ABSTRACT

Predicting Marital Discord and Depression in Early Head Start Mothers:
A Step Toward Marriage and Family Therapy Collaboration

by

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The American Association of Marriage and Family Therapy (AAMFT) recently sponsored Head Start-Marriage and Family Therapy (MFT) program partnerships. MFT programs can begin building similarly successful collaborative partnerships with Early Head Start (EHS) programs through using all or portions of this research study. This study has been dedicated to describing the occurrence, co-occurrence, and predictive characteristics of marital discord and depression in families served by EHS programs. This identification of at-risk families can then be used to bolster existing treatment efforts, develop new maritally based interventions, and facilitate increased referrals.

Marital discord and depression are two often interrelated problems EHS mothers are at increased risk to face because they have low incomes and very young children (up to age three). Previous research has demonstrated the negative effects of marital discord and maternal depression on child, adult, and family development. Research with various
married samples has further identified variables predictive of marital discord and depression. It was the aim of this study to reexamine these predictors and test couple measures to find the most effective identifying variables.

Cross-sectional and prospective longitudinal research analyses were conducted from surveys with 148 EHS married mothers and their spouses to answer specific research questions. In general, results revealed that EHS married mothers were (a) slightly less depressed and maritally discordant than what might be expected of lower income parents, (b) more prone to experiencing these problems the more children they had, and (c) more accurately identified by considering couple data, which included similarity in earlier marital discord, earlier depression, religious activity, attachment attitudes or demographic variables. The limitations of this study included weaknesses in measurement and analytic procedures largely resulting from the use of data originally organized at a national level with less complementary purposes in mind. In the future research should address the limitations and incorporate the findings of this study into development and testing of theoretically driven marital interventions in EHS samples. Systemic implications and managing ethical concerns of using the proposed marital interventions in EHS-MFT collaborative effort are also discussed.
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Wade M. Taylor
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CHAPTER I
INTRODUCTION

In recent years, researchers have called for community collaboration to help determine who is best able to help with specific social problems (Chaskin, Joseph, & Chipenda-Dansokho, 1997; Mulroy & Shay, 1997). Head Start (HS) programs and marriage and family therapy (MFT) programs have developed such a partnership to facilitate “capacity building” of each other in meeting their shared goal of improving family functioning (Leitch & Thomas, 1999). From these partnership experiences, Leitch and Thomas (1999) highlighted how systemically oriented MFT programs are particularly suited to provide consultation, HS staff training, in-home therapy, play therapy, and larger systems therapy or consultation specifically where maladaptive relationship dynamics or mental health issues are present.

With HS expanding services to provide earlier intervention, Early Head Start’s (EHS) goal to effectively use staff and community resources to enrich child and family development, and with previous HS - MFT collaborative success, it makes sense that MFT programs, agencies, or private practitioners could develop successful partnerships with EHS programs. The ability of therapists or MFT programs to develop such partnerships could be expanded by following lessons learned from previous HS - MFT program partnerships (Leitch & Thomas, 1999) and other EHS or early intervention research (Allen & Hawkins, 1999; Benasich, Brooks-Gunn, & Clewell, 1992; Dachman, Alessi, Vrazo, Fuqua, & Ferr, 1986; Head Start Bureau, 2001; Hoffman & Moon, 1999; Mahoney, Wiggers, & Lash, 1996; McBride, 1991; Murray & McDonald, 1996; Palm & Palkovitz,
1988; Pfannenstiel & Honig, 1991), while promoting closer attention to the potential benefits of early assessment of and intervention in the marital relationship (Berger & Hannah, 1999; Cowan & Cowan, 1992, 1995; Markman, Floyd, Stanley, & Storaasli, 1988; Stanley, Markman, St. Peters, & Leber, 1995). One common lesson to increasing healthy child development thus far has been to implement effective, father-involving strategies (Beale, 1999; Levine, 1993). In this case, therapists and MFT programs could be even more successful implementing father-involvement strategies by systemically assessing and intervening in problematic marital dynamics that diminish father involvement (Blair, Wenk, & Hardesty, 1994). Successful MFT - EHS collaboration may then come from rethinking the process and effectiveness of traditional parent education to include marital relationship and mental health enhancing systemic interventions.

Between 50-67% of all marriages in the U.S. end in divorce (Martin & Bumpass, 1989). Another report (National Commission on Children, 1993) has stated that 40 out of 100 first marriages end in divorce. Divorce leads to an array of negative consequences for parents and children (Amato, 1993; Kline, Johnston, & Tschann, 1991). While divorce has been named by some as the root of poor adjustment, it is important to recognize the contributions of marital discord or conflict to adjustment. Some research has emphasized the effects of pre-divorce and post-divorce marital conflict as the main contributors to later maladaptive outcomes beyond the effects of the divorce (Hetherington & Clingempeel, 1992; Jekielek, 1998). Marital conflict has been linked to increased demand-withdrawal marital dynamics (Gottman, 1994, 1999; Stanley et al., 1995), parental depression (studies cited in Beach, Sandeen, & O’Leary, 1990; Prince & Jacobson, 1995),
negative parenting behaviors (Donovan, Leavitt, & Walsh, 1998; Krishnakumar & Buehler, 2000; Owen & Cox, 1997), and insecure parent-infant attachment (Belsky, Rosenberger, & Crnic, 1995; Davies & Cummings, 1994; Easterbrooks & Goldberg, 1984; Owen & Cox, 1997; Radke-Yarrow et al., 1995; Volling & Belsky, 1992), which in turn have a long list of negative consequences for children and families (Gable, Belsky, & Crnic, 1992; McHale & Cowan, 1996; O’Brien, Margolin, & John, 1995; Simons, Lorenz, Wu, & Conger, 1993; Steger & Kotler, 1979). Marital discord or conflict in EHS families seems even more critical given findings which suggest that lower income couples are at greater risk for marital conflict (Elder & Caspi, 1988; Kurdek, 1993; Simons et al., 1993) and that many conflicted couples with younger children delay divorce (Chan & Heaton, 1989; Frank & Gertler, 1991; Lauer & Lauer, 1986; Waite & Lillard, 1991). The above research gives strong impetus for the assessment of marital discord or conflict and intervention targeted at improving marital quality in EHS families.

Depression is a mental health issue also worthy of attention in EHS families. Depression has been referred to as the common cold of mental illness (Jesse & L’Abate, 1985) and it is estimated to cost the U.S. $44 billion dollars per year (Dubovsk & Buzan, 1998). Depression is a common characteristic of low-income, low-educated couples with young children (Bird, 1997; Lavee, Sharlin, & Katz, 1996), and mothers with children under age 6 face increased risks for depression (Barnett & Baruch, 1987; Campbell, 1997). Depression negatively affects the marital relationship (Beach et al., 1990; Downey & Coyne, 1990; Prince & Jacobson, 1995), parenting (Breznitz & Sherman, 1987; Cohn, Campbell, Matias, & Hopkins, 1990; Cummings & Davies, 1994; Downey & Coyne,
1990; Gelfand & Teti, 1990; Goodman & Brumley, 1990; Hammen, 1991), parent-infant attachment (studies cited in Belsky et al., 1995; Donovan et al., 1998; Radke-Yarrow et al., 1995), and child well-being (Richters & Pellegrini, 1989).

Marital discord and depression are highly correlated (studies cited in Beach et al., 1990; Beach, Whisman, & O’Leary, 1994; Prince & Jacobson, 1995), and certain aspects of marital discord, criticism especially, are common precursors to depressive episodes (Birchnell & Kennard, 1983; Hooley, Orley, & Teasdale, 1986; Hooley & Teasdale, 1989; Vaughn & Leff, 1976). Individuals in discordant or conflicted marriages are 25 times more likely to be depressed than those in happy marriages (Weissman, 1987), and of those seeking therapy for marital conflict or depression around 50% reported the other condition in their marriage (Beach et al., 1990; Jessee & L’Abate, 1985; studies cited in Prince & Jacobson, 1995). Marital therapy for depression has generally produced as good effects as individual therapy in decreasing depression while also demonstrating decreased marital discord or conflict often highly associated with depressive outcomes (Beach et al., 1990, Beach, Whisman, & O’Leary, 1994; Prince & Jacobson, 1995), indicating that depression should be treated as a marital problem. Further, marriage, when perceived or observed as supportive, confiding, and capable of emotional regulation, is a significant source of social support and a protective factor against depression (Beach & Nelson, 1990; Gottman & Katz, 1989; studies cited in Prince & Jacobson, 1995) with or without children (Belsky & Pensky, 1988).

The above findings give ample evidence that some form of systemic marital intervention would be appropriate and beneficial to many EHS couples and their children.
The purpose of this study will be not to evaluate the effectiveness of specific marital interventions, but to identify predictors of marital discord and depression in EHS couples with one or more young children. It is hoped that results of this research, as an effective early assessment of at-risk couples, can become a first step toward better EHS-MFT collaboration. Identifying predictors of marital discord and depression (for EHS couples) could then inform the theory-intervention link needed for constructing effective treatments and avoiding poor long-term effectiveness reported from some marital therapy for depression, marital discord, or both (Bray & Jouriles, 1995; Christensen & Heavey, 1999; Prince & Jacobson, 1995).

Previous research has identified several predictors of marital discord or conflict and depression which are likely to be applicable to low-income couples with very young children. Predictors of marital discord or conflict and depression have not yet been studied in rural EHS couples. The combination of certain demographics such as young age, female gender, minority group ethnicity, low education, and unemployment or low socioeconomic status has been identified as variables predicting marital conflict, depression, or both (Belle, 1990; Belsky et al., 1995; Cotten, Burton, & Rushing, 1998; Dubovsk & Buzan, 1998; Elder & Caspi, 1988; Heaton & Jacobson, 1994; Kurdek, 1993; Simons et al., 1993; Stets, 1995; Turner & Marino, 1994; Vinokur, Price, & Caplan, 1996). The ability to use certain internal and external coping styles, social support, religious support, mastery, and reframing, has also been highly correlated with or strongly suggested to yield less marital conflict and depression (Bennun, 1986; Coyne, 1984, 1986; House et al., 1994; McCubbin & McCubbin, 1989; Myers & Booth, 1999; Rosenfield,
Adult attachment styles, how people feel about close relationships, also predict conflict and depression such that those with greater relationship anxiety generally have more troubled relationships and more depression (Fitzpatrick, Fey, Segrin, & Schiff, 1993; Simpson, Rholes, & Phillips, 1996). Both attachment and coping styles in marriage, where each spouse reciprocally influences the other, theoretically imply that couple combination styles will affect marital quality. Finally, earlier marital conflict and depression are likely to be the best predictors of later marital conflict and depression (Beach & Nelson, 1990; Gottman, 1994; Heim & Snyder, 1991; Markman & Hahlweg, 1993; Prince & Jacobson, 1995) while analysis with these other predictors will hopefully further differentiate at-risk couples.

The developmental life stages of these EHS couples are likely to influence what variables are most important when assessing predictors of marital discord or conflict and depression. Couples with their first infant likely interact in different ways than couples with many children because of differences in their marital and parenting experiences. This research will join with a large body of theory and research (cited in Belsky & Rovine, 1990) considering family size or transitions to parenthood in hopes of yielding a more descriptive assessment of EHS couples and thereby enrich MFT programs’ collaborative capacities.

This purpose of this research is to answer the following questions: (a) What proportion of EHS married mothers reported high levels of marital discord? (b) What proportion of EHS married mothers reported depressive symptoms? (c) What proportion of EHS married mothers reported both high levels of marital discord and depressive
symptoms? (d) Are EHS married mothers more prone to marital discord, depression, or both if raising a first child as compared to a second or laterborn child? (e) What combination of individual variables best predict EHS married mothers' experience of marital discord and depression? and (f) How well do marital variables (spouse perceptions considered mutually) enhance the prediction of EHS married mothers experience of depression and marital discord?
CHAPTER II
REVIEW OF LITERATURE

Introduction

The observation of marital conflict or depression in married persons represent markers of past dysfunctional intra and interpersonal relations and warning signs of negative individual, marital, parental, and family interactions to come. Head Start (HS) and Early Head Start (EHS) programs have experienced success in the assessment of and intervention with forms of parent involvement affecting child development, but have done little to recognize the role of marriage in this process. In order to heighten awareness of the additional benefits rendered to intervention programs for young children through extending assessment in such programs to marital dynamics, this chapter outlines and defines (a) pertinent concepts of marital discord and depression, (b) negative effects of these problems on married partners and their child(ren), and (c) research attempts to predict marital discord and depression in marriages with children.

Discord and Depression in Marriage

Statistics demonstrate a high attraction to the institution of marriage in the U.S. with nearly 95% of all men and women marrying at some time in their life and relatively high proportions of men and women remarrying after divorce (O'Leary, 1998). Marital relationships provide intimacy, attachment, and other positive resources associated with personal well-being (House, Landis, & Umberson, 1988). Several studies measuring
female mental and physical health have highlighted marriage, when supportive and confiding, as a protective factor or a buffer against vulnerability to stress, depression, and other subsequent mental and physical health problems (Bloom, Asher, & White, 1978; Brown & Harris, 1978; Brown, Harris, & Hepworth, 1995; Jackson, 1992; Ross, Mirowsky, & Goldstein, 1990; Roy, 1978). Research has also demonstrated the positive effects of marriage by consistently finding higher rates of depression in single persons.

The positive effects of marriage can diminish in effectiveness depending on the marital environment. Various factors within the marital environment may create obstacles in which the maintenance or decline of positive marital interaction depends on couple adaptations. Systems and stress theories posit that when life conditions (positive or negative) are operating outside of or above a certain threshold, systems become vulnerable, thereby leading to less effective adaptation and possible disintegration of positive marital relationships through such problems as marital conflict and depression. Many EHS married couples, because of stressful life circumstances common to lower-income families raising young children, may experience increased levels of marital discord or conflict and depression.

**Marital Discord**

Marital discord can be defined as a series of marital, conflict-oriented interactions that lead to decreased levels of intimacy, cohesion, satisfaction, or all of these in the perceptions and attitudes of one or both partners. Marital discord can be differentiated from marital conflict by observing the overall impact that conflictual communications have
on other aspects of a marriage. Conflict, in marriage, may ignite processes of either growth and intimacy or anger, defensiveness, and distancing (Gottman, 1999; Weeks & Hof, 1995). Marital discord therefore represents a segment of time dominated by spiraling negative conflict communication with little or no positive resolution. Even though the concepts of marital discord and marital conflict can be differentiated by the effects of marital conflict communications, the two terms are largely considered interchangeable in the research literature. Most researchers refer to marital conflict as a construct implying severe, chronic, or bothersome interactions beyond simple arguments or a positive growth enhancing relationship aspect. At the same time, the term marital discord has largely been coined and promoted by Beach et al. (1990) as describing clinically significant levels of marital conflict. For these reasons marital conflict will be differentiated in the remainder of the study from marital discord only in cases where previous research has strongly encouraged this terminology or where more careful attention to specific distressing interactions is desirable.

EHS married mothers may experience greater levels of marital discord than the 15% to 20% of couples observed by O'Leary (1998) in the general population to be discordant. Several factors faced by younger, low income couples could inflate rates of marital discord in comparison to the general population. Low socioeconomic status (Conger, Rueter, & Elder, 1999; Simons et al., 1993); the addition of children (e.g., Belsky & Rovine, 1990; Cowan & Cowan, 1995); young age at marriage, childbearing, or both (Booth & Edwards, 1985; Bumpass, Castro-Martin, & Sweet, 1991; Hamil-Luker, 2000; Lindahl, Malik, & Bradbury, 1997; Rockwell, Elder, & Ross, 1979); and the less
effective conflict resolution strategies common to younger couples (Cahn, 1992) are conditions linked to decreased marital satisfaction, higher marital conflict, and greater risk for marital dissolution. EHS married mothers likely face a combination of such factors rendering their marriages more vulnerable to discord. Given a probable relation between marital conflict and subsequent divorce, rates of divorce for younger, lower-income families represented by EHS mothers could be inflated when compared to the 40% to 50% rates reported by Quinn and Odell (1998) and Martin and Bumpass (1989) for young and all couples, respectively.

**Depression**

Depression can be described as a blue, melancholic, or sad mood accompanied by a variety of possible physical or behavioral deficits in activity. Depression is a normal aspect of life and in general only becomes a problem when chronic, severe, and significantly disrupting a person's functioning socially, occupationally, or in other important areas. The *Diagnostic Statistical Manual of Mental Disorders, Fourth Edition* (APA, 1994) provides greater details on the characteristics of clinical or problematic depression. As mentioned earlier, marriage has the capacity to act as a buffer to depressive tendencies when it supports intimacy and conflict resolution. Depression becomes a problem in the context of marriage when individual vulnerability to depressive reactions is activated by ineffective adaptations of married partners to each other in the face of overloading stress.
Depressive symptoms are common among low-income, low-educated couples with young children (Bird, 1997; Lavee et al., 1996). Mothers with children under age 6 are at increased risk for depression (Barnett & Baruch, 1987; Campbell, 1997). Increased depressive symptoms have also regularly been reported for mothers in studies assessing adjustment to parenthood (Campbell, Cohn, Meyers, Ross, & Flanagan, 1992; Cowan, Cowan, Herring, & Miller, 1991; Cox, Paley, Burchinal, & Payne, 1999). Further, several studies have indicated that marital distress or discord increases the risk of depression between 10- and 25-fold (Finchman, 1998; O'Leary, Christian, & Mendell, 1994; Weissman, 1987). If EHS mothers are more likely to experience marital discord, and marital discord increases the risk of depression, then EHS mothers are more likely to report higher rates of depression. In summary, the stresses and strains many EHS mothers likely face from some combination of the above-mentioned factors put them at risk to display higher rates of depression than what might be observed of other married mothers.

Negative Effects of Marital Conflict and Depression

**Negative Effects of Marital Conflict**

Not all conflict communications that occur between spouses necessarily create negative individual, marital, or family outcomes. In his marital research to predict divorce, Gottman (1999) has outlined four specific conflict processes (contempt, criticism, defensiveness, and stonewalling) that increase the likelihood of low marital satisfaction and eventual divorce. Marital discord is observed when these conflict processes become
severe and irreconcilable, and overshadow positive aspects of marriage. Prolonged periods of marital conflict then have negative effects for marital stability, positive mental health, parenting behavior, and child outcomes.

Marital conflict affects marital stability. Gottman (1999) and others (Markman, Stanley, & Blumberg, 1994; Notarius & Markman, 1993; Stanley et al., 1995), in their research involving marital conflict, have claimed 80-90% accuracy predicting divorce from newlywed couples by assessing the presence, duration, intensity, and rapid cycling through the four negative conflict patterns mentioned previously (contempt, criticism, defensiveness, and stonewalling). Identifying all the aspects of marriage that predict divorce is difficult, but clearly marital discord and coinciding conflictual communications play a big part. It is interesting to note that even with a high accuracy in predicting divorce from conflictual communication patterns, the duration of discordant marriage before divorce is less predictable. Gottman (1999) currently has been working to differentiate quickly divorcing couples from later divorcing couples. Some researchers (Chan & Heaton, 1989; Frank & Gertler, 1991; Jekielek, 1998; Lauer & Lauer, 1986; Waite & Lillard, 1991) have posited that couples remain in unhappy marriages for the sake of their child(ren). Some EHS mothers may stay in unhappy, maritally discordant marriages for their children's sake. Long-term exposure to patterns of marital conflict can have negative effects on parental health and child behavior outcomes equal to or greater than that of divorce (e.g., Emery, 1988; Hetherington, 1999).

Marital conflict affects mental health. The negative communication patterns of maritally discordant couples, couples with more negative than positive interactions in and
outside of conflict (Gottman, 1999; Horowitz, McLaughlin, & White, 1997), increase the risk for poor mental health. Hof (1995), in a chapter focused on instilling hope in discordant marriages, discussed how negative marital conflict characterized by defensiveness serves to create depression. He reported that chronic, unresolved conflict depletes hope and thereby creates a sense of hopelessness, a common characteristic of depressed persons. Several longitudinal studies have concluded that marital conflict is a common precursor to experiencing depressive symptoms, especially for newlywed couples (Beach & Nelson, 1990; Beach & O’Leary, 1993). It is important to recognize, however, that discordant marriages do not necessarily produce depressed spouses. Additional individual factors may distinguish married persons’ vulnerability to depressogenic effects of marital conflict. In terms of Hof’s theory (1995), hope may be depleted at different rates for different people.

