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The Relationship among Child Maltreatment, Parental Bonding, and a Lifetime History of Major
Depressive Disorder in Latino College Students

Naelys Diaz

Florida Atlantic University

Humberto Lizardi

Lehman College/ CUNY

Lianfen Qian

Zhihua Liu

Florida Atlantic University

Abstract

This study examined the relationship among child maltreatment, parental bonding, and a lifetime history of major depressive disorder (MDD) in a sample of 119 Latino students. Forty five students reported a lifetime history of MDD and 74 reported not having a lifetime history of MDD. The results indicated that emotional abuse and maternal overprotection were significantly associated with having a lifetime history of MDD. The findings support the importance of examining these factors among depressed Latinos. Future research should continue to explore both the role of child maltreatment and parental bonding in relation to a lifetime history of MDD in this population.

Key words: child maltreatment, parental bonding, major depressive disorder, Latino college students

The Relationship among Child Maltreatment, Parental Bonding, and a Lifetime History of Major Depressive Disorder in Latino College Students

Over the last two decades, there has been an impressive proliferation of empirical work indicating that histories of child maltreatment (abuse and neglect) are related to the presence of depressive symptoms and disorder (Duncan, Saunders, Kilpatrick, Hanson, & Resnick, 1996; Gibb, Alloy, & Abramson, 2001; Mullen, Martin, Anderson, Romans, & Herbison, 1996). Gibb et al. conducted a longitudinal study for 2.5 years among college students at high and low cognitive risk for depression. The authors concluded that levels of child emotional maltreatment, as measured by the Lifetime Experiences Questionnaires (Rose, Abramson, & Kaupie, 2000), were related to severity of episodes of major depression during the prospective follow-up period. High risk participants reported more child emotional maltreatment than low risk participants. Mullen and colleagues examined the history of childhood emotional, sexual, and physical abuse among 497 women in a community sample. Of these, 107 women experienced some form of childhood abuse, including an 11.5% rate of emotional abuse, 10.7% rate of sexual abuse, and a 7.8% rate of physical abuse. Results indicated that 69.6% of the women who experienced childhood abuse reported a history of depressive episodes and 26.4% had an increased risk of attempting suicide. Similarly, Duncan et al. screened a national sample of 4,009 adult women for a history of serious physical abuse in childhood using the Incident Classification Interview (Kilpatrick et al., 1989; Kilpatrick, Saunders, Veronen, Best, & Von, 1987). The authors reported that approximately 2.6% reported having experienced serious assaults in childhood. Compared with women reporting no victimization or history of physical abuse, abused women experienced more lifetime and current episodes of major depressive disorder (MDD).

Poor parental bonding has also been associated with depression (Hall, Peden, Rayens, & Beebe, 2004; Lizardi et al., 1995; Oakley-Browne, Joyce, Wells, Bushnell, & Hornblow, 1995; Parker, 1979; Parker & Lipscombe, 1979; Plantes, Prusoff, Brennan, & Parker, 1988). In this study, parental bonding is defined as the quality of a parent's emotional relationship with and behaviors toward a child as a retrospective assessment of the child in young adulthood. Parker, Tupling, and Brown (1979) developed the Parental Bonding Instrument (PBI) to retrospectively measure adults' perceptions of both of their parents' behavior toward them during the first 16 years of their life. Two dimensions of parental bonding are conceptualized as parental care and parental overprotection. Parental care refers to warmth, affection, and nurturance that the child perceived from his/her parents. Parental overprotection refers to parental behaviors that interfere with the child's development of independence and autonomy. Parker (1979) indicated that parental overprotection in childhood may lead to difficulties in the development of social competence, thus discouraging autonomy and independence, resulting in depression in adulthood.

Oakley-Browne and colleagues (1995) examined 65 recently depressed women and 81 never-depressed women. Those women reporting low maternal care were approximately four times more likely to have had a recent major depressive episode compared to those with high maternal care. In another study, Parker (1979) found that maternal care and overprotection had a greater impact than paternal care and overprotection on depressive symptoms in a sample of 289 college students. Low maternal care was related to greater depressive symptoms. A more recent investigation conducted on predominantly Caucasian college women pointed out that maternal care was the strongest predictor of four different mental health indices: two measures of depression, self-esteem, and negative thinking (Hall et al., 2004). Maternal overprotection

predicted depressive symptoms and negative thinking. In contrast, paternal associations were weaker than the associations with the maternal dimensions.

Attachment theory, developed by Bowlby (1973, 1980, 1982), has been an important influence in the literature on social development involving the quality of relationships a person has with significant others in their life. This theory focuses largely on parent-child relationships and postulates that mental disorders may be determined by the quality of the attachment formed between the primary caregiver and the individual when s/he was a child. In addition, this theory proposes that early insecure attachments lead to experiences involving threats of loss of an attachment figure. As a result of these experiences, the child is constantly in a state of anxiety about losing the attachment figure, and may then experience high levels of distress if a caregiver is consistently unavailable, rejecting, or ineffective in providing comfort and care. This type of situation may become associated with the development of depression. Therefore, experiencing depressive symptoms may be related to the degree of adversity experienced during early attachments (DeJong, Virkkunen, & Linnoila, 1992; Lessard & Moretti, 1998).

Although the current empirical literature has documented the impact of child maltreatment and impaired child-parent bonding on depression, several studies fail to examine the impact of a broad range of adverse childhood experiences (i.e., emotional abuse, physical abuse, sexual abuse, physical and emotional neglect) on depression. In addition, they suffer from a number of methodological limitations. Briere (1992) and Scher, Stein, Asmundson, McCreary, and Forde (2001) described several limitations of studies in the area of child maltreatment as follows: (a) the use of cross-sectional methodology to assess the long-term effects of traumatic events on mental health; (b) failure to account for the impact of different types of abuse that often co-occur; (c) the use of measurement instruments with unknown psychometric properties;

and (d) inadequate representation of a multiethnic sample that would allow for an examination of trauma in different ethnic groups. In addition, these investigations used primarily Caucasian clinical and non-clinical samples (Gibb et al., 2001; Lizardi et al., 1995; Mullen et al., 1996). Furthermore, these studies failed to examine which of the adverse early experiences is the stronger predictor of depression.

