The experimenter presented toddlers with several achievement-like tasks, one of which was a "helplessness" box. The "helplessness" box was a wooden shape sorter with three geometrically shaped holes in the lid (a triangle, a circle, and a square) and three correspondingly shaped pieces (two of each shape). Three pieces fit through the holes on the lid of the shape sorter (one of each shape) and three pieces were slightly too big to fit through the holes. The experimenter demonstrated how the toy worked by placing two pieces through the holes on the lid. The experimenter then dumped all of the pieces out and said, "Now I want to see if you can do it all by yourself." If the toddler asked for help (either from the experimenter or the mother) or was off task for more than a few seconds, the experimenter said, "You try it, I want to see if you can do it all by yourself." The trial was terminated after 3 minutes, or if the toddler became distressed.

After the trial was terminated, the experimenter removed the "helplessness" box and presented a virtually identical box (the lid and pieces were different colors). However, unbeknownst to the toddler, all of the pieces now fit through the holes. The experimenter said, "Now I want to see if you can do *this* one all by yourself." After the toddler successfully completed the second box (the experimenter helped the toddler if necessary to ensure success), the experimenter praised the child and brought out the "helplessness" box and said, "You know what? The pieces were too big to fit in this box. You did a really good job playing."

Because of participants' inability to schedule, experimenter error, and/or camera malfunctions, data were not available on all participants for all variables. Maternal behavior data were

available for 124 participants at 18 months and 122 participants at 25 months. Helplessness data were available for 123 participants at 25 months and 119 participants at 32 months.

Measures

Maternal and toddler behaviors were coded by independent observers (undergraduate and graduate students). Reliability was established prior to coding and were computed on 20% of the sample during coding. Percent agreement and Kappas are reported below for each measure.

Maternal depression. Three depression measures were obtained from the SCID, a widely used semistructured interview. A fourth depression measure was obtained from the Beck Depression Inventory, a widely used questionnaire. The SCID is a diagnostic interview with well-established reliability and validity. It provides current and lifetime diagnoses for major Axis I disorders using criteria from the Diagnostic and Statistical Manual for Mental Disorders (DSM-IV). Interobserver reliability was determined by a second trained interviewer reviewing 20% of videotapes. Kappa was 1.0 for diagnosis of depression. The first depression measure was diagnosis: the presence (or absence) of an episode of major depression during the toddler's lifetime. The second measure was type of depression: "double depression" (dysthymia with major depression) versus depression only. Within the depressed group, 14 mothers met the criteria for "double depression," that is, they met criteria for both major depression and dysthymia. The third measure was recency of depressive symptoms. During the SCID interview additional questions were asked to determine the timing of maternal depressive symptoms. Specifically, the mother was asked whether she experienced depressive symptoms in the month prior to the interview, in the six months prior to that (when the toddler was between 12 and 18 months of age), and in the first year of the toddler's life. If the mother reported experiencing at least two symptoms of depression, she was considered to be at least partially depressed. Recency of depression was coded on a four-point scale as follows: 4 = at least partially depressed in past month, 3 = at least partially depressed within last 6 months (but not the past month), 2 = depressed only when toddler was an infant, 1 = never depressed.

The Beck Depression Inventory (BDI; Beck, 1972) is a dimensional measure of current self-reported depression symptomatology; thus, maternal depressive symptoms were also assessed with the BDI during each playroom visit. Higher scores on the BDI indicate more depressive symptoms.

Maternal behavior most likely affects toddlers over time; therefore, the effects of maternal behavior on child outcomes may not be apparent immediately, especially in toddler behaviors that are assessed outside of the mother-toddler relationship. Consequently, because helplessness was assessed when toddlers were 25 and 32 months of age, maternal behavior assessed prior these visits (i.e., at 18 and 25 months) was used to examine relations between maternal behavior and toddler helplessness.

