

## Exploring Maternal and Child Effects of Comorbid Anxiety Disorders among African American Mothers with Depression

Rhonda C Boyd<sup>1\*</sup> and Brenden Tervo-Clemmens<sup>2</sup>

<sup>1</sup>Department of Child and Adolescent Psychiatry and Behavioral Sciences, Children's Hospital of Philadelphia, Pennsylvania, USA

<sup>2</sup>Department of Psychology, Villanova University, Villanova, Pennsylvania, USA

### Abstract

Comorbid depression and anxiety disorders are commonly experienced in mothers. Both maternal depression and anxiety as well as their comorbidity has been shown to increase psychopathology in children, however, there is limited research focusing on African American families. The aim of this study is to examine whether comorbid anxiety disorders are associated with maternal depression severity, kinship support, and child behavioral problems in a sample of African American mothers with depression. African American mothers ( $n = 77$ ) with a past year diagnosis of a depressive disorder and a child between the ages of 8–14 were administered a clinician interview and measures of maternal depression severity, kinship support, and child behavior problems (internalizing and externalizing) in a cross-sectional design. Results showed that more than half (58%) of the mothers had a comorbid anxiety disorder and a third had Posttraumatic Stress Disorder (PTSD). Regression analyses showed that comorbid PTSD and Social Phobia were positively associated with maternal depression severity. Maternal comorbid Obsessive Compulsive Disorder (OCD) was associated with child internalizing symptoms. The findings are consistent with other research demonstrating negative outcomes with maternal comorbidity of depression and anxiety, however, there is limited research focused on maternal depression and OCD or PTSD. The study suggests that it is important to consider comorbid anxiety and cultural issues when conceptualizing, studying, and treating mothers with depression and their families.

**Keywords:** Comorbidity; Anxiety; Maternal Depression; Children; African Americans

### Introduction

#### Significance

Depressive and anxiety disorders are the most common psychiatric disorders. Depression and anxiety also typically co-occur [1,2]. The comorbidity of these disorders has been shown to be frequently experienced by mothers [3,4]. Mothers are an important population in which to examine comorbid depression and anxiety. Women tend to exhibit depressive and anxiety disorders more than men and there are potential deleterious impacts of these disorders on child functioning [5,6]. There is a multitude of research documenting that children of mothers with depression have an increased risk for depressive and anxiety disorders [7], as well as disruptive and oppositional behaviors [8,9]. Additionally, there is research showing that children of mothers with anxiety disorders have greater frequency of anxiety disorders [10,11].

Maternal depression and comorbid anxiety is a significant issue for African American mothers. Unfortunately, the majority of the epidemiological literature focuses solely on depression. For example, recent studies have shown 12-month prevalence rates ranging from 7.9 to 13% among African American mothers [3,12,13]. However, despite the frequency of depression, there is a paucity of research literature examining the impact of maternal depression on children of African American mothers. African American mothers may have higher risks for depression and anxiety due to factors such as poverty, violence exposure, and stigma of mental illness that continue in some African American communities [3,14,15].

A major health disparity within this population is that African American mothers underutilize mental health treatment. Two recent epidemiological studies showed that 35% [3] and 49% [12] of American mothers with depression utilized treatment within the past 12 months. As there is growing evidence that remission of maternal depression

symptoms have been linked with improved child outcomes [16-18], underutilization of treatment may have negative consequences for both mothers and children.

#### Impact on children

The comorbidity of depression and anxiety among mothers has often been neglected when examining the impact of maternal psychopathology on children; however, this is a growing research area. A recent meta-analysis showed that compared to children of parents without psychiatric disorders, children of parents with comorbid anxiety and depression have increased depression and anxiety disorders [19]. Nevertheless, these children have similar risks of having depression and anxiety disorders as children of parents with only anxiety disorders or only depressive disorders [19]. Other studies have shown that comorbid depression and panic disorder among mothers is associated with greater likelihood of mood and anxiety disorders in children [20,21]. In addition, comorbid anxiety among mothers with depression has been shown to increase risk for anxiety disorders and psychiatric disorders in general for children [20]. In sum, current evidence indicates a risk of impaired functioning among children whose mothers have comorbid depression and anxiety disorders. Nevertheless, there is a scarcity of studies that have involved ethnically diverse families.