The present study addressed several of the aforementioned limitations, except for the use of cross-sectional samples and the use of a multiethnic sample. This study examined the impact of parental bonding and a broad range of early adverse experiences of abuse and neglect on a lifetime history of MDD. Moreover, one recommended way to improve the quality of research in the area of child maltreatment is through the use of tools that have demonstrated good reliability and validity and that facilitate the identification of individuals who have been abused and neglected (Scher et al., 2001). This study uses the Childhood Trauma Questionnaire (CTQ; Bernstein & Fink, 1998), which addresses the failure to account for the impact of different types of abuse occurring simultaneously and the use of instruments with unknown psychometric properties. The CTQ is a measure that has shown strong psychometric properties and assesses several types of abuse. Furthermore, previous studies have documented the impact of child maltreatment and impaired parental bonding on depression primarily using Caucasian samples. To date, no empirical work has examined whether histories of child maltreatment and parental bonding may be predictors of having a lifetime history of MDD specifically among Latinos. It is particularly important to examine the effects of these factors among Latinos because they are one of the youngest and fastest growing segments of the U.S. population. In fact, it is estimated that Latinos will make up 25% of the U.S. population by 2050 (U.S. Census Bureau, 2004). The

growth of this population demands an enhanced and extensive knowledge base, specifically with regard to factors impinging on the mental health of Latinos.

It is important to mention that the child maltreatment factors in this study, as measured by the CTQ, are clearly distinct from the parental bonding factors, and thus do not represent any of the paternal bonding variables (e.g., maternal or paternal overprotection). For example, one of the child maltreatment factors in the CTQ involves emotional abuse, assessed by items such as “People in my family called me things like stupid, lazy, or ugly,” “I thought my parents wished I had never been born,” and “People in my family said hurtful or insulting things to me.”

The purpose of this study was to examine the relationships among child maltreatment (child abuse and neglect), parental bonding, and a lifetime history of MDD among Latino college students. More specifically, this study examined which of the child maltreatment and parental bonding factors would be the strongest predictor(s) of a lifetime history of MDD among Latino college students. The findings of this study could provide a better understanding of the extent, nature, and consequences of child maltreatment and parental bonding as potential factors contributing to a lifetime history of MDD in this population.

Methods

Participants

This was a cross-sectional study of undergraduate college students taking selected psychology courses. Two sources were used to recruit 210 students attending a single college in New York City: (a) 137 students who enrolled in introductory psychology classes; and (b) 73 students enrolled in Abnormal Psychology classes. The students enrolled in the introductory psychology classes were told that their participation in the study would satisfy 2 of the 3 hours of research credits needed for the class. Students from the Abnormal Psychology courses who

participated in the study were entered in a lottery with four prizes. The first prize was a \$100.00 gift certificate to the college bookstore. The other three winners received a \$50.00 gift certificate to the college bookstore. Inclusion criteria were students age 18 or older registered in Abnormal Psychology courses or the introductory psychology courses.

For the purpose of this study, only those students who self-identified as Latino were included in the analyses ($N = 123$). The residual of the sample represented a small number of students from other ethnic groups, which did not provide adequate sample power to detect significant differences in the examination of the impact of the independent variables on the outcome variable. The residual sample of students was composed of 52 African Americans, 21 Caucasians, 4 Asians, and 10 “other.”

Measures

Experiences of Childhood Trauma. Experience of childhood trauma was measured by using the CTQ (Bernstein & Fink, 1998). The CTQ is a 28-item self-report instrument designed to assess the history of five types of traumatic childhood experiences as follows: (a) emotional abuse (items 3, 8, 14, 18, and 25); (b) physical abuse (items 9, 11, 12, 15, and 17); (c) sexual abuse (items 20, 21, 23, 24, and 27); (d) emotional neglect (items 5, 7, 13, 19, and 28); and (e) physical neglect (items 1, 2, 4, 6, and 26). Each item on these subscales is measured using a five point Likert-type scale ranging from 1 (*never true*) to 5 (*very often*). Scores range from 5 to 25 for each of the subscales. The scores are considered an index of trauma severity, with a higher score indicating greater frequency of experiencing this type of abuse.

The CTQ has high test-retest reliability, with values ranging from .79 to .81 over an average of four months (Bernstein & Fink, 1998; Bernstein et al., 1994), suggesting that the CTQ is not influenced by reporting biases because of transient mood states. In addition, this

instrument has demonstrated moderate to good internal consistency, with reliability coefficients ranging from .66 for the physical neglect subscale to .92 for the sexual abuse subscale (Bernstein & Fink). Scher and colleagues (2001) reported very high internal consistency ($\alpha = .91$) for the total measure. They found that the sexual abuse subscale had the highest internal consistency (.94) and the physical abuse subscale had the lowest (.58). More importantly, the CTQ has been used with Latinos (Ferrari, 2002; Medrano, Hatch, Zule, & Desmond, 2003) and has demonstrated moderate to good internal consistency (.69 to .94) and good test-retest reliability at 3 months ($r = .80$; Ferrari). The convergent validity of the scale with both clinician-rated interviews of childhood abuse and therapists' ratings of abuse was high (.73 to 1.00) (Fink, Bernstein, Handelsman, Foote, & Lovejoy, 1995). Fink et al. reported that the scores for trauma severity from the Childhood Trauma Interview correlated strongly with scores from the CTQ ($r = 0.43-0.57$, $df = 188$; $p < .002$).

Level of parental bonding. Parent-child bonding was measured by using Gamsa's (1987) modification of the PBI (Parker et al., 1979). This modification was designed to address subjects' confusion about five items constructed using double negatives in the original PBI. Gamsa's modification indicated scores similar to those on the original version, and significant Pearson correlations ranging from .79 to .84 between the original and modified versions. Gamsa pointed out that one important advantage of the modified version is that respondents can complete this version without help because it eliminates the confusion introduced by the negatively worded items.