Maternal control. Based on previous research (Grolnick, Frodi, & Bridges, 1984; Kelley, Brownell, & Campbell, 2000; Nolen-Hoeksema et al., 1995), two types of *maternal control* were coded: control and intrusiveness. Maternal control refers to verbal and nonverbal behaviors employed by the mother that focus the toddlers' activity on meeting a maternal rather than a self-determined goal. Maternal control was rated on a four-point scale ranging from not at all controlling (scored as 1) to very controlling (scored as 4). Ratings of maternal control were made every 30 seconds, and were averaged across the number of intervals in which the mother and toddler engaged with the toy (agreement at 18 months: 82%, kappa = .66; 25 months:

82%, kappa = .74). Intrusiveness refers to physical interruptions or intrusions and was coded as occurring or not occurring during each interval. The proportion of intervals in which the mother was intrusive was computed (agreement at 18 months: 91%, kappa = .80; 25 months: 97%, kappa = .86).

Emotional climate. The emotional climate of the mother–child interaction was determined by assessments of warmth and negativity. Maternal warmth refers to behaviors that imply acceptance of and sensitivity towards the toddler (e.g., praise and encouragement, smiles, and affectionate touches) and that evidence maternal involvement in the toddler’s actions. Maternal negativity refers to behaviors that display maternal hostility, rejection (e.g., negative tone of voice, anger, annoyance, frustration, aggressive touches), and/or unresponsiveness. Maternal warmth and negativity were coded on separate four-point scales from not at all warm/negative (scored as 1) to very warm/negative (scored as 4). Ratings of maternal warmth (agreement at 18 months: 84%, kappa = .75; 25 months: 84%, kappa = .75) and negativity (agreement at 18 months: 96%, kappa = .69; 25 months: 97%, kappa = .73) were made every 30 seconds and were averaged across the number of intervals in which the mother and toddler engaged with the toy. Ratings of maternal control and emotional climate were independent, i.e., mothers could exude warmth towards their toddlers yet also be highly controlling (e.g., mother smiles and frequently praises toddler while telling the toddler exactly what to do with the toy).

Data reduction. To reduce the number of analyses, and thus to reduce the possibility of Type I error (see Huck, Cormier, & Bounds, 1974), maternal control, intrusiveness, negativity, and warmth were entered into separate principal components factor analyses with Varimax rotation at 18 and 25 months of age. Two factors emerged at 18 months and one emerged at 25, each with eigen values greater than 1 (see Table 1).

At 18 months, control and intrusiveness loaded positively on one factor, labeled *High Control* (factor labels will be capitalized and in italics throughout the remainder of this article). Negativity loaded positively and warmth loaded negatively on the second factor, labeled *Negative Emotional Climate*. At 25 months, only one factor, labeled *Negative Behavior*, was extracted from the factor analysis. This factor had positive loadings on control, intrusiveness, and negativity and a negative loading on warmth.

Helplessness. Recent research on helplessness suggests that children as young as four years of age can evidence behaviors characteristic of helplessness in older children and adults: they show a lack of persistence, express negative affect and thoughts, feel incapable of performing

TABLE 1. *Rotated Factor Loadings and Means for Maternal Behavior*

<i>Behavior</i>	<i>18 Month High Control</i>	<i>18 Month Negative Emotional Climate</i>	<i>25 Month Negative Behavior</i>	<i>18 Month Means</i>	<i>25 Month Means</i>
Control	.88	-.02	.55	2.32 ^a	2.47 ^a
Interruptions	.85	.15	.81	.27 ^b	.13 ^b
Negativity	.23	.80	.76	1.04 ^a	1.02 ^a
Warmth	.08	-.86	-.60	2.99 ^a	2.85 ^a
Percent of variance	42.6	30.8	47.4		

^a Coded on a four-point scale.

^b Coded as occurring (1) or not occurring (0).

