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The purpose of this study was to investigate changes in contact, emotional closeness, and aid exchange in the mother-daughter relationship during daughter's first pregnancy. According to the literature reviewed, women increase contact with and become emotionally closer to their mothers with pregnancy. It appears that pregnant women have increased feelings of closeness to their mothers even though pregnant women are more likely to receive more aid from their mothers than they give. Mothers may become emotionally closer to their daughters because the grandchildren are seen as a stake in the future or they may remain distant from their daughters as they change their lives at middle age. Unbalanced aid exchange between generations also tends to have a negative impact on emotional closeness.

The participants were middle-class women, 18 to 30 years old, married or in a stable relationship with a male partner, and

expecting their first child. Their mothers also participated. Daughters were recruited from obstetrical practices and prenatal classes; their mothers were recruited by mail.

The sample of 64 mother-daughter pairs was stratified into four groups based on gestational age of daughters' pregnancies. A non-pregnant control group of 12 mother-daughter pairs was included.

Data were collected through a two-wave mail survey. The questionnaires consisted of instruments measuring contact patterns, aid exchange, emotional closeness (Walker & Thompson's Attachment and Intimacy Scales), equity (Tilden's Interpersonal Relationships Inventory), and demographic data. Mailings were eight weeks apart.

The design of this study was cross-sequential. Associations among the dependent variables were explored with correlation (Pearson's r). Changes in contact, emotional closeness, equity, and aid exchange were analyzed with repeated measures MANCOVA with dyad partner and period of data collection as the repeated variables. The non-repeated variable was the group assignment based on gestational age. Distance between the partners' residences was the covariate.

Mothers reported greater emotional closeness and equity than daughters, while daughters reported that they received more help than mothers. Between data collection periods, daughters' emotional closeness and equity increased while mothers' decreased. Emotional closeness was more strongly associated with equity than with aid exchange for both mothers and daughters. None of the differences was related to pregnancy.

Perceptions about Mother-Daughter Relationships during Daughters' Childbearing

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PERCEPTIONS ABOUT MOTHER-DAUGHTER RELATIONSHIPS DURING DAUGHTERS' CHILDBEARING

Chapter I

INTRODUCTION

This study examined the impact of adult daughters' first pregnancy on emotional closeness, contact, and aid between mothers and daughters. The importance of this study can be explained by looking at the current trends in research about mother-daughter relationships. Many of the current intergenerational studies of women focus on women past childbearing, some of whom are involved in dependent and caregiving relationships with elderly mothers. There may be several reasons why this is so. Mother and adult daughter relationships are unique in many ways (Troll, 1987). Undoubtedly, older women have a longer mother-daughter relationship history than younger women as writers about women's lifelong development have indicated (Chodorow, 1978; Gilligan, 1982; Hammer, 1976; Troll, 1987). In western culture, women are considered to be caregivers to children and other members of families. Women live longer than men which means that there are considerably more older women than men in dependent relationships with their children.

Little investigation has been done on the earlier phases of the adult daughter-mother relationship. This relationship may be stable over time (Wood, Traupmann, & Hay, 1984), but investigation has indicated that relationships in later life may be influenced by earlier events. Qualitative data from a study (Baruch & Barnett,

1983) of 171 adult women (ages 35 to 55) indicated that their relationships with their mothers changed over time but that most of the change occurred prior to daughters reaching age 35. The beginning of their relationship as adults was characterized by daughters' struggles for autonomy and sense of identity (Baruch & Barnett, 1983). Historically these struggles were part of adolescence and terminated with marriage and childbearing. Therefore, in the older literature on women's lives, the marker event at which the mother-daughter relationship begins as one between adults rather than as parent-child was the daughters' first pregnancy.

The life transitions of women through which they become adults have become more varied, and older conceptualizations may not be entirely valid. Formerly marriage and childbearing were the normative events marking women's adulthood. Currently, more women are leaving their families of origin prior to marriage and/or childbearing to pursue education and employment (Norton & Moorman, 1987). Women are marrying and having children at older ages than their mothers did. Social class, economic status, and ethnicity account for some of the diversity in age at which women become adults, mothers, and grandmothers (Sprey & Matthews, 1982).

Demographic trends give importance to the study of the mother-daughter relationship at the time of daughters' childbearing. Over the last 20 to 50 years, the number of women becoming mothers and grandmothers has increased and continues to do so (Sprey & Matthews, 1982). Even though families now have fewer children, a

greater proportion of women are becoming mothers. With the trends of more women having children and women living longer, the proportion of women becoming grandmothers has increased.

Some family development theorists (Valentine, 1982), psychiatrists (Wenner, Cohen, Weigert, Kvarnes, & Ohaneson, 1969), and nurses (Lederman, 1979, 1984; Rubin, 1984; Tilden, 1978) stress the importance of relationships with others, including women's own mothers, for successful psychological development and adjustment to pregnancy and parenthood. The research on which they have based their conceptualization, however, may not be applicable to contemporary women.

Even though daughters' childbearing may not be the life transition that marks the beginning of mother-daughter relationship as adults, daughters' first pregnancies may be a time of change in the relationship. This facet of women's needs should be examined with contemporary women. The aspects of the relationship that may change during daughters' first pregnancies are emotional closeness, contact, and assistance or aid.

Chapter II

REVIEW OF THE LITERATURE

Relationship with mother has been referred to in descriptive works on childbearing (Colman & Colman, 1972; Oakley, 1980). These works mention that women draw closer to their mothers during pregnancy and the postpartum. The focus in the scholarly literature about mother-daughter relationships is the emotional closeness that daughters develop toward their mothers during pregnancy. This literature to date also suggests that, during pregnancy, the intergenerational relationship is marked by an increase in aid from mothers and that more contact occurs between mothers and daughters. Empirical work about the relationship of emotional closeness, aid patterns, and contact frequency between mother and daughter at the time of daughter's first pregnancy has been extremely limited.

The theoretical perspectives guiding most of the research about mother-daughter relationships during pregnancy have focused on the individual rather than the relationship or dyad. In this chapter, the findings and the theoretical aspects of the existing research pertinent to emotional closeness, contact, and aid between mothers and daughters during daughters' first pregnancies will be presented. Equity theory will be presented as an appropriate theory for investigating the dyadic aspects of mother-daughter relationships during pregnancy and the early postpartum. Equity theory is suitable for studying mother-daughter relationships because it is an all-encompassing theory of social psychology based on several

theories used to study dyads such as reinforcement and social exchange (Walster, Walster, & Berschied, 1979).

Emotional Closeness during Daughters' Pregnancy

The Relationship of Daughters to their Mothers

The earliest work on the mother-daughter relationship during pregnancy was psychoanalytic in orientation and dwelled primarily on the impact of the mother-daughter relationship on women's psychological adaptation to pregnancy and motherhood. Deutsch (1945), through her work as a psychoanalyst, discovered that the relationship with mothers had a profound impact on her clients' pregnancies and childbearing. She saw her clients as identifying with their mothers. She also believed that issues of dependence on mothers were played out during daughters' pregnancies. For example, very dependent women were believed to continue to be highly dependent on their mothers for managing aspects of their pregnancies such as obtaining prenatal care. Pregnancy was also seen as a time during which independence from mother was overemphasized with the inner feeling of, "Now I am the mother, not you" (Deutsch, 1945, p. 143). The extreme of such affirmation was believed to be begrudging the mother the grandchild. Affirmation of independence during pregnancy was seen as the resurfacing of conflicts from earlier in their lives. Deutsch reported that when the daughter indeed was pregnant, old feelings of guilt, aggression, and conflict arose. These negative feelings were seen to diminish as the daughter adjusted to her

upcoming motherhood.

Deutsch's work, however, was not based on empirical study. The women she described were psychiatric patients who may have had different interpersonal relationships from women in the population at large. Also, the lives and treatment of women as adults were quite different in the 1940's from the 1980's when women may be functioning as adults long before marriage and childbearing. Therefore, the validity of Deutsch's work for present-day women is questionable.

Psychoanalytic concepts dominated the investigation of women's relationships with their mothers during pregnancy throughout the 1970's. Few of the psychoanalytic studies were empirical works based on statistical analysis of change or difference. The data were qualitative and obtained primarily from non-random samples of limited size and diversity and were content analyzed from a psychoanalytic perspective. The studies after Deutsch, though still driven by psychoanalytic theory, were more credible in that women without psychiatric diagnoses were studied.

Bibring, Dwyer, Huntington, and Valenstein (1961) analyzed interviews of pregnant adult women in order to identify psychological issues and processes of normal pregnancy. The women had no history of psychological disturbance and were seeking prenatal care at Beth Israel Hospital in Boston. The 15 primiparous women in their nonprobability sample underwent direct observation, interviews, and psychological testing by psychologists, psychiatrists, physicians, and social workers at five different time periods. Data collection times were the first trimester, the second trimester after the woman

felt fetal movement, the third trimester of pregnancy, during hospitalization for the birth, and within the first postpartum year. The data were analyzed qualitatively by teams of investigators through analysis of written materials on each participant and through discussion sessions which included the participant at each time period.