**\*Corresponding author:** Rhonda C Boyd, Department of Child and Adolescent Psychiatry and Behavioral Sciences, Children's Hospital of Philadelphia, 3440 Market Street, 2nd floor, PA 19104, Philadelphia, Pennsylvania, USA, Tel: 215-590-3945; Fax: 215-590-7410; E-mail: [rboyd@mail.med.upenn.edu](mailto:rboyd@mail.med.upenn.edu)

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There are several pathways through which maternal psychopathology may lead to child maladjustment. Goodman and Gotlib [22] proposed an integrative theoretical model for the development of psychopathology in children. A potential pathway begins with maternal psychopathology, which then leads to genetic risk, subsequent impaired parenting, and social stress [22]. These factors then result in child behavior problems [22]. Several studies have also found evidence that family environment and parent-child interactions impact the transmission of depression [23,24]. Potential factors that may serve as moderators in the transmission of psychopathology from a mother to a child include maternal depression severity, child intelligence, paternal presence, and paternal mental health [25]. A drawback of this model is that cultural issues are not considered. The factors that impact the transmission of psychopathology within African American families may be different from other racial/ethnic groups. For example, a few studies have shown that maternal depression was not associated with parenting and parent-child interactions within African American samples [26-28]. There may be potential risk and protective factors, salient for African Americans mothers and their children, which impact the transmission of psychopathology.

### Maternal factors

In the present investigation, two factors (maternal depression severity, kinship support) are examined within a sample of African American mothers with depressive disorders. Depression severity has been shown to be greater for African Americans as compared to European Americans, despite similar rates of 12-month prevalence of Major Depressive Disorder (MDD) [29]. Specifically for mothers, studies have shown that maternal depression severity has been associated with poorer child outcomes, such as depressive disorders [20,30]. A possible characteristic that may increase the severity level of maternal depression is the presence of comorbid anxiety disorders.

Another factor that may influence maternal depression and anxiety is kinship support. Kinship support is an important cultural characteristic that contributes to the resiliency among the African Americans. Kinship support is the social support provided by extended family members, such as aunts, uncles, and cousins. The extended family network can offer emotional and instrumental support, increase interaction among adults, and promote positive parenting behaviors [31-33]. Higher levels of kinship support have been found to be associated with greater maternal warmth, emotional support, and better maintenance of routines within the family [34]. Kinship support has been shown to moderate the effect of negative family interactions on children's and adolescents' internalizing and externalizing behavior [35,36]. Despite its potential to serve as a protective factor, kinship support has not been studied in mothers with comorbid depressive and anxiety disorders.

### Present study

The present study investigates comorbid anxiety disorders among African American mothers with depressive disorders. There is sparse information regarding maternal depression and anxiety in African American samples. Accordingly, it is not clear if the findings from other studies generalize to African American families. As a result, the aim of the investigation is to examine whether maternal comorbid depressive and anxiety disorders are associated with maternal depression severity and kinship support, as well as child internalizing and externalizing behavior problems in an African American sample. An exploratory aim is to investigate whether maternal depression severity and kinship support serve as moderators between maternal comorbid depressive and anxiety

disorders and child internalizing and externalizing behavior problems.

## Materials and Methods

### Participants

The participants were 77 mothers with a child between the ages of 8-14 years. The mothers ranged in age from 23 to 63 years with a mean age of 38.6 (SD = 7.4) years. All mothers identified their race as African American, with 6.5% (n = 5) also identifying with other races (i.e., White, Native Hawaiian/Pacific Islander, Asian, American Indian/Alaskan Native) and 1.3% (n = 1) also identifying with Latino ethnicity. The majority of the mothers were never married (63.6%, n = 49), while 15.6% (n = 12) were married or living with a partner and 20.8% (n = 16) were separated, divorced or widowed. The majority of the mothers received public assistance (59.2%, n = 45). In terms of education level, approximately 72% (n = 55) of the mothers had either high school degree equivalency or higher. The majority (90.9%; n = 70) of the mothers were the child's biological parent.