TABLE 2. Rotated Factor Loadings for Toddler Behavior

<i>Behavior</i>	<i>25 Month Affect-Related Helplessness</i>	<i>32 Month Affect-Related Helplessness</i>	<i>25 Month Behavioral Helplessness</i>	<i>32 Month Behavioral Helplessness</i>
Task avoidance	.07	.03	.77	.80
Negative affect	.79	.62	-.06	.23
Persistence	-.40	-.62	-.58	-.19
Shame	.70	.77	.09	-.35
Reluctance	-.15	.12	.70	.66
Percent of variance	23.1	28.6	31.5	24.5

Table adapted from Kelley et al., 1999.

tasks, and have low expectations for future success following failure (e.g., Burhans & Dweck, 1995; Cain & Dweck, 1995; Dweck, 1990; Hebert & Dweck, 1985; Heyman, Dweck, & Cain, 1992; Smiley & Dweck, 1994). Helplessness is operationalized similarly in this study through ratings of children's persistence (on-task behavior coded on a five-point scale every 15 seconds; agreement at 25 months: 93% within one point; 32 months: 96% within one point) and negative affect (negative facial expressions, displays of frustration/anger coded on a five-point scale at the end of the task; agreement at 25 months: 95% within one point; 32 months: 94% within one point), frequency counts of task avoidance (attempts to change the task agenda or avoid the task; agreement at 25 months: 78%; 32 months: 85%), counting the number of seconds before toddlers engage with a second (possible) box (i.e., reluctance; agreement at 25 months: 93% within one second; 32 months: 94% within one second), and coding whether shame (active or passive withdrawal from the task accompanied by behaviors such as closed or avoidant posture, gaze aversion, and frown; agreement at 25 months: kappa = .79; 32 months: kappa = .89) did or did not occur. An individual principal components analyses (with Varimax rotation) of these toddler behaviors produced two factors at both 25 and 32 months of age: *Affect-Related Helplessness* and *Behavioral Helplessness* (see Kelley & Jennings, 2002, for a thorough discussion of the development of these two measures).

Although *Affect-Related* and *Behavioral Helplessness* emerged at both 25 and 32 months of age, the individual behaviors that comprised these factors were slightly different at the two ages (see Table 2). At both 25 and 32 months, negative affect and shame loaded positively and persistence loaded negatively on *Affect-Related Helplessness*. At both 25 and 32 months, task avoidance and reluctance loaded positively on *Behavioral Helplessness*; however, at 25 months persistence loaded negatively, whereas at 32 months, shame loaded negatively on this factor.

RESULTS

Descriptive Statistics

Independent samples *t*-tests were conducted to compare the reported depressive symptoms (i.e., BDI scores) of depressed versus nondepressed as well as "double depressed" and depression-only mothers. Results indicated that depressed mothers reported significantly more depressive symptoms than nondepressed mothers when toddlers were 18, $t(130) = -6.14, p < .001$, 25, $t(123) = -4.64, p < .001$, and 32, $t(119) = -5.74, p < .001$, months of age. Mothers who were experiencing "double depression" at the 18 month visit also reported significantly more

TABLE 3. Means and Standard Deviations for BDI Scores

<i>Time of BDI Measurement</i>	<i>Mean</i>	<i>Standard Deviation</i>
	Nondepressed	
18 Months	4.95	3.61
25 Months	3.77	3.38
32 Months	3.66	3.25
	Depressed	
18 Months	12.91	10.85
25 Months	10.11	10.08
32 Months	11.34	9.76
	Depression Only	
18 Months	10.36	8.58
25 Months	7.79	8.09
32 Months	9.59	7.86
	"Double Depression"	
18 Months	23.14	13.16
25 Months	20.33	11.90
32 Months	19.44	13.58

depressive symptoms than other depressed mothers when toddlers were 18, $t(68) = -4.45$, $p < .001$, 25, $t(63) = -4.42$, $p < .001$, and 32, $t(51) = -3.27$, $p < .01$, months of age (see Table 3).