The findings of Bibring and associates (1961) supported the idea that pregnancy was a time of revival of psychological conflicts of earlier developmental periods and also a time in which old conflicts were settled with new and different solutions. Early in pregnancy, women sensed change in their relationships with their mothers. Women established new solutions for childhood conflicts and replaced these childhood experiences with new forms of identification with their mothers. Mothers became the prototypical parental figure. During pregnancy a woman's orientation toward her mother changed from being a "little daughter to becoming a co-equal to her mother in function and stature..." (Bibring, 1975, p. 261). Some (number not stated) of the women expressed that dependence on their mothers decreased as they tried to make decisions on their own during the pregnancy. In other women (number not given) Bibring and coworkers found that "belligerent independence" of daughters' adolescence softened, and acceptance of their mothers grew. The outcomes of these changes were awareness of becoming an adult and feelings of closeness with their mothers.

Even though Bibring and associates' study had more external validity than Deutsch's work, the findings must be interpreted with

caution. They assumed that women became adults with pregnancy rather than with other marker events such as marriage, completing education, moving away from the family of origin, and becoming economically independent. It could be inferred that the women were very young because of the frequent mentioning of adolescence as if it were recent, but the ages of the women were not stated. The findings about the mother-daughter relationship were based on self-reports. The nature of the pre-pregnancy relationship could have been distorted by the women's perceptions. Also, the researchers were looking for certain "conflicts" which would have guided their questions as well as their interpretations. In addition, frequencies were not stated for the findings.

In her study of psychological development during pregnancy, Ballou (1978) examined women's relationships with their mothers. The subjects were 12 primigravid women who were heterogenous as to age, socioeconomic status, and education. The women were sought out not to be representative of the population but to represent diverse styles of relationships with important persons in their lives. Like Bibring and associates (1961), Ballou used qualitative investigative methods grounded in psychoanalytic concepts. Semistructured interviews were conducted with the women during each trimester of pregnancy and at six weeks and three months after birth. The interview data were compared for both longitudinal and cross-sectional trends in changes in the importance of persons in relationships.

Ballou concluded that the psychological work of pregnancy

involved "changes in the woman's world of persons in order to make a place for the child" (Ballou, 1978, p. 406). In other words, emotional relationships with others changed during pregnancy. The processes involved with these changes included reconciliation over previous conflicts with mother and development of a sense of being a competent adult woman. Analysis of case studies, driven by psychoanalytic theory, illustrated the development of these changes over the course of pregnancy. Most of the women reported that before pregnancy the relationships with their mothers were ambivalent as they were proving to themselves and their mothers that they were autonomous adults. At the same time, they still wished to be cared for and given to by their mothers. During the first trimester, women were still critical of their mothers and/or perceived that their mothers were critical of them. A common theme in the first trimester was wanting to be different from their own mothers. One woman stated that her husband was a buffer between her and her mother which indicated that the mother-daughter relationship involved conflict at least for that daughter. At the second trimester interviews, women reported that their relationships with their mothers were improved. Mothers were perceived to be treating daughters as adults and to be more giving. As adults, daughters could be more accepting of mothers' opinions without feeling threatened. Judgmental feelings about mothers were toned down. A sense of reconciliation over childhood conflicts prevailed. In the third trimester, women reported that they enjoyed being with their mothers and that they continued to feel close to their mothers. These reconciliation

processes were part of the women's developing sense of self as adults. They sensed that they and their mothers were becoming adult equals as mothers.

More recently, Richardson (1981) empirically examined changes in an array of dyadic relationships of pregnant women. These included relationships with parental figures, peers, husbands, and children. Mother-daughter relationships per se were not studied but were included in parental figure relationships. The sample of 14 pregnant women from a hospital prenatal clinic consisted of four white, two Black, and eight Hispanic women. Five were having first babies while the others had at least one child. Twelve were living with husbands and two were living with their parents after separation from husbands. The women were interviewed monthly from the third month through the ninth month of pregnancy about the importance of the various types of relationships to them, their assessment of changes in relationships in the preceeding month, and if they found the relationships satisfactory or not. The researcher tested for changes in satisfaction with and importance of relationships over time with multiway frequency analysis and likelihood chi-square. The findings were reported for early (9-20 weeks), middle (21-32 weeks), and late pregnancy (33-41 weeks). Satisfaction with parental figures and husbands was greatest in the late period. Even though the findings must be interpreted cautiously because of the small, varied, non-random sample and the inclusion of grandparents, step-parents, and fathers along with mothers in the parental figure dyad, this study supported other research on the nature and direction of change

in the relationships of pregnant women with their mothers.

Unlike Richardson (1981), Fischer (1983) presented evidence that pregnant women's relationships with their mothers are unique among parent-adult child ties. In her exploratory study based on retrospective reports of changes in relationships between 33 adult daughters, 30 of their mothers, and 24 of their mothers-in-law, Fischer found that, with the birth of the first child, daughters had less relational strain and less conflict with their mothers and more conflict with their mothers-in-law. This study also is congruent with the findings of other studies on change in mother and pregnant daughter relationships.

Comparison of pregnant and non-pregnant daughters' perceptions of their relationships with their mothers would confirm that pregnancy is a unique phase of the mother-daughter relationship. Only one such study was found (Olson & Worobey, 1984). Forty non-pregnant and 20 pregnant adolescents were matched as to age (mean = 16.2 years), proportion of white to non-white participants, birth order, mothers' age, mothers' employment and marital status, and number of siblings. Emotional aspects of the participants' relationships with their mothers were measured with standardized instruments, Parent-Child Relationships II and Measures of Intimacy and Attachment (Walker & Thompson, 1983; Thompson & Walker, 1984). Overall, both groups of daughters had positive relationships with their mothers. The non-pregnant daughters, however, had significantly higher scores for the variables of "love," "attention," and "interdependence" than the pregnant daughters. In another study

involving mothers and adolescent daughters (Townsend & Worobey, 1987), non-pregnant adolescents tended to be more positive in intimacy, attachment, and strength of feelings toward their mothers than their pregnant cohorts. Because the study population was adolescent daughters, the results may not be similar for adult daughters' relationships with their mothers. The dynamics of the mother-daughter relationship for pregnant adolescents may be very different from those of adult daughters. The study does provide some evidence, however, that the mother-daughter relationship may be different for pregnant and non-pregnant women.

The prevalent theme in studies of adult pregnant women's relationships to their mothers is that daughters feel emotionally closer to their mothers over the course of pregnancy (Table 1). The relationship between pregnant daughters and their mothers is perceived to be unique. Emotional closeness is believed to develop over the course of pregnancy with the third trimester being the time of greatest closeness. Empirical evidence of changes in emotional closeness to mothers over the course of daughters' pregnancies, however, is extremely limited.

Mothers' Emotional Closeness to Daughters

Mothers' perception of their relationships with their daughters at the time of daughters' first pregnancies may change, but these changes may not be analogous to the changes in daughters' perceptions of the relationship. A greater variety of theoretical perspectives has been used to explain mother's perception of changes in the relationship (Table 2).

Table 1

Daughters' Perspectives of Change in Emotional Closeness between Mothers and Daughters during Pregnancy

Investigator	Time of Change
Deutsch (1945)	Negative feelings of daughter diminish over course of pregnancy
Bibring et al. (1961)	Daughter senses change in relationship early in pregnancy
	Feels close to mother by end of pregnancy
Ballou (1978)	First trimester, daughter is critical of her mother, wants to be different from her own mother
	Second trimester, relationship with mother improving, toning down of judgmental feelings toward mother, less threatened by mother's opinions
	Third trimester, enjoys being with mother, feels close to mother
Richardson (1981)	Satisfaction with parental figures greatest in late pregnancy (33-41 weeks)
Fischer (1981)	Less conflict and relational strain with mother after having first child

Table 2

Mothers Perspectives of Change in Emotional Closeness between Mothers and Daughters during Daughters' Pregnancy

Conceptual Framework	Change
Psychoanalytic	Mother shifts libidinous investment to grandchild
Developmental Stake	Becomes closer to own daughter than to own mother, daughter's childbearing assures extension of personal history into future
Role Convergence	Daughter's pregnancy and motherhood increase role convergence. With role convergence, mother feels closer to daughter
Life Events Perspective	With launching of children, mother relinquishes active participation in parenting; may be returning to employment and/or educational programs or focusing on the marital relationship which could serve to distance mother from adult daughters

According to psychoanalytic theorists (Bibring, Dwyer, Huntington, & Valenstein, 1961; Deutsch, 1945), with daughter's pregnancy, the mother shifts her libidinous investment from her daughter to her grandchild. This shift in relationships has not been supported empirically, however.

