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Recognizing Maternal Depressive Symptoms: An Opportunity to Improve Outcomes in Early Intervention Programs

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Abstract

Objective—A higher rate of depressive symptoms is found among mothers of children with disabilities. However, there is a lack of study of mothers with children < 3 years of age participating in Early Intervention (EI) programs. This study described the extent of mood and related disorders, and tested the relationship of contextual factors and child behavior to depressive

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Conflict of Interest

The authors declare that they have no conflict of interest.

symptoms in these mothers. Prevalence, severity and factors associated with maternal mental health were assessed using gold standard diagnostic and symptom measures.

Methods—A cross-sectional study was conducted with 106 English or Spanish-speaking women who had at least one child enrolled in EI. Mothers completed reliable, valid measures of mental health, health status, family conflict, parent-child interaction, self-efficacy, social support, child behavioral problems, hardship, endangerment, and child disability. Descriptive and multiple regression analyses were performed.

Results—We found 8% of participants met all criteria for a Major Depressive Episode (MDE) with 44% of the sample reporting a past episode and 43% endorsing recurrent episodes. Approximately 34% of mothers reported clinically significant depressive symptom severity on the CES-D. Current depressive symptom severity was predicted by poorer maternal health status, lower self-efficacy, past MDE and child behavioral issues ($p < .05$).

Conclusions—A brief assessment of current and past maternal mood, health and self-efficacy are important factors to assess when evaluating how to support mothers of children in EI.

Keywords

Infant/toddler; Early Intervention; Maternal depression; Child disability; Self-efficacy

Introduction

Early Intervention (EI) services in the US are provided to 336,895 children less than 3 years of age at a cost of more than $438.5 million annually (Center for Parent Information and Resources 2015). Eligibility criteria for EI services includes a documented developmental delay (cognitive, physical, communication, social-emotional and/or adaptive delay) or established condition with a high probability of developmental delay or disability (e.g., premature birth). EI provides evaluation and ongoing assessments, service coordination, an Individualized Family Service Plan (IFSP), access to interventions and support services to improve the child's function, and training for the mother and family (Hebbeler et al. 2007). EI is designed to help caregivers accurately assess the abilities of the child and increase parenting efficacy to improve outcomes for the child.

EI teaches routines-based intervention, a parent-mediated approach in which parents (most often mothers) integrate specific developmentally supportive activities outlined on the IFSP (The National Early Childhood Technical Assistance Center 2015) into the family's normal routines. Optimally, these activities are implemented throughout the day, every day providing continuous therapeutic input that complements therapy provided by specialists. By improving the child's functional capacity in ways that parents can see, routines-based intervention averts behavioral problems and improves the quality of everyday life (Spagnola & Fiese 2007). Because of the emphasis on parent-mediated, routines-based intervention, the beneficial effect of EI is largely dependent on whether parents can provide consistent, developmentally supportive interactions with the child.

Depressive symptoms may undermine uptake and efficacy of EI services by interfering with maternal interactions with the child (Ciciolla, Gertein & Crnic, 2014; Shonkoff, Hauser-

Cram, Wyngaarden Krauss, Christofk Upshur, & Sameroff, 1992). Data amassed over 30 years of study have shown that typically-developing infants and toddlers whose mothers have depressive symptoms show more language and global developmental delays, more negative affect, less sustained attention, overly high activity levels, and more non-compliance and tantrums than children of non-symptomatic mothers (Turney, 2012). These suboptimal developmental outcomes have been linked to the toll that depressive symptoms take on the capability of mothers to consistently respond to the cues of the child and provide appropriate and sensitive responses (Lovejoy, Graczyk, O'Hare, & Neuman, 2000; Wheeler, Hatton, Reichardt & Bailey, 2006).

Greater maternal psychological distress has been linked to less use of effective parenting strategies in response to challenging child temperaments and behaviors (Jones, Lamb-Parker, Schweder, & Ripple, 2001). Infants and toddlers of depressed mothers receive fewer intensive enrichment services (Siqveland, Olafsen, & Moe, 2013). For these reasons, mothers with depressive symptoms may have difficulty implementing routines-based interventions, the effectiveness of which relies on interpreting the cues of the child, responding accurately, managing challenging behaviors and maintaining consistency.