Marital conflict affects parenting behaviors and strains other family relationships. Theoretically, marital conflict between spouses spills over (Krishnakumar & Buehler, 2000) and affects dynamics in other relationships. Bowen systems therapy (Freidman, 1991; Kerr, 1981) incorporates the notion of spillover into the concept of emotional triangles. Dysfunctional triangles are formed when one or both family members engaged in anxiety rich interactions recruit a third party to reduce tensions. Several lines of research appear to support such notions in the context of maternal parenting. Marital conflict has been associated with increased hostility, inconsistency, and less sensitivity in mothers (Donovan et al., 1998; Krishnakumar & Buehler, 2000; Owen & Cox, 1997).
Marital conflict affects child development. Direct and indirect pathways have been proposed in research studying the relation between marital quality and child development. Examples of the direct influences of marital conflict on child development involve studies highlighting how exposure to more frequent, intense, hostile, aggressive, and overt marital conflict tends to increase the likelihood of child adjustment problems (Camara & Resnick, 1989; Emery, 1988; Grych & Finchman, 1990; Reid & Crisafulli, 1990). Social learning theory (Bandura, 1977, 1986) provides a framework for understanding how the ineffective behaviors of marital conflict could be directly transmitted to children, specifically in regards to the concept of vicarious learning. Indirectly, marital conflict influences child development through its negative effects on maternal mental health and parenting behavior. Severe marital conflict and spouse depression disrupt normal routines and consistent parental care. Marital discord disrupts parent-infant attachment during early years (Belsky, 1991; Belsky et al., 1995; Davies & Cummings, 1994; Easterbrooks & Goldberg, 1984; Owen & Cox, 1997; Radke-Yarrow et al., 1995; Volling & Belsky, 1992). Insecure attachment, in turn, is correlated with later child behavior problems (e.g., Gable et al., 1992; McHale & Cowan, 1996; O’Brien et al., 1995). Although the mechanisms by which marital conflict affects child adjustment problems are not fully understood, the above research and others (Katz & Gottman, 1993) provide evidence that marital conflict negatively influences healthy child development.

**Negative Effects of Maternal Depression**

In general, the chronicity, severity, and disruptiveness of depressive behaviors
affect the quality of marital interactions. Increased conflict disagreements and decreased intimacy are among the likely artifacts of prolonged and severe depression. Depression can also affect marital stability, parenting behavior, and child development. It is important, however, to recognize that the quality of the marital relationship prior to and during depressive episodes plays a large role in the development of possible problems stemming from depression. One study (Schmaling & Jacobson, 1990) highlighted this point by finding that only maritally distressed or discordant couples demonstrated dysfunctional communication patterns when one or both partners were depressed.

Depression affects marital conflict and other dynamics associated with marital discord. Several theoretical models of depression in marriage (Beach et al., 1990; Beach, Whisman, & O’Leary, 1994; Biglan, Hops, & Sherman, 1988; Coyne, 1986; Howard & Weeks, 1995; Joiner & Coyne, 1999) have been proposed to explain the functional nature of depression in marriage. In marriage, depressive behavior may serve to suppress or inhibit marital conflict (Biglan et al., 1985; Biglan, Rothlind, Hops, & Sherman, 1989; Coyne, 1986; Hops et al., 1987). Instead of conflict, social support, reduced demands, and reduced hostility are elicited (Coyne, 1986). Depressed spouses may have increased cognitive distortions (Beck, Rush, Shaw, & Emery, 1979), decreased self-esteem (Beach et al., 1990), decreased hope (Hof, 1995), increased negative misinterpretations of attempted social support by a spouse (Beach et al., 1990), and increased attributions of blame for relationship problems (Heim & Snyder, 1991). Coyne (1986) proposed that partners experience depression as aversive and may also experience guilt. He added that impatience, hostility, anger, and rejection may "leak" to the depressed spouse through
their partner's attempts to suppress conflict, reaffirming the depression and strengthening the pattern.

Couple dynamics around depressive symptoms influence marital conflict, the course of depression, and subsequent family functioning. Prince and Jacobson (1995) summarized several findings from studies on depression in marriage and families that support these assumptions. First, studies indicate that couples in which one or both spouses were depressed experienced higher levels of marital conflict compared to non-depressed couples (e.g., Nelson & Beach, 1990). These depressed couples were found to display more frequent and intense conflict communications, asymmetrical interactions, increased negative affect, less constructive problem solving, fewer self disclosures, and greater emotional over involvement and criticism referred to as "expressed emotion.” Second, they highlighted many studies demonstrating slower recovery rates when the above mentioned conflict dynamics were more frequent, intense, or both. Finally, they summarized other studies showing steady declines in adaptive marital and family functioning even after recovery. In addition to the overall poorer rates of functioning after recovery, they discussed how many couples and families continued to display high rates of conflict patterns (i.e., expressed emotion) highly predictive of relapse.

Maternal depression can affect marital stability. Many studies focused on explaining marital stability emphasize marital dynamics (i.e., marital conflict), excluding the effects of depression on these dynamics. In spite of limited research explicating the effects of depression on divorce, it seems logical that depressed spouses who display similar marital conflict patterns as divorcing couples in general would likewise share
similar rates of divorce. Past research not only confirms that depressed couples are likely to have similar conflict patterns to couples who are more likely to divorce, but also indicates a higher rate of divorce under certain conditions. Merikangas (1984) found that couples in which the female was depressed and had been released from an inpatient care facility had a divorce rate 9 times greater than the average. To compare such results to the divorce rates of EHS mothers who generally experience lower levels of depression compared to clinical samples may be inappropriate. Still, whereas Marchand and Hock (2000) found similarities in the use of conflict resolution strategies between clinically depressed and non-clinically depressed samples and Burns, Sayers, and Moras (1994) found marital conflict to be highly influenced by mild but chronic depression more likely in non-clinical samples, the above-mentioned divorce rates could hold for mildly depressed EHS mothers. According to Coyne’s suppression theory of depression (1986), depression might simply slow down conflict patterns related to high divorce rates until depression is reinforced to levels where suppression becomes ineffective and marital conflict follows.

Studies of clinical depression have long established that having experienced a depressive episode greatly increases the likelihood of future episodes (e.g., Belscher & Costello, 1988; Burke & Regier, 1998; O’Hara, Neunaber, & Zekoski, 1984). In theory, depression reaffirms mental messages of hopelessness and worthlessness which compromise future self-confidence and increase anxiety even after physical symptoms have subsided. Furthermore, depressed spouses’ partners report higher rates of depressive symptoms (Halgin & Lovejoy, 1991; Mitchell, Cronkite, & Moos, 1983), suggesting that
maintenance of a close personal relationship with a depressed partner increases stress and vulnerability to depressive behaviors.

Maternal depression affects parenting behavior and child development. Previous research has demonstrated a strong link between maternal depression and maladaptive child outcomes. Depressed mothers have been observed to display more withdrawn, hostile/aggressive, and critical parenting behaviors (Breznitz & Sherman, 1987; Cohn et al., 1990; Cummings & Davies, 1999; Downey & Coyne, 1990; Gelfand & Teti, 1990; Goodman & Brumley, 1990; Hammen, 1991). When these symptoms in mothers are severe, chronic, and accompanied by additional risk factors, increased negative reactions to infants and toddlers (less play, looking, and vocal utterances) have been observed (Breznitz & Sherman, 1987; Cohn & Campbell, 1990; Cohn & Elmore, 1988; Cohn & Tronick, 1983; Field, 1984). Maternal depression disrupts warm, consistent maternal care giving (e.g., Donovan et al., 1998) observed in securely attached mother-infant dyads. Insecure attachment found in the presence of maternal depression, especially in the first few years of life, impairs infant affect regulation and cognitive growth which have later been linked to increased risk for poor academic performance, behavior problems, and affective disorders (Cohn & Campbell, 1990; Cummings & Davies, 1994; Downey & Coyne, 1990; Gelfand & Teti, 1990; Lyons-Roth, Zoll, Connell, & Grunebaum, 1986; Redding, Harmon, & Morgan, 1990).
Early Identification: Key to Success in Decreasing Marital Discord and Depression

The presence of marital discord or depression (and likely both when either one of these conditions exist) present numerous problems for married couples with young children. The financial, social, and emotional costs of these problems are usually very high, especially for children. For example, depression has been estimated to cost the U.S. $44 billion dollars each year (Dubovsk & Buzan, 1998), and some research is claiming the negative effects on children related to financial limitations stemming from divorce and single parenting are greater than enduring consistently discordant or conflictual parents (Hetherington, 1999). Clearly, these examples and those presented above give a clear rationale for the prevention of such problems in married couples with young children. Developing effective preventive interventions for marital discord and depression have long been focal points of research efforts and, like this study, require efforts to identify early potential causes or precursors contributing to these problems.

Predicting Marital Discord and Depression

Several bodies of literature have been dedicated to predicting marital discord and depression in attempts to prevent marital instability, marital conflict and abuse, and other negative outcomes for marriages and families. This next section will be dedicated to listing and describing variables predictive of marital discord and depression.
Marital Discord as a Predictor of Depression and Marital Discord

Several lines of research have indicated perceptions of marital discord by wives as a predictor of depression for females (Beach et al., 1990; Dehle & Weiss, 1998). Several retrospective studies have indicated that depressed women often report marital conflict as a precursor to depression (studies cited in Prince & Jacobson, 1995). In a clinical sample, O'Leary, Risso, and Beach (1990) estimated that 70% of women reported marital conflict preceding their depression. Several prospective studies have further demonstrated that marital conflict is a common precursor to depression. Wives perceptions of marital conflict have been found to strongly predict depressive symptoms in a national random sample (Beach et al., 1996), in women experiencing a significant negative marital event (Christian, O'Leary, & Avery, 1993), and in newlyweds (Beach & Nelson, 1990; Beach & O'Leary, 1993; Finchman, Beach, Harold, & Osborne, 1997). A longitudinal study conducted by Coryell, Endicott, and Keller (1992) \((n = 3,119)\) found marital conflict to be a primary predictor of a first depressive episode with 12% of the sample experiencing major depression within a 6-year interval.

Perceptions of marital conflict also predict later perceptions of marital conflict or discord and divorce. Gottman (1999) and others (Stanley et al., 1995) using prospective studies have demonstrated a clear link between perceptions of marital dissatisfaction, destructive marital conflict patterns, and later divorce or unhappy marriages. The above-stated relation may sometimes be confounded in relationships where marital conflict leads
to spouse physical abuse. This is so because many abused and thereby ashamed spouses, only after clinical interviews, report overestimating marital satisfaction on self-report measures (Gottman, 1999). Furthermore, other studies (e.g., Cohan & Bradbury, 1997; Gottman, 1999; Horowitz et al., 1997) demonstrate that the prediction of marital conflict or discord from earlier perceptions of marital conflict may be inaccurate if such things as individual characteristics, coping strategies, the type and patterns of conflict, and positive aspects of the marital relationship are not also considered. However, several self-report measures generally tap into many of the above-mentioned aspects of marital conflict (Halford, Kelly, & Markman, 1997) and may therefore still constitute an effective predictor of later marital conflict.

Depression as a Predictor of Depression and Marital Discord

The presence of depressive symptoms alone does not translate to a diagnosable depressive disorder. Popular self-report measures of depressive symptoms (i.e., the Center for Epidemiological Studies Depression Scale and the Beck Depression Inventory) are only diagnostic as a screening tool and in defining severity of symptoms. Several cross-sectional and prospective studies in the postpartum period (Campbell & Cohn, 1991; Gotlib, Whiffen, Mount, Milne, & Cordy, 1989; O'Hara et al., 1984) have shown that direct translations of self-reported depressive symptoms to depressive disorders (measured through clinical interview) have produced false positives and false negatives. This means that self-report scores if taken as equivalent to diagnosable depression sometimes falsely
diagnose people not meeting sufficient criteria and fail to identify some people who do meet sufficient criteria. In more direct clinical analyses, the presence of previous depressive episodes is often considered as a risk factor for later depression. In particular, 50% of women who suffer postpartum depression relapse within 2 years of recovery (Belsher & Costello, 1988). Furthermore, depression research has clearly established previous depressive episodes as a primary risk factor to subsequent depression (e.g., Kessler & Magee, 1994).

Depression as a predictor of marital conflict has also received varying reports. In several longitudinal studies with newlyweds (Beach & Nelson, 1990; Beach & O'Leary, 1993; Finchman et al., 1997), depression failed to predict marital conflict. However, researchers and clinicians have documented how depression affects marital quality through increased hostility and emotional withdrawal (Kahn, Coyne, & Margolin, 1985; studies cited in Prince & Jacobson, 1995). Clarifying these discrepancies may therefore rely on assessing the moderating effects of conflict behaviors resulting from depression. Collecting observational data of couple conflict is beyond the scope of this research; however, using a self-report measure that assesses more severe and overt hostility may differentiate depressed couples who escalate conflict. Furthermore, Schmaling, Whisman, Fruzetti, and Traux (1991) pointed out that not controlling for the effects of marital conflict so commonly observed as co-occurring with and precipitating depression (studies cited in Prince & Jacobson, 1995) confounds the ability to clearly determine the effects of depression alone on maritally conflictual interactions.
Combined Effects of Marital Conflict and Depression as Predictors

Positive observations of both marital conflict and depression in marital relationships likely enhance the prediction of depression in married mothers with young children. In separate prospective analyses, marital conflict and depression have each shown unique capability to predict depression in women, with earlier depression the best predictor of later depression. Given that research has demonstrated the lack of a confiding and supportive relationship for women as a risk factor for depression and as a complication in recovery/relapse, marital conflict likely adds significantly to more powerful prediction of depression.

Research is less likely to support the notion that depression alone would prove a significant predictor of marital discord. Observational research supports the genesis or at least exacerbation of marital conflict in marriages with a depressed spouse. However, the absence of criteria establishing depression effects on marital functioning decreases the predictive power of depression. In other words, marriages where marital conflict does not precede depression are likely more satisfying in general and may not incite greater marital conflict unless severe and chronic depressive symptoms begin to weigh on marital interactions. An interdependent relation seems likely between these two variables indicating that the presence of both likely increases predictive power.

Clearly, consideration of both marital conflict and depression account for powerful prediction of these problems later on. In spite of this, other variables, through theoretical
hypotheses and research findings, can further clarify the questions of for whom and in what contexts are married partners raising young children more likely to experience marital conflict or depression.

**Variables Increasing Prediction of Marital Discord and Depression**

Several variables show promise, through theoretical propositions and previous research findings, in increasing the predictive power of marital conflict and depression to these problems later on. Adult attachment styles and coping resources provide promise in that they yield a picture of how married partners raising a young child may respond to stress-invoking events or interactions and the likely consequences of such responses. Other demographic or contextual variables (e.g., age, education level, employment status, religious affiliation, religious activity, socioeconomic status, and the number of children) may contribute additional insight into individual characteristics and marital environments that contribute to stress and its resolution.

**Adult Attachment Styles**

Hazan and Shaver's (1987) extension of Bowlby's (1969) work on attachment theory to adult relationships has spurred interest in the ability of attachment theory to explain marital conflict and depression in marriage. Along these lines Anderson, Beach, and Kaslow (1999) described the complementarity of attachment theory to current
cognitive-behavioral models of marital discord and depression and highlighted the utility of attachment theory to broaden the range of potential interventions.

In his later works, Bowlby (1986) described how the attachment system was transformed into “internal working models” in adulthood. Internal working models are mental representations of expected positive and negative responses of self and others which regulate attachment behaviors when activated by stressful events or interactions (Anderson et al., 1999). Internal working models are often conceptualized in research as attachment styles. Hazan and Shaver (1987) applied Ainsworth’s (1985) three attachment categories, secure, avoidant, and anxious/ambivalent, to describing the effects of different attachment style behaviors in adult relationships. According to Hazan and Shaver (1987), securely attached persons, even in stressful or conflictual relationships, are more likely to perceive themselves and others as warm, dependable, and reliable, leading to proximity seeking and constructive problem solving. Avoidantly attached persons perceive others as unavailable or unable to provide support and thereby are more likely to be “cut-off” emotionally and not to engage or respond warmly with significant others in stressful or conflictual situations. Regarding ambivalent attachment, Hazan and Shaver (1987) proposed these persons to be preoccupied with and hypervigilant about the availability of others because of the unpredictable past attachment figures. Ambivalently attached persons are therefore likely to respond with anger or hostility and increased anxiety in response to stress or conflictual situations.

Research has established connections between specific attachment styles and marital outcomes (Furman & Flanagan, 1997 for review). Attachment styles predict
proximity seeking in response to stress, where secure individuals are more likely to seek support (Simpson, Rholes, & Nelligan, 1992). Secure compared to insecure individuals also rate more highly levels of communication, self-disclosure, problem solving, and responsiveness to self-disclosure in their marriages (Collins & Read, 1990; Kobak & Hazan, 1991). Marital satisfaction is also related to having a secure attachment style (Feeney, Noller, & Callan, 1994). Couples with insecure attachment styles have been found to have more conflict (Cohn, Silver, Cowan, Cowan, & Pearson, 1992); fewer positive exchanges; less interdependence, commitment, and trust; and more negative emotions (Simpson, 1990), and rate their marriage as distressed (Lussler, Sabourin, & Turgeon, 1997).

Attachment style may predict marital conflict and depression in marriage. Anderson et al. (1999) demonstrated using previous research that persons with insecure attachment styles may be more vulnerable to depressogenic thinking following marital conflict, less able to access social support in times of stress or dysphoria, and more likely to engage in destructive, defensive, or self-protective relationship behaviors, which have been observed in relationship deterioration and marital dissatisfaction. Security of attachment predicts levels of withdrawal and verbal aggression in conflict situations (Beach, Smith, & Finchman, 1994) as well as rates of divorce/separation (Hazan & Shaver, 1987; Kirkpatrick & Hazan, 1994). It seems likely that insecurely attached spouses, especially anxious-ambivalent spouses, are likely to respond to marital conflict with depression given previous research that identified dysphoria, a characteristic commonly viewed in ambivalent persons, as a common characteristic in women who were
more likely depressed after reporting maritally discordant relations (Beach & O’Leary, 1993). As discussed above, attachment research has demonstrated that spouses with insecure attachment styles, especially ambivalent spouses, are more prone to conflictual relationships and depression in response to stressful life events and marital interactions.

In addition to an individual’s attachment style predicting marital conflict and depression, consideration of both spouses’ styles may improve predictive accuracy (Volling, Notaro, & Larsen, 1998). A spouse’s attachment style influences relationship behavior, so it makes sense that their responses to stressful marital interactions will activate and influence the attachment system of the other. For example, if a wife has an ambivalent attachment style and her husband has an avoidant attachment style, when attachment systems are activated by stress, the wife might increase her demands, constantly seek reassurance, and be more likely to become angry and hostile, while the husband would be more likely to be emotionally “cut-off” and respond with less warmth and support. This type of couple would therefore engage in a cycle of reaffirming insecure attachment and the marital conflict and depression, which are likely side effects. Secure couples, on the other hand, are more likely to seek support in stressful situations and in turn provide warmth and constructive problem solving. Some researchers are beginning to demonstrate such effects (e.g., Carnelley, Pietromonaco, & Jaffe, 1996; Senchak & Leonard, 1992). For example, Paley, Cox, and Burchinal (1999) recently presented a study demonstrating how wives’ and husbands’ attachment styles considered together affect marital behavior and functioning. These results were especially strong when considering how husbands’ attachment style related to wives’ marital functioning.
**Coping Resources**

Family stress theories (e.g., McCubbin & McCubbin, 1989) identify coping strategies as a critical component of effective adaptation to life transitions and stresses. Coping strategies, according to several theorists, involve the use of personal, family, and social resources to minimize the effects of stress and effectively adjust to life transitions. For simplicity, resources important to predicting maritally discordant relationships and depression can be broken into two categories: individual or personal resources and family or social resources.