Even though no studies solely on women's relations to their adult primigravid daughters seem to exist, work on women's midlife development and intergenerational studies of women suggest that women's relationships with their first-time pregnant daughters change. The change in relationship, that is, to an emotionally closer or more distant one, can be conjectured to develop in opposite ways from different theoretical viewpoints (Table 2).

The "developmental stake" concept (Bengtson & Kuypers, 1971; Hagestad & Lang, 1982) supports that middle-aged women tend to be closer to their own daughters than to their mothers. "Developmental stake" is the emotional investment that parents have in maintaining close relationships with their offspring. The concept is based on the Eriksonian theory that the thrust of the relationships of persons at midlife is to extend one's personal history into the future. Middle-aged people tend to develop intimate relationships with younger generations while younger people invest emotionally into peers and then downward into their own children.

Bengtson and Kuypers (1971) used the developmental stake concept to explain their findings of generational differences in 312 students and 371 of their parents. The majority of students (78%) and parents (87%) reported that their relationship was "close" or

"very close." There were significant differences of opinion on 11 topics. Parents overestimated the degree of closeness, understanding, and communication with their student offspring.

Even though the Bengtson and Kuypers (1971) study offers limited empirical evidence for parents having more emotional investment in relationships with the younger generation than their children have with them, it supports the notion that women could develop closer relationships with their daughters during their first pregnancy. Developmental stake can also be used to explain Baruch and Barnett's (1983) finding that middle-aged women (ages 35-55) without children were closer to their mothers than women who had children themselves. The middle-aged mothers may be investing emotionally into their offspring rather than their own parents. Daughters' pregnancies can be construed by middle-aged women as a time of extension of their personal history into the future.

Even though the participants were mothers of pregnant and non-pregnant adolescents, Townsend and Worobey's (1987) study supports the concept of the generational stake. Ninety-five mother-daughter pairs ($\underline{n}$ = 76 non-pregnant daughters, $\underline{n}$ = 19 pregnant daughters) completed questionnaires on intimacy and attachment and strength of feelings (Circirelli, 1980) toward each other. Overall, mothers tended to have more positive feelings about their daughters than their daughters had about them. There were no significant differences in scores between mothers of pregnant and non-pregnant adolescent daughters. The findings of this study may not be applicable to the mothers of adult daughters but they do support the

concept of the generational stake. The investigators did not state how far along the pregnancies of the daughters were or the range of gestation. Therefore the relationship of time of gestation to the feelings of the pregnant daughters' mothers cannot be assessed.

Role convergence, that is, the roles of the two women becoming identical, is another concept that supports mothers becoming closer to their daughters during pregnancy. The empirical evidence does not support a positive relationship between role convergence and emotional closeness of mothers to daughters when they assume similar roles such as the wife role. The association of attachment, a type of emotional dependence, and the convergence of marital, launching of children, and employment roles was considered in a larger study of interdependence in three generations of women by Walker, Thompson, and Morgan (1987). The 135 college-student daughters and their mothers were primarily middle-class and had higher educational attainment than the population of the state in which they resided. The majority (52%) of the student daughters were 20 to 25 years old and single (82%). All the mothers were married, and most (63%) were between the ages of 40 and 49. The findings did not support that attachment was associated with role convergence. In fact, mothers reported significantly less attachment to married daughters than to single daughters. The findings addressing the association of attachment with convergence of other roles were not significant. The impact of role convergence on emotional closeness of mothers and pregnant daughters cannot be entirely refuted by the Walker and associates (1987) study. The negative correlation between role

convergence and attachment was not significant for all the types of roles addressed, and some family roles, such as the parent role, were not included. Perhaps the findings would have been different if the younger women were pregnant or mothers.

It could be conjectured from a life course perspective that middle-aged women could become more distant emotionally from their pregnant daughters. With the "launching" of children, middle-aged women relinquish some of the roles associated with active parenting (Lowenthal & Chiriboga, 1972; Rubin, 1979). Launching may be associated with relief from parenting burdens and the freedom of women to increase their attention to their own needs (Rubin, 1979). At middle age, many women rejoin the workforce, return to education, or pursue their own interests and concerns which would serve to distance them emotionally from their adult children. Generativity may be expressed by redirecting energy from reproductive-associated ties to other future-oriented concerns.

The life course perspective research cited was based on extensive retrospective and prospective interviewing. An example of life course perspective research is the work of Lowenthal and Chirboga (1972). They conducted lengthy interviews with 27 women (average age 48) as part of a longitudinal study. The investigators asked the respondents to evaluate their lives for the different life stages. Contrary to the prevailing concept about the "empty nest," the women's concerns were not primarily associated with relationships with their adult children but with spouses.

Greater emotional distance between mothers and pregnant, adult

daughters has not been borne out by empirical study. By contrast, in a study of 21 women with children under age 2 1/2 and their mothers, Fischer (1981) found some evidence that mothers wanted to distance themselves from the relationship with their daughters. Walker, Thompson, and Morgan (1987) found no differences in women's attachment to student daughters based on mother's status of launching or employment. Because of the very limited sample, Fischer's finding cannot be generalized to the general population of mothers with pregnant daughters. Even though the study of Walker and associates was not based on mother and pregnant daughter dyads, their findings do not support the notion that the developmental events of women at midlife are associated with emotional distancing from their daughters.

Empirical study of mothers' emotional closeness to daughters during pregnancy is more limited than study about daughters' emotional closeness to their mothers. Developmental stake, role convergence, and life course perspective for women at middle age are conceptual frameworks that can be used to support or refute the idea that women become closer to their first-time pregnant daughters. The developmental stake approach has somewhat stronger evidence than either role convergence or life course perspective to support the idea that mothers may become emotionally closer to their daughters during daughters' first pregnancies.

Emotional Closeness of Mothers and Daughters

Few studies about childbearing women and their mothers have

included both mothers and daughters. Only three were found in which emotional closeness was examined.

Fischer (1981) studied the impact of daughters' transitions of marriage and motherhood on the meaning (symbolic perspective) and on the behavioral (interactional perspective) aspects of the mother-daughter relationship. Retrospective data were collected from both mothers (n = 39) and daughters (n = 43). The subsamples of daughters were 21 married women with children under age 2 1/2, 12 married women without children, and 10 unmarried women without children. If the daughters were mothers, mothers and daughters tended to become more involved with each others' lives. They redefined and renegotiated their relationship in terms of role perspectives about being mothers and changed relative statuses from mother and child to that of two adults. In other words, daughters reevaluated their mothers as mothers and they became equals as mothers. These findings also support that role convergence leads to more involvement with each others' lives.

Fischer also noted that her findings were counter to the usual perspective of young adult women breaking away and becoming less dependent on their mothers. In this study, daughters who were mothers were very desirous of maintaining continuity and ties with their mothers. Often they explained this as doing it "for the sake of the children" (Fischer, 1981, p. 621). She speculated that, if dyads were to separate, the separation probably would be caused by mothers who, as middle-aged women, were seeking independence from their children. This idea is somewhat counter to the idea of

mothers' developmental stake in the younger generation but it supports the life course perspective that mothers at middle age become more distant from their children.

Fischer (1983) also studied harmony and conflict patterns of daughters and mothers in relation to daughters' childbearing. In this study of 33 daughters, 30 mothers, and 24 mothers-in-law, the least amount of conflict was between mothers and daughters with children. All the children of the participant daughters were under age 2 1/2. The most conflict was between mothers-in-law and women with children. Overall mothers and women with children had the least strain on their relationship. It was not stated if any of the daughters were pregnant at the time of this study, but it does imply that childbearing is related to differences in the feelings between mothers and daughters.

Even though the daughters in the Townsend and Worobey (1987) study were pregnant and non-pregnant adolescents, mothers and daughters showed a high convergence of scores on intimacy, attachment, and strength of feeling. There were no significant differences between pregnant and non-pregnant dyads.

Unanswered Questions about Emotional Closeness

So far, changes in emotional closeness between mothers and adult daughters over the course of pregnancy and the early postpartum have not been well documented. Most of the research has focused on daughters' feelings of closeness to their mothers, while there is a paucity of work on mothers' perspectives. Different conceptual

frameworks have been used to study mothers' and daughters' emotional closeness which makes comparisons about perceptions of emotional closeness difficult. Much of the data were retrospective and collected with investigator-developed instruments. Longitudinal research addressing both mothers and daughters has been particularly limited.

The literature on emotional closeness between mothers and adult pregnant daughters raises several questions besides changes in emotional closeness for mothers and/or daughters. There are other aspects of the mother-daughter relationship that have not been addressed that may affect perceptions of emotional closeness. Some of these will be addressed in the next section.