Two reviews (Bailey, Golden, Roberts, & Ford, 2007; Singer, 2006) in the last decade have suggested that approximately a third of mothers of children with disabilities experience significant depressive symptoms during their lifetime; a significantly higher rate than is seen in the general population of women or in mothers of typically developing children. However, both of these reviews reflect a striking lack of studies examining depressive symptoms in mothers of very young children with disabilities, and, as far as we can tell, there has been only one study that has examined the prevalence of depressive symptoms among mothers of children in EI (Feinberg, Donahue, Bliss, & Silverstein, 2012). This study, which used data from self-report measures collected through the Early Childhood Longitudinal Study-Birth cohort (ECLS-B), found that 35% of mothers of children in EI were experiencing significant depressive symptoms when their children were 2 years old. There were significantly less severe depressive symptoms among mothers whose child received a diagnosis at birth, compared to those whose eligibility for EI came later, suggesting time since diagnosis and/or variables related to the nature of the child's disability (e.g. behavioral issues, severity of delay) may have a greater impact on depressive symptoms than eligibility for EI per se. This study suggests that a substantial subset of women whose children are enrolled in EI are experiencing significant depressive symptoms, which are likely to interfere with their ability to carry out routines-based EI interventions. However, while the Feinberg et al. (2012) study provides important insight into the prevalence of depressive symptoms among mothers of children in EI, the reliance on parental self-report—necessary for large longitudinal studies such as the ECLS-B—significantly limits making an argument for increasing the availability of mental health diagnostic and treatment services that can address variable levels of severity.

Study Aims

The current study was constructed to more fully describe the range of depressive and other mental health conditions in mothers of EI infants and toddlers using a combination of parent self-reports and clinician gold standard measures. The study was guided by two aims:

1. To describe the estimated prevalence, severity, and factors associated with maternal mental health using standardized clinical diagnostic and symptom severity measures; and
2. To determine contextual factors associated with maternal depressive symptom severity.

Methods

Study Design

This is a cross-sectional study conducted in partnership with a state agency that delivered EI services to approximately 1200 infants and toddlers in one large county in a southeastern state in the U.S. Families served by the agency were generally representative of the US population with regard to race/ethnicity, SES, and family composition. According to prevailing ethical principles and following Institutional Review Board approval, EI agency staff provided information about the study, contact information and a self-addressed, stamped envelope to mail a “Permission to Contact” form to mothers. Bilingual project staff spoke with interested mothers, explained the study, and scheduled a data collection visit in the families’ home. Inclusion was limited to mothers of children currently enrolled in EI who were at least 18 years of age and able to give consent. Pregnant mothers were excluded. During the data collection visit, mothers provided written consent for project staff to audit pre-specified elements of the child’s EI service record. Participants were interviewed and completed measures in their preferred language (83% in English and 17% in Spanish) and were given the option to have questions read aloud. Mothers received a $50 incentive for participating, a small toy for the child, and a local mental health resource list.

Measures

We used instruments with published reliability and validity in both English and Spanish languages that were appropriate for respondents of varying literacy; see Table 1 for a description of the measures and reliability indices. We developed questions to measure hardship and endangerment and represent the child’s severity of disability (Disability Index).

Depression symptoms and diagnoses—We collected self-report of depressive symptoms via the Center for Epidemiologic Studies Depression Scale (CESD-D; Radloff 1977). Scores of 16 or greater were considered a positive screen for depression (Vega, Kolody, Valle, & Hough 1986). The Mini International Neuropsychiatric Interview (M.I.N.I. version 6.0; Sheehan et al. 1998), a structured clinical diagnostic interview, provided assessment data consistent with the Diagnostic and Statistical Manual of Mental Disorders (DSM; American Psychological Association 2013) and the International Classification of Diseases (ICD; World Health Organization, 2015). Data collectors, trained and supervised

on the M.I.N.I. by experienced clinicians, demonstrated high fidelity and inter-rater reliability (> 90% accuracy of diagnosis) at multiple time points. The M.I.N.I interview provided data about current and past episodes of major depression and as well as episodes of mania and hypomania. Estimates were determined for those with and without functional impairment (Ko, Farr, Dietz and Robbins; 2012). We also assessed whether mothers currently met criteria for three anxiety disorders that have the highest comorbidity with depression (Generalized Anxiety Disorder, Panic Disorder and Post-traumatic Stress Disorder). Suicidality in the past month was also assessed (see Table 3 for details of the assessment). In cases where suicidal ideation was endorsed or the researchers had concerns about suicide risk or severity of mood, an experienced clinician was consulted. To ensure mothers were safe, a plan for support and safety was developed and mothers were connected with a clinician for follow-up before the researcher left the family's home.