Analyses first examined direct relations between maternal depression and toddlers' helplessness and then examined the effects of maternal depression as mediated and/or moderated by maternal behavior. In each section, the first set of analyses refers to maternal depression diagnosis (depressed vs. nondepressed), the second set refers to type of depression ("double depression" vs. depression only), the third set refers to recency of depression, and the final set refers to depressive symptoms (BDI scores).

Maternal Depression and Toddlers' Helplessness

It was expected that toddlers of depressed mothers would be more likely to display helplessness than toddlers of nondepressed mothers. Relations between maternal depression status and toddler helplessness (*Affect-Related* and *Behavioral*) were analyzed with separate two (depressed vs. nondepressed) \times two (child sex) analyses of variance. There were no significant main effects or interactions at either age (25 or 32 months, all $ps > .14$). Similarly, there were no significant main effects or interactions at either age (25 or 32 months, all $ps > .21$) when type of depression was examined.

It was also expected that the more recent the maternal depression, the stronger the effect of depression on helplessness in toddlers. Thus, zero-order correlations were used to assess relations between recency of maternal depression and toddler helplessness (*Affect-Related* and *Behavioral*). There were no significant relations between recency of depression and helplessness in toddlers at either age (25 or 32 months).

Relations between maternal depressive symptoms and helplessness were then examined. Zero-order correlations revealed that reported maternal depressive symptoms measured at each age related to *Affect-Related Helplessness* at 32 months. Eighteen-month BDI scores were significantly related to *Affect-Related Helplessness* in 32-month-old toddlers ($r = .19$, $p <$

.05), as were 25 ($r = .23, p = .01$), and 32 ($r = .23, p = .01$) month BDI scores. Reported depressive symptoms were not related to *Affect-Related Helplessness* at 25 months, or to *Behavioral Helplessness* at either age.

Maternal Depression and Maternal Behavior

Separate two (depressed vs. nondepressed) \times two (child sex) analyses of variance were conducted to examine relations between maternal depression, child sex, and maternal behavior during the mother–child interaction. Results showed a significant main effect of depression status on maternal behavior at 25 months, $F(1, 120) = 4.47, p < .05$, but no effect of child sex and no interaction between depression status and child sex. Post hoc tests revealed that depressed mothers ($M = .18$) had significantly higher scores on the *Negative Behavior* factor at 25 months than nondepressed mothers [$M = -.20, t(120) = -2.11, p < .05$]. No significant main effects or interactions were found between maternal depression, child sex, and maternal behavior at 18 months. No significant main effects or interactions were found between type of maternal depression, child sex, and maternal behavior at any age (all $ps > .07$).

Zero-order correlations were then used to examine relations between recency of maternal depression and maternal behavior during the mother–child interaction. Results indicated that mothers who experienced depression more recently were more likely to display *Negative Behavior* at 25 months ($r = .21, p < .05$). Maternal behavior at 18 months (*High Control, Negative Emotional Climate*) did not differ as a function of recency of depression ($r = -.11, ns, r = -.02, ns$, respectively).

Relations between maternal current depressive symptoms and maternal behavior were similar to those found above. Zero-order correlations indicated that mothers who reported more depressive symptoms on the BDI had higher factor scores for *Negative Behavior* ($r = .24, p < .01$). No relations were found between maternal depressive symptoms and maternal behavior when toddlers were 18 months of age.

Maternal Behavior and Toddlers' Helplessness

Zero-order correlations indicated that mothers who exhibited more *High Control* in interactions when toddlers were 18 months of age had 25-month-old toddlers who were more likely to exhibit *Behavioral Helplessness* ($r = .25, p < .01$). No other relations were significant (all $ps > .23$).

Mediational Model of Maternal Depression and Maternal Behavior

The mediational model was not supported in the current study because no maternal behavior related to both depression and helplessness.