The children had a mean age of 11.1 (SD = 2.0) years. Their school grade ranged from second to tenth with a mean of grade 5.6 (SD = 2.1). Approximately half (58%; n = 45) of the children were female. All mothers identified their children as African American, however 7.8% (n = 6) also identified with other races (i.e., White, Native Hawaiian/Pacific Islander, Asian, American Indian/Alaskan Native). Five children (6.5%) were also of Latino ethnicity.

### Procedures

In the current investigation, mothers were drawn from two related studies focusing on maternal depression within African American families. Mothers were eligible for the study if they: 1) were African American; 2) had a primary current or past-year psychiatric diagnosis of MDD, Dysthymic Disorder or Depressive Disorder, Not Otherwise Specified (NOS); and 3) were the primary caregiver of a school-age child aged 8-14 years who resided with them on at least a part-time basis. Ineligibility criteria include: 1) a maternal history of Bipolar Disorder or any psychotic disorder; 2) maternal current or past year diagnosis of substance dependence; or 3) mental retardation (determined by mothers stating that they and/or their child had been diagnosed with mental retardation within their lifetime).

Study participation involved three steps. First, mothers completed a telephone screening to assess their preliminary eligibility for the study. If appropriate, the diagnostic eligibility of the mothers was then determined by a clinical interview (Structured Clinical Interview for DSM-IV-TR Axis I Disorders) [37] conducted by the primary author (a licensed clinical psychologist). Finally, eligible participants completed a battery of questionnaires read aloud by research staff. Participants were paid \$20 for the assessment interview. The consent process was conducted in person by the principal investigator or another member of the research staff such that the study team obtained written consent for participation. The studies were approved by the Institutional Review Boards of the Children's Hospital of Philadelphia, the University of Pennsylvania, and the Philadelphia Department of Public Health.

### Measures

The Structured Clinical Interview for DSM-IV-TR Axis I Disorders (SCID-I) [37] is a semi-structured interview for diagnosing the major DSM-IV Axis I disorders. The SCID determines whether an Axis I diagnosis has ever been present (lifetime prevalence) and whether or not there is a current episode. This instrument is widely used in

adult psychopathology and treatment research. Comorbid anxiety disorders were categorized in the following manner: 1) Posttraumatic Stress Disorder diagnosis (PTSD); 2) Panic Disorder with and without Agoraphobia (PD) and Agoraphobia diagnoses 3) Social Phobia diagnosis, 4) Obsessive Compulsive Disorder (OCD) diagnosis and 5) Generalized Anxiety Disorder (GAD) diagnosis.

The Beck Depression Inventory- II (BDI-II) [38] was used to measure the severity of mothers' depressive symptoms in areas such as mood, pessimism, sense of failure, and somatic symptoms. There is strong evidence of the reliability, validity, and utility of the instrument [39,40]. It has excellent internal consistency ( $\alpha = 0.90$ ) with African American samples [41,42]. The Cronbach alpha coefficient for this measure in the current sample is 0.89.

The Kinship Support Scale [43] was completed by mothers in order to assess her perception of the amount of social and emotional support received from extended family members. Construct validity of this measure is demonstrated by positive correlations with measures of family routines and informal kinship support [44,45]. Strong internal consistency ( $\alpha = 0.88$ ) has been found in a sample of low-income African American mothers [32]. The Cronbach alpha coefficient for the current sample is 0.89.