Health status—The single-item, global health question from the Medical Outcome Short Form-12, "In general, would you say your health is…" measured mothers' health status (DeSalvo et al., 2006). Responses were recorded with a Likert type scale with five response choices ranging from *Excellent* to *Poor*. Responses are reverse scored so that higher scores indicate better-perceived health.

Parent-Child interactions—The 12-item dysfunctional parent-child interaction subscale of the Parenting Stress Index, Short Form (PSI-SF; Loyd & Abidin 1985), assessed the mother's expectations of her child and satisfaction with interactions. Items (e.g., "Sometimes my child does things that bother me just to be mean") are rated along a 5-point scale ranging from *Strongly Agree* to *Strongly Disagree*. Items are reverse scored so that higher scores reflect poorer perceived parent-child interactions.

General Self-Efficacy—To measure self-efficacy we used the General Self-efficacy Scale (GSE; Luszczynska, Scholz, & Schwarzer 2005). Ten items (e.g., "I know how to get help from others when I need it") are rated along a 4-point scale ranging from *Not True at All* to *Very True*. Higher scores indicate greater perceived self-efficacy.

Social Support—Social support was measured by four items from the Multidimensional Scale of Perceived Social Support (MPSS; Zimet, Powell, Farley, Werkman, & Berkoff 1990). Two items from the Significant Other Subscale (e.g., "There is a special person who is around when I am in need") and two items from the Family Subscale (e.g., "I can talk about my problems with my family") were administered. Responses were rated along a 7-point scale ranging from *Very Strongly Disagree* to *Very Strongly Agree*, with higher scores reflecting greater perceived social support.

Family Conflict—Mothers rated five items from the Conflict Subscale of the Family Environment Scale (FES; Moos & Moos 2002) along a 4-point scale from *Strongly Agree* to *Strongly Disagree*. Items (e.g., "We fight a lot") were rated such that higher scores reflected more open conflict.

Hardship—Degree of hardship was calculated from four self-report items (e.g., in the last 6 months how much did you worry about losing your housing?). Debt, housing, food, and

telephone hardship items were rated along a 3-point scale ranging from *Not at all difficult* to *Very difficult*, with higher scores reflecting greater perceived hardship.

Endangerment—Three items were used to compute perceived endangerment. Two items (e.g., Have you seen a violent crime or domestic violence) were rated on a 2-point, Yes or No, scale and one item (e.g., in the last 6 months how much did you worry about you and your children being in danger?) was rated along a 3-point scale ranging from *Not at all difficult* to *Very difficult*. Higher scores represent higher perceived endangerment.

Child Behavioral Problems—The Brief Infant-Toddler Social Emotional Assessment scale (BITSEA; Briggs-Gowan, Carter, Irwin, Wachtel, & Cicchetti 2004), assesses social-emotional behaviors and competence in 12 to 36-month-olds via maternal report of the child's social emotional development and behavioral challenges.

Disability Index—A disability index score was computed for each child based on a thorough review of developmental evaluations and intervention history from EI service records. Severity and extent of developmental delays, autism diagnoses or noted autism risk, medical comorbidities, cognitive ability and level of functioning were taken into consideration. Two experienced psychologists independently rated severity of disability along a 3-point scale. In the few cases where there was disagreement, the available information was discussed and consensus reached. Higher disability index scores reflect greater functional impairment with greater likelihood for intense and chronic long-term support needs.

Data Analytic Plan

Quantitative methods were used to generate descriptive data and test models predicting maternal mental health. Descriptive statistics and correlations examined data distribution of several demographic characteristics and factors associated with maternal mental health. Multivariate analyses tested the association of maternal depressive symptoms with contextual factors. Multivariate analyses were adequately powered (> 0.80), as determined via post-hoc power analysis with a sample size of 106, alpha of 0.05, 11 predictors, and observed $R^2 = 0.45$ using Statistics Calculators (Soper, 2015). Statistical analyses were conducted using IBM SPSS Statistics (SPSS) version 23.0 (IBM Corp., 2015).