Moderator Model of Maternal Depression and Maternal Behavior

Although maternal behavior, as assessed in the present study, does not mediate the effects of maternal depression on toddlers' helplessness, it may still serve as a moderator. Because the results for depression diagnosis, recency depression, and depressive symptoms were similar, only the results for maternal depressive symptoms will be explained in detail. To examine this moderator model, six hierarchical regression analyses were used to compare the relative con-

tribution of maternal depressive symptoms, maternal behavior, and the interaction of the two on toddlers' helplessness: two analyses (one for *High Control* and one for *Negative Emotional Climate*) were computed for each helplessness variable at 25 months and one analysis (*Negative Behavior*) was computed for each helplessness variable at 32 months. The independent variables (i.e., depressive symptoms from the BDI and the three factor scores for maternal behavior at 18 and 25 months) were centered around the mean (see Aiken & West, 1993) and an interaction term was calculated as the product of the predictors for each analysis. Maternal depressive symptoms were entered into the regression equation first, maternal behavior (i.e., *High Control*, *Negative Emotional Climate*, and *Negative Behavior*, each entered into separate analyses) was entered as the second step, and the interaction term was entered as the final step. Throughout this section the model that includes the interaction term will be referred to as the unconstrained model and the model without the interaction term will be referred to as the constrained model (see Aiken & West, 1993).

Results indicated that the effects of reported maternal depressive symptoms at 18 months on toddlers' *Affect-Related Helplessness* at 25 months were moderated by the *Negative Emotional Climate* that mothers displayed while interacting with their 18-month-old toddlers, $F(3, 116) = 2.99, p < .05$. Post hoc analyses (see Kerlinger & Pedhazur, 1973; von Eye & Schuster, 1993) indicated that the unconstrained model explained the data better than the constrained model, $F(1, 117) = 26.78, p < .001$. Post hoc inspection of the regression lines suggested a disordinal interaction: mothers who reported more depressive symptoms and who had higher scores on *Negative Emotional Climate* had toddlers who displayed more *Affect-Related Helplessness* and mothers who reported more depressive symptoms and who had lower scores on *Negative Emotional Climate* had toddlers who displayed less *Affect-Related Helplessness* (see Figure 1). Further, mothers who reported fewer depressive symptoms and who had lower scores on *Negative Emotional Climate* had toddlers who displayed more *Affect-Related Helplessness* and mothers who reported fewer depressive symptoms and who had higher scores on *Negative Emotional Climate* had toddlers who displayed less *Affect-Related Helplessness*. Neither the unconstrained nor the constrained model examining the effects of maternal depressive symptoms at 18 months and *Negative Emotional Climate* on 25-month-old toddlers' *Behavioral Helplessness* was significant. These results support the hypothesis that the relation between maternal depressive symptoms and toddlers' *Affect-Related Helplessness* is moderated by *Negative Emotional Climate*.

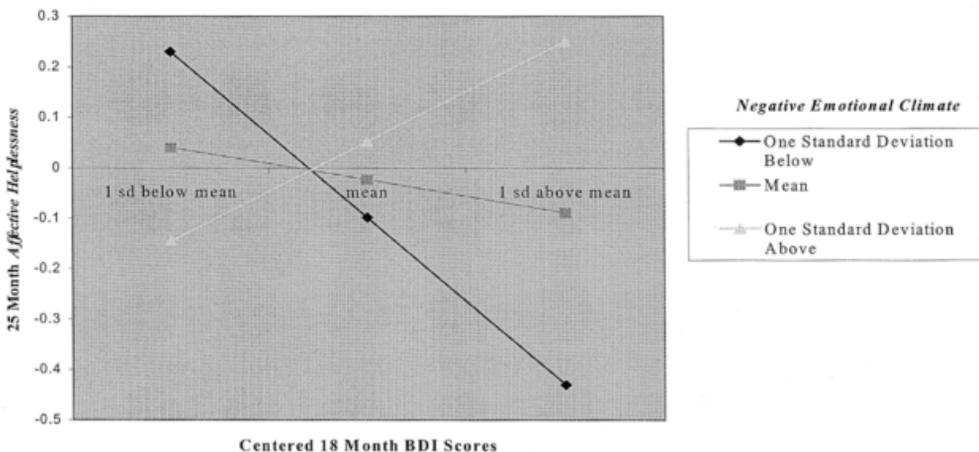


FIGURE 1. Moderator effects of negative emotional climate on 25-month affect-related helplessness.

