A longitudinal investigation of the relationships among parental life stress, parental self-esteem, marital satisfaction, and parental depression

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A longitudinal investigation of the relationships among parental life stress, parental self-esteem, marital satisfaction, and parental depression

by

Wen-Ling Chen

A Dissertation Submitted to the Graduate Faculty in Partial Fulfillment of the Requirements for the Degree of DOCTOR OF PHILOSOPHY

Department: Human Development and Family Studies
Major: Human Development and Family Studies

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For the Graduate College

Iowa State University
Ames, Iowa
1995
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INTRODUCTION

The present study explores relationships between life stress, parental self-esteem, marital satisfaction, and parental depression. A large body of literature has focused on the interrelationships between family life stress such as financial difficulties, psychological functioning of parents, and family process. According to Rutter (1981), stress may be defined by distinguishing four basic aspects of the stress process: the stressful event itself, a force that requires change or adaptation such as strain, emotional distress, and a physiological reaction. Life stress events may be acute (e.g., accidents) or chronic (e.g., unemployment), major (bereavement) or minor, long-lasting (divorce) or brief, controllable or uncontrollable, pleasant or unpleasant. These distinctions are also linked to variations in individual reactions to stressful events and to their long-term effects.

Family development research has focused on the impact of normative and expected changes, such as the transition to parenthood, launching a young adult, or the transition to the postparental stage. Lavee, McCubbin, and Olson (1987) concluded that research on family stress has focused on the effects of unanticipated, undesired, and acute external events (e.g., death of family member, war, and natural disaster) or the influences of persistent life stressors that put long-term
demands on the family (e.g., chronic illness, economic depression, and separation).

Since 1980, considerable effort has been invested in investigating the effect of life stress such as unemployment, job loss, and financial difficulties on people's psychological functioning and on marital relations (Buss & Redburn, 1983; Conger et al., 1990; Galambos & Silbereisen, 1987; Holahan, Betak, Spearly, & Chance, 1983; Kessler, House, & Turner, 1987; Kessler, Turner, & House, 1988; McLoyd, Jayaratne, Ceballo, Borquez, 1994; Perrucci & Targ, 1988).

Earlier stress studies concentrated on the effect of a single life stress event on individuals' and family functioning. Recently, stress research has been directed towards efforts to investigate the impact of an accumulation of events, both normative and nonnormative, expected or unanticipated, and desired and unpleasant on individuals (e.g., DeLongis, 1985; Vinokur & Caplan, 1986) and families (McCubbin & Patterson, 1982; Mederer & Hill, 1983; Patterson & McCubbin, 1983). According to McCubbin and Patterson (1982), family crises generally evolve and resolve over a period of time, and families may encounter more than one stressor. Families may have to deal with consequences of both discrete life events and the overall accumulation of hardship from any ongoing issues with which they struggle from day to day.
Life Stress and Depression

Studies indicate that life stress such as income loss or unemployment may cause problems in mental and/or physical health for children and adults (Angell, 1965; Baldwin & Revenson, 1986; Dekker & Webb, 1974; Dohrenwend, 1973; Elder, 1974; Elder, Liker, & Cross, 1984; Elder, Van Nguyen, & Caspi, 1985; Lempers, Clark-Lempers, & Simons, 1989). McLoyd (1990) found that negative life events accompanied by the disruption of marital bonds may result in psychological distress (e.g., anxiety, irritability, depression). Abidin and Wilfong (1985) indicated that mothers' perceived parenting stress is strongly related to a high rate of maternal use of medical services, to illness-related behaviors, and to negative perceptions of their health status.

Horwitz (1984) indicated that people may be in danger of feeling depressed and hopeless when they have difficulties in maintaining adequate material resources. Several studies have reported emotional vulnerability of men in the face of life stress such as economic strain (Horwitz, 1984; Liker & Elder, 1983; McLoyd, 1989).

Major life events such as divorce are linked to many signs and symptoms of psychological dysfunctioning. Divorce and marital separation rank as the second and third most stressful life events in Holmes and Rahe's (1967) Schedule of
Recent Events. Research has demonstrated that the divorced and the separated have a higher rate of admission into psychiatric facilities (Bloom, 1975; Briscoe, Smith, Robins, Marten, Gaskin, 1973) and higher rates of suicide and homicide (Herman, 1977; Jacobson & Portuges, 1976) than the nondivorced and the nonseparated.

Bachrach (1975) stated that the transition from marriage to singleness is a stressor that triggers a variety of psychic traumas in people. Hunt (1966) pointed out that during the time of becoming single, an individual's self-concept may be under attack since s/he has difficulties in accommodating to the role definition of singleness. Pearlin and Johnson (1977) found that people are prone to depression when they are faced with social and economic difficulties, especially when becoming single.

Life Stress and Self-Esteem

Beck (1967) stated that depression is the consequence of a cognitive triad of negative beliefs about oneself, the world, and the future. These beliefs are utilized to deal with everyday situations, resulting in dysphoria, apathy, and withdrawal. Jahoda (1982) pointed out that life stress induced by unemployment may undermine an individual's sense of identity and purpose, and may constrict social contacts which
can provoke feelings of vulnerability and lack of confidence in oneself and in one's future. All of this may be associated with an individual's diminished mental and/or physical health. Individuals who have low self-esteem or are depressed are more likely to report ongoing stress in life domains, including friendships, family, intimate relationships, and working.

Zuckerman (1989) reported that family stress was associated with low self-esteem in both males and females. Stress from uncomfortable living conditions and physical health problems was related to low self-esteem in males. Stress related to mental health has a strong linkage to low self-esteem and low coping/self-sufficiency for both sexes.

Stress resulting from infertility is closely linked to low self-esteem (Abbey, Andrews, & Halman, 1992; Keye, 1984; Miall, 1985; Sabatelli, Meth, & Gavazzi, 1988, Wright et al., 1991). Most people regard the ability to reproduce as one of the most significant aspects of their personal identity; the inability to have a child may be treated as a personal failure that diminishes self-esteem (Matthews & Matthews, 1986).

Life Stress and Marital Satisfaction

Many studies come to the conclusion that stress may lead to marital discord (Conger et al., 1990; 1992; Liker & Elder, 1983; Liem & Liem, 1988; Moen, Kain, & Elder, 1983; Pearlin &
Johnson, 1977). Elder (1990) documented that the negative emotions associated with economic deprivation include depressed feelings and anger or hostility. In addition, rising economic pressure and forced economic adjustments predicted more hostility between husbands and wives and less warmth and support.

Life stress such as financial difficulties is a factor contributing to married couples' struggles. A study by Arguello (1989) pointed out that married couples' financial difficulties may result in less time together, increased fatigue and anxiety, more bickering and fighting over money spent, and more discussions of divorce. Of all participants in Arguello's study (1989) who had experienced a divorce, 60% indicated that finance was a major factor.

Liker and Elder (1983) found that heavy income loss during the 1930s substantially raised the level of tension in marriages and weakened marital relations by increasing temperamental behaviors, particularly by men, who as major breadwinners became worrisome, unstable, and explosive.

In a study by Dail (1986), it was observed that increased levels of overall conflict resulted from financial stress, and that this deteriorated the sexual relationship between husbands and wives. Stress caused by job loss may provoke high levels of anxiety, hostility, and depression in the unemployed which, in turn, may influence the spouses of the
Several studies documented that marital interactions are more likely to involve negative content such as complaints or criticism or negative emotional affect such as anger, hostility, or irritability when families are faced with life stress (Conger et al., 1990; Gottman, 1979; Margolin & Wampold, 1981). These negative exchanges in marital interactions have been found to have significant effects on marital satisfaction and distress (Conger et al., 1990; Filsinger, Thoma, 1988; Levenson & Gottman, 1985).

In essence, people are more likely to have problems in marriage when they are in distress due to excessive life stress (Elder, Liker, & Jaworski, 1984; Liker & Elder, 1983). Larson (1984) reported that life stress such as unemployment resulted in low marital adjustment, poor marital communication, and low satisfaction and harmony in family relations. Liker and Elder (1983) found that income loss during the early 1930s was positively correlated with marital tension later in the decade. Chronic financial strain is strongly associated with marital tension or conflict both concurrently and prospectively.
Many studies have come to the conclusion that one's self-concept plays an instrumental role in the quality of one's marital relationship (Aller, 1962; Guisinger, Cowan, & Schulberg, 1989; Pittman, Price-Bonham, & McKenry, 1983; Schafer & Keith, 1984; Sharpley & Kahn, 1980; Tharp, 1963). For instance, Pittman, Price-Bonham, and McKenry (1983) found that self-esteem was positively related to married people's favorable evaluations of their own marriages.

They found that self-esteem had an indirect effect on marital cohesion, through spousal hostility and self-disclosure anxiety. Low self-esteem may contribute to individuals' hostility towards their spouses during interaction episodes with the result that their spouses are less likely to feel comfortable in expressing their own thoughts.

Pittman et al. (1983) speculated that individuals with high self-esteem are less likely to suffer from self-disclosure anxiety during spousal interactions because they are less sensitive to subtle rejection cues. Brodbar-Nemzer (1986), investigating the relationship between self-esteem and marital relationships among Jewish and non-Jewish families, found a significant positive association between self-esteem and marital relationships.
Low self-esteem may lead to severe depression or suicide (Gaylen, 1979), divorce (Freudenberg & North, 1985), battering or child abuse (Gelles, 1973), and low marital satisfaction (Goldstein & Rosenbaum, 1985). Rochlin (1973) suggested that violence is more likely to occur when one's self-image is under attack. A study by Goldstein and Rosenbaum (1985) found that abusive husbands had significantly lower self-esteem than non-abusive satisfactorily married men. These abusive husbands perceived significantly more situations as damaging their self-esteem than did their counterparts, and they also had significantly lower marital satisfaction.

Self-Esteem and Depression

Individuals who have low self-esteem tend to report symptoms of depression or other psychiatric disorders (Pearlin & Schooler, 1978). Billings and Moos (1982) hypothesized that low self-esteem may have a direct or an indirect effect on depression because greater self-esteem may have a buffering effect by fostering social resources and effective coping.

Robertson and Simons (1989) showed that low self-esteem has a significant concurrent association with depression. Beck (1967) stated that a negative view of oneself is one fundamental component of the three elements of the cognitive triad which together precipitate depression. Quite a few
studies have documented the association between depression and low self-esteem in individuals (Battle, 1980; Lewinsohn, Steinmetz, Larson, & Franklin, 1981; Robertson & Simons, 1989; Simons & Murphy, 1985; Strober, Green, & Carlson, 1981; Teri, 1982). A study by Brown, Harris, and Bifulco (1986) showed that the perceptions of worthlessness and low self-esteem may cause a person to respond to life events with feelings of helplessness and depression.

People with relatively stable and high levels of self-esteem may suffer from depressive symptomatology when they encounter a significant decline in self-esteem. Low self-esteem should not be considered a personality characteristic of the depressed individual but should be seen as a precipitant factor for the onset of depression. Brown, Harris, and Bifulco (1986) claimed that chronic low self-esteem results in people feeling overwhelmed, helpless, and depressed when facing significant life stress.

Epstein (1976) reported that diminished self-esteem was found to coexist with increased feelings of unhappiness, fatigue, and withdrawal. In a study of adolescents, Bonaguro and Bonaguro (1987) reported a significant relation between self-esteem and distress symptomatology. A study by Zuckerman (1989) revealed that in both men and women feelings of decreased self-confidence, self-worth, and coping ability/self-sufficiency were linked to more depression,
anxiety, withdrawal, and anger.

Pearlin and his associates (Pearlin, Lieberman, Menaghan, & Mullan, 1981) documented that life stress may influence depression through self-esteem. They argued that hardship may play a role as a testimony to one's incapability of success or to one's failure to avoid problems, and may challenge individuals' conceptions of self-worth and of being in control of one's life. When an individual is confronted with stress s/he is particularly vulnerable to the loss of self-esteem. Pearlin, Lieberman, Menaghan, and Mullan (1981) argued that such a vulnerability may emerge as a critical factor in the causal process leading to depression.

Marital Satisfaction and Depression

Research has shown that marital difficulties may contribute to the level of distress in married couples (Paykel et al., 1969; Rounsaville, Prusoff, & Weissman, 1980; Rounsaville, Weissman, Prusoff, & Herceg-Baron, 1979). Coyne and Downey (1991) showed that acute stress and chronic strains of daily life may impair an individual's functioning through the conflicts and disruptions that stress and strains create in one's close social relationships. Stress may reduce the likelihood of forming close emotional bonds in marriage and result in fewer opportunities for spouses to share
responsibility and to provide emotional support.

Campbell, Converse, and Rogers (1976) suggested that marital problems, and the feelings of distress associated with them, are critical contributors to more pervasive feelings of depression and dissatisfaction. Patterson (1988) stated that there may be an increase in density of irritable and hostile interactions between family members when life stress increases. He pointed out that negative interactions among family members often involve a negative reinforcement mechanism in which aggressive, hostile, punitive behaviors are employed as a means to control another family member.

Recent studies confirmed Elder's (1974) finding that economic downturns are linked to depressive moods in both husbands and wives, which in turn, lead to marital discord (Conger et al., 1990; 1992). Elder (1990) indicated that husbands became angry and hostile toward wives in response to greater financial pressure. Marital exchanges were marked by sarcasm, outbursts of frustration, and yelling as the result of the financial pressure which made men more irritable and explosive.

Marital difficulties are regarded as a major life stressor for married individuals, especially married women. Brown, Bhorlchain, and Harris (1975) argued that emotional, intimate relationships such as marital relationships play an influential role in women's well-being. The absence of an
intimate, confiding relationship with the spouse may put an individual at the risk of depression when facing life stress. Research studies have documented that, within marriage, women are 1.6 to 3 times more likely to be depressed than men (Weissman & Klerman, 1977) and that married women are at a higher risk for depression than single women (Overall, 1971).

The association between interpersonal problems such as marital maladjustment and depression for married women has been clearly documented (Brown et al., 1975; Coleman & Miller, 1975; Weissman & Paykel, 1974). There is a controversy as to the nature of the relationship between marital problems and depression in women. Paykel et al. (1969) demonstrated that marital difficulties are the events most likely reported by depressed women prior to the onset of depression. Weissman and Paykel (1974) reported that, compared with nondepressed women, depressed women are more apt to have difficulties in their marital relationships.

Although marital problems may precipitate depression, depression also often precedes and contributes to marital disruption and marital dissolution (Briscoe & Smith, 1973). Therefore, marital difficulties can lead to depression as well as result from depression.

Lavee, McCubbin, and Olson (1987) suggested that family life strain is an intervening factor between life events, either normative or nonnormative, and a decrease in family
functioning. Intrafamily strain decreases spouses' perceptions of marital adjustment. Individuals experience less marital unity and a poor fit between spouses when they have problems performing family roles in parenting, accomplishing certain household chores, and maintaining good interpersonal relationships with their in-laws, children or spouses.