The original PBI includes 25 items developed to measure two dimensions of parental bonding: parental care and overprotection. The PBI assesses students' recollections of their parents' care and overprotection of them during their first 16 years of life by asking them the

degree to which specific parental behaviors were descriptive of each parent. The care subscale (12 items) assesses warmth and nurturance (e.g., “Was affectionate to me” and “Spoke to me with a warm and friendly voice”). The overprotection subscale (13 items) assesses impediments to the offspring’s growth toward independence and autonomy (e.g., “Tried to control everything I did” and “Tried to make me dependent on her/him”). Each item in the PBI is rated using a four-point Likert-type scale ranging from “*very like her/him*” to “*very unlike her/him.*” The relationship with each parent was assessed using the same set of items, yielding four subscale scores: maternal care and overprotection, and paternal care and overprotection. A higher score indicates higher levels of caring and overprotection, respectively.

Studies have reported good psychometric properties for the PBI in samples of undergraduate college students (Hall et al., 2004; Lopez, Melendez, & Rice, 2000; Randolph & Dyckman, 1998; Wilhelm & Parker, 1990). Wilhelm and Parker examined the test-retest reliability of the PBI over an extended period of time. These authors reported mean correlation coefficients of .74 between the period of 1978 to 1983, .77 between 1983 to 1988, and .65 between 1978 and 1988. Randolph and Dyckman reported alphas of .91 for the maternal care, .93 for paternal care, .87 for maternal overprotection, and .83 for paternal overprotection, using a sample of 247 undergraduate students of diverse ethnic backgrounds. More importantly, Lopez et al. reported Cronbach’s alphas ranging from .64 to .94 for the PBI subscales when used in a sample of Latino college students.

Lifetime history of MDD. Lifetime history of MDD was measured by using the Inventory to Diagnose Depression, Lifetime Version (IDDL; Zimmerman & Coryell, 1987). This instrument has been widely used for epidemiological and clinical studies on MDD (Goldston, O’Hara, & Schwartz, 1990; Sato, Sakado, & Uehara, 1994; Zimmerman & Coryell). The IDDL

is a 22-item self-report measure designed to diagnose lifetime history of MDD according to the *Diagnostic and Statistical Manual of Mental Disorders III (DSM-III; American Psychiatric Association, 1980)*. Although the diagnostic criteria of the IDDL are based on *DSM-III*, the IDDL can also be used to diagnose MDD according to the *Diagnostic and Statistical Manual of Mental Disorders IV (DSM-IV; American Psychiatric Association, 1994)* because the diagnostic criteria are the same.

Each symptom included in the criteria for MDD (low mood, restlessness, lethargy, loss of interest, lack of pleasure, decreased energy, lack of sexual interest, guilt, concentration problems, appetite problems, hopelessness, weight gain or loss, sleep disturbances, irritability, and suicidal ideation) is represented by one of the 22 IDDL items. Each item contains five statements related to a specific symptom that can be scored from 0 to 4 according to symptom severity. A score of 0 represents no disturbance, a score of 1 suggests subclinical severity, and a score of 2 or more represents a symptom whose severity represents clinical significance. A sample IDDL item for feeling sad is: 0 – I did not feel sad or depressed; 1 – I occasionally felt sad or down; 2 – I felt sad most of the time, but I was able to snap out of it; 3 – I felt sad all of the time, and I couldn't snap out of it; 4 – I was so sad or unhappy that I couldn't stand it. Participants are asked to select one of the five statements in each item that best describes the way they felt when they were most depressed in their life. For each item rated as 1 or higher, the participant is asked to indicate whether they felt that way for more than two weeks.

There are two criteria for classifying a subject as having a history of MDD. In Criterion A, participants must endorse a score of 2 or more on the items indicating low mood (item 1), hopelessness (item 20), irritability (item 21), or a 3 or more on either the item indicating decreased interest (item 5) or decreased pleasure (item 6). Criterion B is met if the participant

endorses a score of 3 or more on at least one IDDL item in four or more of the eight symptom groups. For both Criterion A and B, the items with a score of 2 or more, the duration of the symptoms must be two or more weeks.

The IDDL scale score is based on meeting criteria A and B. The items of this scale are designed to provide a binary decision as to a symptom's presence or absence. Thus, scores are categorized as yes/no for meeting lifetime MDD criteria. As part of the IDDL, participants are asked to indicate the reason for feeling depressed. The IDDL indicates that data need to be excluded if participants reported bereavement as the reason for their depressed symptoms. Bereavement is given when participants' responses involve the death of a relative or a close friend.

The high internal consistency, reliability, and validity of this measure have been established in numerous investigations of psychiatric inpatients, community residents, and college students (Goldston et al., 1990; Zimmerman & Coryell, 1987; Zimmerman, Coryell, & Corenthal, 1986). The IDDL has been found to be a stable, internally consistent, and valid measure of MDD in college samples (Goldston et al.). Goldston et al. indicated that the IDDL appears to have more diagnostic specificity compared with other self-report measures, including the Beck Depression Inventory (BDI; Beck, Rush, Shaw, & Emery, 1979) and the Center for Epidemiologic Studies-Depression Scale (CES-D; Radloff, 1977). The latter measures may fail to cover all of the diagnostic criteria for MDD. For instance, the BDI does not include items for increased appetite, weight gain, increased sleep, psychomotor agitation, and problems with concentration. The CES-D lacks items for suicidal ideation, guilt, agitation, thoughts of death, and loss of interest. In addition, the inclusion of noncriteria items (e.g. "I felt lonely," "People were unfriendly") on the CES-D may compromise the content validity of this instrument.

Therefore, it appears that the IDDL may be potentially more useful as a screening tool for MDD among college-aged youth than the BDI and the CES-D.

Sociodemographic variables. Ethnicity was determined by including a question that asked participants with which race they identify. Response categories were white, Latino, African American, Asian, and other. Other variables were assessed, including gender and age.

Data Analysis

Categorical variables were analyzed using chi-square tests on 2x2 tables. Independent sample *t* tests were used for continuous variables. For the *t* tests, separate, rather than pooled, estimates of variance were used when the variances differed significantly between groups. The number of students in some analyses varied due to missing data.