The Child Behavioral Checklist (CBCL) [46] assesses children's behavioral problems and competencies as reported by their parents or guardians. There are 113 problem items that assess children's behaviors. There is a 3-point response scale. Psychometrics and norms are well developed with satisfactory reliability and validity. For example, the CBCL and the Strengths and Difficulties Questionnaire have an overall correlation coefficient of 0.87 [47]. It has been used cross-culturally including samples with blacks and/or African Americans [48,49]. In the present investigation, the Internalizing and Externalizing scales were the focus. The Cronbach alpha coefficients for the current sample are 0.88 (internalizing) and 0.93 (externalizing).

## Data analyses

The main goals of the primary analyses were to examine the associations between comorbid anxiety disorders among mothers with depression on: (1) maternal kinship support and depressive severity and (2) maternal report of child internalizing and externalizing behavior problems. Depending on the primary analyses, secondary posthoc analyses were conducted to explore whether potential factors (i.e., maternal depression severity and kinship support) moderated the associations between comorbid anxiety disorders and child internalizing and externalizing behavior problems. Descriptive analyses included frequencies of maternal psychiatric depressive and comorbid anxiety diagnoses. In addition, the means, standard deviations, ranges and Pearson correlations of maternal depression severity, maternal kinship support, child internalizing and externalizing behavior problems, and number of anxiety disorder diagnoses were calculated.

For the primary analyses, multiple regression analyses were performed separately for the continuous kinship support total score, BDI-II total score, CBCL internalizing total score and CBCL externalizing total score. Five comorbid anxiety disorder variables were entered as a block in the following order: comorbid PTSD, comorbid PD and Agoraphobia, comorbid Social Phobia, comorbid OCD and comorbid GAD. These independent variables were coded into categorical variables concerning whether the diagnoses were present or not (no=1, yes=2). Secondary posthoc analyses were performed based on significant findings from the primary analyses. Two-step

multiple regression analyses were conducted with maternal depression severity and kinship support as moderators of the associations between the specific comorbid anxiety disorder and child internalizing and externalizing behavior problems. Anxiety disorders were added in a block in the first step and the interactions between comorbid anxiety disorder and potential moderators (i.e., maternal depression severity, kinship support) were added as a block in a second step.

## Results

### Description of maternal psychiatric comorbid diagnoses

The majority of the mothers had current or past year MDD (80.5%;  $n = 62$ ). Eighteen percent ( $n = 14$ ) of the mothers had Dysthymic Disorder and fourteen percent ( $n = 11$ ) had a diagnosis of Depressive Disorder NOS. Forty five mothers (58.4%) had a comorbid anxiety disorder. Comorbid anxiety disorders included: PTSD ( $n = 22$ , 32.5%), PD and Agoraphobia ( $n = 17$ , 22.1%), Social Phobia ( $n = 12$ , 15.6 %), OCD ( $n = 5$ , 6.5%), and GAD ( $n = 3$ , 3.9%). The depressed mothers had a mean of 0.86 (SD = 0.88, Range = 0-4) comorbid anxiety disorders (Table 1).

### Descriptive analyses and correlations

Means, standard deviations, ranges and Pearson correlations of continuous study variables are presented in table 1. The mothers had a mean score of 26.26 (SD = 10.87) on the BDI-II, indicating a clinical range with a moderate level of depressive severity. The mean total score of 33.13 (SD = 8.55) on the Kinship Support Scale was fairly similar to mean scores (25.49 – 33.12) in studies of community samples of African American families, including low-income and single-household mothers [32,36,43]. The mean of maternal report of child internalizing and externalizing behavior symptoms were within the normative range. However, 23.3% ( $n = 17$ ) of the children were exhibiting internalizing symptoms and 19.2% ( $n = 14$ ) were exhibiting externalizing symptoms in the clinical range on the CBCL (T score of 70 or above).

Maternal depression severity was positively correlated with number of maternal comorbid anxiety disorders ( $r = 0.32$ ,  $p < 0.01$ ) and child internalizing ( $r = 0.34$ ,  $p < 0.01$ ) and externalizing behavior symptoms ( $r = 0.27$ ,  $p < 0.05$ ) but negatively correlated with maternal report of kinship support ( $r = -0.28$ ,  $p < 0.05$ ). Kinship support was negatively correlated with the number of maternal comorbid anxiety disorders ( $r = -0.30$ ,  $p < 0.01$ ).