Lavee, McCubbin, and Olson (1987) found that family members' physical, psychological, and social functioning is affected by the strength of the marital unit, which may protect family members from the assault of life strains caused by life events. Sacco, Dumont, and Dow (1993) concluded that longer or recurring depressive episodes should result in a more elaborate negative schema of the depressed partner, which would predict greater relationship dissatisfaction and more negative affect toward the depressed person.

Rook, Dooley, and Catalano (1991) indicated that the quality of marital relationship appears to mediate between life stress such as job insecurity and distress. When people are faced with stressful life events, social support is thought to be a coping resource, and spousal support is viewed as the principal support system for individuals (Belsky, 1981; Belsky & Vondra, 1989). Spousal support is regarded as the most important source of social support due to the nature of the marital relationship (Bedsworth & Molen, 1982).
Although the marital relationship may act as a buffering agent against the effect of life stress on people, several lines of evidence lead to the conclusion that marital difficulties may contribute to individuals' psychological distress such as depression (Coleman & Miller, 1975; Kahn, Coyne, & Margolin, 1985; Merikangas, Prusoff, Kupfer, & Frank, 1985; Rounsaville et al., 1979; 1980).

Hypotheses

Recently, the complexity of the stress-illness process has been getting more attention. Many efforts have been made to examine the association between life stressors, resources, and distress symptomatology. How resources modulate the effects of life stressors on stress symptomatology has become a vigorous research area (Dean & Lin, 1977; Ensel & Lin, 1991; Gore, 1978).

Ensel and Lin (1991) proposed an integrated approach to the stress-resources-distress paradigm. They elaborated different models of how social and psychological resources, or the lack thereof, might influence the effects of stressors on distress. All of the models Ensel and Lin (1991) developed were based on the distinction between two fundamental functions of socio-psychological resources: a deterring and a coping function. A resource such as self-esteem or marital
support functions as a deterrent if it reduces the likelihood of the occurrence of an external stressor or the stressful meaning of such an external event. As such, the resource acts as an active agent antecedent to whatever stressful event might occur. In its coping function, a resource intervenes in the stress-distress process to mediate or buffer the negative effects of stress on distress; in this function the resource acts as a reactive agent, consequent to whatever stressful events might have occurred.

Based on this fundamental functional distinction of how socio-psychological resources might influence the stress-distress process, Ensel and Lin (1991) developed six specific models, three deterring and three coping models. The three deterring models are the independent model, the stress-suppressing model, and the stress-conditioning model. In the independent model, resources safeguard against the occurrence of distress independent of whether or not stressful life-events occur. In the stress-suppressing model, resources act to protect against the occurrence of both stressful life-events and distress, and in the stress-conditioning model, low levels of present resources interact with later occurring stressful life-events to produce higher levels of subsequent distress.

The three coping models are the deterioration model, the counteractive model, and the buffering model. In the
deterioration model, stressful life-events reduce resources and thus lead to increased distress; in the counteractive model, increases in distress resulting from stressful life-events are offset by increases in resources, also resulting from the stressful life-events; in the interactive buffering model, it is predicted that stressful life-events only have an effect when the stress is high and the level of resources is low (Ensel & Lin, 1991). While there is ample evidence that social support serves as an important component in stress-deterring and coping models, the relationship between personality resources such as self-esteem and distress is less clear.

The present study formulates a model in which life stress serves as an exogenous variable, and parental self-esteem, parental marital satisfaction, and parental depression are endogenous variables. The purpose of the present study is to investigate the accumulated effect of life event stressors on parental self-esteem, parental marital satisfaction, and parental depression and how these variables relate to one another both cross-sectionally and longitudinally.

The following hypotheses are evaluated in the present study: (1) parental life stress has a positive effect on parental depression, (2) parental life stress has a negative effect on parental self-esteem, (3) parental life stress has a negative effect on parental marital satisfaction, (4) parental
self-esteem acts as a mediator variable between parental life stress and parental depression, and (5) parental marital satisfaction functions as a mediator variable between parental life stress and parental depression.

Figure 1 shows the proposed model. Following Ensel and Lin's (1991) terminology, the model is a deterioration model. In the model, parental life stress is hypothesized to increase parental depression (path 1) and to decrease parental self-esteem (path 2) and parental marital satisfaction (path 3). Parental self-esteem and parental marital satisfaction are predicted to decrease parental depression (path 4 and path 5).

However, because life stress is predicted to decrease parental self-esteem and parental marital satisfaction, the latter two variables have less of a buffering effect in decreasing depression than would have been the case, if life stress had not decreased self-esteem and marital satisfaction. Parental life stress, therefore, in addition to having a direct influence on parental depression (path 1), is predicted to influence parental depression indirectly through decreasing parental self-esteem (path 2 and path 4) and marital satisfaction (path 3 and path 5).

The model thus predicts that parental self-esteem and parental marital satisfaction function as mediator variables in the relationship between life stress and depression. Baron and Kenny defined a mediator variable as "a third variable,
Figure 1. Path-analytic model of the effects of parental life stress on parental self-esteem, marital satisfaction, and parental depression.
which represents the generative mechanism through which the focal independent variable is able to influence the dependent variable of interest." (1986, pp. 1173). Whether or not parental self-esteem and parental marital satisfaction function as mediator variables will be evaluated using the analytic procedure suggested by Baron and Kenny (1986) to test for mediation.

Therefore, the following regressions will be performed: parental depression will be regressed on parental life stress to establish that the predictor variable affects the criterion variable; parental self-esteem and parental marital satisfaction will be regressed on parental life stress to show that the predictor variable affects each of the supposed mediator variables; and finally, parental depression will be regressed on parental life stress, self-esteem, and marital satisfaction together to determine that the mediator variables when combined with the predictor variable significantly affect the criterion variable, and that the effect of the predictor variable on the criterion variable is significantly less when combined with the mediator variables than when not combined with them (the first versus the third regression). When all of these conditions are obtained, mediation will have been indicated.

In addition to the proposed model, a fully recursive model will be tested (see Figure 2). The main difference
Figure 2. Fully recursive path-analytic model of the effects of parental life stress on parental self-esteem, parental marital satisfaction, and parental depression.
between the proposed model and the fully recursive model is that in the fully recursive model there is also a path from parental self-esteem to parental marital satisfaction, suggesting that parental self-esteem acts as a mediator variable between parental life stress and parental marital satisfaction.

The fully recursive model is a less parsimonious model than the hypothesized model because it includes one more path. One of the reasons to evaluate both models is to see if the amount of variance accounted for in the two models differs significantly. If, for example, more of the variance in parental marital satisfaction would be accounted for in the fully recursive model than in the more parsimonious hypothesized model, that finding would indicate that life stress has an indirect effect on marital satisfaction through self-esteem.
There is a wide-ranging theoretical and empirical literature on life stress and illness (Dohrenwend, 1975; Lazarus, 1966; Lazarus & Folkman, 1984). Vega, Kolody, and Valle (1988) stated that the notion of stress as an etiological agent in illness derives from the conceptualization that as an increasing demand level is experienced by an individual, there are concomitant changes in biochemical and psychological functioning.

According to the definition by Lazarus and Folkman, stress is "a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being" (1984, pp. 19). Lazarus (1993) described the stress process in terms of four concepts: 1. a causal external or internal agent, which may be called stress or a stressor; 2. an evaluation (by a mind or a physiological system) that distinguishes what is threatening or noxious from what is benign; 3. coping processes used by the mind (or body) to deal with stressful demands; and 4. a complex pattern of effects on mind and body, often referred to as the stress reaction.

Morse and Furst (1982) subcategorized stressors into three types: physical, psychological and social. Physical stressors include external factors, such as drugs, pollutants,
bacteria, viruses, radiation, noise, trauma, and exercise. Psychological stressors include intense emotions, influenced by an individual's perception, which may be realistic, exaggerated, or imagined. These emotions include anxiety, guilt, fear, frustration, hate, and sadness. Social stressors are externally induced by the interaction of the individual with the environment (e.g., job loss, divorce, or death of a spouse).

Although stress is necessary for normal development and optimal functioning for all individuals (Smith, 1977; Tanner, 1978), each individual has a repertoire of psychological mechanisms and external resources that can be used to manage environmental stressors before they overwhelm the individual. These coping capacities, at the personal level, often include basic defensive strategies, such as changing the meaning of the situation so as to change its stressful implications; or taking actions to mitigate, manipulate, or remove the stressor.

Some coping responses may be self-defeating because they involve strong emotional and behavioral reactions that may actually increase the severity of a stressful reaction. Therefore, Vega, Kolody, and Valle (1988) concluded that a premise of the stress-illness paradigm is that stressors are only pathogenic to the extent that they exceed the coping capacity of the individual, and that differential coping
ability will covary systematically with illness outcomes.

The large body of research on stress is heavily focused on the etiology of physical and psychological disorders (Baum, Grunberg, & Singer, 1982; Dohrenwend & Dohrenwend, 1974; Pearlin & Johnson, 1977; Rabin & Struening, 1976; Sowa & Barsanti, 1986; Thoits, 1983). Sowa and Barsanti (1986) summarized that there are two theoretical positions in this area of research. The first position suggests that the association between life events and psychosomatic disorders is dependent upon the amount of change required by stressful life events (Paykel, Prusoff, & Uhlenhuth, 1971; Selye, 1974); a person's stress level is assessed by the accumulation of stressors in an individual's life.

The second position highlights the role of subjective appraisal in the relationship between life events and illness (Cox, 1978). It is postulated that an individual's stress level is determined by his/her perceptions of encountered life events. Sowa and Barsanti (1986) concluded that stress is measured in terms of experienced life events in both positions.

Many studies have documented that undesired or unpleasant events have a damaging effect on peoples' psychological and physical well-being (Brown & Harris, 1978; Bryne & Whyte, 1980; Sowa & Barsanti, 1986). Stressful life events may include such conditions as scarce material resources or
unfavorable life changes, such as divorce or death in the family. Limited economic resources and financial uncertainty are regarded as one of the primary sources of stress. Family life stress induced by the situation of unemployment and/or economic deprivation is one of the important antecedent events to disruptive family functioning (Conger et al., 1990; 1992; Lempers, Clark-Lempers, & Simons, 1989).

Voydanoff, Donnelly, and Fine (1988) summarized the findings of research on the effects of unemployment. They stated that when one of the family members encounters unemployment, family routines may be disrupted and family income may be threatened. The amount of time family members spend together and existing family structures and patterns of family activities may be forced to change. Income loss may undermine the family's standard of living. Consequently, family life may suffer.

Another stressful life-event is divorce. A positive association exists between life stress caused by divorce and depressive symptoms (Holmes & Rahe, 1967; Paykel, Prusoff, & Uhlenhuth, 1971). Divorce is seen as one of the most significant stressful life events precipitating the manifestation of depressive symptoms (Holmes & Rahe, 1967; Paykel et al., 1969).

Chiriboga and Krystal (1985) stated the reasons why divorce is an important subject of clinical investigation.
One reason is the degree of stress evoked by divorce. Divorce is regarded as a stressor with tremendous intensity (Holmes & Rahe, 1967). The other reason is that as a loss-related stress, divorce may precipitate the pathogenic sequence which may cause depression and other symptoms of distress (Brown & Harris, 1978).

Some studies argued that the association between divorce and depression comes about because divorce is a factor precipitating depression (Briscoe, Smith, Robins, Marten, & Gaskin, 1973; Gallemore & Wilson, 1971). According to Feighner et al. (1972), depression was the most frequently diagnosed psychiatric disorder in a representative sample of divorced people. Of the divorced depressives, 96% had an episode of depression connected with their separation or divorce. In addition, 90% of those divorced depressives who had episodes of depression before their marital dissolutions, also were depressed at the time of separation or divorce. The male to female ratio for this diagnosis was about 1:2; women most frequently had an episode of depression at the time of their separation while men were most frequently depressed at the time of divorce.

Briscoe, Smith, Robins, Marten, and Gaskin (1973) documented that depression and antisocial personality in both men and women, and hysteria in women, occurred more frequently in the divorced than in the never divorced control group.
They also reported that among their divorced sample, 40% of the women and 21% of the men were diagnosed as definitely depressive.

Briscoe and Smith (1973) conducted a study comparing divorced depressives to a group of widows and widowers, and to a group of psychiatric inpatients all of whom were classified as depressive. The results indicated that the group of divorced depressives and the group of the bereaved had episodes of depression associated with stressful life events such as divorce and the death of a spouse, and the group of psychiatric inpatients had no apparent stressful life events prior to, or coincidental with, the onset of their depressive symptomatology.

Illness of one member of the family, another stressful life event, has an impact not only on the patient but also on the entire family. "From a system perspective, when illness occurs in the family, the effects are not confined to the sick individual but reverberate through the family system" (Northouse & Swain, 1987, pp. 221). When a family member becomes ill, the whole family may be faced with difficulties and changes in each member's roles and responsibilities (Craven & Sharp, 1972; Livesey, 1972).

The effects of an illness on the patient and his/her family can be very stressful. The spouse of the patient may be under tremendous stress to maintain effective family
functioning. Bedsworth and Molen (1982) stated that the spouses of the ill may be dealing with the demands of a changing role and financial instability, and may be exhausted by negative emotions and symptoms.

Stern and Pascale (1979) questioned 25 spouses of patients with myocardial infarction (MI) and found that these spouses, most of them wives, tended to report symptoms including depression, anxiety, concerns about the patient's survival and about finances, and guilt about having caused the MI. A study by Skelton and Dominian (1973) revealed that the wives of patients with MI reported feelings of panic, threat of loss, fear of recurrence, guilt, self-blame, depression, anxiety, and overwork. Many patients' wives suffered from sleep and appetite disturbances, and 26% reported psychosomatic symptoms including headaches, stomach pains, faintness, heart symptoms, chest pains, and palpitation.

Stress may also arise from work conditions such as heavy work loads, underutilization of abilities, lack of participation in decision making, health and safety hazards, the threat of unemployment, and the responsibilities for the safety and well-being of others (McLean, 1979; Shastak, 1980). It is argued that stress at work may have a direct effect on the workers' non-work performance such as their ability to perform household tasks, to provide spousal support and to engage in leisure activities (Burke & Greenhaus, 1987).
As indicated before, the relationship of stressful life events to depressive symptomatology has been a research focus during the past few decades. Several studies have shown positive relationships between life stress and anxiety, psychological distress, and depression (Dekker & Webb, 1974; Dohrenwend, 1973; Elder, 1974; Elder, Liker, & Cross, 1984; Elder, Van Nguyen, & Caspi, 1985; Lempers, Clark-Lempers, & Simons, 1989). Drastic changes such as unemployment may have adverse effects on men, leading to negative emotional states such as lowered morale, depression, and anxiety (Conger et al., 1990; 1992; Elder, Caspi, & Van Nguyen, 1985; Eisenberg & Lazarsfeld, 1938).