Contact Patterns and Aid during Daughters' Pregnancies

Two salient aspects of relationships are contact patterns and exchange of aid between mothers and pregnant daughters. Study of contact and aid between mothers and pregnant daughters is scant. Therefore works on intergenerational contact and aid patterns for various family networks will be considered. Much of the work during the 1950's and 1960's on intergenerational contact and aid within families challenged the notion of the urban American isolated nuclear family (Adams, 1964, 1968; Aldous, 1967; Reiss, 1962; Sussman, 1953; Sussman & Burchinal, 1962). The focus of later works was exploration of the association of contact and aid with other aspects of interpersonal relationships across generations (Belsky & Rovine,

1984; Fischer, 1981, 1983; Hill, 1970; Leigh, 1982; Thompson & Walker, 1984; Walker & Thompson, 1983). Aspects addressed have been gender, residential proximity, generation, family life cycle stage, and emotional closeness.

Undoubtedly contact and aid are interrelated and difficult to separate into discrete entities. It may be impossible to have aid without some sort of contact even though Fischer (1981) and Adams (1968) identified forms of aid that did not require proximity. For the sake of clarity, contact and aid will be considered separately. Intergenerational studies have focused on the entire life span. This review will be limited to relationships between young adults and their parents.

Contact Patterns across Generations

Contact has been defined in a number of ways. In some works it has been defined as face-to-face encounters only (Aldous, 1967; Reiss, 1962) while in others, the definition of contact includes face-to-face encounters, telephone calls, and correspondence (Adams, 1968; Belsky & Rovine, 1984; Fischer, 1981, 1983; Hill, 1970; Leigh, 1982; Walker & Thompson, 1983; Walker, Thompson, & Morgan, 1987). Adams (1968) included working together, participating in the same volunteer organizations, giving aid, and receiving aid in the definition of contact. Sweetser (1963, 1964), an early investigator of mother and adult daughter relationships, defined contact as living in the same household. In her study of "kinkeeping" or the work of keeping family members in contact with each other, Rosenthal (1985)

included organization and holding of family gatherings as a form of family contact. In a very recent study of parent and adult child interaction, Kivett (1988) expanded the concept of contact to include commercial recreation, home recreation, outdoor recreation, visiting, vacation, family reunion, emergency, working together, baby sitting, happy occasions, church, shopping, writing, and telephoning. In the review that follows, contact will be regarded as the various modes of face-to-face interaction as well as telephone calls and correspondence among family members.

Frequency is the primary dependent variable in the study of contact between generations. Throughout the literature, frequency is commonly measured in terms of days, weeks, months, segments of the year, and years. The most frequently studied independent variables which are believed to influence parent and adult children contacts are residential proximity or distance, gender, and family life cycle stage. To a lesser extent, attitudes or feelings about contact and aid have been studied. Prior to the mid 1970's, social class and social-class mobility of adult children were of interest. Social-class mobility is currently not as pertinent today because of the changing patterns of life-time economic earnings over the past ten to fifteen years which have diminished the potential for upward class mobility.

Distance. In several works that address the impact of distance on contact between various kinship members (Adams, 1968; Leigh, 1982; Reiss, 1962), residential proximity was positively associated with frequency of contact. In his study of the kinship systems of urban,

middle-class informants (n = 69 males and 92 women), Reiss found that, for adult children and their parents who lived in the same town, the most frequently occurring patterns (97.6%) were at least monthly contact. For other patterns of residency, monthly interaction patterns were negatively associated with distance. For all residence patterns, however, interaction between adult children and their parents was more frequent than for other types of relationships such as siblings, cousins, grandparents, aunts and uncles, and nieces and nephews.

In his exploratory study of American kinship, Adams (1968) also found that distance was a factor associated with frequency of contact between adult children and their parents. The mode for children and parents in the same community was at least weekly while for farther distances contact was most likely to be weekly to monthly. Distance was also related to the nature of contacts between parents and children. Frequency of telephoning was inversely related to distance while mail communication was positively associated with distance. Some of the types of contact studied by Adams (1968), such as working together, may not be possible if family members live far apart. Face-to-face interaction for the 799 families in Adams' (1968) block random sample and its relation to distance was also associated with sex of the adult children. If parents lived in the same community or within 100 miles, daughters had more frequent contact than sons. If parents lived 100 miles or more, sons saw their parents more often than daughters. Adams attributed this to the greater mobility of sons than of daughters.

Leigh (1982) used the data from Adams' (1968) Greensboro study and other data from a mail survey of 478 randomly selected families in a small Indiana city to study kinship interaction over the life span. Through regression, Leigh determined that geographical distance was a significant predictor in both sets of data for interaction between adult children and parents. Distance categories were based on mileage between adult children and their parents.

A few investigators examined the association of distance with contact patterns between mothers and daughters (Fischer, 1981; Fischer, 1983; Walker & Thompson, 1983). Walker and Thompson (1983), in a study that involved 132 college student women and their mothers, examined the common assumption that contact and aid between cross-generational dyads were associated with intimacy, a form of emotional closeness. Contact frequency was conditional on distance. Intimacy was significantly associated with distance and frequency of contact for "moderate" distances of 21 to 99 miles. This finding was similar to Adams' (1968) in an investigation of kinship interaction. The investigators concluded that moderate distance between mothers and daughters contributed to the voluntary nature of contacts. When they live close together, contact frequency may be unavoidable even when the parties wish not to have contact; for great distances, separation may be related more to the logistics of contact rather than wanting to be together or apart.

Proximity to daughter was also associated with emotional closeness in the work of Aldous, Klaus, and Klein (1985). Their study of attachment patterns of middle-aged parents to their adult

children showed that mothers (n = 115) most frequently named daughters (n = 75) as confidants and sources of comfort. Daughters (n = 48) living within 50 miles were more apt than daughters living farther away to be confidants and sources of comfort.

In her studies of daughters and their mothers, Fischer (1981, 1983) found that distance ("near," within 20 miles; and "far," at least 50 miles) was a variable associated with different patterns of visiting and communication for mothers and daughters with and without children. Contact patterns for "far" daughters with and without children were similar. For "near" daughters, those with children had more frequent contact with their mothers. Fischer attributed the differences in contact between "near" mothers and daughters to daughters' different life situations, such as being at home or employed, and flexibility of schedules.

Belsky and Rovine (1984) conducted a longitudinal study of the support networks of 72 expectant couples. The data, which were collected during the third trimester of pregnancy, three months postpartum, and nine months postpartum, supported that these couples' contact with their families of origin was inversely related to the geographical distance between them.

The findings about distance and contact for the most part confirm that contact is directly related to proximity. This is especially seen in studies in which distance or proximity is a bivariate such as Fischer's (1981) variables of "near" and "far," or greater than or less than 50 miles used by Aldous et al. (1985). In other works (Adams, 1968; Walker & Thompson, 1983), the association

of proximity and contact is not so clear. For short distances, contact may not be avoidable; for long distances, the logistics of contact influence the rate of contact no matter how emotionally close the family members. Contact at moderate distances may be modulated by family members desiring contact rather than having it be obligatory (Adams, 1968; Walker & Thompson, 1983).

At this time, it is unclear if distance is a factor in contact patterns between mothers and daughters during pregnancy. The work of Belsky and Rovine (1984) suggests that contact patterns may change despite the distance between mothers and daughters.

Gender. Women have been shown to have more involvement in intergenerational relationships than men (Adams, 1968; Aldous, 1967; Belsky & Rovine, 1984; Hill, 1970; Leigh, 1982; Reiss, 1962; Rosenthal, 1985). Women, it is believed, have more feelings of obligation to family duties and are more worried about keeping in touch (Rosenthal, 1985). Rosenthal (1985) explored the role of kinkeeping or keeping family members involved and in contact with each other in a stratified random sample of 453 Canadian men and women 40 years old or older. The majority of the participants (74%) named a female family member as the kinkeeper. Most kinkeepers were in their fifties and sixties. The kinkeeping activities mentioned were telephoning (47%), writing to family members (44%), visiting (29%), and organizing and holding family gatherings (22%). The reason for kinkeeping stated by the participants was to maintain family continuity. In this study, the target of most of the kinkeeping activities was adult siblings. Kinkeeping did not have an

impact on recency of interaction between adult children and their parents. The kinkeeping role tended to be passed on to daughters.

Other studies support the greater involvement of women in intergenerational contact. Each participant in Reiss's (1982) non-random, middle-class, sample of 69 men and 92 women was interviewed about contacts with kin including parents, siblings, and others through first cousins. The most frequent interaction was between parents and adult children. Kinship contact overall had a matrilineal focus. In other words, the informants were apt to be in contact with their mothers' or wives' kin. Attitudes about contact were quite different for men and women. More women felt obligation about maintaining contact with kin. Younger married women tended to feel that their level of contact with their mothers was sufficient while mothers would have preferred more contact.