Results

Sample Characteristics

Mothers from 106 households participated in the study. Fifty-seven percent of participants self-identified as White non-Hispanic, 22% Hispanic, 13% Black non-Hispanic, 8% Mixed race or Native American. All but two participants (an adoptive mother and a grandmother) were the biological mother of the child. The majority of mothers were partnered to their child's biological father, had a high school degree, and were not currently working outside of the home. The average annual household income was upwards of $42,000 ($33,858 median). The majority of children in the study were males over 2 years of age ($M = 31$ months, $SD = 4.77$). Nearly a third of mothers endorsed multiple children with a history of

developmental delay or developmental disability. Seven percent of participants reported multiple children currently receiving EI services (Table 2).

Maternal Mental Health

Using the M.I.N.I., 8% of participants met all criteria for a current major depressive episode (MDE) with 44% of the sample reporting a past MDE and 43% endorsing recurrent MDEs. Eleven percent met criteria for a bipolar disorder diagnosis (6% bipolar I and 5% bipolar II). Overall, more than half of the sample (56%) met full diagnostic criteria for a mood disorder at some point in their life. When a more detailed mood history was taken in a third of the sample, the mean age of onset of mood symptoms was 19.8 years of age, mean number of episodes was 4.6, and 54% reported at least one postpartum episode of depression.

We found 37% of the sample met criteria for a current anxiety disorder: 23% generalized anxiety disorder, 8% panic disorder, 6% post-traumatic stress disorder. Comorbid mood and anxiety disorders were reported by 29%. Over a quarter of the sample endorsed suicidality symptoms in the past month on the M.I.N.I., with 13% percent reporting a past suicide attempt. Twenty-five percent of the sample reported recent psychotropic medication use whereas 25% reported recent engagement in counseling, group therapy or other mental health services. Only 15% reported both recent pharmacological and therapy mental health services.

As moderate to severe depressive symptoms impair maternal responsiveness, we were interested in the presence of depressive symptoms that did not meet diagnostic threshold for MDE. Using the CES-D to assess current depressive symptom severity, approximately 34% of mothers screened at or over a CES-D score of 16. Of these mothers, 13 met all diagnostic criteria for MDE on the M.I.N.I. except endorsement of functional impairment. In summary, 57% of the sample either met criteria for MDE, reported significant symptoms that fell short of a formal diagnosis or had elevated symptom severity levels on the CES-D (see Table 3).

Factors Associated with Maternal Depressive Symptoms

Past episode of depression, family conflict, child behavior problems, maternal self-efficacy, social support, maternal health, monthly household income, perceived hardship and perceived endangerment were entered in a linear regression model predicting severity of current depressive symptoms. The correlations of the variables are shown in Table 4. The prediction model was statistically significant, $F(10, 86) = 6.97$, $p < .001$ and accounted for 45% of the variance in current depression severity ($R^2 = .45$, Adjusted $R^2 = .38$). Current depression severity was primarily predicted by more problematic child behaviors ($\beta = .27$, $p < .01$), lower self-efficacy ($\beta = -.21$, $p = .01$), poorer maternal health status ($\beta = .22$, $p = .03$), and past MDE ($\beta = .18$, $p = .04$). Table 5 summarizes the model results.

Conclusions and Implications for Clinical Practice

To date, this study was the most comprehensive examination of depressive symptoms in mothers whose children are receiving EI services. Using a gold standard assessment measure (M.I.N.I.) and stringent diagnostic criteria for current MDE (in the past month), we found the percentage of mothers who met criteria was 8%, and was no higher than the general US

adult 12-month prevalence rate (8.3%; Bromet et al. 2011). However, when we included mothers who met 5 of 9 depressive symptom criteria in the past month, as required by the DSM-V and similar to methodology used by Ko, Farr, Dietz and Robbins (2012), the prevalence of MDE in the past month increased to 15%, which is higher than the 10.9% rate found among U.S. women of reproductive age in a 12 month period (Ko et al. 2012).