Jahoda (1979) described the effects of stress induced by life events such as unemployment as demoralization, resignation, loss of self-esteem, and depression. Gore (1978) found that unemployed men who lacked perceived support from their families, friends, and relatives in the face of unemployment were more depressed and physically ill than those who felt supported. It has also been documented that African American women who experienced unemployment or job loss suffered a greater number of depressive symptoms than their employed counterparts (Brown & Gary, 1988; Thompson & Ensminger, 1989).
Pearlin and his colleagues (1981) argued that adverse work conditions such as work overload may be regarded as a source of life stress, and that persistent negative working conditions may cause global stress reactions such as depression in the long run. Galambos and Walters (1992) found that women's work-related stress was found to be a mediator linking work strains such as inflexible working schedules and long work hours and stress reactions such as depression.

Keith and Schafer (1983) found that wives in dual-earner families benefitted from having a strong work orientation, but at the same time spending more hours at work was a source of depression. Women who spend more time at work may experience role overload, and tasks typically performed by wives at home may be done less often or not at all and may become sources of distress.

Keith and Schafer (1983) suggested that individuals' work time may have an indirect effect on their spouses' well-being through its negative impact on perceptions of life in two-earner families. In addition, potential sources of job-related strain may have a differential effect on males and females. For example, spending more time at work was stressful for women but not for men, whereas lower job satisfaction had a greater impact on depression among men.

Parenting itself can be a stressful life event (Gibaud-Wallston & Wandersman, 1978), and child problems may be
regarded as an important dimension of stress (Weinberg & Richardson, 1981). Raising a child with a handicap or behavioral problems may create ongoing stress for parents which may lead to parental depression (Mash & Johnston, 1983; Patterson, 1980).

Mothers of children exhibiting problems such as hyperactivity and conduct disorders or handicapping conditions such as cerebral palsy, epilepsy, and developmental delay consider their lives to be more stressful; they are less rewarded and receive considerably less positive feedback than mothers of normal children (Kogan, Tyler, & Turner, 1974; Long & Moore, 1979; Patterson, 1980). Child problems at a very early age are also found to be associated with mother's emotions and perceptions. Blumberg (1980) indicated that mothers of infants at high levels of neonatal risk demonstrated higher levels of depression and anxiety. As stated by Patterson (1980), mothers of aggressive boys tend to have a negative self-image and low self-esteem and experience feelings of depression, anxiety, fatigue, and isolation.

Overall, the evidence clearly supports the conclusion that there is a strong interrelation between life stress and elevated levels of depression, anxiety, and life dissatisfaction both in men and women (Buss & Redburn, 1983; Gary, 1985; Holahan, Betak, Speary, & Chance, 1983).
Self-esteem is a central focus of research examining human personality. There are several conceptualizations of self-esteem. According to the structural perspective, self-esteem is defined as a global positive or negative self-assessment (e.g., Coopersmith, 1967; Rosenberg, 1965; 1979). According to a more process-oriented perspective (Savin-Williams & Demo, 1983), self-esteem is seen as a fluctuating self-attitude that resembles a baseline or standard self-evaluation, but that also shows situational fluctuations from this baseline as a function of changing roles, expectations, performances, responses from others, and other situational characteristics. Therefore, individuals may have a generally favorable attitude toward themselves, possess self-respect, and consider themselves persons of worth, but on certain days and in particular situations they may have better or worse feelings about themselves than is typically the case.

Self-esteem is a judgment or estimate of one's value or self-worth representing the extent to which one feels capable, significant, successful and worthy. Coopersmith (1967) cited four sources of self-esteem: (1) power: the ability to influence and control others, (2) significance: acceptance, attention, and affection of others, (3) virtue: adherence to moral and ethical standards, and (4) competence: successful
performance in meeting demands for achievement. However, high self-esteem does not depend on success in all four sources; for instance, one may have high self-esteem through being highly powerful without being significant, virtuous or competent.

Several studies point out that people may have a low self-esteem due to life stress such as unemployment (Baruch, Barnett, & Rivers, 1983; Fineman, 1979). The way an unemployed man's family reacts to the situation has an effect on his self-esteem (Angell, 1965; Bakke, 1940; Cavan, 1959; Gore, 1978). For instance, an unemployed husband may demonstrate low self-esteem if his spouse or children blame him for losing his job.

Marital role expectation is found to be a key factor in the effect of life stress on individuals' self-esteem (Bakke, 1940; Cavan & Ranck, 1938). Bakke (1940) pointed out that traditional marital role expectations are associated with poor individual and marital adjustment to life stress caused by unemployment. Levitan (1971) argued that since traditional husbands regard themselves as breadwinners, losing their jobs may cost their power and status in the family.

Life changes such as a job change or an income loss may create a disequilibrium which requires a period of readjustment (Cannon, 1939; Selye, 1976). During the time of readjustment, people may be subject to stress and its
consequences. Pearlin et al. (1981) suggested that certain life events such as job loss may intensify more persistent strains such as economic problems in households and the event and the increased strains combine as sources of stress.

The persisting presence of stressful situations may cause damages to the insulation that protects the self against threats to it (Kaplan, 1970). According to Pearlin and his associates (1981), persistent life strains can confront people with their own failures and with inescapable proof of their inability to change the unwanted situations of their lives. Life stress serves as a testimony to one's lack of success or to the inadequacy of one's efforts to avoid problems. Consequently, the sense of lack of success or inadequacy may affect one's conceptions of self-worth and of being in control over one's personal life.

Most divorcing individuals may be at the risk of losing some fundamental elements of their self-definition in the face of marital dissolution. Landman (1986) stated that divorced people lose not only their partner but also the social definitions of themselves as married. They have lost their former identity and need to create a new one. Years of living as a spouse give an individual a self-identity as a married person and as part of a couple. For some people, this self-identity becomes so pervasive that they feel they have totally lost themselves after marital dissolution.
Life Stress and Marital Satisfaction

In contemporary family research on the relationship of economic conditions with family functioning, the linkage between life stress and the quality of the marital relationship has been documented in families encountering difficult life changes such as income loss or unemployment (Conger et al., 1990; 1992; Liker & Elder, 1983; Liem & Liem, 1988; Pearlin & Johnson, 1977).

Many studies have shown the pervasive effects of unemployment on the marital relationship. Unemployment has a negative impact on levels of family stability, on quality of family relations, on marital satisfaction and marital communication (Atkinson, Liem, & Liem, 1986; Larson, 1984). Economic distress due to unemployment may result in family financial disputes, marital tension, and low family satisfaction (Liker & Elder, 1983; Nowak & Snyder, 1984; Voydanoff, Donnelly, & Fine, 1988).

Liker and Elder (1983) showed that economic loss had a significant adverse effect on the quality of the marital relationship among middle- and working-class families. Marital discord increased under economic strain when men lacked adaptive resources and became more tense, irritable, explosive and difficult to live with. Liker and Elder (1983) concluded that heavy income loss increased financial disputes
which substantially raised the level of tensions in marriages, and heavy income loss weakened marital relations by increasing the personal instability of men. Furthermore, chronic financial strain was even more strongly associated with marital tension, both concurrently and prospectively.

In a study by Liem and Liem (1988), a significant effect of job loss on the marital relationship was found in a 7:2 ratio of separations and divorces among the unemployed as compared to the employed. Even where financial strain does not lead to separation or divorce, marital discord and conflict still increase (Moen, Kain, & Elder, 1983). Conger et al. (1992) reported a direct effect of economic hardship on parents' demoralization and emotional distress, and these conditions were found to have negative effects on the marriage and on parenting.

A study by Conger and his associates (1990) showed that economic strain increased husbands' hostility and decreased the warmth/supportiveness of husbands toward their wives when the spouses experienced difficulties in meeting their perceived needs with inadequate resources. Men's hostility was related to a greater perception of marital instability by wives and to lower levels of marital satisfaction/happiness for wives. The husband's warmth/supportiveness was related to the wife's perception of marital quality. The results revealed that the direct and indirect effects of hostility,
lack of warmth, and low marital quality accounted for 51% of the variance in these women's perceived likelihood of divorce or separation.

Some life events such as problems with work conditions may cause time pressure and constraints for husbands and wives which may decrease time for communication and sharing, lessen the intimacy in the relationship, reduce time for shared leisure activities, and reduce time spent with children. Hughes, Galinsky, and Morris (1992) reported that individuals in jobs with high pressure reported conflicting role demands and negative emotions which lead to marital tension.

Conflict regarding work and family roles negatively affects the perception of marital happiness in both employed men and women (Barling, 1986; Pleck, Graham, & Lang, 1980; Suchet & Barling, 1986). According to the "spillover" model (Bolger, DeLongis, Kessler, & Wethington, 1989), the daily tensions and satisfactions at work are linked to individuals' moods at the end of the day. Consequently, work may influence individuals' ways of interacting with their families and their perceptions of the family relationship.

Negative work conditions have been documented as one source of stress which was associated with individuals' perceptions of less satisfying family relationships, less family cohesion, and less marital satisfaction (Coverman, 1989; Repetti, 1987). Hughes, Galinsky, and Morris (1992)
concluded that negative moods link stressful job characteristics and low marital satisfaction.

In addition, a "crossover" effect of stress to marital quality has been proposed (Bolger, DeLongis, Kessler, & Wethington, 1989; Crouter, Perry-Jenkins, Huston, & Crawford, 1989; Repetti, 1989). An individual's stress at work may result in stress for his or her spouse and subsequently cause marital tension. Studies indicate that husbands' perceptions of work stress are associated with their wives' reports of negative marital interactions at the end of the day (Crouter, Perry-Jenkins, Huston, Crawford, 1989; Repetti, 1989). Wives' feelings of stress due to poor work experiences are also linked to husbands' reports of negative marital interactions (Billings & Moos, 1982).

Galambos and Silbereisen (1989) examined how each spouse's role strain induced by life stress is related to reports of marital interactions and family conflict in middle-aged dual-earner couples. It was found that husbands who experienced role strain from having difficulties in meeting family and work demands reported a lower level of marital interaction and a higher level of family conflict than their counterparts. The husband's perceptions of role strain were not related to the wife's perceptions of role strain. On the other hand, the wife's perceptions of marital interaction and family conflict were associated with the role strain of both
themselves and their spouses. Compared to wives with husbands who did not experience role strain, wives who reported that both their spouses and themselves experienced role strain had lower levels of marital interactions and greater family conflict.

Galambos and Sears (1992) also found that work overload and low rewards may spill-over into the marital adjustment. Women experiencing more work stress reported higher levels of global stress and lower levels of marital adjustment than their counterparts who experienced less work stress. Individuals who are exposed to work strains may be more likely to be in a negative mood or to be preoccupied; consequently, they may more easily get into negative marital interactions (Crouter et al., 1989; Repetti, 1989).

The relationship between work scheduling and family functioning has been a recent interest of researchers. Family characteristics have their impact on work schedules (Presser, 1984; 1987; Presser & Cain, 1983) and work schedules affect family relations (Kingston & Nock, 1987; Presser, 1986; 1988).

Based on the definitions by the Bureau of Labor Statistics, shift work is any work schedule in which more than half of the hours worked fall outside of the period between 8:00 a.m. and 4:00 p.m. (Hedges & Sekscenski, 1979). Shift work has been found to have many negative effects on workers' physical and psychological health (Mellor, 1986; Nollen, 1982)
as well as on their family relationships (Carpentire & Cazamian, 1977; Mellor, 1986; Mott, Mann, McLoughlin, & Warwick, 1965; Staines & Pleck, 1983). White and Keith (1990) demonstrated that couples' shift work has significant negative effects on several aspects of the marital and parent-child relationships. They also found that shift work increased the probability of divorce from 7% to 11% over a three-year period.

Stressful life events such as illness may also reduce marital satisfaction. Chronic illness or psychological disorder in one spouse may severely undermine the marital relationship (Krausz, 1988). Several studies concluded that the illness altered the nature of the partnership of the marital relationship through changes in roles and responsibilities (Davidson, 1979; Michela, 1981).

Michela (1981) indicated that both patients with myocardial infarction and their spouses experienced similar feelings of depression and helplessness. Davidson (1979) argued that when a family member is coping with illness, a power struggle may come about between the patient and his/her spouse. Frustration with changes of roles and responsibilities as well as anger by the spouse may result in marital strain (Waltz, 1986; Wishnie, Hackett, & Cassem, 1971).
Self-Esteem and Marital Satisfaction

A positive association between self-esteem and marital quality has been reported in several studies (Aller, 1962; Jourard, 1971; Satir, 1972; Sharpley & Kahn, 1980; Tharp, 1963). Self-esteem is deemed to be one of the significant resources contributing to the marital quality. The argument is that people with a positive self-concept viewed their marriage partners as more interesting, competent, accepting, or as having other positive qualities that contribute to marital happiness.

Blumer (1969) stated that a positive self-evaluation plays a key in successful adjustment in a variety of social relationships. Maslow (1970) argued that a self-actualized person is open and frank in his intimate relationships. A self-actualized person is an individual who accepts him/herself and accepts others. Besides, this individual tends to disclose him/herself in his/her relationships with intimate others.

Empirical evidence has shown that a positive relationship exists between self-acceptance and self-disclosure (Schumm, Figley, & Fuhs, 1981; Shapiro & Swensen, 1977). Shapiro and Swensen (1977) found that self-esteem was significantly related to the amount of self-disclosure in spousal interaction episodes. Besides, people with high self-esteem
tended to be more sensitive to their partner during interaction episodes which contributed to their marital happiness.

Pittman, Price-Bonham, and McKenry (1983) speculated that self-esteem would be positively correlated with dyadic cohesion as assessed by spousal communication and the comparison level of the marriage. Marital communication was measured by spousal hostility and self-disclosure anxiety. The comparison level of the marriage was derived from Levinger's (1965) exchange model of marital cohesion which states that general attractions within a marriage are weighted against attractions outside the marriage and barriers against dissolution of the marriage. Nye (1979) suggested that members of a couple continuously make comparisons between the reward/cost ratio within the marriage and the reward/cost ratio of alternative attractions. If a person has favorable evaluation of his/her own marriage compared to the marriages of other familiar couples, then that person may have a relatively high comparison level.

Pittman, Price-Bonham, and McKenry (1983) reported that the comparison level of the marriage was positively related to marital cohesion, that spousal hostility was negatively related to cohesion, and that self-disclosure anxiety was negatively related to cohesion. In addition, self-esteem was found to have a positive relationship with self-disclosure and
the comparison level of the marriage. Pittman, Price-Bonham and McKenry (1983) argued that although self-esteem was not a statistically significant predictor of marital cohesion, it did have an effect on marital cohesion through self-disclosure anxiety and the comparison level.