Social coping resources may predict marital conflict and depression. The perceived availability and use of social support in stressful situations has commonly been identified as a protective factor against depression for married women. Likewise, perceived social support from one’s spouse or a confiding relationship is a characteristic of happy, satisfied couples (Beach et al., 1990; studies cited in Prince & Jacobson, 1995). Community support, with or without spouse support, may independently decrease the likelihood of being depressed. Several early intervention programs have reported success in promoting secure attachment and cognitive development for infants by providing support to mothers at-risk for depression (Jacobson & Frye, 1991; Lyons-Ruth, Connell, Grunebaum, & Botein, 1990). It is also likely that the use of community resources when maritally stressful interactions occur would result in decreased marital conflict. Marital therapy research, reviewed by Bray and Jouriles (1995), supports this assumption in that most couples report decreased marital conflict after marital therapy, at least for the first 2 years.
Personal or internal coping resources may be particularly strong predictors of maritally discordant relationships and depression. The internal resource of mastery or self-efficacy has been directly associated with less psychological distress, and in particular as a mediator between stressful life events and decreased depression (Holahan, Moos, & Bonin, 1999; House et al., 1994; Rosenfield, 1989; Turner & Noh, 1983). The ability to use internal resources (e.g., marital locus of control, self-confidence, reframing stress-invoking events) has either been shown to or theoretically proposed to alter the negative effects of stress on marital behavior and happiness (e.g., Bennun, 1986; Myers & Booth, 1999). Furthermore, Coyne (1984), in his strategic therapy for depression with maritally discordant couples, proposed that reframing is an important and essential task for depressed couples to use in order to begin changing depressive and conflictual interactions.

The accessibility of both strong personal and social resources facilitates more effective coping with stress that would otherwise lead to or exacerbate maritally discordant relationships and depression. Holahan et al. (1999) produced a model indicative of such from their earlier longitudinal study (Holahan & Moos, 1991) demonstrating that both strong personal and social resources buffered the effects of major stressors on subsequent depressive symptoms.

**Demographics**

**Low socioeconomic status (SES).** Low SES, a common denominator of all EHS mothers, predicts depression and marital conflict in married women. Many researchers
have shown, at least cross-sectionally, associations between low income and depressive symptoms in married couples especially for women (Belle, 1990; Bird, 1997; Cotten et al., 1998; Elliott & Edelman, 1999; Lavee et al., 1996; Mirowsky & Ross, 1989; Simons et al., 1993; Turner & Marino, 1994). Others have shown that low SES when it produces economic stress affects marital conflict by increasing the likelihood of marital distress and decreasing spouse support (Conger et al., 1999; Simons et al., 1993). Low SES may be a weak predictor of marital conflict and depression alone, if it does not take into account the mediating effects of personal resources found by Turner, Lloyd, and Roszell (1999) to better describe the relation between socioeconomic status and depressive symptoms.

Employment. Employment is a key demographic variable that has strong implications for the presence of depression and conflict in marriages and has obvious close ties with socioeconomic status. Unemployment, for women, has been shown empirically to be a vulnerability factor for depression (Brown, 1987; Kaplowitz, 1998; Landstrom, 1998; Olds, Schwartz, Eisen, Betcher, & Van Niel, 1993; Perry-Jenkins, Seery, & Crouter, 1992; Rothblum, 1982; Saurel-Cubizolles, Romito, Ancel, & Lelong, 2000). Unemployment, especially for husbands, greatly increases the risk of divorce (Bumpass et al., 1991; Lester, 1996). Vinokur et al. (1996) demonstrated that financial strain, especially where either spouse was unemployed, increased depression and the withdrawal of social support, an often highlighted aspect of marital dissatisfaction, for both spouses. In the context of low socioeconomic status and economic strain, men’s marital behaviors have been observed to be more hostile and less positive (Conger et al., 1990). Consideration of the employment status of both spouses also has indications for predicting
marital discord, in that marital satisfaction, intimacy, and stability tend to decrease while conflict increases over time in dual earner couples when compared to couples where wives work part-time or not at all (Greenstein, 1990; Olds et al., 1993). It is of interest to note that wives’ full-time employment, when husbands also work full-time, may tend to decrease marital satisfaction and increase vulnerability to depression through factors such as inequitable division of household labor and role strain (e.g., Kaplowitz, 1998; Keith & Shaffer, 1982; Landstrom, 1998; Olds et al., 1993; Perry-Jenkins et al., 1992).

Specifically, higher marital conflict would be expected in the context of parenting in a traditional, rural community as wives work part-time or more and husbands less than full-time. In a traditional, rural community and in the context of parenting, higher levels of depression could be related to (a) financial strain when husbands work less than full-time, or (b) role overload when both spouses work full-time.

**Age.** Age may play some role as a predictor of maritally discordant relationships and depression. Regarding marital discord, age may only be a weak predictor. Younger age, in particular at first marriage, has been shown to predict greater marital conflict (Hamil-Luker, 2000) and marital dissolution especially when the wife’s gender ideology is considered (Booth & Edwards, 1985; Bumpass et al., 1991; Davis & Greenstein, 2000; Lindahl et al., 1997; Rockwell et al., 1979), but has shown mixed results and is confounded by the length of marriage (Karney & Bradbury, 1995). Age has shown a strong short-term relation to marital adjustment in newlywed couples, but in the long run (2 years) may only predict marital conflict to the degree it is related to emotional maturity, interpersonal trust, and amount of spouse behavior change desired (Quinn & Odell, 1998).
Regarding depression, research not considering the presence of a significant other has shown that the ages between 19 and 25 are common for the onset of a first depressive episode (Burke & Regier, 1998). This interval overlaps the age intervals commonly observed for first marriages (Goodman, 1991). Other research has reported young age in the context of close relationships as a risk factor for depression (Cotten et al., 1998; Mirowsky & Ross, 1989; Turner & Marino, 1994). Furthermore, age differences between spouses may act as a weak predictor of marital conflict and dissolution. Past research has demonstrated that more heterogeneous couples, especially where one or both spouses was previously married, are at greater risk for divorce (e.g., Booth & Edwards, 1992; Dean & Gurak, 1978). Age may be one pertinent indicator of heterogeneity among spouses.

**Education.** Low education has been identified as a key predictor of maritally discordant relationships and depression, especially when socioeconomic status is low. Several studies have shown that where income and education are low so are marital quality and stability (Bumpass et al., 1991; Elder & Caspi, 1988; Kurdek, 1993; Teachman & Polonko, 1990). Other studies have shown that low income, less educated married women with young children are also likely to reported more depressive symptoms (Bird, 1997; Lavee et al., 1996). As is the case with employment, when wives’ education levels are high and exceed their husbands’, less depression in women but higher rates of marital dissolution are observed. In addition, greater discrepancy between spouses in education level has been identified as a risk factor for marital dissolution (Bumpass et al., 1991).

**Religious affiliation and activity.** Religious affiliation and activity may have additional implications for mental health and marital happiness. National data indicate that
over 65% of adults are formally affiliated with a religious organization, and 85% say religion plays a major role in their lives (Spilka, Hood, & Gorsuch, 1985). Previous research using the same EHS sample used in this study showed that 94% of all mothers and fathers claimed some sort of religious affiliation while 72% of all mothers were actively involved in religious activity 2-3 times a month or more. Religious affiliation with their respective beliefs about marital behavior per se would be a complicated predictor of depression, marital discord, or both. In rural settings where a large proportion of the population (almost 80% in this sample) belong to one religion, religious affiliation may more aptly indicate cultural beliefs. Heaton and Pratt (1990) proposed that religious affiliations create dominant religious worldviews accompanied by supportive social networks. Under this assumption, persons not affiliated with the majority religion may function more like an ethnic minority. Ethnicity research has established differences in marital quality and mental health due to minority status in a community. In regards to religious activity, low religious participation has been identified as a risk factor for increased marital dissolution (Call & Heaton, 1997; Thomas & Cornwall, 1990) and increased depression especially in the context of stressful life events (Blumel, 1994; Ellison, 1995; Smith-Lovin, 1997; Williams, Larson, Buckler, Heckmann, & Pyle, 1991). Differences in religious attendance and affiliation between married partners have also been identified as risk factors for marital dissolution (Bumpass et al., 1991; Call & Heaton, 1997; Heaton & Pratt, 1990; Lehrer & Chiswick, 1993; Maneker & Rankin, 1993).

Transitions to parenthood. Although small proportions of couples report increases in marital satisfaction after the birth of a first child, declines in marital quality following the
transition to parenthood have been routinely reported in many longitudinal studies as more commonplace (studies cited in Belsky & Rovine, 1990; and Cowan & Cowan, 1995). Belsky and Pensky (1988) proposed the transition to parenthood as a stressful period in regards to marital quality due to (a) changes in the division of labor to more traditional roles, (b) decreases in shared leisure time due to parenting, and (c) abrupt decreases in expressions of positive affect. It is presumed that these changes disrupt intimacy and communication which in turn decrease marital quality. Two of these longitudinal studies (Belsky & Rovine, 1990; Cowan & Cowan, 1992) reported that significant declines in marital quality are observed in 30% to 60% of husbands and wives. Cowan and Cowan (1995) reported that 15% of husbands and wives in their sample fell below clinical cutoff points on assessments of marital satisfaction following the birth of their first child while 28% fell below clinical cutoff points one or more times during the initial transition to parenthood and beyond. Cowan and Cowan (1995) reported that the mean decline in marital satisfaction does not, in general, indicate marital interactions that are clinically discordant, but clear evidence exists demonstrating that the transition to parenthood increases the risk that one or both partners would rate their relationship as distressed or discordant.

New parents are also at increased risk for depression (Campbell et al., 1992; Cowan et al., 1991). Cowan and Cowan (1995) reported that 30% of both mothers and fathers scored above the cutoff on the Center for Epidemiological Studies Depression Scale (CES-D; Radloff, 1977) at 18 months postpartum, and 20% of the mothers and 30% of the fathers were still above the cutoff when their children were 3-1/2 years old. Given
that adults’ high scores on the CES-D are predictive of future psychiatric risk, even when more rigorous interview data do not result in a DSM classified mood disorder (Gotlib, Lewinsohn, & Seeley, 1995), it is clear that a substantial proportion of new mothers and fathers experience at minimum mild depressive distress during the family formation period.

Summary

The first 2 years of raising a young child create many stressful transitions for married couples. New parent couples face many challenges in successfully adapting to life transitions and creating a supportive marital relationship conducive to positive mental health and effective parenting. The negative effects of unsuccessful adaptation are substantial for marital and family functioning. Specifically, the presence of marital conflict and depression in married couples, especially mothers raising young children, can have various negative long-term consequences for both parents and children.

Early identification and intervention with marriages of at-risk mothers can attenuate the negative effects of marital conflict and depression and facilitate healthy family functioning. Previous research has identified several variables, in varying combinations, predictive of such negative outcomes. Predictive research with a rural, low income married sample with very young children has yet to be done. Furthermore, data from this population are needed for marriage and family therapy (MFT) programs and EHS staff to facilitate early identification of and intervention with at-risk couples.
CHAPTER III

METHODS

Design

The data for this study were taken from the Early Head Start Local Research Partnership at Utah State University (USU) in Logan, Utah. This site, with EHS eligible families in northern Utah and southern Idaho, was one of 17 sites selected nationally to conduct research with at-risk families (infants and parents) recruited to participate in Early Head Start. Local and national EHS research was organized into a longitudinal design. The design involved mother, father, and infant assessments using quantitative and qualitative methods at six different points over the child’s first 3 years of life.

In order to answer the research questions of this study, quantitative measures from mother and father interviews were conducted at three different points over time, pre-enrollment, focus child’s 10-month point, and focus child’s 24-month point (see Table 1). Measures were selected as indicators of the constructs of depression, marital discord, adult attachment styles, coping styles and various demographic characteristics (see Table 1). Mother and father scores on identical measures were selected in order to treat some variables as couple constructs (Maguire, 1999). A longitudinal or prospective design was applied in order to facilitate prediction and avoid concerns related to direction in cross-sectional and retrospective studies. In the following section, participants, procedures for data collection, variable measurement, and plans for data transformation will be discussed in greater detail.
### Constructs and Measures Selected for Current Study

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Time 1</th>
<th>Time 2</th>
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<tr>
<td></td>
<td>Pre-enrollment</td>
<td>10-month</td>
</tr>
<tr>
<td>Marital discord</td>
<td></td>
<td>FCS&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>Depression</td>
<td></td>
<td>CES-D&lt;sup&gt;a&lt;/sup&gt;</td>
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<tr>
<td>Attachment styles</td>
<td>RA&lt;sup&gt;a&lt;/sup&gt;</td>
<td></td>
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<tr>
<td>Coping styles</td>
<td></td>
<td>F-COPES&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>Internal (reframing &amp; mastery)</td>
<td></td>
<td>Pearlin Mastery&lt;sup&gt;a&lt;/sup&gt;</td>
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<tr>
<td></td>
<td></td>
<td>F-COPES&lt;sup&gt;a&lt;/sup&gt;</td>
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<tr>
<td>External (informal &amp; formal social &amp; spiritual support)</td>
<td></td>
<td></td>
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<tr>
<td>Demographics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>One question&lt;sup&gt;b&lt;/sup&gt;</td>
<td>One question&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>Employment</td>
<td>One question&lt;sup&gt;a&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>One question&lt;sup&gt;b&lt;/sup&gt;</td>
<td>One question&lt;sup&gt;c&lt;/sup&gt;</td>
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<tr>
<td>Religious activity</td>
<td>One question&lt;sup&gt;a&lt;/sup&gt;</td>
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</tr>
<tr>
<td>Family size</td>
<td>One question&lt;sup&gt;b&lt;/sup&gt;</td>
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</table>

<sup>a</sup> Mother and father measured  
<sup>b</sup> Mother only measured  
<sup>c</sup> Father only measured

### Participants

The sample used in this study included 148 married mothers who participated in the EHS research project. Participants were recruited by the Bear River EHS program (providing services to families in mostly rural communities in southern Idaho and northern
Utah) using convenience sampling. EHS program staff members advertised publically with various professional agencies serving low-income families, and qualifying respondents were informed that some would be randomly selected to participate in EHS program services. All applicants signed agreements stipulating that consideration for services was contingent upon their agreement to participate in research over the focus child’s first 3 years and could discontinue at any time without penalty. The primary caregiver, usually the mother, was also asked to identify the father or other secondary caregiver or male father figure if any existed who would likewise participate. Respondents applying for services and agreeing to EHS research participation were also encouraged to refer friends, family, and acquaintances.

The sole national requirement for participation in the EHS research project was based on meeting federal poverty guidelines. Other factors considered by the Bear River EHS were teenage pregnancy, child developmental problems, and referral from a physician or other health professional.

Consideration of all participating EHS mothers \( (n = 201) \) revealed a majority of participants were married, Caucasian, LDS (The Church of Jesus Christ of Latter-day Saints), low income, highly educated (education extending beyond high school), in their early 20s, and had two or fewer children. Table 2 outlines participant demographics. The EHS program staff indicated that the EHS research participants, compared to other EHS programs nationally, had higher than typical marriage rates, education, and religious activity and lower divorce rates.
Table 2

EHS Mother Demographics

<table>
<thead>
<tr>
<th>Demographics</th>
<th>%</th>
<th>M (SD)</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td>22.78 (5.395)</td>
<td>14-44</td>
</tr>
<tr>
<td>Family Income</td>
<td></td>
<td>$10,068 ($7,929)</td>
<td>0-$50,000</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>78.2%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>13.4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>American Indian</td>
<td>3.5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>4.9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married/living</td>
<td>71.2%</td>
<td></td>
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<tr>
<td>together</td>
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</tr>
<tr>
<td>Single</td>
<td>25.7%</td>
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<tr>
<td>Divorced</td>
<td>2.0%</td>
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</tr>
<tr>
<td>Family Size(^a)</td>
<td></td>
<td>2.20 (1.37)</td>
<td>1-7</td>
</tr>
<tr>
<td>One</td>
<td>40.4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Two</td>
<td>26.8%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Three</td>
<td>17.7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Four or more</td>
<td>15.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td>13.98 yrs (2.83)</td>
<td>4-20</td>
</tr>
<tr>
<td>&lt; 12th grade</td>
<td>23.8%</td>
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<td></td>
</tr>
<tr>
<td>High school graduate</td>
<td>8.9%</td>
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</tr>
<tr>
<td>Some college</td>
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<tr>
<td>Associates degree</td>
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<tr>
<td>Bachelors degree</td>
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<td>&gt; Bachelors degree</td>
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<td>LDS</td>
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<tr>
<td>Other Christian</td>
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<tr>
<td>None</td>
<td>6.0%</td>
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\(^a\) less than above stated sample size due to missing data
Family income \(n = 190\)
Family size \(n = 198\)
Only mothers married at the pre-enrollment interview were included in the present study. Demographics for husband and wife participants were obtained from pre-enrollment, 10-month, and 24-month interviews. For married mothers and their spouses, demographic variables included in this study were race, religious affiliation, age, education, family income, and number of children (see Table 7). From these couples, data were included only from those in which both spouses participated in pre-enrollment and 10-month interviews and mothers participated in 24-month interviews.

Procedures

Both husbands and wives were interviewed at three different assessment points corresponding to the focus child’s age (see Table 1). Before consenting to participate in the research, both spouses were made aware of the longitudinal nature of this research project and the approximate spacing of interviews. They were also informed of their rights as subjects and to confidentiality, and the EHS research confidentiality policy was explained. Participants and interviewers reviewed and signed confidentiality contracts explaining the use of identification numbers and locked files. Staff signed agreements following confidentiality training to protect participant identity. The Institutional Review Board (IRB) for the protection of human subjects at USU reviewed procedures and approved the EHS research project before any interviews were conducted (see Appendix).

Before each interview, subjects were contacted first by mail to notify them of the upcoming interview and then by phone or home visit to set up an interview time. Married
couples were contacted separately and interviewed separately by trained interviewers.
Before interviews, participants reviewed research policy and resigned an agreement to participate in the research. Interviews were done in person or by phone. Participants, who lived within 150 miles of Logan, Utah, were allowed to choose between the two interviewing options. The general protocol for administering the measures involved the interviewer reading aloud the questions and marking the participants' responses. This protocol was chosen at the national level because portions of the interviews used intricate skip patterns to quickly measure a wide variety of contexts and mental health problems. When face-to-face interviews were conducted, more sensitive questions were asked when other family members were not present or were administered in a paper-and-pencil survey format. Participants were paid $20.00 for each assessment.

Interviews were mostly similar, but not always identical over time or between spouses. Nonidentical measures were selected at the national level based on previous research findings of variables important to child outcomes (Mathematica Policy Research, 1999). Pre-enrollment and 10-month interviews for both spouses lasted between 30 minutes and 1 hour. Twenty-four-month interviews with mothers usually lasted over 2 hours. Mothers generally were asked more questions because of their primary caregiver status. Besides the variables of interest to this study, participants answered numerous other questions about parenting, child development, and the parent-child relationship.

Measures

The national EHS research and evaluation project was responsible for the selecting
measures used in this study. Measures for the national study were selected by local and national researchers with the major emphasis on understanding low-income parent-child interactions and other child development factors. With this focus, some variables were changed over time to portray the effects of different parental and family contextual factors. The following quantitative measures were selected for this study from the large array of measures gathered in various interviews with both married parents (see Table 1).