### Regression analyses of maternal and child variables

Table 2 presents the results of the final multiple regression model of the multiple regressions for each dependent variable. In the primary analyses, the presence of comorbid PTSD ( $B = 5.76$ ;  $t = 2.28$ ,  $p < 0.05$ ) and Social Phobia ( $B = 9.78$ ;  $t = 2.98$ ,  $p < 0.01$ ) were

	1	2	3	4	5
1. Maternal Depression	-	-0.275*	0.341**	0.269*	0.322**
2. Kinship Support		-	.003	.111	-0.304**
3. Child Internalizing (T score)			-	-.628**	-0.226
4. Child Externalizing (T score)				-	0.062
5. # of Anxiety Disorders					-
M	26.26	33.13	59.05	60.34	0.86
SD	10.87	8.55	11.36	10.42	0.88
Range	2-51	13-50	39-83	40-87	0-4

Note: \*  $p < 0.05$ , \*\*  $p < 0.01$ , # = Number

**Table 1:** Correlations, Means, Standard Deviations and Ranges of Study Variables.



Comorbid Variables	Kinship Support		Maternal Depression		Child Internalizing		Child Externalizing	
	B	t	B	t	B	t	B	t
Post-Traumatic Stress Disorder	-5.99*	-2.95	5.76*	2.28	0.64	0.23	-0.65	-0.24
Panic Disorder or Agoraphobia	-0.68	-0.29	0.88	0.31	6.08	1.96	2.37	0.78
Social Phobia	-2.80	-1.05	9.78**	2.98	0.43	0.12	0.60	0.17
Obsessive Compulsive Disorder	1.88	0.48	6.61	1.37	11.97*	2.27	3.88	0.75
Generalized Anxiety Disorder	-4.21	-0.87	-6.73	-1.12	2.53	0.39	2.69	0.42

Note. \*  $p < 0.05$ , \*\*  $p < 0.01$

**Table 2:** Linear Regression of Maternal Comorbid Anxiety Disorders on Kinship Support, Maternal Depression, Child Internalizing, and Child Externalizing.

significantly associated with greater maternal depression severity. A mother with depression and comorbid PTSD reported higher levels of depression symptoms while similar results were found with mothers with comorbid Social Phobia. The presence of a comorbid PTSD diagnosis was also negatively associated with kinship support ( $B = -5.99$ ;  $t = 2.95$ ,  $p < 0.05$ ). Specifically, if a mother with depression also had PTSD, then she reported less social support from extended family members. The presence of OCD diagnoses was positively associated with child internalizing symptoms ( $B = 11.97$ ;  $t = 2.27$ ,  $p < 0.05$ ). This finding showed that children of mothers with depression and comorbid OCD exhibited more internalizing disorders than children of mothers with depression without OCD. A marginal association was similarly found among mothers with PD and Agoraphobia ( $B = 6.08$ ;  $t = 1.96$ ,  $p = 0.05$ ). None of the comorbid anxiety disorders were significantly associated with child externalizing problems.

Two posthoc multiple regression analyses were conducted to examine moderation on child internalizing behavior problems. In the first step, comorbid anxiety disorders (i.e., OCD, PD and Agoraphobia) were entered as a block. In the second step, the interactions between comorbid anxiety disorders (i.e., OCD, PD and Agoraphobia) and moderators (i.e., maternal depression severity, kinship support) were added as a second step separately. None of the interactions were significant.