Similar results were obtained for depression diagnosis and recency of depression. However, *Negative Emotional Climate* did not appear to moderate the effects of type of depression (unipolar vs. “double depression”) on toddlers’ *Affect-Related Helplessness*.

The effects of maternal depressive symptoms at 18 months on toddlers’ helplessness (both *Affect-Related* and *Behavioral*) at 25 months do not appear to be moderated by the amount of *High Control* that mothers demonstrate in interactions with their 18-month-old toddlers. Although the unconstrained model that examined whether *High Control* moderated the effects of maternal depressive symptoms on toddlers’ *Behavioral Helplessness* was significant, $F(3, 116) = 4.55, p < .01$, post hoc analyses revealed that the only regression slope that differed significantly from zero was the slope for *High Control*, $t(116) = 3.48, p < .001$. These results suggest that differences in 25-month-old toddlers’ displays of *Behavioral Helplessness* are best explained by differences in maternal displays of *High Control* while engaged in challenging tasks with their 18-month-old toddlers, and that *High Control* does not appear to moderate the effects of maternal depressive symptoms on toddlers’ helplessness.

Similar results were found for depression diagnosis, type of depression, and recency of depression.

A final set of hierarchical regression analyses were conducted to examine whether *Negative Behavior* in mother–child interactions at 25 months moderated the effects of reported maternal depressive symptoms on the BDI at 25 months on 32-month-old toddlers’ helplessness. Results indicated that *Negative Behavior* does not appear to moderate the relation between maternal depressive symptoms and toddlers’ helplessness. Again, although the unconstrained regression model between maternal depressive symptoms, *Negative Behavior*, and 32-month-old toddlers’ *Affect-Related Helplessness* was marginally significant, $F(3, 110) = 2.31, p < .10$, it did not do a better job of explaining the data than the constrained model, $F(1, 114) = 1.5, ns$. Further, the partial *t*-tests indicated that the only significant partial regression coefficient was for reported maternal depressive symptoms at 25 months and toddlers’ *Affect-Related Helplessness* at 32 months, $t(110) = 2.13, p < .05$. No other significant relations were found.

DISCUSSION

The goal of the present study was to explore how maternal depression influences the development of helplessness in toddlers. Although young toddlers’ helplessness may be relatively resilient to the potentially negative effects of maternal depression, by the time they are almost three years of age, depression effects are beginning to be seen. Further, the effects of maternal depression on toddlers’ helplessness appear to be moderated by the emotional climate of mother–child interactions.

The present study suggests that consistent exposure to depressive symptoms plays more of a role in child outcomes than depression status assessed early in the child’s life or the type of depression that mothers experience. Further, maternal depressive symptoms relate to helplessness in 32-month-old toddlers but do not relate to this construct in 25-month-olds. Perhaps relations between maternal depression and toddlers’ helplessness are less apparent when toddlers are 25 months old because helplessness is less consolidated at this age (Kelley et al., 2001) and toddlers’ self-understanding is still quite rudimentary (Brownell & Kopp, 1991; Kagan, 1981). Relations between early experience and complex constructs such as helplessness may not become perceptible until toddlers’ self-understanding becomes more advanced. It is also possible that the relation between maternal depressive symptoms and helplessness in toddlers does not become apparent until toddlers are 32 months of age because the helpless attributional style that underlies depression in adults (see Peterson & Seligman, 1984) is genetically transferred to toddlers and only becomes apparent after helplessness has become more solidi-

fied. The current study should thus be viewed as a “first step,” and clearly further research is needed to identify the precise mechanisms that underlie the development of helplessness in toddlers of depressed mothers.