Moreover, a third (34%) of mothers reported experiencing current symptoms significant enough to warrant clinical concern (CES-D ≥ 16). This was much higher than the (14%) rate found using self-report in a nationally representative sample of women in the U.S. of reproductive age (Farr, Bitsco, Hayas, & Dietz 2010). Over half of the sample met diagnostic criteria for one or more episodes of major depression, mania or hypomania over their lifetime and more than a quarter of the sample experienced comorbid mood and anxiety disorders. This is in contrast to previous reports (Bailey et al. 2007; Singer 2006) that estimated lifetime episodes of depression at approximately 33%.

This is the first study to report rates of suicidal ideation among mothers of children in EI. It is concerning that over a quarter of mothers in this sample indicated some degree of suicidal ideation in the past month (see Table 3 for description), and speaks to the critical importance of having high quality screening measures in place for these families and expanded mental health supports for parents who do not meet criteria for treatment in the current mental health system. These rates are slightly higher than the 2%–15% reported among mothers postpartum (Lindahl, Pearson & Colpe, 2005) and closer to the 19–30% estimates reported among women who screen positive for depressive symptoms postpartum (Wisner et al., 2013).

We found a previous episode of depression was the strongest predictor of current depression even after controlling for the severity of the child's disability and other stressors known to have a relationship with depression (Singer 2006). Previous research has suggested that child behavior problems may be the strongest predictor of maternal outcomes (Bailey et al 2007), but many of these studies did not examine maternal mental health history. Mothers with a history of depression and/or mood disorders may be especially vulnerable if they have a child with developmental or behavioral problems. One simple question, "have you ever been depressed?" could help EI providers (or referring pediatric providers) recognize maternal mood issues early and provide resources, referrals and support to these mothers.

Depressive symptoms can compromise mothers' use of EI services and as such, must be addressed so that EI can optimally benefit the child. EI services can be tailored to meet mothers with depressive symptoms where they are. Tailoring can include accommodating to mothers' shifts in symptoms by relaxing expectations and providing essential supports such as respite care when mothers are not able to function optimally due to depressive symptoms. To help a symptomatic mother use her limited energy efficiently, interventions can focus on those most important to the child's functioning.

Perception of poorer health status and lower self-efficacy was also a predictor of current depression. Perception of health may be dependent on mood and once available resources have been accessed, improvement may be seen. Low self-efficacy can be increased by the

tailoring of interventions and emphasizing successes that may help mothers perceive their ability to help their child. Other approaches that can help build self-efficacy include increasing motivation through techniques such as brief motivational interviewing (Rubak, Sandbaek, Lauritzen, & Christensen 2005) and a flexible approach to routines-based strategies that encourages the mother to implement them when she has the energy available to implement them. Assisting mothers in accessing treatment for depression, tailoring interventions to meet mothers where they are and setting the stage for success in small increments can make a major difference for the child and the family.

These data suggest that maternal history of past MDE, current health and degree of self-efficacy are the important factors to assess when evaluating how to support mothers of children in EI. These factors can be assessed efficiently in the EI setting and providers can be trained to use validated tools such as the Patient Health Questionnaire-2 (PHQ-2; Kroenke, Spitzer, &Williams 2003) to screen for symptoms. Once a mother is identified to be at risk, it is possible to intervene within the context of EI as described, thus reducing the burden on families and potentially decreasing the need for additional services. More research on the development of specific intervention tools to use in this population is greatly needed. We believe that adding a brief assessment of maternal mood, health and self-efficacy provides important information that can guide how EI providers optimize their time with mothers and children to improve outcomes.

Limitations

The study generated descriptive data about depressive symptoms, depression diagnoses and associated mental health diagnoses in mothers of children currently receiving services from EI. However, cross-sectional data capturing a single point in time do not capture mothers' symptoms over time, nor their temporal relationship with the child's birth or disability diagnosis. The study purposely recruited mothers whose child was referred to EI before knowing a cause or whether the delay was transient or pervasive. Positive changes in the child's development, or conversely, the emergence of a more serious diagnosis could affect the course of maternal depressive symptoms and thus, longitudinal studies are needed to observe this trajectory. The convenience sample introduces potential bias in the sample (e.g. severely depressed mothers may have not had the energy to participate), limits generalizability, and was not representative of the demographics of the entire community served by the EI program partner. However, inclusion of mothers who were primarily Spanish speaking as well as the spectrum of social and economic stressors increases generalizability. In this sample, the validated Spanish language GES showed lower reliability than the English language form, potentially suggesting differences in the construct of self-efficacy in this sample. These and other constructs are critical to the understanding of factors important to maternal mental health in EI populations and should be a priority for future studies.