## Discussion

This investigation examined the effect of comorbid maternal depressive and anxiety disorders on maternal depression severity, kinship support, and child behavioral problems among African American families. A high frequency of comorbid anxiety disorders was found in our sample of African American mothers with depression. Specifically, we found that 58% of the mothers had comorbid depressive and anxiety disorders. This rate was slightly higher than rates of comorbid anxiety disorders found among a sample of mothers with depression (43%) and a sample of African American mothers with depression (38%) in an epidemiological study in the United States [3]. Similarly, in an Australian population-based survey, 37.9% of mothers reported high levels of both depression and anxiety [50]. However, our rate is similar to the 60% rate of comorbid depressive and anxiety disorders in a sample of Chinese women [51]. Clearly, comorbid anxiety is a prevalent condition that needs to be examined among African American mothers with depression.

Comorbid PTSD was the most common anxiety disorder, with a third of our sample of depressed mothers meeting criteria for a diagnosis. The frequency found in the present study is higher than rates in epidemiological studies ranging from 9.7-10.1% among women [52,53]. It is not clear if race may account for the higher rate of PTSD in our sample compared to the epidemiological studies. For example, in one U.S. national study, PTSD diagnoses were more frequent among

African Americans compared to other racial/ethnic groups [54]; however, another U.S. national study did not find race differences for African Americans [55]. The high frequency of comorbid PTSD suggests that the sample is vulnerable and high risk.

Additionally, our study showed that comorbid PTSD was associated with increased maternal depression severity. Similarly, it has been found that mothers with a history of trauma and victimization have been shown to exhibit more depression symptoms [56]. The research literature shows some support for maternal PTSD impacting more than mother's presentation of psychiatric symptoms. For example, studies have linked parental PTSD with increased anxiety, depression, and maladjustment in children [57,58]. It has been proposed that maternal history of victimization impacts child functioning through mediation of maternal depression [59]. Although we did not find an association with comorbid PTSD and child behavior problems, future research should explore the potential impact of comorbid depression and PTSD on child functioning. It is possible that PTSD may impact child behavior through maternal depression severity and maternal depression severity acts as a mediator instead of a moderator in the transmission process.

PTSD was also associated with less kinship support. This is consistent with the research literature on social support in general. In a meta-analysis, perceived social support was negatively associated with posttraumatic stress symptoms [60]. In a traumatized sample of individuals in motor vehicle accidents, social support was also negatively associated with PTSD numbing symptoms [61]. Depression reinforces social isolation that leaves a mother feeling alone with few people, including extended family members, to turn to for support, encouragement, and help. Comorbid PTSD and depression likely exacerbates feelings of social isolation. Similarly, within our sample, maternal depression severity was negatively correlated with kinship support. These findings suggest a potential direct positive effect of kinship support on maternal functioning. This extends current research on social support for individuals with depression and/or PTSD.

A major finding showed that of all the comorbid anxiety disorders, two increased the risk of child internalizing behavior problems. Children of mothers with comorbid depression and OCD were more likely to have greater internalizing behavior problems than children of depressed mothers without comorbid OCD. This is a significant finding because there has been sparse investigation on the impact of maternal depression and OCD on child outcomes. One study that specifically tested for maternal depression and comorbid OCD did not find any effect on child psychiatric diagnoses [21]. Overall, there are few studies examining maternal OCD and its impact on children; however, findings suggest that there are increased internalizing problems reported in children compared to mothers without psychopathology [62,63]. Clearly, this is an understudied area which needs further research with a larger sample.

The other maternal comorbid anxiety disorder that was associated

with increased child internalizing behavior problems was the diagnostic category including PD and Agoraphobia, although it was marginally significant. In accordance with this finding, a few studies have shown increased mood disorders among children of mothers with comorbid depression and PD with Agoraphobia [20,21]. In one well-designed study, Bierderman et al. [64] examined child outcomes among parents with comorbid depression and PD compared to depression only, PD only, and no psychiatric diagnosis. They found few differences in child outcomes among the parental psychiatric groups. Nonetheless, comorbid parental depression and PD was associated with increased occurrence of Separation Anxiety Disorder and multiple anxiety disorders in children. Another study demonstrated that children of mothers with comorbid depression and PD, compared to children with mothers with only depression or only anxiety disorders, are more likely to exhibit behavioral inhibition, a precursor to anxiety disorders [65]. There is growing evidence of the negative consequence of comorbid depression and PD on child functioning.