**Depression**

Depression was measured using two different self report measures. Depression, as a predictor, was measured by using the Center for Epidemiological Studies - Depression scale (CES-D; Radloff, 1977) at the 10-month assessment for both parents. The 22-item CES-D assesses severity of symptoms associated with depression experienced during the past week using a 4-point Likert scale ranging from “rarely or never (less than 1 day)” to “most or all (5-7 days).” Examples of questions included answering how often respondents felt “bothered by things that usually don’t bother you,” “depressed,” “lonely,” “your appetite was poor,” and “you could not get going.” Cronbach’s alphas of .90 and .92 have been reported with this scale for low income mothers with children and Head Start families (Hall, Williams, & Greenberg, 1985; Roggman, Moe, Hart, & Forthun, 1994). The CES-D has also shown good discriminant validity between the general population and inpatient depressed clients as evidenced by 70% of inpatient clients scoring above an arbitrary cutoff score of 16 while only 21% of the general population scored higher than 16 (Radloff, 1977).
With mothers at the 24-month assessment point, the Composite International Diagnostic Interview - 12-Month Short Screening Scale or Form (CIDI-SF; R. Kessler & D. Mroczek, personal communication, February 22, 1994; D. Mroczek & R. Kessler, personal communication, February 22, 1994) was used to assess depressive symptoms experienced during the previous 12 months. This survey was selected nationally for its capacity to discriminate between various depressive disorders as well as other psychiatric problems (e.g., anxiety, substance abuse; Mathematica Policy Research, 1999). Items were asked of mothers in such a way as to distinguish whether they reported criteria signifying certain depressive disorders. The two major screening questions for depressive disorder included asking (1) “During the past 12 months was there ever a time when you felt sad, blue, or depressed for two weeks or more in a row,” and (2) “During the past 12 months, was there ever a time lasting two weeks or more when you lost interest in most things like hobbies, work, or activities that usually give you pleasure.” If either question was answered “yes,” then additional questions about duration and co-occurring depressive symptoms were asked. In previous reports on the CIDI (Andrew & Peters, 1998; Kessler et al., 1994), inter-rater reliability, test-retest reliability, and validity have been reported as good to excellent. Furthermore, D. Mroczek and R. Kessler (personal communication, February 22, 1994) reported the CIDI has high validity as evidenced by having consistently correctly identified 85-90% of sample members with a clinical diagnosis. The authors of the CIDI-SF admit that it has not undergone extensive validity testing, but that items pulled from the original CIDI correctly classify psychiatric disorders with between 93% and 99% accuracy (Kessler, Andrews, Mroczek, Ustun, & Wittchen, 1998).
Marital Discord

Marital discord or conflict was measured by two different measures. The Family Conflict Scale (FCS; Mathematica Policy Research, 1999) was used with both spouses at both the pre-enrollment and 10-month interviews. EHS researchers created the 9-item FCS from the Dyadic Adjustment Scale (DAS; Spanier, 1976) using 7 (of 10) items from the original dyadic satisfaction subscale and 2 (of 5) from the original dyadic cohesion subscale. The FCS assesses qualities of the marital relationship related to marital discord and asks for respondents to rate the frequency of marital conflict behaviors or events using a 5-point Likert scale ranging from “all the time” to “rarely or never.” Example items included asking participants “about how often do you and your spouse: discuss or consider divorce,” “quarrel,” “get on each others nerves,” and “calmly discuss an issue that has been bothering you?” Another important question asks “about how often do you confide in your spouse?” Internal consistency reliability has yet to be reported for the FCS; however, Spanier’s original DAS reported internal consistency reliability for the dyadic satisfaction and cohesion subscales at .94 and .81, respectively.

Marital discord or conflict, as an outcome, was assessed using five questions derived from the conflict subscale of the Family Environment Scale Real Form (FES; Moos & Moos, 1981) with mothers at the 24-month interview. The FES measures the degree of overt family aggression and anger. EHS researchers have used a 4-point Likert scale ranging from “strongly agree” to “strongly disagree” as opposed to the original dichotomous true or false options. Example questions include: “we fight a lot,” “we
hardly ever lose our tempers,” and “we often criticize each other.” Many have voiced concerns about the internal consistency reliability of the FES (Loveland-Cherry, Youngblut, & Leidy, 1989; Roosa & Beals, 1990; Waldron, Sabatelli, & Anderson, 1990). However, Waldron et al. (1990) reported a Cronbach’s alpha of .74 for questions that factor loaded on the conflict subscale. Five of these six questions were used in this analysis. Further, this version of the FES will hopefully yield higher reliability alpha coefficients, given previous recommendations that the use of a Likert scale would produce more reliable scores (Loveland-Cherry et al., 1989).

**Adult Attachment Styles**

Adult attachment styles were assessed at the pre-enrollment interview for both parents using the Relationship Attitudes (RA) scale. The RA was adapted from the Adult Attachment Scale (Simpson et al., 1992) by EHS researchers to target attitudes towards close relationships in general. The Adult Attachment Scale was originally developed by Simpson (1990) from Hazan and Shaver’s (1987) Adult Attachment Scale to measure attachment in romantic relationships. The 13-item RA scale uses a 5-point Likert scale ranging from “strongly agree” to “strongly disagree” to yield two subscales reflecting avoidant and ambivalent attachment styles. Example questions include: “I find it relatively easy to get close to others,” “I don’t like people getting too close to me,” “I find it difficult to trust others completely,” “Others often want me to be more intimate than I feel comfortable being,” and “I often worry that people close to me don’t really love me.” Cronbach’s alphas have been reported at between .79 and .81 for the avoidant subscale.
and between .58 and .79 for ambivalent subscale (Simpson, 1990; Sperling, Foelsch, & Grace, 1996). The two scores can be combined to yield an overall relationship anxiety score.

**Coping Resources**

Coping resources were assessed for both spouses using all or portions of two different measures at the pre-enrollment interview. Four subscales derived from the 29-item Family Crisis Oriented Personal Evaluation Scales (F-COPES; McCubbin, Larsen, & Olsen, 1982) were selected for their ability to tap into perceived personal orientations towards using external (informal social support, community social support, and spiritual support) and internal (reframing) coping resources. The F-COPES was slightly reworded to more straightforward language because researchers expected this would increase reliability with a less educated population. Each item measures the perceived frequency of using certain coping strategies with a 5-point Likert scale ranging from “never” to “always”.

The informal (extended family, friends, and neighbors), community, and spiritual social support-seeking subscales constitute measures of a family’s perceived attempts to acquire external coping resources outside the family. First, the nine-item informal social support subscale included questions like “when there is a problem, how often do you:” “ask for encouragement or support from friends,” “ask for advice from relatives,” and “talk about your problem with close friends?” Next, the four-item community support subscale included questions like, “when there is a problem, how often do you: ask for help
from professionals, ask for advice from your family doctor, and try to get help from programs in town that are supposed to help with a problem like yours?” Finally, the four-item spiritual support subscale asked questions like, “when there is a problem, how often do you: participate in church or other spiritual activities, ask for advice from a minister or spiritual advisor, and have faith in God or a power greater than yourself?” Cronbach alphas for the informal social support, community support, and spiritual support seeking subscales have been reported at .83, .71, and .80, respectively (McCubbin et al., 1982).

The reframing subscale represents one possible internal resource couples might use to cope with stress. It attempts to tap into whether couples view change as positive, negative, or neutral. The eight-item reframing scale included questions like “when there is a problem, how often do you: know you have the power to solve it, show you are strong, and think about the problem in a positive way so you don’t get too discouraged?” Cronbach’s alpha has been reported at .82 for this subscale (McCubbin et al., 1982).

The seven-item Pearlin Mastery Scale (Pearlin & Schooler, 1978) was administered to both spouses during the pre-enrollment interview and assessed the use of internal resources to cope with stress. The scale was designed to assess perceptions of problem solving ability and feelings of control over events in life. The Pearlin Mastery Scale uses a 4-point Likert scale ranging from “strongly disagree” to “strongly agree.” Respondents are asked both negative and positive questions such as “Sometimes you feel that you are being pushed around in life,” “I have little control over the things that happen to me,” or “I can do anything I really set my mind to do.” Internal consistency reliability of .72 has been reported previously with an EHS population (Roggman et al., 1994).
Demographics

Age, employment status, education level, religious activity and affiliation, and family size, were derived from background information assessed during the pre-enrollment, 10-month, and 24-month interviews. Age for mothers was asked during the pre-enrollment interview and for fathers during a 14-month interview completed by mothers. Employment status was assessed for both parents during the pre-enrollment interview by asking how many hours per week each of them worked for pay. Education level was assessed for mothers at pre-enrollment and for fathers at the 10-month interview. Respondents were asked to name the highest year, grade, or degree they had already completed. Religious affiliation and activity were assessed for both mothers and fathers during the 10-month interview by asking “what religion are you” and “how often are you actively involved in your religion?” Answers for religious activity were reported using a 7-point Likert scale ranging from “more than once a week” to “never.” Family size was assessed during the pre-enrollment interview by asking mothers how many biological children they had at present that they cared for.

Data Reduction and Transformation

Data reduction and transformations were completed in preparation to conduct specific analyses and successfully answer the research questions for this study. Measures were converted to fit previously prescribed standards for accurate measure interpretation. These conversion processes, particularly for marital conflict or discord and maternal
depression, create categorical variables for describing clinical significance and continuous variables for facilitating statistical analyses.

The data collected from both mothers and fathers on identical measures were combined to treat the couple as the unit of analysis (Maguire, 1999) and adhere to a systems perspective of marital relationship dynamics inherent in individual perceptions. Such transformations link couple similarity in personal characteristics and perceptions with relationship dynamics predictive of marital discord and depression. Details for data reduction and transformations are described below, first for creating couple variables in general, and then specific to each variable in the study.

Creating Couple Variables

Two statistical methods, arithmetic means and standardized regression residuals, were used to create couple variables. These methods were chosen over more descriptive and concise couple variable methods (Maguire, 1999) because of simplicity and timeliness. Although these methods as a means for analyzing couple similarity fall short in interpretive capacity compared to those proposed by Maguire (1999), each represents a step towards highlighting couple relational dynamics in the development or maintenance of marital discord and depression. It is presumed that the subsequent analyses comparing individual and couple variables will distinguish whether more complex methods requiring substantial time investments will yield greater understanding in future studies.

In this study, arithmetic means of spouse scores were used to create a rough couple similarity index for all variables. Arithmetic means in this study were calculated by
summing spouse scores on the variables of interest and dividing by two. These means were beneficial in that they produced a couple absolute value and facilitated across-couple comparisons. The arithmetic mean, however, is a weak indicator of similarity because couples very similar and very disparate could have identical means.

Standardized regression residuals represented another indicator of couple similarity in this study. In regression analysis, residuals represent the difference between the predicted and actual value of a dependent variable according to the regression line of an independent and dependent variable. Residuals, then, measured the degree of similarity between a mother and her spouse on a certain variable of interest. More simplistically put, this meant that a residual score near to or equal to zero represented identical or nearly identical spouse scores. Residuals were calculated for each couple in this study on every variable by regressing father scores on mother scores.

Regardless of the fact that adjusted $R^2$ and standardized regression coefficients are identical between regression models alternating mother or father scores as the predictor variable, residuals vary for individual cases when reversing the predictor variable in these models. This would likely occur because mothers and fathers demonstrate different central tendency and variability. These conditions then imply that mother and father residuals are likely to be uncorrelated. For example, in calculating mother depression score residuals based on a regression model with father depression as a predictor, where wives generally report more depression, and then reversing this to calculate father residuals, where husbands generally report less depression, the residuals are likely to be nonidentical and possibly uncorrelated. These residuals were used to differentiate the
direction of couple similarity in regression analyses predicting maternal depression and marital discord.

**Depression**

Symptoms of depression were assessed using the CIDI-SF and the CES-D. The CIDI-SF differentiated cases and non-cases of clinical depression by assigning a probability score for every item responded to by "yes." Cross-comparisons with depressive symptoms on the CES-D were desired but inappropriate considering stem questions used in the CIDI-SF eliminated asking questions consistent with the CES-D.

The CES-D measured depressive symptoms experienced in the past week by summing the total of all items. Higher scores on this scale indicate more depressive symptoms. Three different scoring schemes in previous literature were used to interpret CES-D scores. First, a score of 16 has been suggested as a cutoff indicative of possible depressive disorders (Myers & Weissman, 1980; Radloff, 1977). Second, several reports (Barnes & Prosen, 1984; Devins & Orme, 1985) have suggested a range of scores to distinguish depressive symptom severity with mild (16 - 20.9), moderate (21 - 30.9), and severe (31 - 60) designations. Finally, Radloff and Locke (1986) reported that scores above 23 were indicative of clinical depression. All scoring options were considered for their respective abilities to differentiate symptom severity. Participant CES-D total scores and interpretation scales were converted to individual item mean scores mainly to facilitate scale interpretation even with a few items missing. Equivalent cutoff scores were also calculated.
With research identification of more depressive or physical symptoms in "non-depressed" spouses married to "depressed" partners (Halgin & Lovejoy, 1991; Mitchell et al., 1983), assessment of couple similarity in depressive symptoms was warranted. Both a couple mean and standardized regression residuals were calculated from mothers’ and fathers’ 10-month CES-D individual item mean scores to identify higher risk couples. The couple means would facilitate better identification through showing couples with higher scores while couple residuals would show the degree of similarity, a possibly critical factor in longitudinal analyses.

**Marital Discord**

Marital discord, as a dependent variable using the conflict subscale of the FES, was scored by computing individual mean item scores from mother responses on each item. Items were coded so that higher scores would indicate more overt anger and aggression.

Marital discord, as an independent variable assessed using the FCS for both mothers and fathers, was calculated by computing individual mean item scores. Again, items were recoded so that higher scores indicated more marital conflict and lower scores less conflict and greater marital satisfaction.

Individual perceptions of marital quality are likely to be more or less congruent depending on life stage transitions, mental health, and the duration of marriage (Beck et al., 1979; Lauer, Lauer, & Kerr, 1990). These findings could imply that EHS couple dissimilarity in perceived marital conflict represents processes indicative of later conflict,
depression, or both. In order to assess couple similarity, a couple-derived arithmetic mean and standardized regression residuals were computed. In this case the mean is proposed to indicate overall how couples compared to each other while the standardized residuals would indicate the degree of partner similarity.

**Depression and Marital Discord**

In order to assess the proportion of EHS married mothers reporting both depression and marital discord at any given time (question c), a variable combining these two conditions at 10- and 24-month assessments was created. Both liberal and conservative estimates of marital discord and depression were created based on varying interpretation guidelines for these measures. When both depression and marital conflict scores fell above conservative or liberal estimates, participants were considered clinically depressed and maritally discordant. This created new dichotomous “yes” or “no” variables.

**Adult Attachment Styles**

Spouse scores on the Relationship Attitudes Scale were combined in hopes of yielding more explanatory power for how marital dynamics surrounding attachment styles relate to depression and marital conflict. Some research (Senchak & Leonard, 1992) has demonstrated that individuals tend to marry partners with similar attachment styles. It is expected, however, that varying combinations of attachment styles will affect depression and marital conflict. Secure-secure types will likely have the fewest problems, whereas
secure-insecure types and insecure-insecure types having progressively more problems. In order to assess couple similarity in attachment attitudes, first the steps outlined by Simpson et al. (1992; Simpson, 1990) to score individual attachment attitudes on avoidance, ambivalence, and overall security were followed. From this, variables assessing couple similarity on each subscale were assessed by computing couple-derived means and standardized regression residuals.

Coping Resources

The use of certain internal or external coping resources by mothers and fathers was first calculated and assessed separately. Items from the informal social support, community social support, and spiritual support subscales of the F-COPES were added together and then divided by the number of items in each subscale to yield individual item means scores. Higher scores indicated a stronger orientation towards the use of these external resources. The two internal scales, the reframing subscale (F-COPES) and the Pearlin Mastery Scale, were scored in a similar fashion. Again, higher scores on each scale separately indicated stronger orientation towards the use of internal resources.

Scores from the three external and two internal coping strategies were then combined to create composite internal and external coping resources variables. Individual mean item scores from the external support subscales were added together and divided by three to yield this composite score. Composite individual item mean scores for internal resources were computed for the two nonidentical scales by converting raw scores to z-scores to adjust for variable scoring and then averaging the two z-scores. In this case
scores falling above the mean would, in general, indicate a stronger orientation towards using internal resources.

Couple similarity in coping resources was calculated in order to assess whether individual coping resources or couple coping resources better predicts depression and marital discord. The degree of similarity between spouses for the above-mentioned internal and external coping resources was calculated using arithmetic means and standardized regression residuals.

**Demographics**

In order to assess the best predictors of marital discord and maternal depression, individual responses and “created” couple scores of demographic indicators were used. Individual responses on age, education, employment, and religious activity did not require transformations. It should be noted that increasing scores among these variables would indicate the expected interpretations except for religious activity where lower scores actually meant greater activity.

Couple similarity scores were derived for age, education level, employment hours worked, and religious activity. In order to assess differential outcomes by couple age, education, employment, and religious activity similarity, couple means and standardized regression residuals were computed.
Introduction

Analyses were conducted as outlined in the methods section. Both measurement scales and single item questions were used to represent constructs of interest to this study. Data were taken from three different time points in order to answer both the cross-sectional and longitudinal research questions.

Data analyses were conducted using several statistical procedures in SPSS. These procedures included calculation of scale reliability, frequency distributions, means, standard deviations, correlations, and linear regressions. Before any analyses were attempted, data were entered into text files by two different data entry persons. These files were matched to detect discrepancies and were corrected when necessary to reduce measurement error due to data entry. Further, certain data were transformed from their original format according to the procedures outlined in the data reduction section in order to answer the research questions.

Results are presented in this section under four headings: Reliability, Variable Description, Participants, and Research Findings. The reliability section addresses reliability of scales used in the study. The variable description section presents basic statistical characteristics of maternal and couple variables used in research analyses. The sample section describes the participant selection process and participant characteristics, and addresses the nature of unequal numbers of participants and attrition effects on
research analyses. Finally, the research findings section lists the research questions, mentions the statistical methods used, and presents in written and table formats the calculated results.

Reliability

As mentioned previously, most of the measurement scales used in this study were altered slightly from either their original wording or administration procedures or both to facilitate quicker administration to lower income, lower educated persons. These alterations had the potential to alter the accuracy of previously calculated reliability estimates. Therefore, new reliability coefficients were calculated based on the data from this study.

Cronbach’s alpha reliability estimates for these measures were adequate to high. For both mothers and fathers, without considering marital status, reliability coefficients ranged from .52 to .88. For married mothers and fathers, reliability coefficients ranged from .50 to .89. Many calculated alphas fell near or within the range of previously assessed alphas, .58 to .94. For a complete list of current alpha reliability estimates along with their comparisons to previously calculated alphas refer to Table 3 and the description of measures in the methods section.

Variable Description

Variables presented in this section are meant to match with pertinent concepts discussed in the review of literature and methods sections and report basic statistical
Table 3

Scale Reliability Alphas

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<td>F-COPES</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Social Support</td>
<td>2</td>
<td>Community Support</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>Reframing</td>
<td>5</td>
<td>Combined External Support</td>
<td></td>
</tr>
<tr>
<td>RA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Avoidance</td>
<td>2</td>
<td>Ambivalence</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>Security index</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;sup&gt;a&lt;/sup&gt; above previous reliability estimate(s)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;sup&gt;b&lt;/sup&gt; below previous reliability estimate(s)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;sup&gt;c&lt;/sup&gt; equal to or within range of previous reliability estimate(s)</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>PMS = .72</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FCS = .81 to .94 (based on estimates from the DAS)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;sup&gt;d&lt;/sup&gt; no previous estimate(s) found</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
outcomes. First, important concepts to the description and prediction of marital discord, depression, or both were presented in variable categories such as coping resources, attachment attitudes, and demographics. Within each variable category, maternal and couple variables were created in hopes of highlighting differential outcomes depending on the type of data selected. Second, basic statistical tests or characteristics of central tendency, sample size, and dispersion were presented for both maternal data and couple data. It is hoped that such tests will give a general overview of important variable characteristics, inform appropriate interpretation of statistical analysis, and give sufficient information for any supplemental analyses. Tables 4, 5, and 6 present each maternal and couple variable discussed in later analyses. Some demographic variables were not included in the following tables because their characteristics were included in participant characteristics (see Table 6).

Participants

Married and cohabitating mothers were deliberately selected from all participating EHS mothers in this study. In pre-enrollment interviews, mothers were asked both their marital status and how they characterized their family structure. Mothers who reported a marital status of married or who reported either having a two-parent traditional family or a single parent with a live-in partner were considered as meeting the criteria of parenting within an intimate relationship.