Several studies documented that the disclosure of self-relevant information to one's spouse has a positive relationship with marital satisfaction because it empowers marriage partners to coordinate necessary actions and reduces ambiguity about another's intentions and the meaning of their behavior (Burke, Weir, Harrison, 1976; Hendrick, 1981; Waring, McElrath, Lefcoe, & Weisz, 1981). Gottman, Markman, and Notarius (1977) found that distressed spouses demonstrated higher levels of reciprocity of negative behaviors than positive ones and engaged in more cross-complaining than validation statements during the self-disclosure episodes. Chelune, Rosenfeld, and Waring (1985) also found that compared with the self-disclosure of nondistressed counterparts, the self-disclosure of distressed couples showed lower levels of similarity in reciprocity patterns and less affection toward each other. More hostility, anger, and complaints between couples with low self-esteem may eventually result in low marital quality.

According to Mead's (1934) interactionist theory, the self-concept is a reflected self incorporating others'
appraisals of an individual and the individual's subjective perception of others' appraisals. The self-concept is acquired from the reactions of others through role taking in which the individual's interpretations of others' responses toward him/herself define his/her self-concept.

Schafer and Braitto (1979) indicated that individuals tend to be less effective in their marital interaction episodes or tend to feel less positive about their performances when they perceive their spouses to hold them in low self-esteem. Schafer and Keith (1984) speculated that how marriage partners perceive their spouses' feelings about themselves may be reflected in the way they approach and perform their various marital roles, the nature of their interactions with their spouses, and their evaluation of their marital relationship.

Furthermore, Schafer and Keith (1984) stated that if individuals hold negative evaluations of their spouses, they may be less likely to expect more from their spouses or to be satisfied with their spouses' contributions to marital interactions. This negative perception of their spouses may result in the spouses' negative appraisal of the marital relationship.

Schafer and Keith (1984) indicated that when the assessment of one's own and one's spouse's role performance in the marriage is regarded as an indicator of marital quality, then the self-concept is significantly associated with marital
quality. They pointed out that during the process of role taking, individuals' evaluations of themselves depend on their perceptions of their spouses' appraisals of them, and these evaluations may influence how they perceive their marital quality.

Jernigan and Heritage's (1991) study revealed a significant relationship between self-esteem of wives and the number of reported marital arguments. The data indicated that the lower the self-esteem of the wives, the more marital arguments there were. Jernigan and Heritage (1991) argue that when a person has low self-esteem s/he may become argumentative.

Self-Esteem and Depression

Low self-esteem has been regarded as a hallmark of depression for a century (Freud, 1917; James, 1880). More recently, Beck and his associates (Beck, Rush, Shaw, & Emery, 1979) and Abramson, Seligman, and Teasdale (1978) continued to highlight the role of self-esteem in the etiology of depression and depressive symptomatology. Beck (1973) pointed out that one of the defining characteristics of depression is that of a negative self-concept associated with self-reproach and self-blame. Beck (1974) argued that a depressed person not only has a negative view of himself/herself but also of
Hinchliffe, Hooper, and Roberts (1978) argue that interactional problems and misunderstandings in married couples may damage their self-esteem; consequently, they are more likely to be depressed. Schafer's (1985) research supported the notion that interaction problems in the marital relationships may harm individuals' self-concept which, in turn, may cause their depressed mood. His reasoning was that if there are role conflicts between spouses, one cannot ignore the impact this has on the self-concept of any one partner in the marriage.

Schafer (1985) pointed out that role disagreements in married couples resulted in wives assuming that their husbands evaluated them lower due to their disagreements. Wives' negative reflected self-concept, resulting from disagreements between the spouses in the marital relationship, had an effect on the wives' depressed mood. The depressed mood turned out to be the consequence of uncertainty and disruption in the wives' self-worth. Similarly, Vega, Kolody, and Valle (1988) suggested that depressive symptoms covary directly and inversely with mastery and self-esteem in a group of Mexican-American women.

Weiner and White (1982) addressed the correlation between lowered self-esteem and depression. They suggested that some older individuals are not adequately prepared to cope with
losses (i.e., status, objects, persons, etc.) in their lives; consequently, they are prone to have low self-esteem which may lead to depression. Lyons (1983) suggests that a loss of self-worth is one of the factors fostering feelings of hopelessness.

Chiriboga and Krystal (1985) classified all possible physical and psychological symptoms of their divorcing subjects into ten clusters: robust, agitated depressives, ruminative depressives, insecure depressives, anxious depressives, depressives, distressed depressives, somatic depressives (I), somatic depressives (II), and overwhelmed.

They indicated that divorcing individuals who fell into the category of robust cluster were among the lowest in self-criticism, negative self-image, dominating image, incompetent image, and vulnerable image; they were among the highest in the sense of self as masterful. The overwhelmed, on the extreme of the depressive symptomatology continuum, generally were high in self-criticism, negative self-image, sense of vulnerability, and low in feelings of being masterful. Similarly, the somatic depressives were found to be on the more maladaptive end of most self-concept measures. People in the overwhelmed or the depressive somatic group had the greatest feelings of incompetence.

Low self-esteem may result in depression or suicide (Gaylen, 1979). Ludwig (1975) conducted a study by
manipulating self-esteem through offering feedback concerning the subject's creativity and maturity on a bogus personality test. Three levels of bogus feedback were presented: "bolster" self-esteem feedback, "constant" self-esteem feedback (no information), and "reduced" self-esteem feedback. The results revealed that subjects who received a "reduced self-esteem" treatment manifested more depressed affect, while the subjects in the "bolstered" self-esteem feedback showed an increased desire for activity. From the results, Ludwig (1975) concluded that low self-esteem is a determinant of depression.

Coleman (1975) tested the causal relationship between self-esteem and depression by asking subjects to read modified Velten (1968) positive or negative self-evaluative statements and complete multiple measures of mood, behavior and cognition. It was found that subjects who read negative self-evaluative statements exhibited higher levels of depression, anxiety, and hostility, slower psychomotor speed, and decreased desire for social interaction. Therefore, Coleman (1975) claimed negative self-evaluation to be a causal antecedent to depression.

Several researchers have proposed a relationship between derived identity and depression, particularly female depression (Bernard, 1973; Carmen, Russo, & Miller, 1981; Scarf, 1980). The psychological variable of derived identity
is defined as a sense of self that is overly influenced by and dependent upon relationships with significant others (Warren & McEachren, 1985). Bernard (1973) argued that married women often discover that their roles as wives and mothers can gradually diminish their sense of self separate from their relationship with their husband and children.

Research findings have indicated that married women tend to report more depressive symptoms than single women (Warren & McEachren, 1985). Besides, nonprofessional or nonemployed women are more likely to have higher levels of depression than professional women (Radloff, 1980). Radloff (1980) stated that because professional women are engaged in occupations that generally give the type of intrinsic and extrinsic rewards which strengthen feelings of self-esteem and competence, they may protect these women against depression.

Warren and McEachren (1985) reported a significant relationship between depressive symptomatology and derived identity. Women who reported that they did few things to define themselves apart from their interpersonal relationships, were prone to have more symptoms of depression than women who reported that they did many things to define themselves. However, Warren and McEachren (1985) pointed out that the correlation between derived identity and depression does not justify a cause-effect inference.
Derived identity and depression thus have been found to be related to marital status. The possible linkage between marriage and depression for women may reflect the negative impact that marriage might have on a woman's identity. According to several researchers' interpretations, marriage may have a negative effect on a woman's psychological well-being because the wife/mother role can make it difficult for a woman to preserve an autonomous sense of herself (Bernard, 1973; Scarf, 1980; Warren & McEachren, 1985).

Marital Satisfaction and Depression

Bolger, DeLongis, Kessler, and Shilling (1989) indicated that difficulty in interpersonal relationships, the most common form of stress, may be one of the most important precipitants of depression. Depression is a dysphoric feeling state in which a person experiences sadness, hopeless, despair, and loss of interest or pleasure in anything or anyone. It was found that at least 15% of all adults between the ages of 18 and 74 have experienced some form of depression which required clinical treatment (Beck, Rush, Shaw, & Emery, 1979).

A better way of understanding an emotion such as depression is to study it in the social, interactional context in which it occurs. The familial context is considered as
very important for understanding the higher rates of depression among women (Amenson & Lewinsohn, 1981; Weissman & Klerman, 1982) and particularly among those who are married (Radloff & Rae, 1979). Married women have more pathology, including depression, than have either married men, or unmarried women (Knupfer, Clark, & Room, 1966).

Marital distress and depressive symptoms have been shown to be associated (Weissman & Paykel, 1974), and some of the interactive problems of the depressed may be due to marital discord (Biglan et al., 1985; McLean, Ogston, & Grauer, 1973). Beach (1983) reported that the risk of depression for the low marital satisfaction group was twice as high as the risk for the high satisfaction group.

It has been well documented that there is a significant relationship between marital dissatisfaction and depression (Bullock, Seigel, Weissman, & Paykel, 1972; Colemen & Miller, 1975; Hinchliffe, Vaughan, Hopper, & Roberts, 1977; Weiss & Aved, 1978). Research also suggested that maternal depression levels have been related to the quality of family relationships and, particularly, to the quality of the marital relationship (Bond & McMahon, 1984; Forehand et al., 1988).

Considerable evidence indicates females' psychological distress is significantly attributed to less satisfying marriages (Brodsky, 1968; Clancy, & Gove, 1974; Gittleman-Klein & Klein, 1968; Rosen, Klein, Gittleman-Klein, 1971).
Roy (1978b) documented that women are at risk of depression when they regard themselves in a bad marriage in which there is a lack of intimacy with their husbands. Women who report higher levels of marital satisfaction experienced lower levels of depression than those having less satisfying marital relationships (Ross, Mirowsky, & Ulbrich, 1983; Van Fossen, 1981).

Many studies indicated a correlation between depression and a negative perception of marital quality (Coleman & Miller, 1975; Kahn, Coyne, & Margolin, 1985; Merikangas, Prusoff, Kupfer, & Frank, 1985; Rounsaville, Prusoff, Weissman, 1980; Rounsaville, Weissman, Prusoff, Herceg-Baron, 1979). Increased marital problems (fights, arguments) are deemed as one of the critical life events prior to an affective disorder and/or a relapse into a depressive episode (Brown & Harris, 1978). Similarly, depressed individuals are more likely to have disturbed marriages (Bothwell & Weissman, 1977; Roy, 1978a; Weissman, Paykel, Siegel & Klerman, 1971).

Bullock, Seigel, & Weissman, and Paykel (1972) found that clinically depressed women with poor marital adjustment tended to have more negative interactions with their spouses and a poorer prognosis than did depressed women with adaptive marital adjustment. Likewise, the former tended to regard their marital difficulties as reasons for their depression while the latter blamed problems outside the marriage for the
depression.

Coleman and Miller (1975) documented a significant relationship between depression and marital maladjustment. Women were significantly more depressed than men though similar in average ratings of marital adjustment. Women's depression ratings were minimally associated with their own or their husbands' marital ratings. However, the greater a man's depression, the more the marriage was rated by both husband and wife as conflictual.
MATERIALS AND METHODS

Participants

The subjects were selected based on the following criteria: (1) the target child had to be either a sixth or eighth grader at the beginning of the three-year study, (2) both parents (biological, step, or foster) of the target child had to be present in the same household at the beginning of the three-year study, (3) the target child had to have at least a sibling within three years of age of the target child, and (4) the family members had to agree to take part in the investigation.

A letter sent to the parents described the general nature of this longitudinal research project which involved three family contacts over a three-year time span. The letter requested their voluntary participation as a family, and informed them that they would be reimbursed for their participation in the study in the amount of $75 for each family visit. Together with this letter describing the study was a short questionnaire to ascertain if the family met the criteria for participation, a form on which the family was to indicate its willingness or refusal to participate, and a stamped return envelope. Families who returned the stamped envelope and indicated a willingness to participate and
appeared to be eligible were contacted by phone and an appointment was made to visit each family.

During the home visit, the interviewer provided and reviewed a written description of the project with all participating family members so each of them had a clear understanding of the particular requirements of the project. If the family was still willing to participate, family members and the interviewer signed a dated statement of informed consent.

The total number of families screened initially was 726 and the number of families eligible for the study was 464. Of those who were eligible, 398 families agreed to participate. There were 382 families for the second year and 374 for the third year. The families came from agriculture-dependent central Iowa counties with a population of approximately 10,000. They were representative of the economic stress experienced during the 1980s by farm and nonfarm families throughout the state and the region. Of the 398 families, 48% were farm families which had been farming since at least 1983, and 52% were non-farm families. Based on the parents' current occupation and highest grade completed, socio-economic status was determined by using Hollingshead's (1957) procedure which showed that the vast majority of families were middle- and working-class families.
The subjects were tested three times over a three-year time span beginning in fall 1988. The present study uses the data from the second year and the third year. For the present study, the second year's data will be called time 1 or wave 1 data and the third year's data will be called time 2 or wave 2 data.

Procedure of Data Collection

The interviewers for this project were recruited by the Survey Section of the Statistical Laboratory at Iowa State University. All interviewers had experience working on similar projects. The Survey Section conducted training workshops with the interviewers for this particular project to ensure uniformity of interview administration procedures. A total of 12 different interviewers were involved.

During the first home visit, after the interviewer had reviewed the project and the participating family had signed the informed consent form, the interviewer instructed all the participating family members how to proceed in responding to their respective questionnaires. Each was asked to carefully read the instructions accompanying each set of questions in the questionnaire and, if needed, to request clarification from the interviewer. Each participant was asked to go to a separate room, if possible, to answer his or her
questionnaire. After each participant finished, the interviewer checked to make sure all questions were answered; if not, she requested the respondent to provide his or her best answer.

After all participants finished and the interviewer had checked if all questions had been answered, she thanked the family for their participation, provided them with the reimbursement for their time and effort, and informed them that the Survey Section would contact the family for the next two visits. Total time needed for this visit varied from one to one and one-half hours among families.

Measures

Life stress

Life stress was assessed by Johnson's (1986) modification of a 43-item scale, originally devised by Holmes and Rahe (1967), called The Schedule of Recent Experiences (SRE) (see Appendix A). This 43-item self-report measure contains a sample of common major life events for the preceding 12 months. This measure provided the first convenient index not only of the number of life changes but also of their cumulative impact (Johnson, 1986). The subjects were asked to identify whether any of the major life events happened to them in the last year. If certain life events did happen in the
past year, then they had to identify the magnitude of the impact of these life events on a seven-point Likert scale ranging from extremely negative to extremely positive (1 = extremely negative, 4 = no impact, and 7 = extremely positive). If the magnitude of a certain event was equal to or less than 3 it qualified as a negative life event. The life stress score in the present study was the sum of all negative life events.