The number of maternal comorbid anxiety disorders was correlated with maternal factors. The greater the number of anxiety disorders exhibited among depressed African American mothers, the more severe her depression and the less perceived kinship support. This is consistent with a United Kingdom study of mothers with recurrent depression that found that the number of co-occurring problems, including anxiety, was associated with increased maternal depression, as well as new onset child psychiatric problems [66]. It is possible that depressed mothers with a greater number of anxiety disorders have more impairment and psychopathology that affects psychiatric and social functioning. Empirical evidence shows that psychiatric comorbidity is associated with increased severity of disorders [2,51,67]. This is particularly relevant to African Americans, as the presentation of MDD has been demonstrated to be more severe and disabling for African Americans compared with European Americans [29,68]. Additionally, our results indicate that comorbid Social Phobia increases maternal depression severity. In a sample of adults, it has been shown that comorbid Social Phobia, OCD and Panic Disorder with depression are associated with earlier onset of disorder, more hospitalizations, and more suicide attempts compared to only MDD alone [69]. These specific psychiatric outcomes represent severity of disorder in a compelling manner with the demonstration of societal and personal costs. Future studies could benefit from examining severity of disorder by multiple indices.

## Limitations

There are several limitations to the present investigation. First, the sample size is relatively small. The study achieved its target sample size with sufficient power to detect main effects in regression and correlational models. Nonetheless, the sample size for this investigation may limit the power to detect significant interactions in the exploratory multiple regression analyses there by increasing the likelihood of Type II error. Second, maternal and child functioning factors are solely gathered by maternal report. Additional reporters (e.g., teachers) and the use of a clinical interview to gather child diagnoses would have strengthened the investigation. An attempt was made to have a significant adult in the child's life to complete the CBCL, however, the response rate was too low to be useful for data analyses. Because of privacy issues, the Internal Review Board would not allow us to contact the significant adults directly. As a result, we gave the CBCL to the mother to give to the other adult. Third, the cross-sectional design of the study limits our ability to establish the direction of effect among the variables. Finally, the sample was predominantly low-income and thus the results may not generalize to middle- and high-income African American families. The

study strived to have variability in socioeconomic status, however, 69% of the mothers who agreed to participate in the study were on public assistance. It is likely that the having psychiatric diagnosis and being a single mother impacts functioning in the workplace and socioeconomic status.

## Implications

There are several implications of the findings from this investigation. The findings highlighted that comorbid maternal depression and anxiety disorders need to be considered in the understanding of psychopathology transmission. Additionally, understanding the cultural context of African American mothers is critical in advancing the maternal psychopathology field. Current theories and models on the transmission of maternal psychopathology should incorporate factors that are relevant to African American families such as socioeconomic status, kinship support, violence exposure, discrimination experiences, and maternal treatment experiences. These factors may serve as moderators or mediators in the transmission process but will need to be studied in larger, longitudinal studies to establish the associations. For example, the findings showed that kinship support, an important factor within African American families, was associated with other maternal factors such as comorbid PTSD and depression severity. Kinship support has rarely been studied within the maternal psychopathology field. More generally, there are gaps that need to be addressed in understanding the comorbidity of depression and anxiety among mothers. For example, the specificity of maternal anxiety disorder's impact on mother and child functioning, when comorbid with depression, is not fully delineated.

Another important implication of this investigation is its influence on interventions. The findings suggest that it will be critical that interventions employ techniques for maternal comorbid depression and anxiety symptoms and their consequences. Correspondingly, effective treatment modalities for depression and anxiety can be incorporated into a single intervention to impact maternal symptoms, child behavior, and key mediators and moderators. Furthermore, psycho education for families could include teaching about both depressive and anxiety disorders and their impacts on children, parenting, and the family. To be culturally sensitive to African American families, interventions could also include extended family members, improve social support among extended family members and teach coping skills for contextual stressors and traumatic experiences.

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