A stepwise multiple logistic regression model, using both forward and backward logistic regression modeling techniques, was utilized to estimate the likelihood of a lifetime history of MDD regressing on all CTQ subscales and PBI subscales. In addition, the sociodemographic variables that were significant in the bivariate analyses were entered into the model.

Results

Of the 210 students who participated in the study, 123 met the ethnicity criteria of identifying themselves as Latino and four were excluded from the analyses due to reporting bereavement as the reason for their MDD. The final sample of students ($N = 119$) included in the analyses had a mean age of 24.2 years ($SD = 7.35$). The age ranged from 17 years old to 46 years old, and approximately 68% ($n = 83$) were between the ages of 17 to 24 years old. The final sample was composed of mostly single students (75%; $n = 92$) and females (76.4%).

Approximately 38% (45 out of 119) reported having a lifetime history of MDD.

Preliminary Bivariate Analyses

Chi-square test indicated that a lifetime history of MDD was significantly associated with gender, $\chi^2(1, N = 119) = 4.78, p = .03$. Forty-three percent of females reported having a lifetime history of MDD, while 21% of males reported having this history. Students with a lifetime history of MDD were also significantly older than those students without a MDD history, $t(2, 78.38) = -2.538, p = .013$. Lastly, lifetime history of MDD was significantly associated with the two study groups, whereby those students recruited from the Abnormal Psychology classes were more likely to report having a history of MDD than those recruited from the Introductory Psychology classes, $\chi^2(1, N = 119) = 5.53, p = .02$. This may reflect the age differences of the students in that those students in the Abnormal Psychology classes were more likely to be older students ($M = 30.22, SD = 7.45$) than those in the Introductory Psychology classes ($M = 21.15, SD = 5.11$), $t(119) = -7.93, p < .001$.

Table 1 presents the bivariate analyses comparing students who reported a lifetime history of MDD with those who did not report a history of MDD using the different CTQ subscales. Those students with a lifetime history of MDD reported a higher level of emotional abuse ($t[2, 67.910] = -2.96, p = .004$), sexual abuse ($t[2, 59.861] = -2.77, p = .008$) and emotional neglect ($t[2, 78.228] = -2.37, p = .02$) than students who did not have a lifetime history of MDD. The associations between physical abuse and physical neglect with a lifetime history of MDD were not statistically significant.

INSERT TABLE 1 HERE

With regard to parental bonding, students who reported a lifetime history of MDD reported a lower level of maternal care ($t[2, 74.6] = 2.08, p = .04$) and a higher level of maternal ($t[2, 113] = -3.08, p = .003$) and paternal ($t[2, 100] = -2.07, p = .04$) overprotection than students

who did not have a lifetime history of MDD (see Table 2). The association between paternal care and a lifetime history of MDD was not statistically significant.

INSERT TABLE 2

Stepwise Multiple Logistic Regression Analysis

Only the variables that were statistically significant in bivariate analyses were entered into the stepwise multiple logistic regression model. These variables included: gender, age, recruitment source (Introductory psychology classes or Abnormal psychology class), maternal care, maternal overprotection, paternal overprotection, emotional abuse, sexual abuse, and emotional neglect. Both forward and backward stepwise methods were used. The forward method involves introducing variables into the analysis that contribute the most to predicting the dependent variable (DV), until these variables stop making significant contributions to the prediction of the DV. In the backward method, all predictors are included. A significance test is conducted for every predictor, as if each were entered last, to determine the level of contribution to overall outcome. The likelihood-ratio test provided the basis for removing variables from the model if $p < 0.1$ (Hosmer & Lemeshow, 1989). Once a variable is removed, a new regression is conducted with the remaining variables. This process is conducted until only significant predictors remain in the model (Stevens, 1992).

Table 4 presents the results of the final step of both forward and backward logistic regression methods. Emotional abuse ($\beta = .11$) and maternal overprotection ($\beta = .06$) were the only statistically significant variables in predicting the likelihood of having a lifetime history of MDD. The probability of having a lifetime history of MDD increased by 11.1% as the score on the emotional abuse subscale increased one unit, while holding all other variables constant. On the other hand, the probability of having a lifetime history of MDD increased by 6.4% as the

score on the maternal overprotection subscale increased by one unit, holding all other variables constant. The performance of the model was assessed by crosstabulating the observed number of MDD students and the predicted number of MDD students. The model with the two significant variables (emotional abuse and maternal overprotection only) classified 72.3% of these cases correctly (see Table 3).

INSERT TABLES 3 AND 4

Since the stepwise logistic regression showed that emotional abuse and maternal overprotection were significant predictors for MDD, a second stepwise regression analysis was conducted with these two variables and their interaction (see Table 5). In this model, results showed that the interaction was the only significant predictor ($\beta = .005$, S.E. = .002, $p < .001$; OR = 1.005, 95% CI: 1.002 – 1.008), implying that individuals who are exposed to both emotional abuse and have an overprotective mother are more likely to report a lifetime history of MDD than those who report either emotional abuse or having an overprotective mother.

INSERT TABLE 5

Discussion

An important contribution of this study was to examine which of the child maltreatment and parental bonding factors was the strongest predictor(s) of a lifetime history of MDD among Latino college students. The findings of this study provided empirical support for the relationship between child maltreatment and a lifetime history of MDD. In the bivariate analyses, those who reported a history of emotional abuse, sexual abuse, and emotional neglect were more likely to report a lifetime history of MDD. These findings are consistent with reports in the literature of the association between history of child maltreatment and depressive symptoms and disorders (Gibb et al., 2001; Lizardi et al., 1995). However, it is interesting that in the logistic regression

analyses only emotional abuse was significantly associated with having a lifetime history of MDD.