Once married and cohabitating mothers were selected (n = 148), demographics were recalculated to describe the characteristics of these mothers and their partners.
Table 4

Maternal Data Characteristics

<table>
<thead>
<tr>
<th>Maternal variables</th>
<th>M</th>
<th>SD</th>
<th>n</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Social coping resources</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soc. support</td>
<td>2.89</td>
<td>2.94</td>
<td>0.61</td>
<td>148</td>
</tr>
<tr>
<td>Com. support</td>
<td>2.53</td>
<td>2.52</td>
<td>0.76</td>
<td>148</td>
</tr>
<tr>
<td>Spir. support</td>
<td>3.56</td>
<td>3.69</td>
<td>0.98</td>
<td>148</td>
</tr>
<tr>
<td>Ext. support</td>
<td>2.96</td>
<td>3.02</td>
<td>0.57</td>
<td>148</td>
</tr>
<tr>
<td><strong>Personal coping resources</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reframing</td>
<td>3.91</td>
<td>3.91</td>
<td>0.57</td>
<td>148</td>
</tr>
<tr>
<td>Mastery</td>
<td>3.26</td>
<td>3.29</td>
<td>0.49</td>
<td>148</td>
</tr>
<tr>
<td>Combined</td>
<td>0.00</td>
<td>0.00</td>
<td>0.83</td>
<td>148</td>
</tr>
<tr>
<td><strong>Demographics</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religious activity</td>
<td>2.68</td>
<td>2.37</td>
<td>1.92</td>
<td>148</td>
</tr>
<tr>
<td>Work hrs/week</td>
<td>7.63</td>
<td>7.07</td>
<td>13.64</td>
<td>147</td>
</tr>
<tr>
<td><strong>Attachment</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avoidant</td>
<td>2.54</td>
<td>2.56</td>
<td>0.70</td>
<td>143</td>
</tr>
<tr>
<td>Ambivalent</td>
<td>2.26</td>
<td>2.21</td>
<td>0.70</td>
<td>143</td>
</tr>
<tr>
<td>Insecure</td>
<td>2.43</td>
<td>2.42</td>
<td>0.60</td>
<td>143</td>
</tr>
<tr>
<td><strong>Depression</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10-month</td>
<td>0.71</td>
<td>0.69</td>
<td>0.49</td>
<td>132</td>
</tr>
<tr>
<td>24-month</td>
<td>0.25</td>
<td>0.24</td>
<td>0.39</td>
<td>109</td>
</tr>
<tr>
<td><strong>Marital discord</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10-month</td>
<td>1.78</td>
<td>1.77</td>
<td>0.58</td>
<td>127</td>
</tr>
<tr>
<td>24-month</td>
<td>1.81</td>
<td>1.80</td>
<td>0.69</td>
<td>105</td>
</tr>
</tbody>
</table>

Note. 1 = Married mothers sample. 2 = Married mothers whose spouse completed 10-month data. All other demographics found in Table 6.
Table 5

**Couple Arithmetic Mean Data Characteristics**

<table>
<thead>
<tr>
<th>Couple variables</th>
<th>M</th>
<th>SD</th>
<th>n</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Social coping resources</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soc. support</td>
<td>2.85</td>
<td>2.89</td>
<td>0.43</td>
<td>0.42</td>
</tr>
<tr>
<td>Com. support</td>
<td>2.38</td>
<td>2.42</td>
<td>0.50</td>
<td>0.52</td>
</tr>
<tr>
<td>Spir. support</td>
<td>3.47</td>
<td>3.64</td>
<td>0.89</td>
<td>0.79</td>
</tr>
<tr>
<td>Ext. support</td>
<td>2.88</td>
<td>2.96</td>
<td>0.42</td>
<td>0.40</td>
</tr>
<tr>
<td>Personal coping resources</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reframing</td>
<td>3.93</td>
<td>3.92</td>
<td>0.31</td>
<td>0.26</td>
</tr>
<tr>
<td>Mastery</td>
<td>3.34</td>
<td>3.37</td>
<td>0.32</td>
<td>0.31</td>
</tr>
<tr>
<td>Combined</td>
<td>0.01</td>
<td>0.00</td>
<td>0.58</td>
<td>0.52</td>
</tr>
<tr>
<td>Demographics</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>24.81</td>
<td>24.66</td>
<td>4.80</td>
<td>4.58</td>
</tr>
<tr>
<td>Education</td>
<td>13.90</td>
<td>14.17</td>
<td>1.91</td>
<td>1.90</td>
</tr>
<tr>
<td>Attachment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avoidant</td>
<td>2.55</td>
<td>2.54</td>
<td>0.48</td>
<td>0.49</td>
</tr>
<tr>
<td>Ambivalent</td>
<td>2.19</td>
<td>2.13</td>
<td>0.51</td>
<td>0.46</td>
</tr>
<tr>
<td>Insecure</td>
<td>2.41</td>
<td>2.38</td>
<td>0.41</td>
<td>0.40</td>
</tr>
<tr>
<td>Depression</td>
<td></td>
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</tr>
<tr>
<td>10-month</td>
<td>0.63</td>
<td>0.62</td>
<td>0.33</td>
<td>0.34</td>
</tr>
<tr>
<td>Marital discord</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10-month</td>
<td>1.77</td>
<td>1.77</td>
<td>0.38</td>
<td>0.38</td>
</tr>
</tbody>
</table>

*Note.* 1 = Married mothers. 2 = Married mothers whose spouse completed 10-month data.
Table 6

Couple Residual Similarity Data Characteristics

<table>
<thead>
<tr>
<th>Couple variables</th>
<th>M</th>
<th>SD</th>
<th>n</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Social coping resources</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soc. support^a</td>
<td>0.04</td>
<td>0.11</td>
<td>1.02</td>
<td>0.95</td>
</tr>
<tr>
<td>Com support^b</td>
<td>0.00</td>
<td>0.12</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Spir. support^a</td>
<td>0.04</td>
<td>0.04</td>
<td>0.98</td>
<td>1.00</td>
</tr>
<tr>
<td>Ext. support^a</td>
<td>0.04</td>
<td>0.10</td>
<td>0.99</td>
<td>0.96</td>
</tr>
<tr>
<td>Personal coping resources</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reframing^a</td>
<td>0.01</td>
<td>0.00</td>
<td>0.95</td>
<td>0.84</td>
</tr>
<tr>
<td>Mastery^a</td>
<td>0.05</td>
<td>0.01</td>
<td>0.96</td>
<td>0.94</td>
</tr>
<tr>
<td>Demographics</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religious activity^b</td>
<td>0.14</td>
<td>0.00</td>
<td>1.00</td>
<td>0.98</td>
</tr>
<tr>
<td>Religion^a</td>
<td>0.00</td>
<td>0.00</td>
<td>1.00</td>
<td>0.81</td>
</tr>
<tr>
<td>Work hrs/week^a</td>
<td>0.01</td>
<td>0.00</td>
<td>1.01</td>
<td>0.94</td>
</tr>
<tr>
<td>Age^a</td>
<td>0.01</td>
<td>0.00</td>
<td>0.88</td>
<td>0.87</td>
</tr>
<tr>
<td>Education^a</td>
<td>0.21</td>
<td>0.35</td>
<td>0.94</td>
<td>0.86</td>
</tr>
<tr>
<td>Attachment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avoidant^a</td>
<td>0.00</td>
<td>0.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Ambivalent^a</td>
<td>0.00</td>
<td>0.01</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Insecure^a</td>
<td>0.00</td>
<td>0.01</td>
<td>1.00</td>
<td>1.02</td>
</tr>
<tr>
<td>Depression</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10-month^a</td>
<td>0.00</td>
<td>0.00</td>
<td>1.00</td>
<td>1.01</td>
</tr>
<tr>
<td>Marital discord</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10-month^a</td>
<td>0.00</td>
<td>0.01</td>
<td>1.00</td>
<td>1.03</td>
</tr>
</tbody>
</table>

Note. 1 = Married mothers. 2 = Married mothers whose spouse completed 10-month data. Couple similarity^a = fathers regressed on identical maternal variable. Couple similarity^b = mothers regressed on identical paternal variable.
Table 7 describes key demographic characteristics for EHS married mothers and their spouses. An eyeball examination of these data in comparison to the entire sample (see Table 2) appears to show married and cohabitating mothers differing little from the entire sample. Both EHS married mothers and fathers were more educated and older on average than what might be expected for lower income families raising children. The unexpected observation of higher education could have been due to the imbalance of education and employment opportunities in the participants' geographic region. The observation of older age was tempered to more expected levels when the number of children in the family was broken down by age. For instance, when considering couples with only one child, the mean age dropped to 21.37 and 23.17 for mothers and fathers, respectively. Furthermore, participants were rather homogeneous in regards to religious affiliation and ethnicity.

Attrition was evident in this sample. First, considering EHS married mother data without partner data, 44 and 47 out of the original 148 participants did not complete the depression and marital conflict outcome measures, respectively. Then, the use of partner data to answer the longitudinal research questions deflated the sample size even more. This translated to between 30% and 43% of the original sample not completing outcome measures. A complete breakdown of the sample size variations for both cross-sectional and longitudinal questions can be found in Table 8.

Analysis of variance (ANOVA) testing further highlighted attrition effects on sample characteristics. First, comparing continuously married mothers who completed 24-month depression and marital discord measures to those who did not produced statistically significant differences in four maternal variables: religious activity, religious affiliation,
Table 7
EHS Married Mother and Father Demographics

<table>
<thead>
<tr>
<th>Demographics</th>
<th>%</th>
<th>M (SD)</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mothers</td>
<td>Fathers</td>
<td>Mothers</td>
</tr>
<tr>
<td>Age*</td>
<td>23.76</td>
<td>26.14</td>
<td>(5.26)</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Caucasian</td>
<td>81.80%</td>
<td>81.80%</td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>10.20%</td>
<td>10.20%</td>
<td></td>
</tr>
<tr>
<td>American Indian</td>
<td>3.40%</td>
<td>3.40%</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>4.80%</td>
<td>4.80%</td>
<td></td>
</tr>
<tr>
<td>Education*</td>
<td></td>
<td></td>
<td>14.54 yrs</td>
</tr>
<tr>
<td>&lt; 12th grade</td>
<td>16.90%</td>
<td>13.40%</td>
<td>(2.86)</td>
</tr>
<tr>
<td>High school</td>
<td>8.10%</td>
<td>35.70%</td>
<td></td>
</tr>
<tr>
<td>Some college</td>
<td>2.70%</td>
<td>35.70%</td>
<td></td>
</tr>
<tr>
<td>Associates degree</td>
<td>29.10%</td>
<td>0.00%</td>
<td></td>
</tr>
<tr>
<td>Bachelors degree</td>
<td>29.10%</td>
<td>10.70%</td>
<td></td>
</tr>
<tr>
<td>&gt; Bachelors degree</td>
<td>14.20%</td>
<td>4.50%</td>
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</tr>
<tr>
<td>Religion*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LDS</td>
<td>78.90%</td>
<td>77.90%</td>
<td></td>
</tr>
<tr>
<td>Other Christian</td>
<td>8.80%</td>
<td>9.90%</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>6.80%</td>
<td>6.90%</td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>5.40%</td>
<td>5.30%</td>
<td></td>
</tr>
<tr>
<td>Family Income</td>
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<td></td>
</tr>
<tr>
<td>Family Size</td>
<td>2.19</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. n = 148

*Less than above stated sample size for mothers due to missing data
  Family income n = 141; Family size n = 146; Religion n = 147

b Less than above stated sample size for fathers due to missing data
  Age n = 119; Education n = 112; Religion n = 131
Table 8

Sample Sizes

<table>
<thead>
<tr>
<th>Sample sizes</th>
<th>Data for cross-sectional analyses</th>
<th>Pre-enrollment married father</th>
<th>10-month married mother</th>
<th>10-month married father</th>
<th>10-month married mother</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-enrollment mother</td>
<td>201</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-enrollment married mother</td>
<td>148</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-enrollment married father</td>
<td>131</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10-month married mother</td>
<td>CES-D 132</td>
<td>118</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>FCS 127</td>
<td>115</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10-month married father</td>
<td>CES-D 112</td>
<td>108</td>
<td>104</td>
<td>104</td>
<td>101</td>
</tr>
<tr>
<td></td>
<td>FCS 112</td>
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<td>104</td>
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<td>101</td>
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<tr>
<td>24-month married mother</td>
<td>CIDI-SF 109</td>
<td>121</td>
<td>105</td>
<td>106</td>
<td>104</td>
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<tr>
<td></td>
<td>FES 105</td>
<td>121</td>
<td>102</td>
<td>103</td>
<td>101</td>
</tr>
</tbody>
</table>
education level, and divorce. This meant that married mothers completing 24-month assessments were, in general, more likely to be LDS, religiously active, better educated, and not divorced. Next, comparing married mothers who completed 24-month depression or marital discord and whose spouse also completed earlier assessments to those not meeting these criteria produced statistically significant differences in the following areas: mothers' spiritual support, religious activity, religious affiliation, education level, divorce; and fathers' spiritual support, religious activity, religious affiliation, ambivalence (missing marital discord scale only), and mastery (missing depression scale only). This meant that married mothers and fathers completing 24-month data were more likely to be LDS, religiously active, better education, using spiritual support, not divorced, less ambivalent about relationships (fathers), and more self-confident (fathers). Certain ANOVA tests may have yielded inaccurate results due to homogeneity of variance assumption violations (mothers religious affiliation and divorce; fathers religious affiliation and spiritual support), but the observed differences provide compelling evidence that attrition may have altered the longitudinal research findings in this study.

Research Findings

The focal point of this study was to produce specific, informative findings for marriage and family therapists (MFTs) to foster collaborative relationships with EHS programs. Maternal depression and marital conflict are key intra and interpersonal factors affecting EHS family interaction. Because these factors appear important to effective family interaction, questions regarding the proportion and prediction of maternal
depression, marital discord, or both were asked. The first questions regarding the proportion of these two things in EHS married mothers gives MFTs information to facilitate awareness. The later questions may further facilitate EHS-MFT collaboration by identifying predictors of these problems for EHS mothers.

**Question A: What is the Proportion of High Marital Discord?**

Measures of marital discord were assessed at two different time points, the focus child's 10- and 24-month ages. Two different measures were used at the two different time points because national researchers were not focusing on the development of marital discord. Each measure had distinct qualities that tapped into marital discord. Although informative about differing aspects of marital discord, the use of two measures as opposed to one poses a challenge to the interpretation of results. For instance, at face value the results appeared to support increased levels of marital conflict between the 10- and 24-month time assessments. This face value judgment, however, may be misleading when one takes into account the incongruence between the two scales.

Further, divorce and separation in this study were taken as indicators of marital discord. At the 10-month point, only 7 couples out of 134 had divorced or separated (about 5%). At the 24-month point, an additional 10.7% had divorced or separated (n = 113, 11 couples). Without accounting for remarriages, this meant 15.9% (18) of the couples (n = 113) originally married or cohabiting ended their relationship or were separated for a substantial period of time at the 24-month assessment.
10-Month Marital Discord

At the 10-month assessment, the Family Conflict Scale (FCS; Mathematica Policy Research, 1999) was used to measure aspects of marital conflict and marital satisfaction. Since no interpretation guidelines have been reported, assumptions were made about the meaning of FCS scores on the basis of face value and following guidelines for interpretations of the Dyadic Adjustment Scale (DAS; Spanier, 1976) since the FCS was developed from items on the DAS.

First, assessing each item on the FCS at face value alone indicates that scores above three would indicate marital discordant interactions occurring "more often than not." This method indicated 13.4% of EHS married mothers experienced high levels of marital discord at the 10-month assessment point. For this sample that equals about one and an half standard deviations above the mean.

Second, interpretation of the FCS could mirror that of the DAS. Clinical research has suggested one standard deviation below the mean on the DAS as indicative of highly discordant marriages (Beach et al., 1990). A simple calculation of one standard deviation above (opposed to below because the FCS was reverse coded so that high scores indicate high marital conflict) the FCS mean in this study would indicate 15% of EHS married mothers reported high marital discord at the 10-month assessment.

Such a simple comparison on the basis of certain item similarities between the DAS and the FCS ignores several assumptions and merits some effort to remedy differences between these measures. One assumption that cannot be remedied here involves the fact that no mean or standard deviation of randomly selected married couples
approximating a population mean has been established for the FCS. Such data, if it had already established reliability through comparisons with clinical impressions and the DAS, would allow for a more accurate calculation of the proportion of EHS mothers reporting high marital discord according to the standard deviation method. Other assumptions for which a remedy was merited stemmed from the fact that the DAS, unlike the FCS, has more items, subscales using variable Likert scales, and for most items a larger Likert scale (six points 0 to 5 compared to five points 1 to 5, respectively).

A simplistic scale conversion was undertaken to remedy these measure disparities. First, a new Likert scale was calculated for the DAS changing the range to start with 1 as opposed to 0. From this step, previous DAS parameter estimates were used to derive a new DAS item mean, 4.36, and standard deviation, .68. Next, the difficulty of comparing item means and standard deviations between the unequivocal Likert scales of the DAS and FCS was approached. This was done by first making all DAS items equivalent creating a 1.00 to 5.72 scale and then adjusting the DAS item mean and standard deviation to fit within a 5-point Likert scale for the FCS. The new FCS mean and standard deviation equaled 2.19 and .60, respectively. This yielded an item mean score, 2.79, one standard deviation above the mean, which meant that 7.9% of EHS married mothers reported clinically significant marital discord. It is important to remember that in attempting to make the DAS and FCS equivalent for interpretation, the procedures used broadly assumed that the parameter estimates found for the DAS (Spanier, 1976) assimilated a population mean and that both scales measured the same construct(s).
24-Month Marital Discord

At the 24-month assessment, a revised version of the conflict subscale in the Family Environment Scale (FES) was used to assess marital discord. This measure is different from the FCS in that it is more likely to measure conflict that is clearly overt and more violent in nature. Like the FCS, no interpretation guidelines have been reported for this revised version of the FES. Interpretations were therefore made on the basis of face value and simplified calculations of scores falling above one and two standard deviations of the mean.

First, a score above 2 would indicate an EHS mother reported mild or strong agreement that some form of criticism or fighting takes place in their household. Because using item mean scores creates variation between scores of 2 and 3, item mean scores at 2.5 and above were assumed to come closer to three meaning mothers mildly agreed with marital conflict. This rounding up resulted in 17.4% of EHS married mothers reporting discordant relationships at the 24-month point.

Second, standard deviations from the mean produced different results for interpreting the prevalence of marital discord. At one standard deviation above the mean, the results would be identical to that stated above (17.4%). At two standard deviations above the mean, only 3% of all EHS married mothers would have reported high levels of marital conflict at the 24-month assessment. These results rely on the assumption that the group mean and group dispersion (standard deviation) from this sample were representative of all married mother reports. As stated above, population estimates for married mothers using the revised FES have yet to be reported and it should be further
noted that even if these estimates were present, no testing has yet demonstrated standard deviations from the mean as a valid indicator of clinically significant marital discord.

Question B: What Is the Proportion of Depressive Symptoms?

Depressive symptoms were measured by both the CES-D and the CIDI-SF. Each was administered at different time points because national researchers were not focused on understanding changes in maternal depression. Each measure has strengths in assessing the level and significance of depressive symptoms. The CES-D is one of the most commonly used measures of depression or depressive symptoms in the research literature. Common usage of the CES-D and its ability to hone in on current mood constitute two reasons for its strength as a measure of depression. The CIDI-SF is strong in that it has the capacity not only to describe certain depressive symptoms, but to provide sufficient information to make a clinical DSM diagnosis on the basis of major depression having occurred within the past year. As with the use of two different measures of marital discord, comparisons between the two time points with the two different measures must be made tentatively. Each scale focuses on unique characteristics and therefore cannot be reliably compared. However, given the face value of the two scores as indicators of depressive symptoms, it appears that the proportion of depression remains relatively consistent between the two time periods.
10-Month Depressive Symptoms

EHS mother depression scores on the CES-D were calculated in both total and item mean score formats. The CES-D scores can be interpreted in different ways depending on clinical significance of symptoms.