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Significance

What is already known on this subject?

Increased incidence of maternal depressive symptoms has been associated with child disability. It can also interfere with the mother's ability to respond appropriately to the young child and can impact the child's developmental outcomes.

What this study adds?

This study adds to the limited information on mothers of children under 3 and identifies past depression, current perceived health, low self-efficacy and child behavioral issues as potential risk factors for current severity of depression in mothers with young children in early intervention programs.

Table 1

Instrument Reliabilities in Current Sample

Construct/Variable		Reliability Indices (Cronbach's Alpha)		
		Full Sample (n=106)	**English (n=88)**	**Spanish (n=18)**
	Maternal Measures			
Depressive Symptom Severity	Center for Epidemiological Studies Depression Scale (Radloff, 1977)	.92	.92	.94
Health status	Medical Outcomes Studies Short Form Health Survey, global health (1-item)(Gandek et al., 1998)	.84	.83	.89
Parent-Child Interactions	Parenting Stress Index, Parent-Child Dysfunctional Interaction subscale (Loyd & Abidin, 1985)	.87	.86	.89
General Self-Efficacy	General Self-Efficacy Scale (Luszczynska et al., 2005).	.76	.79	.62
Social Support	Multidimensional Scale of Perceived Social Support (Zimet et al., 1990)	.84	.83	.89
Family Conflict	Family Environment Scale, Family Conflict Subscale (Moos & Moos, 2002)	.61	.63	.40
	Child Measures			
Child Behavioral Problems	The Brief Infant-Toddler Social Emotional Assessment (Briggs-Gowan et al., 2004)	.71	.70	.79

Table 2

Sample Characteristics (n = 106)

Variable	%	Mean(SD)	Range
Language of Interview			
English	83%		
Spanish	17%		
Ethnicity & Race			
White	57%		
Hispanic	22%		
Black	13%		
Multiracial	7%		
American Indian	1%		
Caregiver			
Biological Mother	98%		
Adoptive Mother	1%		
Grandmother	1%		
Legal Guardian	100%		
Caregiver's Age		32.92(5.78)	22–45
Current Work Status			
Employed	39%		
Actively seeking employment	4%		
Not actively seeking employment	57%		
Financial Instability Worries		2.48(2.86)	0–12
Average Monthly Income		3,528.64(3,228.96)	0–26,000
Years of Schooling		14.45(3.55)	3–26
Partnered Currently	84%		
Partner is Child's Biological Father	93%		
EI Child Gender (Boy)	71%		
EI Child Age (in months)		30.94(4.77)	12–45
Entry into EI because of developmental delay (vs. an established condition)	84%		
# Children in family w/developmental delay history		1.43(0.78)	0–6
Depression Severity (CES-D)		13.87(11.98)	0–48
Health Status (MOS)		2.54(1.07)	1–5
Parent-Child Dysfunctional Interaction (PSI)		22.32(8.19)	12–48
General Self-Efficacy (GSE)		33.70(4.01)	22–40
Social Support (MSPSS)		23.03(5.50)	4–28
Family Conflict (FES)		8.22(1.94)	5–15
Hardship		3.04(2.90)	0–12
Endangerment		0.82(1.27)	0–5
Child Behavior Problems (BITSEA)		14.47(9.97)	0–44
Worried about child's behavior		2.05(0.99)	1–4