**Parental self-esteem**

Parent self-esteem was measured by Rosenberg's (1965) *Self-Esteem Scale* which asked parents to respond to ten questions (see Appendix B). The Rosenberg Self-Esteem Scale is a 10-item scale aimed to assess global self-esteem. It was designed to tap dimensions of self-esteem based on self-attributions, social comparisons, and reflected appraisals. Respondents were asked to choose their degree of agreement with ten statements, using the following response categories: strongly agree, agree, disagree, and strongly disagree.

**Marital satisfaction**

Marital satisfaction was measured by asking how happy the respondent's marriage had been over the past year. Mothers' and fathers' marital satisfaction was assessed independently by seven questions. The first two questions dealt with the
respondent's degree of satisfaction with the marital relationship and with the respondent's perception of his/her partner's degree of satisfaction with the marital relationship, as assessed on a 7-point scale from "extremely unhappy" to "extremely happy." The next five questions dealt with whether (1) they thought their marriage to be in trouble, (2) they had thought about separation or divorce, (3) they had discussed these with each other, (4) they had discussed these with a close friend, and (5) they had talked about consulting an attorney about these. Responses to these questions range from 1 = never, 2 = yes, prior to the last 3 years, 3 = yes, within the last 3 years, and 4 = yes, within the last 3 months. All seven questions are listed in Appendix C.

**Parental depression**

Parental depression was measured by Pearlin, Lieberman, Menaghan, and Mullan's (1981) *Depression Scale*. The scale consists of nine items (see Appendix D). The assessment of depression is based on respondents' reports of how frequently in the preceding month they had experienced each of the nine stated symptoms. Responses range from 1 = never, 3 = sometimes, to 7 = very often.
Reliability

Reliability was determined by calculating Cronbach alpha. Cronbach alpha for fathers' marital satisfaction was .84 for wave 1 data and .86 for wave 2 data. Cronbach alpha for mothers' marital satisfaction was .88 at both times of measurement. Cronbach alpha for depression was .88 for fathers at both times of measurement and .89 and .90 for mothers at time 1 and time 2. Cronbach alpha for self-esteem was .83 and .87 for time 1 and time 2, respectively, for fathers and .89 for both time 1 and time 2 for mothers.

Procedure of Data Analysis

Several steps of data analyses were performed in this study: (1) means and standard deviations for all variables at time 1 and time 2 were calculated, (2) T-tests were performed to examine differences between fathers and mothers at time 1 and time 2 as well as differences between the two waves for fathers and mothers, (3) correlational analyses: correlations between all variables were computed at one point in time as well as across time, and (4) multiple regressions were conducted to evaluate the postulated model.

The multiple regression analyses followed the procedure for testing mediation effects as suggested by Baron and Kenny (1986). First of all, the associations between life stress
and parental self-esteem, between life stress and marital satisfaction, and between life stress and parental depression were examined. Secondly, the presence of a mediation effect was determined by the examination of whether the significant association between life stress and parental depression diminished or disappeared when parental self-esteem and marital satisfaction were introduced as mediator variables. Following the same line of thinking, it was determined whether the significant association between life stress and marital satisfaction diminished or disappeared when parental self-esteem was added to the regression equation as a mediator variable between life stress and marital satisfaction.
RESULTS

T-Tests Results

All the means and standard deviations of the variables in the present investigation are listed in Table 1.

For fathers, no significant difference was found between wave 1 life stress and wave 2 life stress, $t(156) = .79$, $p > .05$, between wave 1 marital satisfaction and wave 2 marital satisfaction, $t(357) = 1.08$, $p > .05$, and between wave 1 depression and wave 2 depression, $t(366) = .30$, $p > .05$. The only significant difference was between fathers' wave 1 self-esteem and wave 2 self-esteem, $t(366) = -3.86$, $p < .001$. As Table 1 shows, fathers reported higher self-esteem at wave 2 than at wave 1.

For mothers, no significant difference was found between wave 1 life stress and wave 2 life stress, $t(179) = 1.52$, $p > .05$, between wave 1 self-esteem and wave 2 self-esteem, $t(367) = .57$, $p > .05$, between wave 1 marital satisfaction and wave 2 marital satisfaction, $t(359) = -.30$, $p > .05$, and between wave 1 depression and wave 2 depression, $t(367) = -.10$, $p > .05$.

When comparing fathers and mothers at wave 1, no significant difference was found between fathers' and mothers' life stress, $t(466) = -.62$, $p > .05$, between fathers' and
Table 1. Means and standard deviations for paternal and maternal life stress, self-esteem, marital satisfaction, and depression at wave 1 and wave 2

<table>
<thead>
<tr>
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<td>SD</td>
<td>Mean</td>
<td>SD</td>
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<td></td>
<td>25.06</td>
<td>4.92</td>
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</table>

Wave 1

Wave 2
mothers' self-esteem, $t(753) = 1.23, p > .05$, and between fathers' and mothers' marital satisfaction, $t(745) = 1.92, p > .05$. The difference between fathers' and mothers' depression was significant, $t(753) = -4.57, p < .001$. As Table 1 shows, mothers reported a higher level of depression than fathers.

When comparing fathers and mothers at wave 2, no significant difference was found between fathers' and mothers' life stress, $t(443) = -0.65, p > .05$, between fathers' and mothers' self-esteem, $t(734) = 1.26, p > .05$, and between fathers' and mothers' marital satisfaction, $t(717) = .90, p > .05$. Again, the difference between fathers' and mothers' depression was significant, $t(753) = -4.72, p < .001$. As Table 1 shows, mothers reported a higher level of depression than fathers at wave 2.

Correlations

**Correlations between all the variables at wave 1**

Table 2 shows the correlations between variables at wave 1. As can be seen in the table, fathers' life stress is significantly and positively correlated with fathers' depression. Fathers' self-esteem has a significant and positive correlation with fathers' marital satisfaction. Fathers' life stress is negatively correlated with fathers' self-esteem and marital satisfaction. Fathers' self-esteem
Table 2. Wave 1 correlations between the variables

<table>
<thead>
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<tr>
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<tr>
<td>Self-Esteem</td>
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<td>.45**</td>
</tr>
<tr>
<td>Marital Satisfaction</td>
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<td>-.15*</td>
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<tr>
<td>Depression</td>
<td>.18**</td>
<td>.11*</td>
</tr>
<tr>
<td>Life Stress</td>
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<td></td>
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<tr>
<td>Self-Esteem</td>
<td>-.32**</td>
<td>.24**</td>
</tr>
<tr>
<td>Marital Satisfaction</td>
<td>-.20**</td>
<td>-.12*</td>
</tr>
<tr>
<td>Depression</td>
<td>.18**</td>
<td>-.27**</td>
</tr>
<tr>
<td>Life Stress</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-Esteem</td>
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<td>-.12*</td>
</tr>
<tr>
<td>Marital Satisfaction</td>
<td>-.50**</td>
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<td>-.34**</td>
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</tbody>
</table>

• p < .05.
•** p < .01.
•*** p < .001.
has a significant and negative correlation with fathers' depression. Fathers' marital satisfaction is significantly and negatively associated with fathers' depression.

Mothers' life stress is significantly and positively correlated with mothers' depression. Mothers' self-esteem is significantly and positively associated with mothers' marital satisfaction. Mothers' life stress is significantly and negatively correlated with mothers' self-esteem and marital satisfaction. Mothers' self-esteem is significantly and negatively associated with mothers' depression. Mothers' marital satisfaction has a significant and negative correlation with mothers' depression.

Fathers' life stress is significantly and positively correlated with mothers' life stress and mothers' depression. Fathers' self-esteem has a significant and positive correlation with mothers' marital satisfaction. Fathers' marital satisfaction is significantly and positively correlated with mothers' self-esteem and mothers' marital satisfaction. Fathers' depression has significant and positive associations with mothers' life stress and mothers' depression.

Fathers' life stress is significantly and negatively correlated with mothers' marital satisfaction. Fathers' self-esteem is significantly and negatively correlated with mothers' life stress and mothers' depression. Fathers'
marital satisfaction is significantly and negatively related to mothers' life stress and mothers' depression. Fathers' depression has a significant and negative association with mothers' marital satisfaction.

Correlations between all the variables at wave 2

At wave 2 (see Table 3), fathers' life stress is significantly and positively correlated with fathers' depression. Fathers' self-esteem is significantly and positively correlated with fathers' marital satisfaction. Fathers' life stress is significantly and negatively correlated with fathers' self-esteem and marital satisfaction. Fathers' self-esteem is significantly and negatively correlated with fathers' depression. Fathers' marital satisfaction shows a significant and negative relationship with fathers' depression.

Mothers' life stress is significantly and positively correlated with mothers' depression. Mothers' self-esteem has a significant and positive relationship with mothers' marital satisfaction. Mothers' life stress is significantly and negatively correlated with mothers' self-esteem and marital satisfaction. Mothers' self-esteem has a significant and negative relationship with mothers' depression. Mothers' marital satisfaction is significantly and negatively correlated with mothers' depression.
Table 3. Wave 2 correlations between the variables

<table>
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<td></td>
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<td>Self-Esteem</td>
<td>Marital Satisfaction</td>
<td>Depression</td>
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<td>Fathers</td>
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<tr>
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<tr>
<td>Self-Esteem</td>
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<td>.22**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital Satisfaction</td>
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<td>.26**</td>
<td>.68**</td>
<td>-.27**</td>
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<tr>
<td>Depression</td>
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<td>-.56**</td>
<td>-.28**</td>
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<td>Mothers</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Life Stress</td>
<td>.26**</td>
<td>-.07</td>
<td>-.28**</td>
<td>.20**</td>
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<td>Self-Esteem</td>
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<td>Marital Satisfaction</td>
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<td>.11*</td>
<td>.68**</td>
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<tr>
<td>Depression</td>
<td>.26**</td>
<td>-.07</td>
<td>-.28**</td>
<td>.20**</td>
</tr>
</tbody>
</table>

* p < .05.
** p < .01.
*** p < .001.
Fathers' life stress is significantly and positively correlated with mothers' life stress and mothers' depression. Fathers' self-esteem is significantly and positively correlated with mothers' marital satisfaction. Fathers' marital satisfaction is significantly and positively associated with mothers' self-esteem and mothers' marital satisfaction. Fathers' depression is significantly and positively correlated with mothers' life stress and mothers' depression. Fathers' life stress is significantly and negatively associated with mothers' self-esteem and mothers' marital satisfaction. Fathers' marital satisfaction is significantly and negatively correlated with mothers' life stress and mother's depression. Fathers' depression is significantly and negatively associated with mothers' marital satisfaction.

**Time 1 to time 2 correlations**

**Auto-correlations** As can be seen in Table 4, all auto-correlations are highly significant ranging from .45 to .80. For fathers, the stability coefficient for life stress is .45; for self-esteem it is .69; for marital satisfaction it is .78, and for depression it is .67. For mothers, the stability coefficient for life stress is .45; for self-esteem it is .77; for marital satisfaction it is .80, and for depression it is .63.
Table 4. Auto- and cross-lagged correlations between the variables

<table>
<thead>
<tr>
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<th>Mothers (Wave 1)</th>
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<tbody>
<tr>
<td></td>
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<td>Self-Esteem</td>
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<tr>
<td>Fathers (Wave 2)</td>
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<td>-.14*</td>
</tr>
<tr>
<td>Self-Esteem</td>
<td>-.23**</td>
<td>.69**</td>
</tr>
<tr>
<td>Marital Satisfaction</td>
<td>-.20**</td>
<td>.17**</td>
</tr>
<tr>
<td>Depression</td>
<td>.39**</td>
<td>-.41**</td>
</tr>
<tr>
<td>Mothers (Wave 2)</td>
<td></td>
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<tr>
<td>Life Stress</td>
<td>.26**</td>
<td>.00</td>
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<tr>
<td>Self-Esteem</td>
<td>-.12</td>
<td>.06</td>
</tr>
<tr>
<td>Marital Satisfaction</td>
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<td>.12*</td>
</tr>
<tr>
<td>Depression</td>
<td>.11</td>
<td>-.04</td>
</tr>
</tbody>
</table>

* p < .05.
** p < .01.
*** p < .001.
Cross-lagged correlations For fathers, significant and positive correlations were found between wave 1 life stress and wave 2 depression, between wave 1 self-esteem and wave 2 marital satisfaction, between wave 1 marital satisfaction and wave 2 self-esteem, and between wave 1 depression and wave 2 life stress.

Significant and negative correlations were found for fathers between wave 1 life stress and wave 2 self-esteem and wave 2 marital satisfaction, between wave 1 self-esteem and wave 2 life stress and wave 2 depression, between wave 1 marital satisfaction and wave 2 life stress and wave 2 depression, and between wave 1 depression and wave 2 self-esteem and wave 2 marital satisfaction.

For mothers, significant and positive correlations were found between wave 1 life stress and wave 2 depression, between wave 1 self-esteem and wave 2 marital satisfaction, between wave 1 marital satisfaction and wave 2 self-esteem, and between wave 1 depression and wave 2 life stress.

Significant and negative correlations for mothers were found between wave 1 life stress and wave 2 self-esteem and wave 2 marital satisfaction, between wave 1 self-esteem and wave 2 depression, between wave 1 marital satisfaction and wave 2 life stress and wave 2 depression, and between wave 1 depression and wave 2 self-esteem and wave 2 marital satisfaction.
Significant and positive correlations were found between fathers' wave 1 life stress and mothers' wave 2 life stress, between fathers' wave 1 self-esteem and mothers' wave 2 marital satisfaction, and between fathers' wave 1 marital satisfaction and mothers' wave 2 self-esteem and mothers' wave 2 marital satisfaction. Negative correlations were found between fathers' wave 1 marital satisfaction and mothers' wave 2 depression and between fathers' wave 1 depression and mothers' wave 2 marital satisfaction.

Significant and positive associations were found between mothers' wave 1 life stress and fathers' wave 2 life stress and fathers' wave 2 depression, between mothers' wave 1 self-esteem and fathers' wave 2 self-esteem and fathers' wave 2 marital satisfaction, between mothers' wave 1 marital satisfaction and fathers' wave 2 marital satisfaction, and between mothers' wave 1 depression and fathers' wave 2 life stress and fathers' wave 2 depression.