Similar findings have been reported in the literature, suggesting that emotional abuse may play a more central role in depressive disorders than do experiences of sexual and physical abuse or neglect (Kent & Waller, 1998). Congruent with this evidence, Gibb et al. (2001) indicated that only emotional abuse, and not physical and sexual maltreatment, was related to episodes of MDD among primarily Caucasian female college students at high and low cognitive risk for depression. A more recent study compared depressed versus non depressed African American females ($N = 250$) ranging in age from 14 to 18 years old. Results indicated that depressed participants were 4.3 times more likely to report emotional abuse, 3.7 times more likely to report being physically abused, and almost 3 times as likely to report being verbally abused than non depressed participants (DiClemente et al., 2005). It is possible that emotional abuse represents a broader concept containing factors involved in physical and sexual abuse, as well as harsh parenting.

Furthermore, the findings of this study are consistent with the current literature regarding the association between parental bonding and depression (Hall et al., 2004; Lizardi et al., 1995; Oakley-Browne et al., 1995). In the bivariate analyses, lower maternal care and higher maternal and paternal overprotection were associated with a lifetime history of MDD. However, in the regression analyses, maternal overprotection was the only factor significantly associated with having a lifetime history of MDD. The students who reported having an overprotective mother were more likely to report a lifetime history of MDD. Neither the maternal care nor the paternal care and overprotection were associated with a history of MDD in Latino college students in the final logistic regression model.

The finding that maternal overprotection was the only factor significantly associated with having a lifetime history of MDD among all parental bonding variables is interesting. Although previous findings have indicated that maternal care and overprotection factors may exert greater influence on the development of depression than paternal factors, these studies have reported that maternal care seems to play the most crucial role. Hall et al. (2004) found maternal care to be the factor most strongly associated with different mental health indices, including depression, in a sample of predominantly Caucasian college women. Maternal overprotection was strongly associated with depressive symptoms and negative thinking. In contrast, paternal associations were weaker than the associations with the maternal dimensions. Another investigation conducted by Carter, Sbrocco, Lewis, and Friedman (2001) found ethnic differences between Caucasian and African American college students in regard to the impact of parental bonding. Among Caucasian college students, maternal care was inversely associated to anxiety and depression, whereas overprotection was positively related with these two dimensions of mental health. In contrast, for African American college students, there was no association between maternal overprotection and either anxiety or depression. However, there was an inverse relationship between the perceived care dimension of parental bonding and the measure of depression (BDI). Unlike Caucasian college students, there was a significant relationship between ethnic identity measures and a measure of depression among African Americans.

Further analyses in this study indicated that when the different types of abuse are excluded, maternal care and maternal overprotection are significant factors for MDD, which is consistent with previous findings. However, previous studies have not included both different types of abuses and parental bonding factors. It seems that, when all these factors are included in this sample, maternal overprotection and emotional abuse are the most significant predictors for

MDD. Furthermore, this study indicates that the interaction between emotional abuse and maternal overprotection is a stronger predictor of MDD than the two factors alone. It seems that a person who suffers emotional abuse and maternal overprotection concurrently is more likely to have MDD sometime in his/her lifetime than emotional abuse or maternal overprotection alone.

It is crucial to interpret the results and inconsistencies of this study contextually considering ethnocultural factors. These factors may shape parental behaviors and definitions of childhood maltreatment, playing an important role in the dynamics between youth and their parents. Several investigations on family processes within Latino families describe Latino parents to be warm, nurturing, and egalitarian (Calzada & Eyberg, 2002; Keefe, 1984; Mindel, 1980). A study of Puerto Rican and Dominican mothers revealed high levels of positive parenting practices consistent with an authoritative parenting that has been related to optimal mother-child relationship among Caucasians (Baumrind, 1995). These Latino mothers reported using reasoning when disciplining their children, indicating high level of parental responsiveness and avoiding punitive and harsh parenting practices.

In contrast, some researchers have depicted Latino families as punitive and authoritarian (Cardona, Nicholson, & Fox, 2000; Knight, Viridin, & Roosa, 1994; Martinez, 1988). These findings have been explained within a cultural context. For instance, Cardona et al. examined ethnic differences in parenting style between Latino and Anglo-American mothers. Results indicated that Latino mothers reported a higher frequency of discipline and a lower frequency of nurturing with their young children compared with Anglo-American mothers. These differences were explained by the tendency of Latino parents to use material rewards less frequently and use affective rewards more frequently as compared to Anglo-American parents. Martinez indicated

that Latino parents exhibited a variety of parenting styles depending on acculturation, educational attainment, and income level.

An important phenomenon that characterizes Latino families refers to familism (Cuellar, Arnold, & Gonzalez, 1995). Familism involves an orientation that emphasizes family ties, obligation, solidarity, and closeness (Rogler & Cooney, 1984). Family obligations toward relatives represent the core and primary family-centered value within Latino families. Familism dictates child-rearing, parenting practices, and values. For example, using the CTQ Ferrari (2002) examined how cultural beliefs may influence parenting behaviors (including childhood maltreatment) and attitudes in a non-traditional ethnic diverse college sample of 75 fathers and 75 mothers (33% Latino, 33% African American, and 33% European American). Findings indicated that familism scores were negatively related to the use of parental physical punishment. Regardless of ethnicity, fathers who had less regard for familism were more likely to engage in physical punishment to discipline their children than fathers who held familism more highly. Machismo scores were negatively related to the severity of case vignettes' ratings depicting emotional maltreatment, physical punishment, and sexual abuse. In addition, the study reported that Latino parents used more verbal punishment with their children than European American parents. Predictors for the use of verbal punishment included being Latino and having a history of child maltreatment.

In addition, familism embraces other cultural values including honesty, respectfulness (respeto), reciprocity between family members, deference to parental authority, obedience, family loyalty, and personal honor (Gonzalez-Ramos, Zayas, & Cohen, 1998; Webb, 2001; Zayas, 1994). Research has indicated that Latino mothers value honesty, respect, and obedience more than Caucasian mothers, who place more value on autonomy, assertiveness, and

independence (Gonzalez-Ramos et al.). Perhaps having an overprotective mother who may not allow for autonomy and/or provides a restrictive and controlling environment may be a risk factor for Latinos' mental health. It is possible to speculate that respect, obedience, and deference to parental authority may hinder youths' abilities to discuss issues regarding their need for autonomy and independence with their overprotective mothers. Some of the items in the PBI indicating this need include "Tried to control everything I did" and "Tried to make me dependent on her/him." The maternal overprotection role may interfere with the development of the youths' personal initiative, free choices, and decision making skills. The failure to develop these skills may exacerbate feelings of inadequacy and self-doubts in young adolescents who may perceive that they are unable to engage in independent activities away from the undue influence or control of their overprotective mothers. In addition, the Anglo-Saxon emphasis on independence may result in a great deal of dissonance for young adolescents who are trying to fit into the dominant culture, especially when their family practices are at odds with this value. Another important feature that characterizes Latino families is "simpatia," which refers to the desire to conform and strive for harmonic interpersonal relationships (Triandis, Marin, Lisansky, & Betancourt, 1984).