Hill's (1970) study of three generations of married pairs found that daughters visited their parents more than sons did. Distance was controlled by only including informant families living within a 50-mile radius. In another longitudinal study of kinship visiting patterns, Aldous (1967) interviewed wives in each nuclear family of 79 three-generation lineages four times over the course of a year. In this subsample of Hill's (1970) participants from the Minneapolis-St. Paul metropolitan area, women, especially in the parent generation, had more kin contact than men. Aldous hypothesized that the increased frequency of contact by parent-generation women was related to the homemaker and caretaker roles expected of these women.

In a study (Leigh, 1982) involving two large (n = 799 and 489), random samples, gender was one factor associated with adult child and parent interaction over the life span. In the first sample, which was Adams' (1968) 1964 data, gender along with feelings of closeness to parents accounted for differences in contact frequency. Data from the second study of 489 respondent families were collected in 1976 through a mail survey. The questionnaire was based on Adams' (1968) interview schedule. In the second sample, females maintained more contact with their parents than males but gender was not a strong predictor of frequency of contact between parents and adult children. The different findings could be related to the different modes of data collection. A more likely explanation, however, rests with differences in the two samples. They came from different parts of the United States and were studied 12 years apart. Cohort effects for 1964 and 1976 could be rather dramatic because of changing economic and childbearing patterns. Role expectations of men and women may have shifted as well; men were more expected to participate in domestic duties. These social changes could have an impact on kinship interaction.

A more recent study supports that daughters and mothers have the greatest level of contact of all parent and adult child dyads (Kivett, 1988). Kivett (1988) examined the levels of association or contact between 321 adults over 65 years of age and their children, all from a rural area. The subsamples consisted of 94 mothers and daughters, 79 mothers and sons, 98 fathers and daughters, and 56 fathers and sons. The parent was the informant. The level of

contact between mothers and daughters was significantly higher than that between fathers and sons and mothers and sons. Contact of mothers and daughters was not significantly higher than that of fathers and daughters. Kivett (1988) attributed these differences to expectations about women's roles and activities related to family. The largest discrepancies in contact activities between mothers and daughters and the other dyads involved activities traditionally associated with women, such as shopping.

Only one study was found that involved kinship patterns of men and women during the transition to parenthood (Belsky & Rovine, 1984). In their convenience sample of 72 expectant couples, Belsky and Rovine (1984) found that women had more frequent contacts with their families of origin than men.

Most of the studies cited only addressed gender for one generation. That is, adult daughters may be mentioned but mothers and fathers were not differentiated (Adams, 1968; Belsky & Rovine, 1984; Leigh, 1982). Research addressing contact differences between mothers and fathers with sons and daughters has been extremely limited. For instance, in Adam's (1968) classic study on urban American kinship patterns, daughters were found to have more contact with their parents than sons. The same pattern held for adult sons and daughters and widowed or divorced mothers. No mention was made of differences according to marital status of fathers. Kivett's (1988) data certainly support greater contact between mother-daughter dyads than other parent-child dyads. But caution must be used in applying these findings to mothers and daughters during pregnancy

because of the age of Kivett's respondents. At the time of daughters' first pregnancies, most mothers are considerably younger than 65.

Despite the limitations of the research cited, it is safe to say that mother and daughter contact will persist during pregnancy. Pregnancy and childbearing, gendered activities, will be related to high levels of contact between mothers and daughters.

Family Life Cycle Stage. Family life cycle stages in general have not been useful in explaining intergenerational interaction. Reiss (1962) examined the association of family life cycle stages with contact patterns based on years of marriage, marital status of children, and widowed status of parents. There was no association between kinship contact and family life cycle stage. Family events such as weddings, illness, and deaths were the primary reasons for intergenerational contact for 45% of the non-random sample of 127 middle-class adults. Leigh (1982) examined the influence of family life cycle stages on contact in two large, random samples of adults. Over 90% of adult children in early family life cycle stages and of parents who had launched children had at least monthly contact. There were no significant differences for family life cycle stage. The lack of significant findings could be attributed to lumping together the different parent-child dyads of mother-daughter, father-daughter, mother-son, and father-son pairs. Neither of these studies was longitudinal; therefore change within and across family life cycle stages was not examined.

Studies addressing specific family life cycle stages do suggest

changes in contact patterns. For example, in a study of mothers' and daughters' role positions associated with family life cycle stages, mothers reported that they had less contact with married daughters than with single daughters (Walker, Thompson, & Morgan, 1987). The sample included 132 mothers and 132 student daughters, and daughters' reports confirmed mothers' reports. Other roles such as mothers' launching of children and marital status did not have an impact on contact. Belsky and Rovine (1984), in their study of social support networks, found that expectant parents' contact with their families of origin did increase from the last three months of pregnancy to the first three months postpartum. Although the sample included both primiparous and multiparous parents, differences in contact for families expecting their first child and those expanding their families were not explored.

Contact between mothers and daughters during pregnancy has not been a major focus but is a recurring variable in some studies. Virtually all the 30 pregnant volunteers in Cranley's (1981) study of the development of attachment during pregnancy mentioned that contact with their mothers had increased in late pregnancy. According to these daughters, most of the increased contact had been initiated by mothers. The psychoanalytic studies (Ballou, 1978; Bibring et al., 1961; Chodorow, 1978; Deutsch, 1945) strongly suggested that contact frequency increased during daughter's pregnancies.

Daughters who are mothers have different contact patterns with their mothers than daughters who are not mothers (Fischer, 1981). In a retrospective study of 21 married daughters with children under age

2 1/2, 10 single daughters, 12 childless married daughters, and their mothers, Fischer explored the impact of family life cycle stage on mother-daughter relationships. Daughters with children had more frequent telephone contact with their mothers than daughters without children. Visiting rates were higher for mothers and daughters with children if they lived within 20 miles of each other. There were no differences in visiting rates between mothers and daughters who lived more than 50 miles from each other regardless of daughters' maternal status. There was also no difference by distance for telephone contact. Having children appears to have a unique effect on contact between mothers and daughters. In another study involving the same women, Fischer (1983) found no changes in contact with mothers-in-law for daughters with children while contacts with their own mothers increased.

Most of the studies in which the association of contact and family life cycle stage is explored have limitations that hinder generalization of the findings. Fischer's studies are retrospective ones of small non-random samples. In others, specific family life cycle stages are not addressed separately. Only Belsky and Rovine's (1984) work longitudinally explores changes in contact during a shift in family life cycle stage. No empirical work on changes in contact between mothers and daughters over the course of pregnancy was found.

Summary of Contact. Research, particularly on mother-daughter contact during daughters' pregnancies, is scant. Therefore, conclusions about the nature of such contact must be extrapolated from a variety of intergenerational contact studies.

Contact between adult children and their parents is conditional on geographical proximity for moderate distances (20 to 100 miles). Visiting or face-to-face contact is probably more affected by distance than telephone contact.

Women have more contact with their parents than men do. Probably the most frequent contact exists between mothers and daughters. Overall, women may feel more obligated to maintain family contacts than men. The social norm is that women stay in touch with families.

Contact between mothers and daughters may be associated with gender-related activities. The process of change in contact over the course of pregnancy has not been empirically investigated. Pregnancy, however, is highly associated with gender-related activities. Therefore it is likely that contact between mothers and daughters increases over the course of pregnancy and into the early postpartum period.

Aid between Mothers and Daughters

Aid in intergenerational studies is synonymous with help or assistance. In some studies, aid is a component of support. Different types of aid are referred to in the literature. In some works, aid is not defined (Adams, 1964, 1968; Ballou, 1978; Fischer, 1981, 1983; Leigh, 1982). Most often, aid refers to forms of help such as goods and services. Goods defined as aid are economic aid (Hill, 1970), direct and indirect financial assistance (Adams, 1968), material aid (Leapley, 1988), and gifts and money (Sussman, 1953;

Sussman & Burchinal, 1962; Thompson & Walker, 1984; Walker & Thompson, 1983; Walker, Thompson, & Morgan, 1987). Services mentioned in intergenerational research are help during illness (Hill, 1970; Kivett, 1988; Sussman & Burchinal, 1962; Thompson & Walker, 1984; Walker & Thompson, 1983; Walker, Thompson, & Morgan, 1987), childcare (Belsky & Rovine, 1984; de Anda & Becerra, 1984; Fischer, 1981; Hill, 1970; Sussman & Burchinal, 1962; Walker & Thompson, 1983; Walker, Thompson, & Morgan, 1987), shopping (Kivett, 1988; Thompson & Walker, 1984; Walker & Thompson, 1983; Walker, Thompson, & Morgan, 1987), and household management tasks (Hill, 1970; Kivett, 1988). Less frequently mentioned services were physical assistance (Leapley, 1988), transportation and car care (Kivett, 1988), and legal aid (Kivett, 1988).