Variable	%	Mean(SD)	Range
Child Disability Index		1.89(0.72)	1–3

Table 3

Prevalence of Mood and Anxiety Symptoms in Mothers of Children in EI

Variable	%	Mean (SD)	Range
Mood			
Depressive Symptoms Screen Positive (CES-D ≥ 16)[1]	34%	13.87 (11.98)	0–48
Major Depressive Disorder (MDD)[2]			
MDD Current	8%		
MDD Current (broader definition)[a]	16%		
MDD Past	44%		
MDD Recurrent	43%		
Suicidality past month[2 b]	26%		
Low range (0–7)	22%		
Moderate range (9–16)	4%		
High range (≥17)	1%		
Bipolar Disorder (BPD)[2]	11%		
Mania[2]			
Current episode	0%		
Past episode	6%		
Hypomania[2]			
Current episode	3%		
Past episode	9%		
Anxiety			
Panic Disorder[2]			
Current	8%		
Past	19%		
PTSD[2]			
Current (past month)	6%		
GAD[2]			
Past 6 months	23%		
Comorbidity			
Mood & Anxiety Comorbidity[2]	29%		

Note. Variables were collected from two separate measures, [1]= CES-D, [2]= M.I.N.I. 6.0.

[a]MDD Current (broader definition) represents participants who endorsed 5 of 9 symptoms of depression (criteria A1–A3) without requiring endorsement of functional impairment, similar to methodology used by Ko et al., 2012. DSM-IV and DSM V require 5 of 9 symptoms and clinically significant distress OR functional impairment, that is not better explained by another diagnosis. Out of the 17 participants who endorsed 5 or more current MDD symptoms, 9 met full criteria for MDD current and 8 lacked the functional impairment item.

[b]Suicidality was assessed using the MINI 6.0 which includes questions about hopelessness, thoughts of death, thoughts of harm or suicide, self-injury and suicide attempts yielding a suicide assessment score categorization of low, moderate, or high based on symptoms endorsed.

Table 4

Correlations of the Variables in the Analysis Associated with Risk for Depressive Symptoms ($N = 106$)

		2	3	4	5	6	7	8	9	10	11	12	13
1.	Depression Severity (CES-D)	0.82***	0.39***	0.47***	0.12	0.46***	−0.27**	−0.30**	0.35***	−0.06	0.36***	0.39***	0.03
2.	Significant Depression Symptoms (CES-D ≥ 16)	1.00	0.48***	0.40***	0.13	0.37***	−0.23*	−0.27**	0.33**	−0.02	0.37***	0.35***	−0.05
3.	Past MDE		1.00	0.18	0.10	0.26*	−0.09	−0.08	0.26**	0.10	0.20*	0.28**	−0.02
4.	Current MDE			1.00	0.01	0.07	−0.20*	−0.05	0.06	−0.01	0.12	0.32**	−0.05
5.	FES Conflict Scale				1.00	0.08	0.01	−0.17	−0.03	0.13	0.09	0.10	−0.01
6.	Child Problem Behaviors					1.00	−0.09	−0.38***	0.29**	−0.18	0.33**	0.28**	0.19
7.	Self-Efficacy						1.00	0.02	−0.15	0.07	−0.02	−0.09	0.08
8.	Social Support							1.00	−0.02	0.01	−0.22*	−0.15	−0.12
9.	Health								1.00	−0.18	0.32**	0.34***	−0.02
10.	Income									1.00	−0.20*	−0.01	−0.07
11.	Hardship										1.00	0.24*	0.07
12.	Endangerment											1.00	0.040
13.	Child Disability Index												1.00

* $p<.05$,

** $p<.01$,

*** $p<.001$

Table 5

Linear Regression Predicting Depressive Symptom Severity (*n=106*)

	b	SE	*β*	*t*	*p*	95% CI	
						Lower	Upper
Constant	23.76	10.90					
Past MDE *	4.20	2.05	.18	2.05	.04	.13	8.28
FES Conflict Scale	.30	.49	.05	.60	.55	−.68	1.27
Child Behavior *	.31	.11	.27	2.81	.01	.09	.53
Self-efficacy *	−.61	.23	−.21	−2.62	.01	−1.08	−.15
Social Support *	−.22	.18	−.11	−1.21	.23	−.58	.14
Mother's Health *	2.30	1.03	.22	2.23	.03	.25	4.34
Income	.00	.00	.06	.69	.50	.00	.01
Hardship	.17	.38	.04	.44	.66	−.59	.92
Endangerment	.96	.82	.11	1.17	.25	−.67	2.60
Disability Index	−1.00	1.31	−.06	−.76	.45	−3.59	1.60

Significant at

* $p < .05$

Values −0.00 or 0.00 indicate $-.01 < \beta < .01$