A number of methodological issues must be considered when interpreting the findings of this study. It is likely that at least several years had elapsed between when the abuse occurred and data collection for this study, allowing for ample time in which the students may have modified their perceptions and subsequent reporting of these events. Research suggests that reports of abuse and parental bonding are corroborated by knowledgeable informants, including siblings and parents (Herman & Schatzow, 1987; Parker, 1989; Robins et al., 1985). Moreover, this study used a relatively small nonprobability sample, which may have resulted in selection bias limiting the generalizability of the study. It is not clear whether the findings of this study

regarding MDD could be generalized to other Latinos. Finally, this study did not distinguish ethnic subgroups of Latinos in the sample as the national origin of the students was not assessed. Therefore, caution is necessary when generalizing the results to specific Latino ethnic subgroups.

Despite these limitations, the current study has several conceptual and methodological strengths. This is the first study that examined the relationships among child maltreatment, parental bonding, and a lifetime history of MDD in Latino college students. Due to the scarcity of research with respect to risk factors that may be related to a lifetime history of MDD in this sample, the methods used in this study allowed for the examination of associations among these variables.

Future research should continue to explore both the role of child maltreatment and parental bonding in relation to a lifetime history of MDD in this population. This exploration is crucial to better understand these factors and resolve the inconsistencies in the findings of this study and the existing literature. Other variables, including socioeconomic status, immigration history, and acculturation should be included in future studies because they may affect perception of parenting, child maltreatment, and onset and severity of depression. Future studies should also explore the quality of the parent-child relationship and the impact of child maltreatment on depressive disorder in different ethnic groups. Different cultures may value and practice specific parenting styles and may also define child maltreatment differently.

Conclusion and Implications for Mental Health Professionals

The findings indicate that preventive clinical interventions should incorporate the dyad of parent-child to maximize the relational bond that may serve as a buffer to counteract the negative effect of a history of emotional abuse and maternal overprotection on a history of MDD. In addition, the findings of this study add evidence to the construct validity of measures that might

be useful assessment tools in practice. More specifically, the CTQ can be used to conduct thorough assessments of past history of different types of child maltreatment. Mental health professionals could integrate this assessment tool into their established assessment procedures as a means of rapidly and reliably identifying factors contributing to the presentation of depression. Mental health professionals and other health professionals who work with children and adolescents are often faced with individuals presenting with mood disorders, some of whom already have a history of child maltreatment and family conflict. It is imperative to assess these factors to develop adequate treatment plans and use appropriate clinical interventions.

References

- American Psychiatric Association. (1980). *Diagnostic and statistical manual of mental disorders* (3rd ed.). Washington DC: Author.
- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington DC: Author.
- Baumrind, D. (1995). *Child maltreatment and optimal caregiving in social contexts*. New York: Garland.
- Beck, A., Rush, J., Shaw, B., & Eemery, G. (1979). *Cognitive therapy of depression*. New York: Guildford Press.
- Bernstein, D. P., & Fink, L. (1998). *Childhood Trauma Questionnaire: A retrospective self-report manual*. San Antonio, TX: The Psychological Corporation.
- Bernstein, D. P., Fink, L., Handelsman, L., Foote, J., Lovejoy, M., Wenzel, K., et al. (1994). Initial reliability and validity of a new retrospective measure of child abuse and neglect. *American Journal of Psychiatry*, *151*(8), 1132-1136.
- Bowlby, J. (1973). *Attachment and loss: Volume II: Separation, anxiety, and anger*. New York: Basic Books, Inc.
- Bowlby, J. (1980). *Attachment and loss*. New York: Basic Books, Inc.
- Bowlby, J. (1982). Attachment and loss: Retrospect and prospect. *American Journal of Orthopsychiatry*, *52*(4), 664-678.
- Briere, J. (1992). Methodological issues in the study of sexual abuse effects. *Journal of Consulting and Clinical Psychology*, *60*(2), 196-203.

- Calzada, E. J., & Eyberg, S. M. (2002). Self-reported parenting practices in Dominican and Puerto Rican mothers of young children. *Journal of Clinical Child and Adolescent Psychology, 31*(3), 354-363.
- Cardona, P. G., Nicholson, B. C., & Fox, R. A. (2000). Parenting among Hispanic and Anglo-American mother with young children. *The Journal of Social Psychology, 140*(3), 357-365.
- Carter, M. M., Sbrocco, T., Lewis, E. L., & Friedman, E. K. (2001). Parental bonding and anxiety: Differences between African American and European American college students. *Anxiety Disorders, 15*, 555-569.
- Cuellar, I., Arnold, B., & Gonzalez, G. (1995). Cognitive referents of acculturation: Assessment of cultural constructs in Mexican Americans. *Journal of Community Psychology, 23*, 339-355.
- DeJong, J., Virkkunen, M., & Linnoila, M. (1992). Nervous and mental disease: Factors associated with recidivism in a criminal population. *Journal of Nervous & Mental Disease, 180*(9), 543-550.
- DiClemente, R. J., Wingood, G. M., Lang, D. L., Crosby, R. A., Salazar, L. F., et al. (2005). Adverse health consequences that co-occur with depression: A longitudinal study of black adolescent females. *Pediatrics, 116*(1), 78-81.
- Duncan, R. D., Saunders, B. E., Kilpatrick, D. G., Hanson, R. F., & Resnick, H. S. (1996). Childhood physical assault as a risk factor for PTSD, depression, and substance abuse: Findings from a national survey. *American Journal of Orthopsychiatry, 20*(1), 437-448.
- Ferrari, A. M. (2002). The impact of culture upon child rearing practice and definitions of maltreatment. *Child Abuse & Neglect, 26*, 793-813.