Significant and negative associations were found between mothers' wave 1 life stress and fathers' wave 2 self-esteem and fathers' wave 2 marital satisfaction, between mothers' wave 1 self-esteem and fathers' wave 2 life stress, between mothers' wave 1 marital satisfaction and fathers' wave 2 life stress and fathers' wave 2 depression, and between mothers' wave 1 depression and fathers' wave 2 self-esteem and fathers' wave 2 marital satisfaction.
Path-Analytic Findings: Direct and Mediated Effects of Life Stress on Parental Depression

Path-analytic results

The hypothesized model (see Figure 1) was evaluated separately for the fathers and the mothers. Figure 3 shows the path-analytic results for the fathers at wave 1. The figure shows that the coefficient of the path from fathers' life stress to fathers' depression is, as predicted, significant and positive. In addition, the coefficients of the paths from fathers' life stress to fathers' self-esteem and to fathers' marital satisfaction are, as predicted, significant and negative. The coefficient of the path from fathers' self-esteem to fathers' depression is significant and negative, thus confirming the prediction. The coefficient of the path from fathers' marital satisfaction to fathers' depression also supports the prediction of a significant and negative association between fathers' marital satisfaction and fathers' depression.

A total of 10% of the variance in fathers' self-esteem is accounted for by fathers' life stress. Only 4% of variance in fathers' marital satisfaction is accounted for by fathers' life stress. Fathers' life stress, self-esteem, and marital satisfaction together account for 42% of the variance in fathers' depression.
Figure 3. Wave one path-analytic results for fathers

R² = .10

Fathers' Self-Esteem

-.32***

-.38***

.35***

Fathers' Life Stress

Fathers' Marital Satisfaction

-.20**

-.19***

Fathers' Depression

R² = .42

R² = .04

* p < .05.
** p < .01.
*** p < .001.
Figure 4 presents the path-analytic results for fathers at wave 2. The coefficient of the path from fathers' life stress to fathers' depression is, as predicted, significant and positive. The coefficients of the paths from fathers' life stress to fathers' self-esteem and to fathers' marital satisfaction are, as predicted, significant and negative. The coefficient of the path from fathers' self-esteem to fathers' depression is significant and negative, confirming the prediction. The coefficient of the path from fathers' marital satisfaction to fathers' depression also supports the prediction of a significant and negative relation between fathers' marital satisfaction and fathers' depression.

Fathers' life stress accounts for 10% of the variance in fathers' self-esteem and 13% of the variance in fathers' marital satisfaction at wave 2. Fathers' life stress, self-esteem, and marital satisfaction together account for 44% of the variance in fathers' depression.

Comparing between the wave 1 and wave 2 path-analytic results for fathers, it shows that there is no large difference between the coefficient of the path from life stress to self-esteem at wave 1, ($B = -.32$), and the same coefficient at wave 2, ($B = .31$), and between the coefficient of the path from marital satisfaction to depression at wave 1, ($B = -.19$), and the same coefficient at wave 2, ($B = -.17$).
Figure 4. Wave two path-analytic results for fathers

- ** p < .01.
- *** p < .001.

Fathers' Self-Esteem

- .48***

Fathers' Life Stress

- .36***

Fathers' Marital Satisfaction

- .17**

R² = .10

R² = .44

R² = .13

* p < .05.
** p < .01.
*** p < .001.
There are differences between the coefficient of the path from life stress to depression at wave 1, \((B = .35)\), and the same coefficient at wave 2, \((B = .24)\), between the coefficient of the path from life stress to marital satisfaction at wave 1, \((B = -.20)\), and the same coefficient at wave 2, \((B = -.36)\), and between the coefficient of the path from self-esteem to depression at wave 1, \((B = -.38)\), and the same coefficient at wave 2, \((B = -.48)\).

The path-analytic results for mothers at wave 1 are displayed in Figure 5. The figure shows that the coefficient of the path from mothers' life stress to mothers' depression is, as predicted, significant and positive. The coefficients of the paths from mothers' life stress to mothers' self-esteem and to marital satisfaction are significant and negative. Also as predicted, the coefficient of the path from mothers' self-esteem to mothers' depression is significant and negative. The coefficient of the path from mothers' marital satisfaction to mothers' depression also supports the prediction of a significant and negative relationship between mothers' marital satisfaction and mothers' depression.

Mothers' life stress accounts for 6% of the variance in mothers' self-esteem and 5% of the variance in mothers' marital satisfaction. Mothers' life stress, self-esteem, and marital satisfaction together account for 52% of the variance in mothers' depression at wave 1.
Mothers' Self-Esteem

Mothers' Life Stress

*.24***

-.22***

Mothers' Marital Satisfaction

R² = .06

Mothers' Depression

-.45***

.24***

R² = .52

R² = .05

* p < .05.
** p < .01.
*** p < .001.

Figure 5. Wave one path-analytic results for mothers
Figure 6 shows the results for mothers at wave 2. The coefficient of the path from mothers' life stress to mothers' depression is, as predicted, significant and positive. The coefficients of the paths from mothers' life stress to mothers' self-esteem and to marital satisfaction are significant and negative. As predicted, the coefficient of the path from mothers' self-esteem to mothers' depression is significant and negative. The coefficient of the path from mothers' marital satisfaction to mothers' depression also supports the prediction of a significant negative relationship between mothers' marital satisfaction and mothers' depression.

Mothers' life stress accounts for 6% of the variance in mothers' self-esteem and 6% of the variance in mothers' marital satisfaction. Mothers' life stress, self-esteem, and marital satisfaction together account for 49% of the variance in mothers' depression at wave 2.

Comparing between wave 1 and wave 2 path-analytic results for mothers, it shows that there is no large difference between the coefficient of the path from life stress to depression at wave 1, (B = .24), and the same coefficient at wave 2, (B = .22), between the coefficient of the path from life stress to self-esteem at wave 1, (B = -.24), and the same coefficient at wave 2, (B = -.24), and between the coefficient of the path from life stress to marital satisfaction at wave 1, (B = -.22), and the same coefficient at wave 2, (B = -.24).
Figure 6. Wave two path-analytic results for mothers.

R² = .06

Mothers' Self-Esteem

-.24***

Mothers' Life Stress

.22***

Mothers' Marital Satisfaction

-.24***

Mothers' Depression

-.48***

-.27***

R² = .06

R² = .49

* p < .05.
** p < .01.
*** p < .001.
The same finding of no large difference is seen between the coefficient of the path from self-esteem to depression at wave 1, \( B = -.45 \), and the same coefficient at wave 2, \( B = -.48 \), and between the coefficient of the path from marital satisfaction to depression at wave 1, \( B = -.31 \), and the same coefficient at wave 2, \( B = -.27 \). As a matter of fact, wave 1 and wave 2 path-analytic results are very similar for mothers.

Table 5 presents the direct, indirect, and total effects of life stress on depression for fathers at both waves. For wave 1, the direct effect of fathers' life stress on fathers' depression equals \( .35 \), the indirect effect through fathers' self-esteem equals \( .12 \), and the indirect effect through marital satisfaction equals \( .04 \). The table shows that 69% of the effect of fathers' life stress on fathers' depression is direct and the rest, 31%, is indirect through fathers' self-esteem (23%) and through fathers' marital satisfaction (8%).

At wave 2, the direct effect of fathers' life stress on father's depression equals \( .24 \), and the indirect effect through father's self-esteem and through marital satisfaction equals \( .15 \) and \( .06 \), respectively. Of the total effect of fathers' life stress on fathers' depression at wave 2, 53% is direct, and the rest, 47%, is indirect, through fathers' self-esteem, 33% and through fathers' marital satisfaction, 14%. 
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<td>Marital Satisfacion</td>
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<td>Depression Wave 1</td>
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<tr>
<td></td>
<td>(69%)</td>
<td>(23%)</td>
<td>(8%)</td>
</tr>
<tr>
<td>Depression Wave 2</td>
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<td></td>
<td>(53%)</td>
<td>(33%)</td>
<td>(14%)</td>
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</tbody>
</table>
Table 6 presents the direct, indirect, and total effects of life stress on depression for mothers. For wave 1, the direct effect of mothers' life stress on mothers' depression is .24, and the indirect effect through mothers' self-esteem is .11 and through mothers' marital satisfaction, .07. The table also shows that 57% of the effect of mothers' life stress on mothers' depression is direct, and the rest, 43%, is indirect through mothers' self-esteem (26%) and through mothers' marital satisfaction (17%). At wave 2, the direct effect of mothers' life stress on mother's depression is .22, and the indirect effect through mother's self-esteem is .12 and through marital satisfaction, .06. Of the total effect of mothers' life stress on mothers' depression, 55% is direct and the rest, 45%, is indirect through mothers' self-esteem (30%) and through mothers' marital satisfaction (15%).

For the purpose of comparing the proposed model with a fully recursive model, a path from parental self-esteem to parental marital satisfaction was added to the hypothesized model. The comparison shows whether a more parsimonious model (the proposed model) is as good a model or even a better model than less parsimonious model (the fully recursive model).

For fathers at wave 1 (see Figure 7), the coefficient of the added path from fathers' self-esteem to fathers' marital satisfaction is positive but non-significant. The coefficient of the path from fathers' life stress to fathers' marital
Table 6. Direct, indirect, and total effects of life stress on depression for mothers' model at both waves

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<th>Direct Effect</th>
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<th>Total Effect</th>
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<td></td>
<td></td>
<td>Self-Esteem</td>
<td>Marital Satisfaction</td>
</tr>
<tr>
<td>Depression Wave 1</td>
<td>.24</td>
<td>.11 (26%)</td>
<td>.07 (17%)</td>
</tr>
<tr>
<td></td>
<td>(57%)</td>
<td>(26%)</td>
<td>(17%)</td>
</tr>
<tr>
<td>Depression Wave 2</td>
<td>.22</td>
<td>.12 (30%)</td>
<td>.06 (15%)</td>
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<td></td>
<td>(55%)</td>
<td>(30%)</td>
<td>(15%)</td>
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Figure 7. Wave one fully recursive path-analytic results for fathers
satisfaction only declines by .02. Fathers' life stress and fathers' self-esteem together account for 5% of the variance in fathers' marital satisfaction which represents only a 1% increase in variance accounted for as compared to the findings in the hypothesized model.

Similarly, Figure 8 shows that the coefficient of the path from fathers' self-esteem to fathers' marital satisfaction at wave 2 is positive but non-significant. The coefficient of the path from fathers' life stress to fathers' marital satisfaction only declines also by .02. The variance (13%) accounted for in fathers' marital satisfaction does not increase at all when adding the path from fathers' self-esteem to fathers' marital satisfaction at wave 2.

Figure 9 shows the results of the analysis of the fully recursive model for mothers at wave 1. The coefficient of the path from mothers' self-esteem to mothers' marital satisfaction is positive and significant. The coefficient of the path from mothers' life stress to mothers' marital satisfaction declines by .05. A total of 9% of the variance in mothers' marital satisfaction is accounted for by mothers' life stress and mothers' self-esteem, an increase of 4%.

Figure 10 presents the results for the fully recursive model for mothers at wave 2. The coefficient of the path from mothers' self-esteem to mothers' marital satisfaction is significant and positive. The coefficient of the path from
Figure 8. Wave two fully recursive path-analytic results for fathers
Figure 9. Wave one fully recursive path-analytic results for mothers
Figure 10. Wave two fully recursive path-analytic results for mothers

- $R^2 = 0.06$
- $R^2 = 0.49$
- $R^2 = 0.09$

- $-0.24^{***}$
- $0.22^{***}$
- $-0.17^{**}$
- $-0.20^{**}$
- $-0.48^{***}$
- $-0.27^{***}$

* $p < 0.05$.
** $p < 0.01$.
*** $p < 0.001$. 
mothers' life stress to mothers' marital satisfaction declines by .04. A total of 9% of the variance in mothers' marital satisfaction is accounted for by mothers' life stress and mothers' self-esteem in the fully recursive model, an increase of 3% when compared to the hypothesized model. All other percentages of variances stay the same as in the originally proposed model.

Table 7 lists the direct, indirect, and total effects of life stress on marital satisfaction for fathers for the fully recursive model. At wave 1, the direct effect of fathers' life stress on fathers' depression equals .35 and the indirect effect of fathers' life stress on fathers' depression through fathers' self-esteem equals .12, through fathers' marital satisfaction equals .03, and through both fathers' self-esteem and marital satisfaction equals .01. Of the total effect of fathers' life stress on fathers' depression, 68% is direct and the rest, 32%, is indirect through fathers' self-esteem (24%), through fathers' marital satisfaction (6%), and through both fathers' self-esteem and marital satisfaction (2%). The direct effect of fathers' life stress on fathers' marital satisfaction is -.18 and the indirect effect of fathers' life stress through fathers' self-esteem on fathers' marital satisfaction is -.03. Of the total effect of fathers' life stress on fathers' marital satisfaction, 86% is direct and 14% is indirect.
Table 7. Direct, indirect, and total effects of life stress on marital satisfaction and depression for fathers' fully recursive models at both waves

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<td>Self-Esteem</td>
<td>Marital Satisfaction</td>
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<td></td>
<td>Wave 1</td>
<td>Wave 2</td>
</tr>
<tr>
<td>Depression Wave 1</td>
<td>.35</td>
<td>.12</td>
<td>.03</td>
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<tr>
<td></td>
<td>(68%)</td>
<td>(24%)</td>
<td>(6%)</td>
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<tr>
<td>Marital Satisfaction</td>
<td>-.18</td>
<td>-.03</td>
<td>.21</td>
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<td></td>
<td>(86%)</td>
<td>(14%)</td>
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<tr>
<td>Depression Wave 2</td>
<td>.24</td>
<td>.15</td>
<td>.06</td>
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<tr>
<td></td>
<td>(53%)</td>
<td>(33%)</td>
<td>(14%)</td>
</tr>
<tr>
<td>Marital Satisfaction</td>
<td>-.34</td>
<td>-.02</td>
<td></td>
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<tr>
<td></td>
<td>(94%)</td>
<td>(6%)</td>
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At wave 2, the direct effect of fathers' life stress on fathers' depression equals .24 and the indirect effect through fathers' self-esteem equals .15, through fathers' marital satisfaction equals .06, and through both fathers' self-esteem and marital satisfaction equals .00. Of the total effect of fathers' life stress on fathers' depression at wave 2, 53% is direct and the rest, 47%, is indirect through fathers' self-esteem (33%) and fathers' through marital satisfaction (14%). The direct and indirect effects of fathers' life stress on fathers' marital satisfaction equal -.34 and -.02, respectively. Of the total effect of fathers' life stress on fathers' marital satisfaction 94% is direct and 6% is indirect.