Some forms of aid studied were intangible such as emotional support (Belsky & Rovine, 1984; de Anda & Becerra, 1984). Advice was frequently mentioned (Fischer, 1983; Leapley, 1988; Sussman & Burchinal, 1962; Thompson & Walker, 1984; Walker & Thompson, 1983; Walker, Thompson, & Morgan, 1987). Less frequently mentioned were emotional gratification (Hill, 1970), positive feedback (Leapley, 1988), and knowledge (Hill, 1970).

Aid implies a transaction between persons or giving and receiving. Intergenerational studies focus on the conditions under which aid is given and received. The conditions to be reviewed are distance, gender and relationship, and family life cycle stage.

Giving and receiving aid implies exchange. Intergenerational studies examine the properties of aid exchange such as frequency of

aid exchange, patterns of reciprocity, and the impact of aid exchange on relationships. These will be reviewed in relation to aid exchange between mothers and pregnant daughters.

Distance. The very nature of aid implies that some contact takes place between persons. As Adams (1964), Fischer (1981), and Walker and Thompson (1983) pointed out, geographical proximity is necessary for some forms of aid, especially services. Other forms of aid, such as the giving of goods, money, and advice, do not require geographical proximity.

Distance may or may not influence aid to pregnant women. In their study of support to pregnant teenagers in the Los Angeles area, de Anda and Becerra (1984) found that mothers were the primary source of aid to English-speaking Hispanic teenagers (n = 43) who were pregnant or less than 12 months postpartum while husbands were the primary source to Spanish-only-speaking Hispanic participants (n = 39). The authors attributed this difference to geographical distance from mother rather than the tendency for more of the Spanish-speaking women to be married than the English-speaking ones. The Spanish-only-speaking teenagers most often lived farther away from their families of origin than the English-speaking ones. The authors implied that the norm for these women was for mothers to be the primary source of help during pregnancy and postpartum. They also found that the nearer the mother was to her daughter, the more concrete the help given. Child care, for example, was a concrete form of help while advice was considered to be less concrete.

In contrast to de Anda and Becerra's (1984) findings, aid from

families of origin to expectant couples (n = 72 couples) at the third trimester of pregnancy and the third and ninth months postpartum was not related to proximity in the study conducted by Belsky and Rovine (1984). Aid was defined as material and emotional support.

In Fischer's (1981) study concerning the relationships of mothers and daughters, frequency of aid was related to them being "near" (within 20 miles of each other) or "far" (more than 50 miles apart). The investigator separated babysitting from other types of help because it could not be reciprocated between mothers and daughters. Ninety percent of "near" mothers did babysitting for their daughters while less than half did so for "far" daughters. "Near" daughters with children gave more "proximity help" to their mothers than "far" daughters. Both "near" and "far" mothers gave more "non-proximity help" than their daughters gave them.

Walker and Thompson (1983) also found differences in "proximal" and "distal" aid in their three-generation study of women's relationships. "Proximal" aid was defined as help during illness, shopping, and advice, and "distal" aid was defined as giving gifts and money. For mother and student daughter pairs, "proximal" aid to mothers from daughters was a significant predictor of intimacy for both mothers and daughters. "Distal" aid from mothers to daughters was significantly correlated to mothers' reports of intimacy toward daughters.

The relationship of distance to aid between mothers and pregnant adult daughters is not entirely clear in any of the studies cited. de Anda and Becerra (1984) studied adolescent not adult

pregnant women. Consequently their findings may not apply to an adult daughter, non-Hispanic population. Belsky and Rovine (1984) did not separate mothers from daughters in their work on support to expectant couples. The daughters in Fischer's (1981) study were non-pregnant mothers of children under 2 1/2 years old. Daughters' childbearing statuses were not mentioned by Walker and Thompson (1983).

Contact was a confounding variable for the association of aid and distance. Distance was clearly a factor in giving and receiving aid that required face-to-face contact in Fischer's (1981) work but the same cannot be inferred from Walker and Thompson's (1983) investigation. The association of distance and frequency of proximal aid was not reported. Distal aid is not necessarily associated with distance; giving of gifts and money can occur regardless of distance between persons.

In summary, distance may be a factor for some types of aid exchanged by mothers and pregnant daughters. Services may be related to distance but forms of aid not requiring face-to-face contact may not be related to distance. Most likely distance is not as important as other variables in explaining aid exchange between mothers and daughters during pregnancy.

Relationship, Gender, and Aid Exchange. Children do receive aid from their parents, even after the onset of adulthood and marriage (Adams, 1964, 1968; Hill, 1970; Sussman, 1953, Sussman & Burchinal, 1962). According to Hill (1970), intergenerational aid exchange is based on the needs of the generations. The parent

generation has the most assets while the adult child and grandparent generations have more needs. In the course of a year, the participants in Hill's (1970) study sought help most frequently from family members. Adult children (48.2%) sought help more than parents (34.1%). Thompson and Walker (1984) also found that college-student daughters were more likely to have higher levels of assistance from their mothers than their mothers had from them.

Women tend to be more involved with aid exchange in families. In a study of 266 respondents with living parents, median age, 31.3 years, Adams (1964) found that women were more involved than men in receiving and giving aid within families. A finding of Adams' (1968) study of 799 white individuals, who were married for the first time for 20 years or less, was that women's parents were more frequently called upon for help. Young middle-class women tended to receive the most aid (Adams, 1964). In a study of 321 parents over the age of 65 (Kivett, 1988), mothers (n = 173) both gave to and received more aid from daughters (n = 94) than from sons (n = 79). According to Kivett (1988), gender differences in aid exchange are related to social norms for women to be in helping roles and to be involved with family.

The types of aid exchanged across generations are related to generation and gender. In a study of 97 upper-middle class, New England families, Sussman (1952) pointed out that financial aid tended to be a one-way transaction from parents to adult children. In a later study of three generations, Hill (1970) found that parents reported giving more economic help, emotional gratification,

household management assistance, and childcare than they received from their children. Parents also reported giving the same amount of help during illness as they received. Children reported that they gave more emotional gratification, household management assistance, and care during illness than they received. These findings were similar to findings from a study of 27 working-class and 53 middle-class Cleveland households reported by Sussman and Burchinal (1962). Most of the aid for the month prior to data collection was from parents to the respondents for financial assistance, childcare, advice, and valuable gifts. Help during illness was exchanged almost equally between parents and children.

Findings in older studies (Adams, 1964; Sussman, 1952) about gender differences in aid to young families from their parents are conflicting. Sussman (1952) pointed out that daughters were more often the recipients of "indirect" or non-monetary economic aid. The explanation for this was that daughters' parents did not want to usurp the role of their sons-in-law as provider. Eighteen years later, Hill (1970) found that men's parents in his Midwestern sample were less likely to give direct forms of financial aid. An explanation for this may be that the parents supported the notion of boundary maintenance and independence for sons' families more than for daughters' families. Cohort effects could have influenced these findings. In a more recent study of help exchanged between parents and their adult children, Kivett (1988) found that aid in female dyads was different from aid in male dyads. For example, women exchanged help in household management and shopping while men were

more involved with car care. Money or financial aid was not a variable in this study of older parents and children. It may be that in younger mother-daughter pairs types of aid or services exchanged are not restricted to or predominantly gender-related ones. It is also difficult to predict the association between gender and financial aid from the studies examined.

Family Life Cycle Stage and Aid Exchange. Intergenerational aid exchange is associated with the early stages of family life. Sussman (1952), an early investigator of intergenerational aid, implied that most aid from parents to children occurred in the early years of marriage and parenthood. Hill (1970) stated that the greatest demand for resources was during the early stages of marriage through the birth of the first child. This period coincided with the time at which the parent generation had the most assets to help out other generations (Hill, 1970). For a sample (n = 266) of young, married adults in the early 1960's, financial aid given by parents to children was most frequent during the first five years of children's marriages (Adams, 1964). Services from parents to children were most frequent from the sixth through the ninth year of marriage; the next most frequent time for parents to give services to their adult children was during the first five years of marriage. A more contemporary study (Walker, Thompson, & Morgan, 1987) contradicts Adams' (1964) study. There were significant differences related to daughters' marital status in aid exchange between 135 student daughters and their mothers. If the daughter was married, there was less proximal aid from mothers to daughters. Cohort effects are

plausible explanations for the different findings. Most likely, the transition to parenthood also occurred during the first five years of marriage. The impact of marriage on aid patterns in Adams' (1964) study may be confounded by transition to parenthood. Postponement of parenthood until later in marriages is more prevalent in the 1980's than it was during the time of Adams' study. Possibly the married student daughters studied by Walker et al. (1987) were shifting their dependence for aid from their mothers to their husbands. Young married women may have less need for resources from parents than in the past or their parents are not as willing to aid children as in the past. In any case, the literature is not conclusive about the exchange of aid for contemporary adult children and their parents during marriage.