- Fink, L.A., Bernstein, D., Handelsman, L., Foote, & Lovejoy, M. (1995). Initial reliability and validity of the Childhood Trauma Interview: A new multidimensional measure of childhood interpersonal trauma. *American Journal of Psychiatry, 152*(9), 1329-1335.
- Gamsa, A. (1987). A note on a modification of the Parental Bonding Instrument. *British Journal of Medical Psychology, 60*(3), 291-294.
- Gibb, B. E., Alloy, L. B., & Abramson, L. Y. (2001). History of childhood maltreatment, negative cognitive styles, and episodes of depression in adulthood. *Cognitive Therapy & Research, 25*(4), 425-446.
- Goldston, D. B., O'Hara, M.W., & Schwartz, H. A. (1990). Reliability, validity, and preliminary normative data for the Inventory to Diagnose Depression in a college population. *Psychological Assessment, 2*(2), 212-215.
- Gonzalez-Ramos, G., Zayas, L. H., & Cohen, E. V. (1998). Child-rearing values of low income, urban Puerto Rican mothers of preschool children. *Professional Psychology: Practice and Research, 29*(4), 377-382.
- Hall, L. A., Peden, A. R., Rayens, M. K., & Beebe, L. H. (2004). Parental bonding: A key factor for mental health of college women. *Issues in Mental Health Nursing, 25*, 277-291.
- Herman, J. L., & Schatzow, E. (1987). Recovery and verification of memories of childhood sexual traumas. *Psychoanalytic Psychology, 4*, 1-14.
- Hosmer, D., & Lemeshow, S. (1989). *Applied logistic regression*. New York: John Wiley & Sons.
- Keefe, S. (1984). Real and ideal extended familism among Mexican Americans and Anglo-Americans: On the meaning of "close family ties." *Human Organization, 43*, 65-70.

- Kent, A., & Waller, G. (1998). The impact of childhood emotional abuse: An extension of the Child Abuse and Trauma Scale. *Child Abuse & Neglect, 22*, 393-399.
- Kilpatrick, D. G., Saunders, B. E., Amick-McMulla, A., Best, C. L., Veronen, L. J., & Resnick, H. S. (1989). Victim and crime factors associated with the development of crime-related post traumatic stress disorder. *Behavior Therapy, 20*, 199-214.
- Kilpatrick, D. G., Saunders, B. E., Veronen, L. J., Best, C. L., & Von, J. M. (1987). Criminal victimization lifetime prevalence, reporting to police, and psychological impact. *Crime and Delinquency, 33*(4), 479-489.
- Knight, G. P., Viridin, L. M., & Roosa, M. (1994). Socialization and family correlates of mental health outcomes among Hispanic and Anglo American children: Consideration of cross-ethnic scalar equivalence. *Child Development, 65*, 212-224.
- Lessard, J. C., & Moretti, M. M. (1998). Suicidal ideation in an adolescent clinical sample: Attachment patterns and clinical implications. *Journal of Adolescence, 21*(4), 383-395.
- Lizardi, H., Klein, D. N., Ouimette, P. C., Riso, L. P., Anderson, R. L., & Donaldson, S. K. (1995). Reports of the childhood home environment in early-onset dysthymia and episodic major depression. *Journal of Abnormal Psychology, 104*(1), 132-139.
- Lopez, F. G., Melendez, M. C., & Rica, K. G. (2000). Parental divorce, parent-child bonds, and adult attachment orientations among college students: A comparison of three racial/ethnic groups. *Journal of Counseling Psychology, 47*(2), 177-186.
- Martinez, E. A. (1988). Child behavior in Mexican American/Chicano families, maternal teaching, and childrearing practices. *Family Relations, 37*, 275-280.

- Medrano, M., Hatch, J., Zule, W., & Desmond, D. (2003). Childhood trauma and adult prostitution in a multiethnic heterosexual drug-using population. *American Journal of Drug & Alcohol Abuse, 29*(2), 463-487.
- Mindel, C. H. (1980). Extended familism among urban Mexican Americans, Anglos, and Blacks. *Hispanic Journal of Behavioral Sciences, 2*, 21-34.
- Mullen, P. E., Martin, J. L., Anderson, J. C., Romans, S.E., & Herbison, G. P. (1996). The long-term impact of physical, emotional, and sexual abuse of children: A community study. *Child Abuse & Neglect, 20*(10), 7-21.
- Oakley-Browne, M. A., Joyce, P. R., Wells, J. E., Bushnell, J. A., & Hornblow, A. R. (1995). Adverse parenting and other childhood experiences as risk factors for depression in women aged 18-44 years. *Journal of Affective Disorders, 34*, 13-23.
- Parker, G. (1979). Reported parental characteristics in relation to trait depression and anxiety levels in a non-clinical group. *Australian & New Zealand Journal of Psychiatry, 13*, 260-264.
- Parker, G. (1989). The Parental Bonding Instrument: Psychometric properties reviewed. *Psychiatric Developments, 4*, 317-335.
- Parker, G., & Lipscombe, P. (1979). Parental characteristics of Jews and Greeks in Australia. *Australian & New Zealand Journal of Psychiatry, 13*(3), 225-229.
- Parker, G., Tupling, H., & Brown, L. B. (1979). A parental bonding instrument. *British Journal of Medical Psychology, 52*, 1-10.
- Plantés, M. M., Prusoff, B. A., Brennan, J., & Parker, G. (1988). Parental representations of depressed outpatients from U.S.A. sample. *Journal of Affective Disorders, 15*, 149-155.