Table 8 shows the direct, indirect, and total effects for mothers for the fully recursive model for wave 1 and wave 2. For wave 1, the direct effect of mothers' life stress on mothers' depression is .24 and the indirect effects through mothers' self esteem is .11, through mothers' marital satisfaction is .05, and through both mothers' self-esteem and marital satisfaction is .02. Of the total effect of mothers' life stress on mothers' depression, 57% is direct and the rest, 43%, is indirect through mothers' self-esteem (26%), mothers' marital satisfaction (12%), and through both mothers' self-esteem and marital satisfaction (5%). The direct effect of mothers' life stress on mothers' marital satisfaction is
Table 8. Direct, indirect and total effects of life stress on marital satisfaction and depression for mothers' fully recursive models at both waves

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<td>Self-Esteem</td>
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<td>Marital Satisfaction</td>
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<td>Wave 1</td>
<td>Wave 2</td>
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<td>Wave 2</td>
<td>Wave 2</td>
<td>Wave 2</td>
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<tr>
<td>Depression Wave 1</td>
<td>.24</td>
<td>.11</td>
<td>.05</td>
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<tr>
<td></td>
<td>(57%)</td>
<td>(26%)</td>
<td>(12%)</td>
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<tr>
<td></td>
<td>Depression</td>
<td>.02</td>
<td>.42</td>
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<td></td>
<td>Wave 2</td>
<td>(5%)</td>
<td></td>
</tr>
<tr>
<td>Marital Satisfaction</td>
<td>-.17</td>
<td>-.05</td>
<td>-.22</td>
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<tr>
<td></td>
<td>(77%)</td>
<td>(23%)</td>
<td></td>
</tr>
<tr>
<td>Depression Wave 2</td>
<td>.22</td>
<td>.12</td>
<td>.05</td>
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<tr>
<td></td>
<td>(55%)</td>
<td>(30%)</td>
<td>(13%)</td>
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<td></td>
<td>.01</td>
<td>.40</td>
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<td></td>
<td>(2%)</td>
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<td></td>
</tr>
<tr>
<td>Marital Satisfaction</td>
<td>-.20</td>
<td>-.04</td>
<td>.24</td>
</tr>
<tr>
<td></td>
<td>(83%)</td>
<td>(17%)</td>
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-.17 and the indirect effect through mothers' self-esteem is -.05. Of the total effect of mothers' life stress on mothers' marital satisfaction 77% is direct and 23% is indirect through mothers' self-esteem.

At wave 2, the direct effect of mothers' life stress on mothers' depression is .22 and the indirect effects through mothers' self-esteem is .12, through mothers' marital satisfaction is .05, and through both mothers' self-esteem and marital satisfaction is .01. Of the total effect of mothers' life stress on mothers' depression at wave 2, 55% is direct, and the rest, 45%, is indirect through mothers' self-esteem (30%), through mothers' marital satisfaction (13%), and through both mothers' self-esteem and marital satisfaction (2%). The direct and indirect effects of mothers' life stress on mothers' marital satisfaction equal -.20 and -.04, respectively. Of the total effect of mothers' life stress on mothers' marital satisfaction, 83% is direct and 17% is indirect.

Panel data analysis

The longitudinal model (see Figure 11) incorporates all the paths of the cross-sectional models (path 1 to path 5 for wave 1; path 15 to path 19 for wave 2) as well as new paths. Paths 6 through 14 represent the longitudinal associations. Paths 6, 10, 12, and 14 represent longitudinal auto-
Figure 11. Longitudinal path-analytic model for parental life stress, parental self-esteem, marital satisfaction, and parental depression.
regressions: the predictions of wave 2 parental life stress, wave 2 parental self-esteem, wave 2 parental marital satisfaction, and wave 2 parental depression from the same variables at wave 1. Paths 7, 8, 9, 11, and 13 represent longitudinal relations between wave 1 variables and different wave 2 variables.

The analysis of the longitudinal model was performed as follows. First, wave 2 parental life stress was regressed on wave 1 parental life stress (path 6). Second, wave 2 parental self-esteem was regressed on wave 1 parental self-esteem (path 10), wave 2 parental life stress (path 15), and wave 1 parental life stress (path 7). Third, wave 2 parental marital satisfaction was regressed on wave 1 parental marital satisfaction (path 12), wave 2 parental life stress (path 16), and wave 1 parental life stress (path 8). Finally, wave 2 parental depression was regressed on wave 1 parental depression (path 14), wave 2 parental life stress (path 17), wave 2 parental self-esteem (path 18), wave 2 parental marital satisfaction (path 19), wave 1 parental life stress (path 9), wave 1 parental self-esteem (path 11), and wave 1 parental marital satisfaction (path 13).

This model was evaluated separately for the fathers and the mothers. Figure 12 shows the longitudinal results for fathers. The results indicate that the coefficient of the path from fathers' wave 1 life stress to fathers' wave 2 life
Figure 12. Longitudinal path-analytic results for fathers
stress is, as predicted, significant and positive, .45. The coefficient of the path from fathers' wave 1 self-esteem to fathers' wave 2 self-esteem is also significant and positive, .71. The coefficient of the path from fathers' wave 2 life stress to fathers' wave 2 self-esteem is, as predicted, significant and negative (-.30). However, the coefficient of the path from fathers' wave 1 life stress to fathers' wave 2 self-esteem turns out to be significant but positive, .15, contradicting the prediction.

The coefficient of the path from fathers' wave 1 marital satisfaction to fathers' wave 2 marital satisfaction is significant and positive, .78. The coefficient of the path from fathers' wave 2 life stress to fathers' wave 2 marital satisfaction is, as predicted, significant and negative (-.16). The coefficient of the path from fathers' wave 1 life stress to fathers' wave 2 marital satisfaction, .02, fails to confirm the prediction.

The coefficient of the path from fathers' wave 1 depression to fathers' wave 2 depression is significant and positive, .39. The coefficients of the paths from fathers' wave 2 life stress and wave 2 marital satisfaction to fathers' wave 2 depression are nonsignificant, .14 and -.15, respectively. The coefficient of the path from fathers' wave 2 self-esteem to fathers' wave 2 depression is, as predicted, significant and negative, -.40. The coefficients of the paths
from fathers' wave 1 life stress, wave 1 self-esteem, and wave 1 marital satisfaction to fathers' wave 2 depression are all nonsignificant, (-.02, .03, and .06, respectively).

A total of 21% of the variance in fathers' wave 2 life stress is accounted for by fathers' wave 1 life stress. Fathers' wave 1 and wave 2 life stress and wave 1 self-esteem account for 57% of the variance in fathers' wave 2 self-esteem. Fathers' wave 1 and wave 2 life stress and wave 1 marital satisfaction account for 68% of the variance in fathers' wave 2 marital satisfaction. Fathers' waves 1 and wave 2 life stress, waves 1 and wave 2 self-esteem, waves 1 and wave 2 marital satisfaction, and wave 1 depression together account for 59% of the variance in fathers' wave 2 depression.

Figure 13 shows the longitudinal results for mothers. The coefficient of the path from mothers' wave 1 life stress to mothers' wave 2 life stress is significant and positive, .45. The coefficient of the path from mothers' wave 1 self-esteem to mothers' wave 2 self-esteem is also significant and positive, .80. The coefficient of the path from mothers' wave 2 life stress to mothers' wave 2 self-esteem is, as predicted, significant and negative, -.22. The coefficient of the path from mothers' wave 1 life stress to mothers' wave 2 self-esteem turns out to be nonsignificant and positive, .09, thus failing to confirm the prediction.
Figure 13. Longitudinal path-analytic results for mothers
The coefficient of the path from mothers' wave 1 marital satisfaction to mothers' wave 2 marital satisfaction is, as predicted, significant and positive, .77. The coefficient of the path from mothers' wave 2 life stress to mothers' wave 2 marital satisfaction is nonsignificant and negative, -.07, thus failing to prove the prediction. The coefficient of the path from mothers' wave 1 life stress to mothers' wave 2 marital satisfaction is .01, failing to confirm the prediction.

The coefficient of the path from mothers' wave 1 depression to mothers' wave 2 depression is, as predicted, significant and positive, .25. The coefficient of the path from mothers' wave 2 life stress to mothers' wave 2 depression is as predicted, significant and positive, .21. The coefficient of the path from mothers' wave 2 self-esteem to mothers' wave 2 depression is significant and negative, -.58, thus confirming the prediction. The coefficient of the path from mothers' wave 2 marital satisfaction to mothers' wave 2 depression is negative but nonsignificant, -.12. The coefficients of the paths from mothers' wave 1 life stress and wave 1 marital satisfaction to mothers' wave 2 depression are nonsignificant, -.08 and -.12, respectively. The coefficient of the path from mothers' wave 1 self-esteem to mothers' wave 2 depression is significant but positive, .24, contradicting the prediction.
A total of 21% of the variance in mothers' wave 2 life stress is accounted by the variable of mothers' wave 1 life stress. Mothers' wave 1 and wave 2 life stress and wave 1 self-esteem account for 67% of variance in mothers' wave 2 self-esteem. Mothers' wave 1 and wave 2 life stress and wave 1 marital satisfaction account for 62% of the variance in mothers' wave 2 marital satisfaction. Mothers' waves 1 and wave 2 life stress, waves 1 and wave 2 self-esteem, waves 1 and wave 2 marital satisfaction, and wave 1 depression together account for 55% of the variance in mothers' wave 2 depression.

Figures 14 and 15 show the results when evaluating a reduced model. This model leaves out all the paths in the longitudinal model which failed to reach significance. Testing a reduced model like this follows a suggestion made by Ensel and Lin (1991). Figure 14 shows the results for fathers. The results indicate that the coefficient of the path from fathers' wave 1 self-esteem to fathers' wave 2 self-esteem equals .71 and that the coefficient of the path from fathers' wave 2 life stress to fathers' wave 2 self-esteem equals -.30. The coefficient of the path from fathers' wave 1 life stress to fathers' wave 2 self-esteem is .15. Among these three significant coefficients, the one for the path from fathers' wave 1 life stress to fathers' wave 2 self-esteem contradicts the prediction.
Wave One

Fathers' Life Stress → Fathers' Self-Esteem → Fathers' Marital Satisfaction → Fathers' Depression

.65***

.32***

.38***

.19**

.53***

Wave Two

Fathers' Life Stress → Fathers' Self-Esteem → Fathers' Marital Satisfaction → Fathers' Depression

R² = .21

.15*

.30***

.16***

R² = .57

R² = .62

R² = .54

*p < .05.

**p < .01.

***p < .001.

Figure 14. Reduced longitudinal model for fathers
Figure 15. Reduced longitudinal model for mothers
The coefficient of the path from fathers' wave 1 marital satisfaction to fathers' wave 2 marital satisfaction is .73 and the coefficient of the path from fathers' wave 2 life stress to fathers' wave 2 marital satisfaction is -.16. The coefficient of the path from fathers' wave 1 depression to fathers' wave 2 depression is .53 and the coefficient of the path from fathers' wave 2 self-esteem to fathers' wave 2 depression is -.33.

Fathers' wave 1 and wave 2 life stress and wave 1 self-esteem account for 57% of the variance in fathers' wave 2 self-esteem. Fathers' wave 1 marital satisfaction and wave 2 life stress account for 62% of the variance in fathers' wave 2 marital satisfaction. Fathers' wave 1 depression and fathers' wave 2 self-esteem account for 54% of the variance in fathers' wave 2 depression.

Figure 15 shows the results of evaluating the reduced model for mothers. The figure shows that the coefficient of the path from mothers' wave 1 self-esteem to mothers' wave 2 self-esteem is .77 and that the coefficient of the path from mothers' wave 2 life stress to mothers' wave 2 self-esteem is -.15. The coefficient of the path from mothers' wave 1 marital satisfaction to mothers' wave 2 marital satisfaction is .80.

The coefficient of the path from mothers' wave 1 depression to mothers' wave 2 depression is .40. The
The coefficient of the path from mothers' wave 2 life stress to mothers' wave 2 depression is .20. The coefficient of the path from mothers' wave 2 self-esteem to mothers' wave 2 depression is -.53. The coefficient of the path from mothers' wave 1 self-esteem to mothers' wave 2 depression is .25, contradicting the prediction.

Mothers' wave 1 self-esteem and mothers' wave 2 life stress account for 64% of the variance in mothers' wave 2 self-esteem. Mothers' wave 1 marital satisfaction alone accounts for 65% of the variance in mothers' wave 2 marital satisfaction. Mothers' wave 1 and wave 2 self-esteem, wave 1 depression, and wave 2 life stress account for 52% of the variance in mothers' wave 2 depression.
Cross-Sectional Results

The purpose of the present study is to examine the relationships among parental life stress, parental self-esteem, marital satisfaction, and parental depression. The cross-sectional results indicate that parental life stress is positively associated with parental depression. The more life stress individuals encounter, the higher levels of distress they report to be experiencing. For both wave 1 and wave 2, fathers' life stress is positively related to fathers' depression. Similarly, for both waves, mothers' life stress is positively associated with mothers' depression.

This finding lends its support to the notion that the stressful nature of life-events acts as a precipitating factor in the manifestation of depression. This finding is consistent with previous studies which documented a modest but significant association between life-events stress and mental symptomatology (Brown, 1972; Elder, 1974; Elder, Liker, & Cross, 1984; Holmes & Rahe, 1967; Paykel et al., 1969; Rahe, 1975).

Parental life stress is negatively associated with parental self-esteem. At both waves, for both fathers and mothers, the more life stress they report to be experiencing
in their lives, the less likely they are to score high on self-esteem. These results support the notion that when individuals are confronted with stressful life situations, they are at the risk of appraising themselves less positively (Jahoda, 1979). Life stress may confront individuals with their inability to change undesired situations. Consequently, it may affect their perception of self-worth and result in low self-esteem (Battle, 1980; Kaplan, 1970; Pearlin et al., 1981; Simons & Murphy, 1985).

Another finding of the present study is that parental life stress is negatively related to parental marital satisfaction. This result converges with findings of previous studies that life stress might act as a deleterious factor in the marital relationship (Belsky, Spanier, & Rovine, 1983; Conger et al., 1990, 1992; Miller & Sollie, 1980). For both waves, the more stress fathers report to be encountering, the less likely they are to report being satisfied with their marital relationships. Similarly, the more life stress mothers are confronted with, the less satisfaction they report in their relationships with their husbands.

It is clear that when individuals are faced with life stress, they are prone to have unsatisfying marital relationships (Conger et al., 1990; Liker & Elder, 1983). When couples are under stress, more hostility, irritability, criticism, and anger may be exchanged in spousal interactions.
(Gottman, 1979; Liker & Elder, 1983; Margolin & Wampold, 1981). These negative interaction episodes are predictive of the levels of marital satisfaction spouses report (Filsinger & Thoma, 1988; Levenson & Gottman, 1985). Conger et al. (1990) pointed out that life stress decreased individuals' warmth/support toward their spouses leading to marital difficulties. Results of the present study support earlier evidence that there is a modest negative correlation between life stress and marital quality as assessed by perceptions of marital happiness or satisfaction with the marriage (Piotrkowski, Rapoport, & Rapoport, 1987).