Myers and Weissman (1980) as well as Radloff (1977) recommended a total score of 16 (.73 on a 0 to 3 scale if scoring an individual mean item) as indicative of depressive symptoms. Under this condition, 36.2% of EHS married mothers (n = 132) experienced depressive symptoms in the past week at the 10-month assessment point. Radloff and Locke (1986) later stated that scores above 23 (1.05 if translated to individual item mean score) were high enough to constitute some need for psychotherapy as well as a clinical depression diagnosis. Under this criterion, around 18% reported depression. Still, others (Barnes & Prosen, 1984; Devins & Orme, 1985) have suggested a range of scores to distinguish depressive symptom severity with mild (16 - 20.9), moderate (21 - 30.9), and severe (31 - 60) designations. According to these designations, 14.8% would have been characterized as mildly depressed, while 11.9% and 9.5% would be characterized as moderately and severely depressed, respectively.

24-Month Depressive Symptoms

Scores on the CIDI-SF were interpreted in two ways according to its authors’ recommendations (R. Kessler & D. Mroczek, personal communication, February, 22, 1994). Before interpretation, scores ranging from 0 to 7 were designated to participant “yes” responses based on experiencing some specific symptom meeting DSM-IV.
depression criteria. In the first scoring technique, scores from 0 to 2 were considered probable non-cases of depression, while scores 3 and above were probable cases. In the other scoring technique, each value was assigned an increasing probability score of depression. According to method one, 30% of the sample, excluding missing cases, would have likely been diagnosed with major depression having occurred within the past year. According to method two, 69% would have had a zero probability of major depression, with 4.5% between 0 and 55% probability, 7.5% between 56% and 81% probability, and 19% between 82% and 91% probability.

Question C: What Is the Proportion of Both High Discord and High Depression?

Measures of depression and marital discord were obtained at the 10- and 24-month points. The proportion of EHS married mothers who reported both depression and discordant marriages provides important therapeutic information about the etiology of the other condition. However, analyzing the meaning for therapy of both constructs considered mutually, as measured by the chosen scales, falls beyond the scope of this thesis. Further, direct comparison of the results between the two time points cannot be made because different measures of depression and marital discord were used at the different time points.

At the 10-month point, the CES-D and the FCS were used to measure both. As stated earlier, different interpretation guidelines can be used for both measures. Therefore, consideration of the most conservative and most liberal estimates from the
above listed scales on a continuum representing the most mild to the most severe indicated that between 5.3% and 20% of all EHS married mothers were both clinically depressed and maritally discordant.

At the 24-month point, the CIDI-SF and the FES conflict subscale were used to measure both. These measures differ in their assessment of marital conflict and depression from the FCS and the CES-D by being more sensitive to more severe forms of depression and marital conflict. As with the 10-month measures, a variety of interpretation guidelines exist for these measures creating a spectrum ranging from the most depressed and discordant couples to those with minimal depression and marital discord. This spectrum indicated that between 1% and 8.5% of all EHS married mothers were both depressed and maritally discordant.

Question D: Are There Differences in Marital Discord and Depression by Family Size?

Proportions of high marital discord, depression, or both by family size were calculated. Liberal and conservative estimates were presented to portray a range of depressive and maritally discordant symptoms. Analysis of the dependent variables at face value revealed greater proportions of depression, marital discord, and both by EHS mothers with more than one child compared to mothers with only one child. Chi-square tests were used to assess differences in proportions by family size. The Chi-square test was chosen because it allowed for testing the statistical difference between EHS married mothers by family size on the basis of clinically significant symptoms. Mothers raising
their second or greater child, compared to those raising their first, reported statistically significantly more depression and nearly statistically significantly more marital discord and depression at the 24-month point (see Table 9).

In addition, t tests were conducted because continuous data, even though it does not portray clinical significance, provides more statistical power. Also, continuous data could help in further analyses by accounting for variations in marital, parental, and child outcome variables. The t tests conducted at the 10- and 24-month points with depression and marital discord by the number of children in the family found statistically significant differences in depressive symptoms at the 24-month point. Also of note, the statistically significant differences were in the opposite direction of what was proposed. In general, EHS mothers with more children reported more depression and marital conflict than those making the initial transition to motherhood. See Table 10 for more details.

Further analysis of statistical differences in other key variables by family size were conducted using ANOVA to assess other areas in which couples differed. Results showed first-time parents differed in the following ways: both mothers and fathers were younger, \( M_{\text{father}} = 23 \) and 28, \( F(1,116) = 28.08, p = .00 \); \( M_{\text{mom}} = 20 \) and 25, \( F(1,143) = 28.69, p = .00 \); mothers were less religiously active, \( M_{\text{mom1}} = 3.10, M_{\text{mom2+}} = 2.40, F(1,144) = 4.78, p = .03 \); and fathers reported higher levels of marital conflict, \( M_{\text{father1}} = 1.85, M_{\text{father2+}} = 1.70, F(1,109) = 4.32, p = .40 \). Less religious activity by first-time mothers and more marital conflict for first-time fathers were unexpected.
Questions E and F: What Regression Analyses Predicted Marital Discord and Depression?

Pearson correlations propelled decision making regarding variables for inclusion in regression analyses. A correlation matrix (see Table 11), computed listwise to fit with the default of SPSS linear regression, guided the selection process and will be referred to throughout the following section. Correlations were presented based on data from all EHS married mothers, however, it should be noted that correlations fluctuated slightly when sample sizes decreased in order to use couple data.

Predicting Depression

Mothers only. Regression analyses were first conducted to predict depression for mothers at the 24-month assessment. Both 10-month depression and marital discord scores were statistically significantly correlated with depression scores and both were included in the regression for theoretical purposes in spite of the fact that 10-month marital discord contributed little unique variance to the total accounted for by both, Adjusted $R^2 = .24, F (2, 89) = 15.18, p = .00$.

Further selecting and testing several pre-enrollment variables alongside 10-month depression and marital discord scores improved the regression model's predictive capacity. Numerous models were tested due to: (a) the broad number of variables having previously demonstrated a statistical or theoretical link to depression, (b) statistically significant correlations between many of these pre-enrollment variables and the depression and marital discord variables already in the model, and (c) theoretical or conceptual and
Table 9
Chi-Square Tests of High Marital Discord and Maternal Depression by Number of Children

<table>
<thead>
<tr>
<th>Maternal variables</th>
<th>Number of children</th>
<th>10-mon</th>
<th>24-mon</th>
<th>( \chi^2 ) (2-tailed)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>One</td>
<td>Two or more</td>
<td></td>
<td></td>
</tr>
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<td>High marital discord</td>
<td></td>
<td>n</td>
<td>n</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10-mon</td>
<td>liberal</td>
<td>14.9%</td>
<td>15.2%</td>
<td>79</td>
<td>.00</td>
</tr>
<tr>
<td></td>
<td>conservative</td>
<td>6.4%</td>
<td>7.6%</td>
<td>79</td>
<td>.05</td>
</tr>
<tr>
<td>24-mon</td>
<td>liberal</td>
<td>15.5%</td>
<td>18.4%</td>
<td>65</td>
<td>.83</td>
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<tr>
<td></td>
<td>conservative</td>
<td>2.6%</td>
<td>3.0%</td>
<td>65</td>
<td>1.04</td>
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<tr>
<td>High depression</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10-mon</td>
<td>liberal</td>
<td>26.7%</td>
<td>41.5%</td>
<td>82</td>
<td>.29</td>
</tr>
<tr>
<td></td>
<td>conservative</td>
<td>12.2%</td>
<td>24.6%</td>
<td>82</td>
<td>2.84</td>
</tr>
<tr>
<td>24-mon</td>
<td>liberal</td>
<td>16.7%</td>
<td>37.9%</td>
<td>66</td>
<td>4.67</td>
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<tr>
<td></td>
<td>conservative</td>
<td>16.7%</td>
<td>37.9%</td>
<td>66</td>
<td>4.67</td>
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<td>High marital discord &amp;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High depression</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10-mon</td>
<td>liberal</td>
<td>18.8%</td>
<td>21.0%</td>
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<td>.09</td>
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<tr>
<td></td>
<td>conservative</td>
<td>4.1%</td>
<td>6.2%</td>
<td>81</td>
<td>.11</td>
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<tr>
<td>24-mon</td>
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<td>12.3%</td>
<td>65</td>
<td>3.34</td>
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<tr>
<td></td>
<td>conservative</td>
<td>0.0%</td>
<td>1.5%</td>
<td>65</td>
<td>.66</td>
</tr>
</tbody>
</table>

Note. Chi-square test df = 1.

* = .05
### Table 10

Results of t Tests of High Marital Discord and Maternal Depression by Number of Children

<table>
<thead>
<tr>
<th>Maternal variables</th>
<th>Means by number of children</th>
<th>Two or more</th>
<th>t</th>
<th>p (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marital discord</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10-month</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.81 (^a)</td>
<td>1.77 (^a)</td>
<td>0.33</td>
<td>0.74</td>
<td></td>
</tr>
<tr>
<td>24-month</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.73 (^a)</td>
<td>1.85 (^a)</td>
<td>-0.82</td>
<td>0.41</td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10-month</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.65 (^b)</td>
<td>0.74 (^b)</td>
<td>-0.99</td>
<td>0.33</td>
<td></td>
</tr>
<tr>
<td>24-month</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.14 (^c)</td>
<td>0.33 (^c)</td>
<td>-2.23</td>
<td>0.03*</td>
<td></td>
</tr>
</tbody>
</table>

\(^a\) mean score presented on a scale from 1 to 5
\(^b\) mean score presented on a scale from 0 to 3
\(^c\) mean score presented on a scale from 0 to 1
* = .05
Table 11

Bivariate Correlation Matrix

|                  | 1     | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20    |
|------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 24-month depression | 1     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 24-month marital discord | 2     | .21*  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 10-month depression | 3     |       | .44**| .32***|       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 10-month marital discord | 4     |       | .24* | .48**| .57** |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Avoidance        | 5     |       | .20* | .07  | .31**| .03  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Ambivalence      | 6     |       | .30**| .18  | .43**| .32**| .52** |       |       |       |       |       |       |       |       |       |       |       |       |       |
| Insecurity       | 7     |       | .27**| .13  | .41**| .17  | .92** | .81** |       |       |       |       |       |       |       |       |       |       |       |       |
| Reframing        | 8     |       | -.06 | -.02 | -.23 | -.22 | -.21 | -.33 | -.29**|       |       |       |       |       |       |       |       |       |       |       |       |
| Mastery          | 9     |       | .21* | -.28 | -.52 | -.44 | -.40 | -.48 | -.49 | -.37**|       |       |       |       |       |       |       |       |       |       |       |
| internal resources | 10    |       | -.17 | -.19 | -.46 | -.40 | -.37 | -.49 | -.48 | .82** | .84** |       |       |       |       |       |       |       |       |       |       |
| Social support   | 11    |       | -.05 | -.06 | -.08 | -.12 | -.34 | -.28 | -.36 | .30** | .18  | .29** |       |       |       |       |       |       |       |       |       |
| Community support| 12    |       | .08  | -.04 | -.16 | -.04 | -.22 | .12  | -.21 | .11   | .22  | .20  | .42** |       |       |       |       |       |       |       |       |       |
| Spiritual support | 13    |       | -.01 | -.11 | .08  | .02  | -.25 | -.26 | -.29 | .09   | .30  | .24  | .45** | .49** |       |       |       |       |       |       |       |       |       |
| external support | 14    |       | -.01 | .09  | -.12 | -.07 | -.35 | -.29 | -.37 | .24   | .28  | .31  | .86** | .72** | .78** |       |       |       |       |       |       |       |       |
| Employment hours | 15    |       | .03  | .10  | -.14 | .14  | .00  | -.08 | .04  | .11   | .03  | .08  | .00  | -.16 | -.20 | -.13 |       |       |       |       |       |       |
| Age              | 16    |       | .10  | .08  | .04  | .17  | .20  | .15  | .20  | .08   | .04  | .02  | -.18 | .10  | .19  | .01  | -.08 |       |       |       |       |       |
| Education        | 17    |       | .05  | .06  | .12  | -.10 | -.12 | -.16 | -.16 | -.26  | .27  | .32  | .18  | .23  | .33**| .30**| .07  | .08  |       |       |       |       |
| Religious affiliation | 18  |       | .04  | -.14 | .04  | .03  | .30  | .26  | .32  | -.03  | -.18 | -.13 | -.17 | -.18 | -.38**| -.30**| -.15 | .13  | -.23**|       |       |       |
| Religious activity | 19    |       | .07  | .27**| .13  | .07  | .17  | .13  | .17  | .02   | -.21 | -.12 | -.11 | -.26 | -.68**| -.40**| .20  | -.18 | -.31**| .38** |       |       |
| Parity           | 20    |       | .29**| -.05 | .16  | .08  | .14  | -.01 | .10  | .01   | -.02 | -.01 | -.04 | .09  | .09  | .04  | -.04 | .40**| .04  | .05  | -.06 |       |

Note: listwise n = 98.

* = .05

** = .01
statistical duplications observed among some of the pre-enrollment variables. Since many pre-enrollment variables shared significant conceptual and statistical correlations with pre-enrollment and later variables, statistical performance largely determined which variables were discarded.

Mothers’ ambivalent attachment attitude was the first variable selected for the final regression model. Ambivalence showed the strongest consistency in statistically significant correlations both short and long term when compared to other pre-enrollment independent variables even in comparison to the other attachment attitude indicators and was therefore selected. In spite of several pre-enrollment variables showing strong correlations to depression (i.e., avoidance, insecurity, and other internal resource variables), they were ruled out in order to avoid misspecification of the regression model likely to occur due to high intercorrelations among these independent variables and to ambivalence (see Table 11).

Parity, or having one versus two or more children, was the second variable selected for the final regression model. Parity correlated positively with both 10-month and 24-month depression scores without much intercorrelation to 10-month marital discord, pre-enrollment ambivalence, or other pre-enrollment variables, making it a strong candidate for inclusion in the full regression model.

The final specified model included mothers’ ambivalence relationship attitude and parity as pre-enrollment independent variables with marital discord and depression as 10-month independent variables. The model’s adjusted $R^2$ equaled .29, meaning that the variance of the independent variables accounted for 29% of the total variance in the
dependent 24-month depression scores, $F(4, 85) = 10.03, p = .00$. Statistical significance testing of standardized regression coefficients revealed depression, $\text{Beta} = .40, t = 3.44, p = .00$; ambivalence, $\text{Beta} = .19, t = 1.91, p = .06$; and parity, $\text{Beta} = .23, t = 2.54, p = .01$, as satisfactory while marital discord, $\text{Beta} = -.06, t = -.57, p = .57$, performed poorly.

Multicollinearity among independent variables could threaten the stability of the regression coefficients in this model given a condition index of 15, derived from eigenvalues, at the minimum cutoff recommended for possible problems (Belsley, Kuh, & Welsch, 1980). In conclusion, earlier maternal ambivalent attachment and the number of children in the family considered together enhanced the capacity of marital discord and depression in predicting later maternal depression.

**Couples data.** In general, couple variables improved the prediction of maternal depression. First, simple regression models were conducted where one maternal variable and its coinciding couple variable were separately regressed on maternal depression. Couple variables performed as well or better than maternal variables alone (after matching maternal variable alone cases with completed couple cases).

The next step involved assessing the utility of replacing couple variables for maternal variables in the maternal depression regression model. In order to make this comparison, the regression model using individual variables was tested again with the decreased number of cases found by including only couples with complete data. This led to the following minor variations in results: maternal depression and marital discord alone went from $\text{Adj } R^2 = .24, F(2, 89) = 15.18, p = .00$, to $\text{Adj } R^2 = .24, F(2, 78) = 13.37, p = .00$; and maternal ambivalence and parity added to maternal depression and marital discord
went from \( \text{Adj } R^2 = .29, F (4, 85) = 10.03, p = .00 \) to \( \text{Adj } R^2 = .29, F (4, 74) = 8.92, p = .00 \). Testing the same progression of regression models while substituting couple for individual variables produced the following results: father similarity to maternal depression and father similarity to maternal marital discord (level 1), \( \text{Adj } R^2 = .22, F (2, 78) = 12.25, p = .00 \); and father similarity to maternal ambivalence and parity added to level 1, \( \text{Adj } R^2 = .30, F (4, 72) = 9.01, p = .00 \). Standardized regression coefficient testing for this model produced the following: father similarity to maternal depression, \( \text{Beta} = .39, t = 3.27, p = .00 \); father similarity to maternal marital discord, \( \text{Beta} = -.06, t = -.50, p = .62 \); parity, \( \text{Beta} = .25, t = 2.54, p = .01 \); and father similarity to maternal ambivalence, \( \text{Beta} = .22, t = 2.05, p = .04 \). These results yield support to individual variables equaling or exceeding the capacity of couple variable to predict maternal depression.

Additional regression analyses were conducted due to many couple variables displaying identical or numerically higher correlations to maternal depression than individual variables. Mother similarity to paternal religious activity and father similarity to maternal use of reframing showed strong partial correlations to maternal depression after controlling for earlier maternal depression and marital discord, \( \text{pr} (65) = .20, p = .11 \), and \( \text{pr} (65) = .28, p = .02 \), respectively, and greatly enhanced the amount of total variance in maternal depression accounted for by other individual or couple regression models, \( \text{Adj } R^2 = .38, F (6, 67) = 8.42, p = .00 \). This regression model accounted for 9% more variance than the original maternal data only model \( (\text{Adj } R^2 = .29) \). In addition, four of the six independent variables had statistically significant standardized regression coefficients, father similarity to maternal depression, \( \text{Beta} = .41, t = 3.35, p = .00 \); father similarity to
maternal ambivalence, \( \text{Beta} = .33, t = 3.18, p = .00; \) parity, \( \text{Beta} = .23, t = 2.45, p = .02; \) and father similarity to maternal use of reframing, \( \text{Beta} = .24, t = 2.31, p = .02. \) Father similarity to maternal marital discord and mother similarity to paternal religious activity produced marginal to poor standardized regression coefficients, \( \text{Beta} = -.06, t = -.53, p = .60 \) and \( \text{Beta} = .16, t = 1.64, p = .11, \) respectively.

In addition to the above models containing strictly individual or couple variables, combining individual and couple variables further increased the capacity of the regression model to predict maternal depression. The best fit model contained three individual (maternal depression, maternal marital discord, and parity) and three couple (father similarity to maternal ambivalence, father similarity to maternal use of reframing, and mother similarity to paternal religious activity) variables. The model accounted for 40% of the total variance, \( \text{Adj } R^2 = .40, F(6,67) = 8.93, p = .00, \) in maternal depression. All regression coefficients improved in statistical significance except for mother similarity to paternal religious activity, \( \text{Beta} = .15, t = 1.52, p = .13. \) Testing multicollinearity assumptions also revealed a well fit model (Condition index = 12 derived from eigenvalues below the cutoff of 15) (Belsley et al., 1980). In summary, couple variables paired with strongly associated maternal variables predicted more variance in maternal ratings of depression than maternal variables alone. However, these findings are tempered by maternal variables in the best fit individual regression model accounting for slightly more variance than their contingent couple variables.

Predicting Marital Discord

Mothers only. Regression analyses were conducted to predict marital discord for
mothers at the 24-month assessment. At the closest data point (10-month) both marital discord and depression scores were statistically significantly correlated to later marital discord (see Table II). Again both variables were included in the regression analyses for theoretical purposes in spite of 10-month depression not contributing unique variance to the total accounted for by both, Adj $R^2 = .22$, $F (2, 89) = 13.92$, $p = .00$.

Selecting and testing several pre-enrollment variables alongside 10-month depression and marital discord scores slightly improved the regression model’s predictive capacity. As with regression models predicting depression, several pre-enrollment variables were considered on the basis of past empirical or theoretical findings. Variables chosen in the final analysis accounted for the most variance while coming closest to preserving regression analysis assumptions.

Variables measuring the use of internal resources (i.e., mastery, reframing, and a variable combining the two) appeared to be good candidates for inclusion (see Table II), until partial correlations controlling for the effects of 10-month depression and marital discord showed weak direct effects on 24-month marital discord, $r = -.11$, $p = .29$; $r = .03$, $p = .76$, $r = -.05$, $p = .65$, respectively. External support variables did not demonstrate strong zero-order or partial correlations (after controlling for 10-month depression and marital discord) with 24-month marital discord. Other pre-enrollment variables, even when promising because of near significant correlations, did not account for significant variance.