It is interesting that maternal depression relates to the more affective component of helplessness but does not relate to the more behavioral component of this construct. Depression is an affective disturbance; therefore, it makes theoretical sense that it would have stronger relations to the affective rather than the behavioral component of helplessness. In toddlerhood, the affective and behavioral components of helplessness may be more distinct constructs than they are in older children and adults because helplessness is less consolidated (Kelley & Jennings, 2002). Relations between maternal depression and the more behavioral component of helplessness may be strengthened as the developmental pathway set by early emotional experiences is more ingrained and the affective and behavioral components of helplessness become more intertwined.

The current study suggests that maternal behavior (at least as measured here) does not *mediate* relations between various aspects of maternal depression (i.e., diagnosis, type, recency, and symptoms) and toddlers’ helplessness; however, it does indicate that the warmth and negativity (i.e., emotional climate) displayed by mothers during mother-child interactions *moderates* this effect. Although depressed and nondepressed mothers do not differ in the amount of negativity or warmth they display during mother-child interactions, emotional climates that are less warm and more negative appear to exacerbate the effects of maternal depression on toddlers’ helplessness.

It is important to emphasize that not all depressed mothers engage in more negative/less warm interactions with their toddlers. Some depressed mothers appear better able to overcome the negative affect that they experience as a function of their depressed mood, and thus, are better able to provide a warm and supportive environment for their toddlers. Although these mothers may, at times, engage in negative interactions with their toddlers, their ability to subdue their own negative affect may decrease the likelihood that their toddlers will display helplessness.

The emotional climate of mother-child interactions is also important for mothers who are not currently depressed and/or who report fewer depressive symptoms. In general, mothers displayed a great deal of warmth and very little negativity in the current study. Too much warmth appears to have an adverse effect on toddlers of mothers who are not currently depressed and/or who report few depressive symptoms. Baumrind’s (1967, 1971) work suggests that parents who rarely discipline yet who maintain a warm, positive relationship with their children tend to have children who lack impulse control, self-reliance, social responsibility, and independence. Contrary to what may be commonly believed, excessive warmth may actually foster maladaptive behaviors such as helplessness in certain situations.

In conclusion, exposure to maternal depression throughout the first few years of life appears to take a toll on toddlers’ achievement-related behaviors, particularly their responses to failure. Further, the effects of maternal depressive symptoms coupled with less warm emotional climates can be seen even earlier than the effects of maternal depressive symptoms alone.

Although a diagnosis of depression alone did not relate to helplessness in the current study, it does not mean that a diagnosis of depression has no effect on toddlers. Indeed, several studies have found relations between maternal depression status and various outcomes in children (see Downey & Coyne, 1990; Gelfand & Teti, 1990). Further, the emotional climate of mother-child interactions moderated the effects of depression diagnosis, recency of depression, and maternal depressive symptoms in the current study. It is possible that other maternal characteristics (e.g., personality or other psychiatric disorders) also moderate the effects of depression. For instance, future research should consider the effects of multiple risk factors (see Goodman,

Brogan, Lynch, & Fielding, 1993; Hammen, 1992; Sameroff, Seifer, Baldwin, & Baldwin, 1993) as well as other supportive persons in the child's life (Radke-Yarrow, 1998) when assessing the effects of maternal depression on parental functioning and child outcomes. The effects of depression may be exacerbated in the context of other stressors (e.g., the emotional climate of mother-child interactions) and tempered in the context of social support, both for the mother and child.

Alternatively, it is possible that depressed mothers "don't always look as bad as they feel" (see Frankel & Harmon, 1996). In other words, some depressed mothers may be able to "pull it together" for the sake of their children, thereby reducing the potentially negative consequences that could result as a function of their behavior and negative affect. The results of the current study illustrate the complexity of maternal depression and how further research is necessary to increase our understanding of this complicated disorder.

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