**Self-esteem and marital satisfaction as mediators between life stress and depression**

Findings in the present study support the hypothesis that parental self-esteem and marital satisfaction both act as mediator variables between life stress and parental depression.

Baron and Kenny (1986) suggested that a variable can be regarded as a mediator when it accounts for the relationship between a predictor variable and a criterion variable. The following three conditions have to be met according to Baron and Kenny (1986): (1) the independent variable has to have an effect on the presumed mediator variable, (2) the independent variable has to have an effect on the dependent variable, and (3) the independent variable should have less of an effect on
the dependent variable when both the independent variable and mediator variable function as predictor variables than when only the independent variable is used as a predictor. Perfect mediation occurs when the significant effect of the independent variable on the outcome variable disappears when the mediator is controlled (Baron & Kenny, 1986).

Results of the present study show that the proposed conditions required for a mediation effect to occur are met to some degree. First, the independent variable, parental life stress, has a significant effect on the outcome variable, parental depression, for both fathers and mothers at both waves. Second, for both fathers and mothers, life stress is significantly and negatively related to both self-esteem and marital satisfaction. Finally, the independent variable, parental life stress, has a weaker association with the outcome variable, parental depression, when the mediator variables, parental self-esteem and marital satisfaction, are controlled. For both fathers and mothers, the magnitude of the association between life stress and depression declines when self-esteem and marital satisfaction are entered as mediator variables at both waves.

While the results of the present study suggest a mediation effect of self-esteem and marital satisfaction, no perfect mediation effect is found. The direct effect of life stress on the outcome variable, depression, is still stronger
than any of the indirect effects through the mediators, self-esteem or marital satisfaction.

The finding of a mediating effect for self-esteem in the present study is consistent with findings by Pearlin et al. (1981). In their study, self-esteem not only had a direct impact on depression but also intervened in the relationship between life stress and depression. Life stress caused loss of self-esteem in people which, in turn, had an effect on depression.

Quite a few studies have investigated the relationships between life stress, marriage, and psychological functioning (Lavee, McCubbin, & Olson, 1987; Pearlin & Johnson, 1977; Rook et al., 1991). They found marital satisfaction to function as a mediator variable between life stress and depression. Pearlin and Johnson (1977) compared married and unmarried people and found married individuals to be less exposed and less vulnerable to life stressors such as economic hardship, social isolation, and parental responsibilities than unmarried individuals.

Lavee, McCubbin, and Olson (1987) reported a mediation effect of marital adjustment in the stress and family well-being relationship. They documented that marital adjustment was found to be a major factor influencing family adaptation outcomes as indicated by husbands' and wives' well-being. Further, they argued that family members' physical,
psychological, and social well-being were positively influenced by the strength of the marital unit which may counteract the impact of life stress.

**Self-esteem as mediator between life stress and marital satisfaction**

The path-analytic results for the fully recursive model for fathers indicate that fathers' life stress does not have an indirect effect on fathers' marital satisfaction through self-esteem. The path-analytic results for the fully recursive model for mothers reveal that mothers' life stress does have an indirect effect on mothers' marital satisfaction through mothers' self-esteem.

A mediation effect of mothers' self-esteem for the relationship between mothers' life stress and marital satisfaction is found at both waves. At wave 1, the coefficient of the path from mothers' life stress to mothers' marital satisfaction in the original model (-.22) is greater than the coefficient of the same path in the fully recursive model (-.17). At wave 2, the magnitude of the coefficient of the path from mothers' life stress to mothers' marital satisfaction is -.24 for the originally hypothesized model and -.20 for the recursive model.

Compared to the originally hypothesized model, there is a 4% increase in variance in mothers' marital satisfaction in the fully recursive model for wave 1. Although a 4% increase
is small, it almost doubles the variance in the originally proposed model. A total of 9% of the variance in mothers' marital satisfaction is accounted for by mothers' life stress and self-esteem. At wave 2, compared to the originally proposed model, there is a 3% increase in variance accounted for in mothers' marital satisfaction in the fully recursive model. As is the case at wave 1, at wave 2, a total of 9% of variance in mothers' marital satisfaction is accounted for by mothers' life stress and self-esteem.

The finding of a significant association between mothers' self-esteem and mothers' marital satisfaction is consistent with the results of several earlier studies (Aller, 1962; Schafer & Keith, 1984; Tharp, 1963). Individuals who have a positive self-concept are more likely to have an open and accepting attitude toward and a positive appraisal of their spouses which may enhance their marital satisfaction (Aller, 1962; Jourard, 1971; Sharpley & Kahn, 1980). On the other hand, when people feel that their self image is under attack, they are more likely to act in an explosive, hostile way toward their spouses which may result in their own or their spouses' reports of low levels of marital satisfaction (Goldstein & Rosenbaum, 1985).

The mediational findings of the present study support a deterioration model (Ensel & Lin, 1991). For data to support a deterioration model, Ensel and Lin (1991) argue that the
following conditions have to be met: (1) the independent variable, stress, has to have a direct and negative effect on the mediator variable, the resource and (2) a positive effect on the outcome variable, distress. As a result of the negative effect of stress on the resource, the beneficial effect the resource has on distress, in reducing the level of distress, is decreased.

Results of the present study indicate that the conditions required for data to support a deterioration model are met to some degree. For both fathers and mothers at both waves, life stress has a significant and positive effect on depression. Life stress also has significant and negative effects on self-esteem and marital satisfaction. Parental self-esteem and marital satisfaction are weakened by the presence of life stress. Consequently, the total effect of life stress on depression, the sum of the direct and indirect effects, is increased.

Longitudinal Results

The results from the longitudinal data analyses do not demonstrate many substantial relationships between wave 1 and wave 2 variables except for the auto-correlations. For fathers, wave 1 life stress is significantly associated with wave 2 life stress. Wave 1 fathers' self-esteem, life stress,
and wave 2 life stress are significantly associated with wave 2 fathers' self-esteem. In the longitudinal analyses for fathers, wave 1 life stress is positively associated with wave 2 self-esteem, counter to what was predicted. This might be a case of multicollinearity. According to Ensel and Lin (1991), multicollinearity occurs when the correlations among the predictor variables are modest, and the correlations between the predictor variables and the criterion variable are even lower. The longitudinal correlations for fathers in the above case are consistent with this pattern.

Fathers' wave 1 marital satisfaction and wave 2 life stress are significantly associated with fathers' wave 2 marital satisfaction, and the associations are in predicted directions. Wave 1 depression and wave two self-esteem are significantly associated with wave 2 depression for fathers and the signs of these coefficients are as predicted.

For mothers, wave 1 life stress is significantly associated with wave 2 life stress. Wave 1 self-esteem and wave 2 life stress are both significant predictors of wave 2 self-esteem, with the signs of the coefficients being as predicted. Wave 1 marital satisfaction turns out to be the only significant predictor of wave 2 marital satisfaction for mothers. It should be noted that the $R^2 (.62)$ in the original model with all the hypothesized paths feeding into the dependent variable, wave 2 marital satisfaction, is slightly
less than the $R^2 (.65)$ in the reduced model. A plausible interpretation might be that over-feeding independent variables in the regression equation may cause a suppression in the $R^2$.

For mothers, wave 1 self-esteem, wave 1 depression, wave 2 life stress, and wave 2 self-esteem all significantly predict wave 2 depression. However, the significant and positive association between wave 1 mothers' self-esteem and wave 2 mothers' depression is counter to what was predicted. Here again the problem of multicollinearity, the correlational pattern as described by Ensel and Lin (1991), occurs for mothers.

In conclusion, this study evaluates a model that emphasizes both the direct effects of life events on depression as well as indirect effects, through self-esteem and through marital satisfaction. While the cross-sectional data provide some evidence to support the assumptions implicit in the model, such support is non-existent in the longitudinal data. In trying to evaluate the model longitudinally, several problems were encountered: lack of identification, non-positive definite matrices, multicollinearity, and suppression effects.

In the process of data analyses, other statistical techniques were employed such as LISREL (Linear Structural Relationships by the Method of Maximum Likelihood) and LVPLS
(Latent Variable Path Analysis with Partial Least Squares Estimation). Neither attempt succeeded due to the non-positive definite sigma matrices caused by the auto-correlations of the variables.

The identification of the nature of the relationship between life stress and individual and family psychological functioning can play an instrumental role in the design and implementation of intervention programs. There are many possible channels to implement an intervention program. Government subsidies may be one of the most significant and substantial forms of assistance for families facing financial difficulties due to a crisis such as the farming crisis. Another intervention may be support groups for people or families in stressful life situations and family extension programs for teaching family budgeting, family communication, and life stress coping techniques.

Identifying the crucial mediating variables in the relationship between stress and distress can assist in designing and implementing intervention programs which can intervene in the process in multiple ways and can increase the likelihood of preventing or reducing distress in individuals and families.

One of the major weakness in the research literature in the area of stress, resources, and distress is that most studies evaluate what are longitudinal models, models of how
variables relate to each other over time, only cross-sectionally. More longitudinal research in this area is needed in order to get a clearer picture of how the mechanism of resources such as individuals' psychological well-being (self-esteem) and family functioning (marital satisfaction) functions in the life stress process over time.

Finally, a limitation of the present study is that all the information is based on self reports. Further research can be improved by using at least one more different type of information to establish validity of the findings more strongly.


Weissman, M. M., Paykel, E. S., Siegel, R., & Klerman, G. L. (1971). The social role performance of depressed women:


ACKNOWLEDGEMENTS

Upon the completion of this study, I would like to express my deepest appreciation to my major professor, Dr. Jacques Lempers whose guidance, encouragement, and patience help me through this long period of graduate study.

I also feel grateful to several good friends who have been standing by me and supporting me during the last couple years of attending graduate school and raising my son alone. Their care and love give me lots of cheers and their instrumental assistance eased many of the tough times.

I would like to extend many thanks to my family. Particularly, I would like to thank my late father; without his inspiration I would not have accomplished all this. I feel grateful for my husband's remarkable understanding and sacrifice in supporting my academic pursuit. Finally, my son deserves my heartfelt thanks for being such a resilient child surviving through our lives together.
We'd like to know a bit about things which may have happened to you since we interviewed you last year. Look at the list below and circle a "1" if it happened, or a "2" if it did not happen. Then if it did happen, circle the number for the answer that best describes how the event affected your life. Your choices for this part of question are:

1 = it had an extremely negative impact
2 = it had a moderately negative impact
3 = it had a somewhat negative impact
4 = it had no impact
5 = it had a somewhat positive impact
6 = it had a moderately positive impact
7 = it had an extremely positive impact

1. You separated from your spouse.
2. You divorced.
3. Your spouse died.
4. You had a child who died.
5. Some other close family member died. Who?_______
6. A close friend died.
7. You had a serious illness or injury.
8. Your spouse had a serious illness or injury.
9. Any of your children had a serious illness or injury.
10. Other close relative had a serious illness or injury. Who?_______
11. Your work situation changed (i.e. hours, responsibilities, etc.).
12. You started a new job.
13. You had trouble with your employer.
14. You were fired from your job.
15. You retired.
16. There was a change in your husband's work.
17. You had an outstanding personal achievement.
18. You received a traffic ticket or violated any other minor law such as disturbing the peace.
19. You were put in jail.
20. You experienced a major change in your financial situation.
21. You borrowed more than $10,000 (buying a home, business, etc.).
22. You borrowed less than $10,000 (loan for TV, car, school,
23. A mortgage or other loan was foreclosed on.
24. Forced (financially) to quit farming.
25. Quit farming (by choice).
26. You experienced a change in sleeping habits.
27. You experienced a change in eating habits.
29. The family moved to a different home.
30. Change in your family living conditions (i.e. remodeled, addition, moved to a less desirable area, etc.).
31. You had trouble with your in-laws.
32. You argued a lot more or a lot less with your husband.
33. You became pregnant.
34. A new member added to your family.
35. A major change in closeness of family members.
36. Son or daughter left home (i.e. college, marriage, etc.).
37. Because of work or other reasons like that, you and your husband were separated.
38. You attended church activities much more or less.
39. You participated in regular recreational activities a lot more or a lot less.
40. You spent a lot more time or a lot less time on regular social activities.
41. You had an abortion.
42. Other event that have had an impact on your life in the last year. List and rate: 
43. Other event that have had an impact on your life in the last year. List and rate: 
SELF-ESTEEM QUESTIONNAIRE

Please read each statement and circle the number which indicates how much you agree or disagree with how it describes you. Your choices are:

1 = strongly disagree
2 = disagree
3 = agree
4 = strong agree

1. On the whole, I am satisfied with myself.
2. At times I think I am no good at all.
3. I feel that I have a number of good qualities.
4. I feel able to do things as well as most other people.
5. I feel I do not have much to be proud of.
6. I certainly feel useless at times.
7. I feel that I am a person of worth, at least on an equal plane with others.
8. I wish I could have more respect for myself.
9. All in all, I am inclined to feel that I am a failure.
10. I take a positive attitude toward myself.
MARITAL SATISFACTION QUESTIONNAIRE

The numbers on the following line represent different degrees of happiness in your marital relationship. Please circle the number which best describes your degree of happiness, all things considered, with your marital relationship.

0 1 2 3 4 5 6

Extremely Fairly A Little Happy Very Extremely Perfect
Unhappy Unhappy Unhappy Happy Happy

Now would you think about how your wife/husband feels about your relationship and answer this same question? Circle the number which best describes your degree of happiness, all things considered, with your marital relationship.

0 1 2 3 4 5 6

Extremely Fairly A Little Happy Very Extremely Perfect
Unhappy Unhappy Unhappy Happy Happy

Sometimes couples experience serious problems in their marriage and have thoughts of ending their marriage. Please circle the answer that best describes your experience.

1 = never
2 = yes, prior to the last 3 years
3 = yes, prior within the last 3 years
4 = yes, within the last 3 months

1. Even people who get along quite well with their spouse sometimes wonder whether their marriage is working out. Have you ever thought your marriage might be in trouble?
2. Has the thoughts of getting a divorce or separation from your spouse crossed your mind?
3. Have you discussed divorce or separation from your spouse with a close friend?
4. Have you or your wife/husband ever seriously suggested the
idea of divorce?

5. Did you and your wife/husband talk about consulting an attorney about a possible divorce or separation?
This series of questions ask about your feelings and thoughts during the last month. The best approach is to answer each question fairly quickly to indicate what seems like a reasonable estimate. Choose one number from one to seven which best reflects how you felt.

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During the last month, how often did you...
1. Lack enthusiasm for doing anything?
2. Have a poor appetite?
3. Feel lonely?
4. Feel bored or have little interest in doing things?
5. Have trouble getting to sleep or staying asleep?
6. Cry easily or feel like crying?
7. Feel downhearted or blue?
8. Feel low in energy or slowed down?
9. Feel hopeless about the future?