Two variables, mothers’ attachment security and religious activity, considered mutually and alongside marital discord and depression at the 10-month point provided the
best regression model fit. Religious activity performed well in the final regression model due to strong zero-order (see Table 10) and partial (controlling for 10-month depression and marital discord), \( \rho = .18, p = .09 \), correlations with 24-month marital discord. Attachment security likely performed well because of significant zero-order correlations with all variables in the regression model (see Table 11).

The final regression model accounted for the greatest variance in marital discord outcome scores, \( \text{Adj } R^2 = .29 \), while coming closest to preserving regression assumptions. This means that 29% of the total variance in 24-month marital discord scores was accounted for by the combined variance of the above-mentioned four variables in the regression model, \( F(4, 86) = 10.29, p = .00 \). Statistical significance testing of standardized regression coefficients revealed marital discord, \( \beta = .50, t = 4.64, p = .00 \), and religious activity, \( \beta = .27, t = 2.96, p = .00 \), performed satisfactorily while depression, \( \beta = .002, t = .01, p = .99 \), and attachment security, \( \beta = .003, t = .33, p = .74 \), performed poorly. Multicollinearity diagnostics computed using eigenvalues produced an index of 15, which is right at the cutoff for possible problems (Belsley et al., 1980). In summary, it appeared that preliminary maternal attachment security and religious activity considered mutually enhanced the prediction of later overt and aggressive marital discord.

**Couples data.** In general, couple variables increased the prediction of maternal marital discord. First, correlations were conducted where one maternal variable and its coinciding couple variable were separately correlated with maternal marital discord.
Couple variables performed as well or better than maternal variables alone (after matching maternal variable alone cases with completed couple cases).

The next step involved assessing the utility of replacing maternal variables with couple variables in the above-presented maternal marital discord regression model. In order to make this comparison, the regression model using individual variables was retested with the decreased number of cases found by including only couples with complete data. This led to a decrease in the amount of variance accounted for by the individual data regression model, $\text{Adj } R^2 = .25, F (4, 75) = 7.52, p = .00$. Further analysis revealed that the decrease in sample size numerically increased regression coefficients for maternal depression, $\text{Beta } = .07, t = .58, p = .57$, and attachment security, $\text{Beta } = .07, t = .65, p = .52$, while decreasing regression coefficients for marital discord, $\text{Beta } = .42, t = 3.50, p = .00$, and maternal religious activity, $\text{Beta } = .19, t = 1.89, p = .06$. Testing the same regression model while substituting couple for individual variables produced statistically significant results, $\text{Adj } R^2 = .33, F (4, 70) = 10.17, p = .00$, and accounted for 4% and 8% more variance in maternal marital discord, respectively, than regression models presented above. In the couple selected sample, two couple variables' regression coefficients were statistically significant, father similarity to maternal marital discord, $\text{Beta } = .45, t = 4.27, p = .00$, and couple mean religious activity, $\text{Beta } = .28, t = 2.67, p = .01$.

The findings of this model are tempered by concerns with multicollinearity found in an eigenvalue-derived condition index of 18, which exceeds the cutoff of 15 for potential problems (Belsley et al., 1980).
Additional regression analyses were conducted due to many couple variables displaying stronger correlations than individual variables to maternal marital discord. Dropping couple mean attachment security and replacing it with parity and father similarity to maternal employment hours per week greatly enhanced the amount of total variance accounted for in maternal marital discord, \( \text{Adj } R^2 = .38, F(5, 69) = 10.23, p = .00 \). Both of these replacements were selected because they displayed relative independence in comparison to other independent variables and father similarity to maternal employment hours showed a statistically significant partial correlation, \( r = .31, p = .007 \), to marital discord after controlling for maternal depression and earlier marital discord. This model accounted for 9% more variance than the original mother data only model (Adj \( R^2 = .29 \)) and 13% more variance than the mother data models using the complete couple data sample (Adj \( R^2 = .25 \)). Regression coefficient analysis for this model produced the following results: father similarity to maternal marital discord, \( \text{Beta} = .46, t = 4.30, p = .00 \); couple mean depression, \( \text{Beta} = .12, t = 1.11, p = .27 \); couple mean religious activity, \( \text{Beta} = .27, t = 2.64, p = .01 \); parity, \( \text{Beta} = .18, t = 1.90, p = .06 \); and father similarity to mother employment hours per week, \( \text{Beta} = .18, t = 1.84, p = .07 \). The index of multicollinearity, using eigenvalues, equaled 10, indicating independent variables fit well together in the model without excessive intercorrelations.

In addition to the above regression models containing strictly individual or couple variables, combining individual and couple variables slightly increased the amount of variance in marital discord accounted for. The best fit model contained all the variables mentioned above in the best fit couple model, except father similarity to maternal marital
discord was replaced with individual maternal marital discord. The model accounted for 40% of the total variance in maternal depression, \( \text{Adj } R^2 = .40, F (5, 69) = 10.74, p = .00. \) Regression coefficients for maternal marital discord, \( \text{Beta} = .49, t = 4.51, p = .00; \) parity, \( \text{Beta} = .18, t = 1.99, p = .05; \) and father similarity to maternal employment hours per week, \( \text{Beta} = .18, t = 1.87, p = .00, \) were statistically significant while the coefficients for couple mean depression, \( \text{Beta} = .09, t = .79, p = .48, \) and couple mean religious activity, \( \text{Beta} = .26, t = 2.62, p = .01, \) were not. Testing multicollinearity revealed independence assumptions of regression variables were met (Condition index = 13 derived from eigenvalues below the cutoff of 15) (Belsley et al., 1980). In summary, couple variables alone and paired with strongly associated maternal variables appeared to predict more variance in marital discord than maternal variables alone.
The main goal of this study was to identify the occurrence, co-occurrence, and predictive characteristics in Early Head Start (EHS) mothers and their partners of mothers' depression and marital discord. Tied to this goal has been an assertion that such information might guide marriage and family therapists' (MFTs') collaboration with EHS programs through an emphasis on marital and systemic dynamics. In general the results showed that EHS mothers were (a) slightly less depressed and maritally discordant than what might be expected, (b) more prone to experience these problems if they had more children, and (c) more accurately identified by considering couple data which included earlier marital discord, depression, religious activity, attachment attitude, and other demographic variables. The limitations of this study included weaknesses in measurement and analytic procedures largely resulting from the use of data originally organized with less complementary purposes in mind. In the future, research should address these limitations and incorporate the findings of this study into development and testing of theoretically driven marital interventions in EHS samples. The following sections are targeted at addressing these topics in order to engender capacity building of MFTs with EHS programs.
Prevalence of Marital Discord

The married mothers in this sample of Early Head Start low-income families, on the whole, did not report discordant marriages at either earlier or later points in their children’s first two years. It comes as a surprise that these mothers report less marital discord than reported in the general population (O’Leary, 1998), given the degree of stress presumed to exist in low-income marriages. Furthermore, only a relatively small proportion of the married mothers reported divorce/separation during this same time period. Marital discord, at least as far it predicts divorce, may be lower in this sample than that of the national average with a divorce rate between 40% and 67% over a 40-year period for first marriages (Bumpass & Martin, 1989; National Commission on Children, 1993). In addition, given Quinn and Odell’s (1998) report that nearly 21% of all marriages end within the first two years, it makes sense that the divorce rate found in the 2-year period of this study was lower than the average for all marriages. Also, married mothers, on the whole, or when considered separately by whether it is their first or later child, reported lower levels of marital conflict than that reported in other research of parents making the transition to parenthood (Belsky & Rovine, 1990; Cowan & Cowan, 1992).

The relatively low rates of marital discord could have been due in part to sample characteristics and attrition effects. First, the sample was comprised of highly educated, religiously active, and otherwise highly homogeneous persons (i.e., little ethnic, religious, or age diversity). These factors are often considered as buffers to marital conflict (e.g., Booth & Edwards, 1992; Bumpass et al., 1991; Call & Heaton, 1997; Dean & Gurak,
1978; Heaton & Pratt, 1990; Lehrer & Chiswick, 1993; Maneker & Rankin, 1993). Secondly, attrition effects may have resulted in missing data from those who would have otherwise reported discordant marriages. Analysis of attrition demonstrated that couples who dropped out were lower in education, religious activity, use of spiritual support, marital stability, personal mastery or self-esteem (fathers only) and tended to be non-LDS. Because some of these factors are likely to contribute to marital satisfaction (e.g., Bennun, 1986; Bumpass et al., 1991; Call & Heaton, 1997; Elder & Caspi, 1988; Kurdek, 1993; Myers & Booth, 1999; Teachman & Polonko, 1990; Thomas & Cornwall, 1990), it makes sense that those who dropped out would have reported more discordant marriages.

Although most mothers did not report highly discordant marriages or a marital separation or divorce, some mothers did. Because up to 17% and 16% of the EHS mothers completing outcome measures did report marital discord or divorce, respectively, it seems that this nevertheless represents a significant area for EHS-MFT collaboration and intervention.

### Prevalence of Maternal Depression

EHS married mothers seemed to report high levels of depression at both early and later points in their child’s first two years. At both time points, about one third of the married mothers in this sample reported clinically significant depressive symptoms. The proportion of depression symptoms reported may not be out of the ordinary for mothers in an EHS context. Many of the stressful factors EHS mothers likely face (e.g., low SES, less education, raising one or more children, and marital conflict related to less intimacy,
role strain, or parenting issues) may undermine the protective effects of marriage or social support (Beach et al., 1990, Brown & Harris, 1978; Jackson, 1992) and contribute to more depressive symptoms (Barnett & Baruch, 1987; Bird, 1997; Campbell, 1997; Finchman, 1998; Lavee et al., 1996; O’Leary et al., 1994; Weissman, 1987). Further, given sample characteristics (see discussion in prevalence of marital discord), attrition effects (see discussion in prevalence of marital discord) of more severe cases who likely dropped out, and more stringent criteria for depression probability in the later measure, mothers appeared in general to become more depressed over time. The interpretation of increasing depression in EHS married mothers could be incorrect because convergent validity testing between the CES-D and the CIDI-SF has yet to be done. Regardless of the trend over time, it seems clear that at any point in the course of EHS intervention, maternal depression is a substantial concern.

Co-Occurrence of Marital Discord and Maternal Depression

Relatively few EHS married mothers reported co-occurring, clinical marital discord and depression at either early or later time points in their child’s first two years of life. In spite of few co-occurring cases, the observation of clinically discordant marriages, in this study, appeared more closely tied to the observation of maternal depression than vice versa. Otherwise stated, 15% to 34% (at time one) and 27% (at time two) of depressed mothers (n = 131, n = 107 respectively) reported clinically discordant marriages while 27% to 95% (at time one) and 33% to 50% (at time two) of maritally discordant
mothers reported high depression. The co-occurrence found between these two factors seems to coincide with previous studies reporting an increased risk of depression in discordant marriages (Finchman, 1998; O'Leary et al., 1994; Weissman, 1987). Nevertheless, the majority of depressed mothers in this study reported supportive marital relationships at the same time they reported high depressive symptoms. This reaffirms the importance of questions about differential characteristics in depressed mothers and their contexts that lead to or cause quick resolution of symptoms or continued depression and serious disruption in marital and family interactions. Without sufficient methodological means to answer such questions in this study (e.g., repeated measures, depression duration sensitive measures, and greater steps to reduce sample attrition) inferring causality would be inappropriate. The methodological weaknesses of this study also make it difficult to comment on the observed decrease in the co-occurrence of marital discord and maternal depression from earlier to later time periods.

**Prevalence of Marital Discord and Depression by Family Size**

The findings from this study supported few important distinctions between EHS married mothers on the basis of family size. The only clearly supported such finding was that married mothers raising more than one child experienced more depression at the youngest child’s second birthday than first-time mothers. Another result worthy of mention involved mothers with more than one child reporting more serious co-occurring marital discord and depression than first-time mothers at the youngest child’s second
birthday. Although no other observations of marital discord, depression, or both showed statistically significant differences, the trends and frequencies noted in this study may be indicative of actual differences by family size seen in other studies.

In regards to marital discord, the increasing rates found in this study by increased family size seemed to match a general trend noticed in most families. Past research has established marital satisfaction at its highest before having a first child and slowly declining or eroding with the addition of children until couples “launch” all their children (Olson, 1993). Therefore, although not conclusive, the trend noticed in most families received continued support from this study. It is of interest to note that although the trend remained consistent, the rate of decline may be different from that found in previous research. For example, in Cowan’s and Cowan’s (1995) study on the transition to parenthood, the rate of marital discord was calculated at between 15% and 28% over the first 3.5 years while only 12% to 15% of first-time mothers in this study reported marital discord. Again, potential explanations for decreased marital discord in first-time mothers likely mirror those mentioned above with overall low levels of marital discord found in this study.

In regards to maternal depression, the increasing rates found in this study by increasing family size do not appear to follow trends for women in general. Although a great deal of research has highlighted initial increases in depression following the transition to motherhood, other research has shown that prevalence rates for women in general decline with age (e.g., Mirowsky & Ross, 1999). Although such research may not account for factors specific to marriage or child rearing, it still makes sense that the lack of
resources (especially financial) accompanied by the increased demands of raising more and more children likely with these mothers mirrors etiological factors hypothesized for depression (e.g., Holahan, Moos, Holahan, & Cronkite, 1999; Mirowsky & Ross, 1999). Given the detrimental effects of reduced resources on depression it should be noted that rates for first-time mothers in this study coincided with reports from previous research (Cowan & Cowan, 1995). This could mean that reduced financial resources do not foster greater depression until families have to cope with the demands of raising more than one child. Depressive symptoms did decline for all mothers over the first two years of their youngest child’s life, but it is unclear whether this had more to do with the change in depression measures, successful adaptation to stressors associated with raising children by these mothers, attrition effects, or a combination of the three.

In drawing conclusions on the basis of family size from this study, it is important to bear in mind that statistical differences between parents of firstborns and parents of laterborns showed three family characteristics relevant to marital discord and maternal depression. Compared to parents with more than one child, first-time mothers and fathers were younger and less religiously active, and first-time fathers reported more marital conflict. These factors in first-time parents represent substantive contextual differences between marriages with more than one child and marriages with only one child. These differences may reflect undeveloped or underdeveloped social, marital, and personal resources to manage stressful life events and interactions related to parenting by first-time parents. Nevertheless, in this study parents with only one child actually reported less marital conflict and depression.
Predicting Marital Discord and Maternal Depression

Several maternal variables showed promise in identifying future EHS married mothers likely to report marital discord or depression. Interestingly, in many cases the inclusion of variables with the couple as the unit of measure increased the effectiveness of predicting marital discord and depression. This finding lends support to the notion that relationship dynamics are etiologically significant in the development and/or maintenance of these negative outcomes with EHS or low-income married mothers.

Maternal Depression

The two primary conditions, marital discord and depression, theoretically and empirically proposed to predict maternal depression gave mixed results in this study. The results clearly point to depression as the strongest predictor of later depression in married mothers over a 1-year period between their children's first and second year of life. Past research and theory suggesting a central role of marital discord in the etiology and prediction of depression, however, failed to gain unequivocal support from the results of this study. When controlling for the linear effects of earlier depression, marital discord contributed little unique variance above and beyond depression alone. In spite of this finding, a large body of supporting literature seems to implicate marital discord as an etiological factor in depression even if it did not perform as a strong predictor when combined with concurrent depression in this study.
Results also support maternal ambivalence and raising more than one child as indicators further differentiating EHS married mothers’ experience of depression. Ambivalence in close relationships likely functions as a predictor of maternal depression because normal marital conflict associated with raising children would likely be accompanied by greater dysphoria and less confidence in personal ability and the availability of the other to resolve conflict if one feels ambivalence and anxiety about the marital relationship. Raising more than one child may have stood out as a good predictor because a balance of demands to social, marital, and economic coping resources likely worsened in these EHS couples and could thereby decrease resistance to depressive reactions.

Results appeared stronger when couple variables were included in the analyses. Considered together, couple similarity in greater marital discord, greater depression, less religious activity, less reframing to cope with stress, and greater relationship ambivalence represented indicators further differentiating EHS married mothers experiencing greater depression. These couple factors may have further contributed to the prediction of maternal depression by highlighting how husbands’ characteristics could serve to buffer or worsen wives’ depressive reactions to marital and life event stressors.

**Marital Discord**

Marital discord and depression, assumed to function as the best predictors of later marital discord over a 1-year period, demonstrated the proposed relations with some important clarifications. Partial correlation controlling for depression, simple bivariate correlations, and regression analyses identified earlier marital discord as the most
significant predictor of later marital discord. These same statistical procedures (partial correlation controlling for marital discord), however, failed to identify depression as a predictor of later marital discord. Removing depression assessments from the identification process in accordance with these statistical outcomes may be ill-advised because it would (a) ignore the statistically significant direct and potentially significant interaction effects observed with earlier and later marital discord, and (b) lead to developing preventive techniques uniformed by previous research demonstrating that the presence of depression in maritally discordant relationships uniquely affects subsequent interactions.

Two correlates of marital discord found in this study, in conjunction with earlier maternal depression and marital discord, could be helpful in identifying EHS mothers likely to experience continuing marital discord. Overall maternal attachment security constitutes one such correlate that may be important because, as suggested by previous research, insecure mothers are less likely to interpret themselves, their partners, or both as capable of resolving conflict or being emotionally available in stressful situations and thereby are less likely to experience effective conflict resolution. Religious activity is a good identifier of later marital conflict, perhaps for several reasons. One possible reason is that religiously active persons may recover more quickly from marital conflict interactions because they are more often taught themes such as forgiveness, kindness, service, and love, are more likely to meditate on these themes, and thereby are likely to act upon them more often.
In spite of conceptual and statistical weaknesses of couple variables created in this study, couple indicators of marital discord may add support to accurate prediction. Results were consistently more accurate in this study whether exclusive to couple variables or with some combination of couple and individual variables. Considered together, similarity in high marital discord, high depression, high religious activity, fewer hours worked per week, and having more than one child represented predictors of high marital discord. These couple conditions may have further elucidated the prediction of marital discord by highlighting critical areas where couple dissimilarity or the lack of coping resources within the couple as a whole contributes to greater conflict and deplete resources necessary for effective conflict resolution.

Limitations

Several methodological limitations of this study create potential concerns about applying these results to MFT program collaboration with EHS staff and families. Aspects of the research design, measures, and analytic procedures contribute to potential limitations. It is important to note, however, that most limitations mentioned below were the result of the author having to rely on the methods and measures selected nationally on the bases of feasibility, child development outcomes, EHS program evaluation, and other concerns related to coordinating a national study. Furthermore, a large portion of this study was exploratory in nature and dedicated to simple description of EHS mothers’ depressive and maritally discordant characteristics in a local sample. The purpose of this description was for dissemination to EHS staff and MFT programs. The following
limitations, on the whole, may not have strongly influenced these simple descriptions and exploratory analyses.

The conceptualization of the research design for this study may have omitted key steps to providing greater confidence in the above findings. First, and possibly most important to EHS programs, no consideration of triadic interactions, between mother, father, infant, and other family members, was included to explore their relation to maternal depression or marital discord. Few research studies employ methods focusing on triadic interactions (Coyne, Downey, & Boergers, 1990), rendering results weaker and less clear than studies that map the effects of complex reciprocal interactions (e.g., Dadds, Sanders, Behrens, & James, 1987). Next, this study did not use an experimental or quasi-experimental design, hindering its ability to manipulate critical variables and assess their effects by comparing program and comparison groups for marital discord and depression outcomes. Participants in this study were not randomly selected from the more general U.S. population, and therefore were highly homogeneous in several areas. Generalization of these results must be made tentatively and with confidence only in communities where similar characteristics are found. Although not ethically possible in this study, future studies involving these data will be able to distinguish causal effects of one manipulated variable (EHS program involvement) on maternal depression, marital discord, and child behavior outcomes. At this time, analysis of program effects was not allowed due to national agreements to forfeit such rights until after EHS program results are reported to the U.S. Congress. Without experimental or quasi-experimental designs, it should be noted that the use of a prospective design, such as the one used in this study, demonstrates
a temporal order of events which if accurately specified approximates the conditions of prediction if not causation.