- Radloff, L. S. (1977). The CES-D Scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement, 1*(3), 385-401.
- Randolph, J. J., & Dyckman, B. M. (1998). Perception of parenting and depression-proneness in the offspring: Dysfunctional attitudes as a mediating mechanism. *Cognitive Therapy & Research, 22*(4), 377-400.
- Robins, L. N., Schoenberg, S. P., Holmes, S. J., Ratcliff, K. S., Bentham, A., & Works, J. (1985). Early home environment and retrospective recall: A test for concordance between siblings with and without psychiatric disorders. *American Journal of Orthopsychiatry, 55*, 27-41.
- Rogler, L. H., & Cooney, R. S. (1984). *Puerto Rican families in New York City: Intergenerational processes*. Maplewood, NJ: Waterfront Press.
- Rose, D. T., Abramson, L. Y., & Kaupie, C. A. (2000). *The Lifetime Experience Questionnaire: A measure of history of emotional, physical, and sexual maltreatment*. Unpublished manuscript, University of Wisconsin-Madison, Madison, WI.
- Sato, T., Sakaso, K., & Uehara, T. (1994). Age distribution of the melancholic type of personality (typus melancholicus) in outpatient with major depression: A comparison with a population without a history of depression. *Psychopathology, 27*(1-2), 43-47.
- Scher, C. D., Stein, M. B., Asmundson, G. J. G., McCreary, D. R., & Forde, D. R. (2001). The Childhood Trauma Questionnaire in a community sample: Psychometric properties and normative data. *Journal of Traumatic Stress, 14*(4), 843-857.
- Stevens, J. (1992). *Applied multivariate statistics for the social sciences* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum Associates.

- Triandis, H. C., Marin, G., Lisansky, J., & Betancourt, H. (1984). Simpatia as a cultural script of Hispanics. *Journal of Personality & Social Psychology, 47*, 1363-1375.
- U.S. Census Bureau. (2004). *Census Bureau Projects Tripling of Hispanic and Asian Populations in 50 Years; Non-Hispanic Whites May Drop To Half of Total Population*. Retrieved September 15, 2005 from <http://www.census.gov/Press-Release/www/releases/archives/population/001720.html>
- Webb, N. B. (2001). *Culturally diverse parent-child and family relationships: A guide for social workers and other practitioners*. New York: Columbia University Press.
- Wilhelm, K., & Parker, G. (1990). Reliability of the Parental Bonding Instrument and Intimate Bond Measure scales. *Australian & New Zealand Journal of Psychiatry, 24*, 199-202.
- Zayas, L. H. (1994). Hispanic family ecology and early childhood socialization: Health case implications. *Family Systems Medicine, 12*, 315-325.
- Zimmerman, M., & Coryell, W. (1987). The inventory to diagnose depression, lifetime version. *Acta Psychiatrica Scandinavica, 75*(5), 495-499.
- Zimmerman, M., Coryell, W., & Corenthal, C. (1986). A self-report scale to diagnose major depressive disorder. *Archives of General Psychiatry, 43*(11), 1076-1081.

Author Note

Address correspondence to: Naelys Diaz, Ph.D. Florida Atlantic University School of Social Work, 777 Glades Road, SO 284, Boca Raton, Florida 33433 - ndiaz10@fau.edu.

Author Bios

Naelys Diaz earned her MSW and Ph.D. in Social Work from Fordham University, NY. Dr. Diaz is currently an Assistant Professor at Florida Atlantic University, School of Social Work and her publications areas include parental roles, mood disorders, substance abuse, and mental health outcomes in minorities (esp. Latinos).

Humberto Lizardi received his Ph.D. from the State University of New York at Stony Brook. Dr. Lizardi is an Associate Professor at Lehman College, Psychology Department, and his publications emphasize differences between major depressive disorder and dysthymic disorder, and examine psychosocial outcomes in the children of mothers with dysthymic disorder.

Lianfen Qian received her Ph.D. in Statistics from Michigan State University. She is currently an Associate Professor at Florida Atlantic University, Department of Mathematical Sciences and her research interests are in nonlinear time series analysis and regression modeling, survival analysis, environmental statistics, parameter and function estimation, weak convergence stochastic processes and their applications to statistics.

Zhihua Liu received her M.S. in Biostatistics from Florida Atlantic University and is currently a Ph.D. candidate in the Department of Mathematical Sciences at Florida Atlantic

University. Her research interests include modeling financial data, change point detection and actuarial science.

Table 1

Relationships between Child Maltreatment and a Lifetime History of Major Depressive Disorder

Type of Abuse	Lifetime History of MDD				<i>p</i>
	Yes		No		
	Mean	<i>SD</i>	Mean	<i>SD</i>	
Emotional Abuse	11.73	5.86	8.77	4.04	.004**
Physical Abuse	10.18	5.20	8.53	3.90	.072
Sexual Abuse	10.10	7.02	6.77	4.34	.008**
Emotional Neglect	13.27	3.39	11.85	2.73	.02*
Physical Neglect	10.61	2.23	10.19	2.52	.36

Table 2

Relationships between Parental Bonding and a Lifetime History of Major Depressive Disorder

PBI factors	Lifetime History of MDD				<i>p</i>
	Yes		No		
	Mean	<i>SD</i>	Mean	<i>SD</i>	
Maternal care	21.26	10.88	25.32	8.76	.041*
Maternal overprotection	22.52	7.27	18.03	7.71	.003**
Paternal care	19.24	9.03	22.03	9.71	.15
Paternal overprotection	20.45	7.15	17.30	7.56	.04*

Table 3

Classification Table for a Lifetime History of MDD

		Observed		Predicted
		History of lifetime MDD		% Correct
		Never	History of lifetime	
		depressed	MDD	
History of lifetime MDD	never depressed	53	6	89.8
	history of lifetime MDD	20	15	42.9
Overall Percentage				72.3

Table 4

Stepwise Logistic Regression Model Regressing Lifetime History of Major Depressive Disorder on Potential Predictors (Best-Fitting Logistic Model)

Predictors	Beta	S.E.	p value	Odds ratio	95% of CI of OR	
					Lower	Upper
Emotional Abuse	.105	.052	.043	1.111	1.004	1.229
Maternal Overprotection	.062	.031	.049	1.064	1.000	1.132

* This model fit the data significantly better than the model including gender, age, study groups, maternal care, maternal overprotection, paternal overprotection, emotional abuse, sexual abuse, and emotional neglect