Giving of aid to children during the transition to parenthood is a recurring trend in the intergenerational literature. Sussman (1952) stated that the first birth was a time of financial aid for adult children. Large gifts were especially common from parents to children. The parent participants stated that the daughters' labor and early postpartum were times of the greatest need for "nursing" care by them. Another more contemporary study supports parental aid during the transition to parenthood (Belsky & Rovine, 1984). For this sample of 72 expectant couples, those having first babies had more emotional support from families of origin than couples having subsequent children. Emotional support for primiparous couples increased steadily from late pregnancy to the third month postpartum and to the ninth month postpartum. Material support also differed

for primiparous and multiparous couples. For primiparas, it increased from late pregnancy to the third postpartum month and then decreased by the ninth postpartum month. The pattern was reversed for multiparous families; material support decreased by the third postpartum month and increased by the ninth. These findings are possibly related to the different types of aid needed by primiparous and multiparous couples. Birth and infant care are new experiences for first-time parents while parents of more than one child require assistance with caring for and supporting more than one child. More recently, in a convenience sample of 83 primiparous women, the highest level of all types of assistance and support was at the third postpartum week (Leapley, 1988).

The literature on aid between mothers and daughters during the first two trimesters of pregnancy is very scant. In a qualitative study of a convenience sample of 30 women between 12 and 22 weeks of pregnancy, Tilden (1983) interviewed the women about perceptions of their support. The trend was that pregnancy was a time of increased need for both partnered and single women. Both partnered and single women mentioned their families, especially their mothers, as sources of support. The 21 daughters who were mothers in Fischer's (1981, 1983) studies reported that they needed and received more help from both their mothers and mothers-in-law after the birth of their first child.

Intergenerational aid is mentioned in studies of grandparenting. Crawford's (1981) sample of 53 perspective grandmothers was recruited through prenatal clinics attended by their

pregnant daughters or daughters-in-law. An overwhelming majority (96%) agreed with the statement, "having a grandchild means I will be able to help him/her." Fischer (1982) also found in her non-random sample of 28 grandmothers that many of them associated grandmotherhood with the instrumental role of giving aid. Interestingly, the grandmothers (36%) who lived more than 50 miles from their daughters felt that the aid-giving role affected their lives more than did women (29%) who lived within 20 miles of their daughters.

In summary, the transition to parenthood is a stage of high needs strongly associated with aid from parents to children. Simultaneously, the transition to grandmotherhood is associated with helping younger generations. At this time, most of the work on aid during the transition to parenthood focuses on the postpartum period rather than pregnancy. Very little is known about intergenerational aid during pregnancy although the literature implies it is a time of increased need for women.

Uniqueness of Aid from Mothers. It may be that mothers provide unique aid to their pregnant daughters. In studies addressing aid to childbearing women, mothers invariable are listed as sources of help (Harrison & Hicks, 1983; Leapley, 1988; Tilden, 1983). Both mothers and mothers-in-law were sources of aid to daughters with children in Fischer's (1983) study. Mothers-in-law were more likely to give things to while mothers were more likely to do things for their daughters. Mothers, however, seemed to be a more important source of help to daughters with children; daughters who were mothers were four

to five times more likely than childless daughters to ask their own mothers for advice. Rates of advice-seeking from mothers-in-law were no different for daughters without and daughters with children. In a larger study of primiparas (n = 83), involving material aid, advice, positive feedback, and physical assistance, mothers exceeded male partners only in providing material aid (Leapley, 1988). Levels of assistance from mothers, especially physical assistance, increased more than those from husbands and boyfriends from the third trimester to the third week postpartum. Conflict between the childbearing women and their sources of help, including mothers, was also measured. Conflict with mothers appeared to decline over the course of late pregnancy and early postpartum but its association with aid was not measured. The notion that mothers are a primary source of material aid or have more importance in the early postpartum is consistent with intergenerational studies. The decline in conflict is consistent with the early works of pregnant women's relations with their mothers.

Summary about Aid. Aid in intergenerational studies has been defined in many ways. Most often aid is separated into categories of goods and services. In some works aid is synonymous with help or support. Contact is a confounding variable in research about aid. Some types of aid do require physical proximity while others, especially financial aid, can be given from any distance.

In general, parents provide more aid to adult children than they receive and women are more involved than men with aid exchange across generations. Some particular types of aid are associated with

gender and generations. For example, women more than men tend to be involved with shopping, childcare, and household management, and parents more often than other providers of help give financial and material aid rather than emotional reassurance. The transition to parenthood is strongly associated with increased aid from parents to adult children, especially to children having first babies. Aid giving by parents seems to be greatest during the early postpartum. Becoming a grandmother is associated with the instrumental role. Prospective grandmothers have expressed that being a grandparent means helping out the younger generations. The literature focuses primarily on late pregnancy and the postpartum periods. Little has been written on aid during the earlier months of pregnancy even though it has been implied that women need assistance throughout pregnancy. Mothers seem to provide unique aid to their daughters during childbearing.

To date, no work has been published on the aid patterns between mothers and daughters during the entire childbearing cycle. Most likely, more aid will be given to daughters than mothers receive from daughters. It can be predicted that the frequency of most types of aid given by mothers depends on proximity to daughters. Mothers will tend to provide advice, material aid, and physical assistance, particularly in the early postpartum period. The help provided by mothers will tend to be gender-associated activities such as shopping and household management.

The Association of Emotional Closeness, Aid, and Contact

A common assumption is that aid, contact, and emotional closeness are underlying dimensions of close relationships. In this section, the associations among aid, contact, and emotional closeness will be examined especially for the relationship of mothers and pregnant adult daughters.

Aid and Contact

Aid given and received is highly associated with contact between parents and adult children. Adams (1968) found that communication, aid given, and aid received were the most frequent contacts between parents and adult children. In a replication of Adams' (1968) study, Leigh (1982) found that needing help and parental aid-giving were predictive of contact by adult children with their parents. The work of Hill (1970) showed that frequency of intergenerational kinship activity, including contact, may be related to patterns of aid exchange. The lowest rates of kinship activity were found among those who received aid but did not reciprocate. The highest rates of kinship activity were for those who gave aid which was not reciprocated. Hill speculated than non-reciprocated aid puts a strain on the relationship. In other words, contact and aid patterns are associated with emotional aspects of relationships.

Emotional Aspects of Aid and Contact

Frequency of contact across generations has been associated

with attitudes and feelings. In an early study (Adams, 1968), the participants most frequently stated that enjoyment and affection were their primary reasons for maintaining contact. It was recognized that the positive responses may have been influenced by social desirability. When Adams' (1968) examined the association of distance and contact, feelings associated with obligation or discretion were used to explain the association of geographical proximity and patterns of affection and contact between parents and children. There was no association between contact and feelings of closeness to their parents for children living in the same community while for distances of 100 miles or so, there was an association between contact and feelings of closeness. It was implied that, for close distances, contact could be explained by feelings of obligation as well as emotional closeness. Contact between parents and children living farther apart was more apt to be discretionary rather than obligatory. For distances over 100 miles, difficulty and expense of travel influenced contact rather than feelings of closeness or obligation.

Later when Adams' (1968) research was partially replicated, adult children's feelings of obligation as well as enjoyment and feeling close to parents were associated with contact. The voluntary nature of contact between parents and adult children for distances between 21 and 99 miles was supported by Walker and Thompson (1983). The reports of intimacy by the 132 mother and student daughter pairs were significantly correlated with contact frequency for those living 21 to 99 miles apart.

Feelings about aid were factors in parents giving aid to adult married children in Sussman's (1952) early work on intergenerational aid. Interviews about aid to a total of 197 married children were conducted with 97 sets of parents. Parents stated that they and their children wanted to be part of each others' lives. Parents wanted to grow with their children and to enjoy their grandchildren; children wanted assistance and encouragement from parents at the beginning of their married lives. Parents had no intention to subsidize their children indefinitely. It was obvious in this study that parental aid-giving to married children was not strictly altruistic. Parents did want something in return, that is, intergenerational continuity. If what parents reported about children's attitudes was accurate, the children accepted aid in exchange for access to grandchildren, the family's stake into the future. No mention was made of the impact of aid on the emotional quality of the parent-child relationship.

In his three-generation study, Hill (1970) found that families giving and/or receiving aid generally had good feelings toward each other. There was, however, the realization that there were "strings attached" to gifts and aid from family members.