Measurement errors in this study could attenuate results and their implications. First, measurement errors may have occurred through measurement procedures. For example, all measures were self-report in nature and could reflect participant bias. Observational data by objective parties and detailed clinical interviews could reduce the above concerns in future studies, thereby yielding more accurate results. For example, Gottman’s (1994) pairing of self-report with observational measures has increased the ability of researchers to predict divorce (Carrere & Gottman, 1999) and therefore could enhance the prediction of marital discord. Likewise, effective clinical interviewing strategies, such as those used by Hooley et al. (1986) to assess the degree of “expressed emotion” by family members, or the Adult Attachment Interview (George, Kaplan, & Main, 1985), which taps unconsciously motivated attachment behaviors, would likely increase the efficiency of predicting maternal depression. Decreasing costs, time consumption, and focus on relationships outside the parent-child relationship to understand child development were plausible reasons for not using observational and clinical interview marital measures. Next, these same reasons also contributed to the selection and sometimes reformulation of marital relationship measures which were not adequately tested for validity and reliability in previous research. For example, the marital discord measures used only a subset of items (Family Conflict Scale from the Dyadic Adjustment Scale) or a single subscale (conflict subscale from the Family Environment Scale) from previously validated measures and the Relationship Attitudes Scale was
reworded to apply to close relationships in general as opposed to one’s romantic partner. This may have been what led to some low estimates of internal consistency. Still another limitation included attrition effects. The number and characteristics of dropout couples likely would have influenced at least longitudinal analyses. In light of this limitation, longitudinal analyses may at a minimum be reflective of a small subsample of EHS continuously married mothers. Lastly, different measures assessed depression and marital discord at two separate time points, resulting in ambiguity about the degree of similarity or convergent validity. It seems clear, however, that the current research identifies couples who display depressive symptoms and overt and aggressive marital discordant behaviors. Analytical techniques were limited by the national research design and time constraints. First, sophisticated analytical procedures like structural equation modeling were not employed because of a relatively small sample size and large number of variables. Second, developmental analyses using growth curves (Karney & Bradbury, 1995) were not possible because repeated measures on key variables were not administered. Lastly, to complete this project in a timely manner, simple measures of couple similarity (couple mean scores and standardized regression residuals) were calculated for analysis. Future attempts at research addressing the effects of couple data on specific outcomes should follow guidelines outlined by Maguire (1999) in their analyses. Maguire discussed three analytic approaches (intraclass correlation, repeated measures ANOVA, and hierarchical linear modeling) that are more accurate when combining partner scores on measures with several items, can preserve the magnitude of individual partner scores as well as the
direction, and can produce a couple regression line using multiple variables to predict the similarity between spouses.

In summary, using methods designed by national researchers who are focused on child development rather than on marital relations presented the greatest limitation to fulfilling the primary purpose of this study (to provide evidence to promote a greater focus on the marital dyad in EHS programs). The array of marital measures available has likely weakened the clarity and predictive power of the above research findings. Hopefully, the strong results found in this study, in spite of the limitations in its research design, will encourage changes in future studies with similar aims.

Recommendations

Future Research

The findings and limitations of this study suggest several directions for future research. First, closer attention to the selection and use of measures and methods important to predicting marital discord and depression would presumably improve the predictive power of this and future studies. MFT programs working with a greater focus on the marital relationship in EHS populations in the future might use different measures (e.g., Dyadic Adjustment Scale and Beck Depression Inventory), repeated measures, observational methods (e.g., Gottman, 1994; Carrere & Gottman, 1999), and other techniques (Prince & Jacobson, 1995) together to yield more reliable and valid results (Whiston, 2000). Results from this study provide support for conducting better assessment of and intervention with at-risk couples in an EHS context.
Second, greater attention has been called for in past research to differentiating the types, severity, and chronicity of marital conflict and maternal depression linked to children's behaviors, parenting, and marital adjustment (e.g., Prince & Jacobson, 1995). Regarding the range of marital conflict, researchers have highlighted chronic and intense conflict as the most destructive to parent and child outcomes (e.g., Beach, Whisman, & O'Leary, 1994; Bloom et al., 1978; Grych & Finchman, 1990; Karney & Bradbury, 1995; Krishnakumar & Buehler, 2000; Reid & Crisafulli, 1990). Regarding maternal depression, effects on parenting and marital adjustment have been demonstrated on the bases of type, severity, chronicity, or recurrence of depression (e.g., Beach, Whisman, & O'Leary, 1994; Burns et al., 1994; Cohn & Campbell, 1990; Downey & Coyne, 1990; Gelfand & Teti, 1990; Gotlib et al., 1990; Prince & Jacobson, 1995). In spite of these findings, a large proportion of research characterizes marital conflict and depression as one-dimensional constructs, which leads to overly simplistic and misleading explanations of their effects on marriage and children. In the future, a more careful consideration of the multidimensional nature of these constructs and their differential effects on marriages and children is warranted. Future studies with EHS married parents should specifically study the connections between variations in marital conflict and depression and variations in infant and toddler behavioral, emotional, and cognitive outcomes. Such efforts would facilitate "joining" with national social policy makers from their perspective on healthy child development and thereby increase support for identifying and intervening in at-risk marriages.
Third, resiliency factors and other buffering dimensions of marital and family life (i.e., positive to negative exchange ratio, spiritual and extended family resources, phenomenological life altering events, etc.) are largely missing from the current study and could shed additional light on children and marriages who, in spite of maternal depression or marital discord, adapt successfully. A search for such factors pertinent to married couples and their children in EHS settings points to new research directions aimed at identification, intervention, or program evaluation.

Fourth, developing marital intervention strategies with EHS programs that target results from the current study seems like a logical next step. Current findings provide information to identify different groups on the basis of marital discord and depression and evaluate within- and between-group changes on the basis of different marital and family therapy interventions (Prince & Jacobson, 1995).

In summary, future researchers in rural EHS contexts aimed at early identification of maladaptive maternal and child outcomes or effective intervention evaluations developed from EHS-MFT collaborations would be wise to replicate some strengths of this study. Focusing on the marital dyad in maternal outcomes as observed in the formation and use of couple data, conducting further exploratory research to identify the magnitude and clustering of at-risk married mothers, and using a prospective design conducive to greater inference of causation represent strengths of the current study. Future studies may yield more effective early identification and intervention with at-risk married couples and their children in EHS settings by linking together (a) the strengths of this study, (b) the above-mentioned recommendations, and (c) more concerted efforts to
“join” national policy makers’ perspectives on child development through studies connecting marital and child outcomes.

**EHS-MFT Collaboration**

This study has attempted to bring forward, remind, and reinforce to early childhood intervention programs the importance of marital processes in adaptive child and family development. Hopefully, as a result, early childhood intervention programs will demonstrate renewed vigor in appropriating greater attention and resources to developing maritally-based interventions as well as clarifying adaptive and protective marital processes in future research. The preliminary findings and conclusions of this study provide several avenues for enhancing standard parenting-focused EHS interventions through collaboration with MFT programs. In order for these avenues to facilitate the maximum benefits and eliminate potential harm for EHS participants, certain ethical dilemmas must also be acknowledged and resolved.

**Findings-Based Marital Interventions and Their Systemic Implications**

The prevalence rates of marital discord and maternal depression, along with the variables that identify them, seem to support several theoretically rich paradigms or frameworks for building effective marital interventions. Such interventions have the capacity to enhance marital functioning and mental health while isomorphically enhancing parent, child, and overall family functioning. Life course or developmental, attachment, stress/coping, and marital discord and depression models under the umbrella of family
systems thinking all have specific connections with and could contribute to enhancing marital strengths and resiliency processes for at-risk families in EHS settings. Likely, interventions developed using aspects of all such models will provide multiple avenues (i.e., individual case management, marital seminars, EHS sponsored marital activities, marital therapy, etc.) for supporting EHS marriages with different needs. Successful implementation of any suggested strategies is more likely if EHS and MFT programs focus on effective collaboration lessons learned from previous ventures (Leitch & Thomas, 1999).

Marital discord models for depression. Discordant marriages characterized by maternal depression, found to a moderate degree in this study, likely represent a specific group of EHS couples amenable to marital discord models of depression. In treatment reviews by Beach, Whisman, and O'Leary (1994) and Prince and Jacobson (1995), various marital discord models of depression have shown better results in reducing depressive symptoms and marital conflict than individual treatments for depression alone, especially when couples reported current marital problems in connection to depressive symptoms. Prince and Jacobson (1995) also reported marital discord models of depression were most effective with less severe depression, which seems to fit well for EHS depressed mothers given that most were only mildly depressed and discordant. Specific theoretical models can be used that provide more insight into critical concepts and strategies for effective marital intervention (Beach et al., 1990; Beach, Whisman, & O'Leary, 1994; Biglan et al., 1988; Coyne, 1984, 1986; Howard & Weeks, 1995).
In marital discord models of depression, the lack of a supportive relationship is proposed to be a primary etiological factor in discordant relations and depression in women. In EHS settings, this could be characterized systemically as constraints on personal resources to provide mutual support as wives are raising young children while husbands are working long hours to meet financial needs. With these constraints, wives and husbands may become more frustrated with their roles and bring this frustration into the marital relationship. After unsuccessful attempts to elicit support from each other through conflictual communications, depressive symptoms may then function to elicit the desired marital support. The depressive symptoms may function in parenting such that mothers provide less consistent care and that fathers avoid parenting when the mother is present or resent parenting when the mother is not present. Marital interactions could then result in a child mirroring depressive or angered reactions. The child's reactions could in turn increase parent stress and depressive, conflictual interactions with each other.

Marital discord models of depression focus on marital supportiveness to facilitate change (e.g., Beach et al., 1990). EHS staff could assist married couples to share a systemic perspective of their struggles, thereby creating greater openness and support while decreasing conflict. According to Coyne (1986), assisting couples to positively reframe depression as normal, functional, helpful, or welcomed creates a paradox, thereby reducing depression. Further, EHS programs could facilitate greater marital supportiveness by organizing with MFT programs and other community resources to provide an array of activities, including seminars focusing on systemic parenting, marital
enrichment and conflict resolution, mental health, or time management; community funded retreats or activities for couples away from work and children; regular couple discussion groups on improving marriages; and marital therapy. As these activities increase the degree of marital support and warmth in a given relationship, mothers and fathers in turn will be likely to parent with greater warmth and consistency.

Attachment theories. Attachment theory could provide a fruitful paradigm for intervention building in the context of marriage and family dynamics. In this study, mother self-assessments of relationship ambivalence, avoidance, or overall security predicted maternal depression and to some degree marital discord. To a greater degree couple similarity in attachment styles produced the same results. With relations between attachment styles and maternal depression and marital discord established, attachment theory can be used to build upon marital discord models of depression and yield additional avenues for intervention with the most difficult depressed and discordant couples (Anderson et al., 1999). Still others have explicated important theoretical concepts and clinical strategies for using attachment theory in relation to family systems, couple relationships, and parenting (Byng-Hall, 1995, 1999; Greenberg & Johnson, 1988; Radojevic, 1996; Scharff & Scharff, 1991).

According to attachment theories (Anderson et al., 1999), marital relationships provide three socioemotional functions: proximity/closeness, a safe haven, and a secure base in times of stress. Individual variations in attachment reactions to stress are termed as attachment styles. Systemically, the presence of certain attachment styles will facilitate couples meeting or failing to meet attachment needs. The inability to meet attachment
needs in the marriage could then carry over into parent-child relationships, creating either inconsistent or unresponsive parenting that results in insecure child attachments.

Successful marital intervention based on attachment theories would assist partners to more fully recognize and meet each others' attachment needs. Potential interventions offered by EHS programs working with MFT programs could include facilitating (a) child care support for couples when there are physical or psychological stressors, or (b) seminars or therapy discussing partners' emotional needs, experiences that pre-date current attachment styles, typical behaviors associated with various attachment styles, and ways to more successfully meet partners' needs while getting personal needs met. In general, engendering a softer viewpoint on attachment fears of abandonment or rejection, that may be behind conflict and depression, is likely to begin the change process (Anderson et al., 1999). In turn, as couples reciprocally improve in meeting each other's needs, they will be more attuned to and able to provide for the attachment needs of their children.

Family developmental theories. Family developmental theories could further inform EHS marital interventions. EHS mothers with more than one child reported more diagnosable depression and a trend toward more overt marital conflict or discord. From this it might be inferred, in spite of research demonstrating parental struggles with the initial transition to parenthood, that family adaptations and role adjustments associated with raising more than one child in the context of limited resources magnifies discordant and depressive relationships. Clearly, interventions to reduce discordant or depressive relationships (delivered through various formats like case management, marital therapy, or
marital psychoeducation seminars) could be tailored to help EHS families meet
developmental needs by assisting (a) couples with larger families in locating additional
financial and social resources, (b) all couples to more quickly and efficiently negotiate
needed individual, marital, and family developmental adjustments through understanding
systemic principles, (c) all couples to be aware of and work through the effects of
generational development issues, and (d) all couples to become more aware of and prepare
for future individual, marital, and family developmental changes. Such marital
interventions are proposed to reduce the intensity and duration of discordant and
depressive symptoms resulting from developmentally induced stressors (child, personal,
marital, and family). Decreasing the exposure of children to these symptoms will then
likely increase parent capacities to focus on child development needs and elicit child
cooperation with parental demands.

Stress and coping models. Stress and coping are important factors in the research
literature on discordant relationships and depression. Although not overly apparent in this
research due to previously mentioned reasons, clear links have been demonstrated between
stressful life events or interactions, coping strategies employed in response by either or
both spouses, and depressive and discordant marital outcomes (e.g., Cohan & Bradbury,
1997; Holahan et al., 1999). Interventions to help parents develop more effective coping
strategies in marital interactions could involve (a) education, especially about the contexts
in which specific marital coping strategies are stress reducing or inducing (Cohan &
Bradbury, 1997); (b) skills training for personal and relationship coping, stress reduction,
and relaxation; or (c) analysis and enhancement of personal and relational strengths or
solutions. Stress entering the family system at the marital subsystem level will reverberate throughout the rest of the system (i.e., children), thereby increasing stressful interactions. Intervening to assist couples learn to more effectively reduce marital stress from using skills gained from these interventions and EHS staff examples will help parents to be more able in teaching their children relational stress management, and as a result children will learn to reduce their own stress.

**Resiliency models.** Collaboration might become even more effective by incorporating a family resiliency perspective (Walsh, 1998) into the previously discussed interventions. The absence or relative absence of marital discord, depression, or both found in most couples in this study in spite of facing stressors inherent with low income and child rearing implies that couples cope effectively or are resilient. Predictive findings from this research can then provide clues to understanding resilient processes in EHS couples. Once resiliency processes of healthy adapting couples are identified, the same processes can guide intervention strategies with couples who generally do not appear to be resilient to the same stressors. Walsh has provided several concepts and intervention strategies for strengthening resiliency processes in at-risk families which would likely benefit resiliency based intervention construction stemming from this research.

A solution-focused approach may further enhance a resiliency perspective in EHS married couples. This approach would facilitate couples assessing their marital strengths and resources in meeting life demands. Further, it would help them focus on moments where they were less discordant, depressed, or both and seek to re-create these interactions. Educating EHS married partners in their inherent present and past abilities to
organize solution-resolving personal resources could help them bolster relational processes, protecting against future occurrences of marital discord and depression. As with the other models, marital success will spill over into parenting success. In this model, parents will look for solutions to parenting concerns (as with marital concerns) instead of maintaining a problem-promoting, problem-focused perspective.

**Bridging marital models with future EHS-MFT collaboration.** Each of the aforementioned theoretical perspectives has much to offer in developing and eventually implementing marital interventions with EHS couples. The current study has identified key factors related to these perspectives predictive of maternal depression or marital discord in order to guide future intervention building. Numerous strategies could then be implemented and tested. Such a step represents a needed bridge between this study and effective EHS-MFT collaboration.

**Ethics of Early Identification and Program Implementation**

Marriage and family therapists seeking to build collaborative relationships with EHS programs must be aware of potential ethical dilemmas involved with early identification of maternal depression and discordant marriages. EHS participant early awareness of the predicted process between current personal or relational characteristics and these negative outcomes could create an array of ethical concerns. In particular, participants could become hostile, less motivated to participate in program services, or blindly buy into a socially constructed “narrative” promoting dysfunctional reactions.
Systemically, the effects of this information to EHS mothers could diminish marital, parental, community, and child resources through overaction to this narrative.

Several strategies might then be employed to reduce the likelihood of facing this dilemma. First, training and collaboration with EHS staff on how to (a) discuss the implications of this research with EHS participants, (b) identify systemic dynamics related to the precursors of marital discord and depression from this study, and (c) encourage change or services by more effectively building trust or "joining" before rushing intervention could reduce the likelihood of breaching this ethical concern. Second, because the prediction of marital discord and depression was not based solely on clinically depressed or discordant mothers, group interventions (e.g., seminars, activities) could be developed which highlight resiliency processes found to some degree in all EHS participants. Overall, creating supportive relationships between MFTs, EHS staff, and EHS participants would engender greater understanding and patience in working with this information in a productive way.

Summary

The current study is preliminary to facilitating collaborative relationships between MFT and EHS programs aimed at meeting their mutual goals of healthy child and family development. The presentation of research findings from this study is hoped to help MFT programs and therapists (a) inform EHS program staff about the degree of maritally based concerns likely in EHS families, and (b) provide clues towards the development, presentation, and implementation of intervention strategies aimed at strengthening the
quality of EHS marriages and thereby child development in EHS programs. Effective collaborations will likely result from using the information from this study as prescribed above and by following lessons learned by similar collaborative efforts (Leitch & Thomas, 1999) and couple preventive interventions (Berger & Hannah, 1999; Christensen & Heavy, 1999).


MEMORANDUM

TO: Lori Roggman
FROM: True Rubal, Secretary to the IRB
SUBJECT: Local Research Partnership for Early Head Start

The above-referenced proposal has been reviewed by this office and is exempt from further review by the Institutional Review Board. The IRB appreciates researchers who recognize the importance of ethical research conduct. While your research project does not require a signed informed consent, you should consider (a) offering a general introduction to your research goals, and (b) informing, in writing or through oral presentation, each participant as to the rights of the subject to confidentiality, privacy or withdrawal at any time from the research activities.

The research activities listed below are exempt from IRB review based on the Department of Health and Human Services (DHHS) regulations for the protection of human research subjects, 45 CFR Part 46, as amended to include provisions of the Federal Policy for the Protection of Human Subjects, June 18, 1991.

2. Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless: (a) information obtained is recorded in such a manner that human subjects can be identified, directly or through the identifiers linked to the subjects: and (b) any disclosure of human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

Your research is exempt from further review based on exemption number 2. Please keep the committee advised of any changes, adverse reactions or termination of the study. A yearly review is required of all proposals submitted to the IRB. We request that you advise us when this project is completed, otherwise we will contact you in one year from the date of this letter.
MEMORANDUM

TO: Lori Roggman

FROM: Sally Maxwell, Secretary to the IRB

SUBJECT: Local Research Partnership for Early Head Start, Phase II

The above-referenced proposal has been reviewed by this office and is exempt from further review by the Institutional Review Board. The IRB appreciates researchers who recognize the importance of ethical research conduct. While your research project does not require a signed informed consent, you should consider (a) offering a general introduction to your research goals, and (b) informing, in writing or through oral presentation, each participant as to the rights of the subject to confidentiality, privacy or withdrawal at any time from the research activities.

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MEMORANDUM

TO: Lori Roggman

FROM: True Rubal, IRB Coordinator

SUBJECT: Local Research Partnership for Early Head Start, Phase II

The above referenced proposal was reviewed and approved by the IRB. You may consider this letter to be your approval for your study.

Any deviation from this protocol will need to be resubmitted to the IRB. This includes any changes in the methodology of procedures in this protocol. A study status report (stating the continuation or conclusion of this proposal) will be due in one year from the date of this letter.

Please keep the committee advised of any changes, adverse reactions or the termination of this study. I can be reached at extension 7-1180.