Intergenerational patterns of aid, contact, and emotional closeness have been studied in women (Walker & Thompson, 1983; Thompson & Walker, 1984) but not in relation to life cycle events. The findings, based on women of similar ages to childbearing daughters and their mothers, suggest some related trends in aid, contact, and emotional closeness during daughters' childbearing.

Walker and Thompson (1983) studied the assumption that aid, contact, and emotional closeness were related to the construct of intergenerational bonds. They (Walker & Thompson, 1983) found that aid and contact accounted for only as much as 11% of the variance in reports of intimacy. In the younger pairs (young adult women and middle-aged mothers) intimacy and contact were related to geographic distance. Amount of contact was related negatively to mother's reported intimacy to their daughters. Attachment in the dyads differed in relation to aid exchange patterns of high reciprocity, low reciprocity, mother dependent, and daughter dependent (Thompson & Walker, 1984). With both reciprocity patterns and the mother-dependent pattern in the younger pairs, mothers perceived less attachment than daughters. Mothers perceived more attachment in the daughter-dependent pattern. Overall, the daughters tended to report more attachment than the mothers.

At this time no research was found on the association of aid, contact, and emotional closeness between mothers and their childbearing daughters. Most likely the most common pattern of reciprocity will be daughter dependent. Because of the importance of the instrumental role to grandmothers, mothers will feel more emotional closeness to their daughters than typically would be expected in daughter-dependent relationships. One can only speculate about the degree to which contact and aid are predictive of emotional closeness. Because contact and aid may assume greater importance in pregnancy, contact and aid could account for greater variance in reports of emotional closeness.

Summary of the Literature

The literature on the mother-daughter relationship during daughters' childbearing is limited but suggests several trends. These are as follows.

1. During pregnancy and postpartum, daughters' relationships with their mothers change. They tend to become emotionally closer to their mothers. Changes in daughters' feelings of emotional closeness to their mothers will increase over the course pregnancy.

2. Mothers will also feel closer to their first-time pregnant daughters. The process of developing closeness cannot be predicted, nor can one speculate whether daughters are closer to their mothers than their mothers are to them.

3. Contact will increase between mother and daughter during pregnancy and early postpartum.

4. Changes occur in patterns of aid from mothers to daughters during childbearing. Over the course of pregnancy and early postpartum, daughters tend to receive more aid from their mothers than they give to their mothers.

5. Aid between mothers and daughters is associated with gender-related activities such as shopping and household management. Mothers are involved with material aid and physical assistance especially in the early postpartum.

6. Emotional closeness between mothers and daughters may be related to their perceptions about contact and aid patterns during pregnancy.

Limitations in the Literature

Social and cultural context was not considered to be a factor in the early work on pregnant women's relationships with their mothers (Bibring, Dwyer, Huntington, & Valenstein, 1961; Deutsch, 1945). The psychoanalytic works may be outdated and invalid because of the social and cultural changes for women since the middle of the twentieth century and because they were based on a theory that has not been well validated. Family contact and aid patterns during pregnancy may have been influenced by social context as well.

The samples for most of the studies cited were small and not representative of the larger population of primigravid women and their mothers. Very little prospective study has been done on the mother-daughter dyad during pregnancy. Consequently, conclusions about the relationship of mothers and daughters during daughters' pregnancies are based on extrapolation and speculation rather than empirical investigation.

In most of the works cited, the variables were measured with investigator-developed instruments. The reliability and validity of these instruments may be questionable. The only instrument with published psychometric properties was the one used to measure emotional closeness (attachment and intimacy) in the Walker and Thompson (1983) and the Thompson and Walker (1984) studies.

The investigation of daughters' relationships to mothers during daughters' pregnancies has been limited to qualitative methodology. To date, extremely limited empirical research has been done. In

order for current conceptualizations about this relationship to be valid beyond very limited populations, empirical investigation with larger intergenerational samples of pregnant women and their mothers must be done.

At this time the relationship of mothers to their pregnant daughters can only be conjectured because of the very limited scientific investigation of women as mothers of pregnant adult daughters. To further understanding of the impact of daughters' pregnancies on women, their perceptions of the relationship at the time of daughters' pregnancies need to be studied scientifically.

Theoretical Perspectives

To date, the mother-daughter relationship during daughters' childbearing has been examined from the theoretical perspectives of psychoanalysis, attribution, and symbolic interaction. Few of the previously mentioned theoretical perspectives provide satisfactory explanations for the changes that may occur in contact, aid, and emotional closeness between mothers and daughters during daughters' first pregnancies. Even though attribution and symbolic interaction are appropriate frameworks for studying dyads (Uphold & Harper, 1985), they have been used in a limited way in the studies cited.

Other theoretical approaches have enriched the knowledge about mothers and daughters. For instance, Thompson and Walker (1984) used social exchange based concepts in their studies of the relationship of aid to attachment for mothers and daughters. Social exchange does

provide some insight into this relationship. The basic premise of social exchange is that one maximizes rewards and minimizes costs in relationships (Huston & Burgess, 1979). In order to induce rewards, one must provide rewards in turn. Consequently social behavior is the exchange of mutually rewarding activities. If reciprocity does not occur, the person feels distressed about the relationship. Thompson and Walker (1984) predicted that participants in non-reciprocal aid exchange patterns would have lower attachment scores. They did find that the dependent or non-giving partners reported lower attachment scores which gives credence to the predictive value of social exchange theory.

The literature reviewed suggests that childbearing daughters receive more aid than they give to their mothers. At the same time, they feel greater emotional closeness to their mothers during the course of pregnancy. Mothers, too, feel closer to their daughters; they may want to be more active providers of aid to their daughters. Social exchange theory does not explain the relationship of emotional closeness and aid; it may explain the relationship of contact and closeness, both of which increase for mothers and daughters during pregnancy.

Equity Theory and Mother-Daughter Relationships

Equity theory is satisfactory in explaining changes in the relationship over the course of pregnancy. With this theory, the quality of relationships is based on perception of justice by the partners involved or by an outsider (Walster, Walster, & Berscheid,

1978). By justice is meant that what one gives and receives is equitable or in balance with what the other gives and receives. This can be explained with the concept of proportion. For example, if A gives 10 points and receives 5 points and B gives 20 points and receives 10 points, it is considered an equitable relationship because of proportional balance. In the case of mothers and pregnant daughters, it is possible that the relationship is an emotionally close one and perceived to be equitable even though mothers give more aid to daughters than they receive. Differences in feelings about the emotional quality of relationships by each party can be explained with equity theory; one party may feel it is equitable while the other does not feel it is equitable.

Equity theory has been the basis of at least one mother and adult children study (Wood, Trautman, & Hay, 1984) involving women older than the cohorts of childbearing daughters and their mothers. One hundred and eighty-seven women with ages ranging between 50 and 93 were asked about the give and take of family life and if they or their children got a better or a worse "deal." Over 2/3 of the women felt that their relationships with their children were equitable and enjoyable. Women who felt they were overbenefited, that is, they got a better deal than their children, felt they needed to keep in contact with their children because their children needed or might need help. Underbenefited women, that is, they felt their children got a better deal than they did, kept up contact with their children because of obligation. The investigators stated that these findings refuted the notion that women prefer underbenefited relationships

because they are socialized to be givers rather than receivers. The subjective balance of the relationship assumed more importance than the objective balance.

Even though the research questions to be proposed will not address the causes of changes in mother-daughter relationships during pregnancy, equity theory can be used to explain any relationship changes. Obviously mothers will give aid to their daughters. In turn, they will receive increased contact with their daughters and potential grandchildren; that is, an opportunity to project themselves into the future. Daughters obviously will receive the aid they need but this will not be a one-way exchange. They will give their mothers the opportunity for developmental stake. Also there may be an implied agreement to take care of their mothers in later life. If mothers and/or daughters feel the relationship is equitable, they will feel increased emotional closeness over the course of childbearing. If they feel that they are overbenefited, emotional closeness will not increase and conflict may result. Underbenefited mothers and/or daughters may persist in contact with the other out of feelings of obligation. As with the overbenefited, emotional closeness will not increase over the course of pregnancy. It is possible with equity theory that the perception of how equitable the relationship is may differ between mothers and daughters. Consequently they could have different perceptions of emotional closeness.

Research Hypotheses

The following hypotheses are the focus of this study.

1. Contact frequency is not associated with distance between mothers and daughters.
2. Emotional closeness between mothers and daughters is not associated with distance between their residences.
3. Emotional closeness between mothers and daughters is not associated with contact type and/or frequency.
4. Contact between mothers and daughters does not change as pregnancy advances.
5. Emotional closeness between mothers and daughters does not change as pregnancy advances.
6. Aid patterns, or help given and help received, do not change as pregnancy advances.
7. Emotional closeness is more associated with perception of equity between mothers and daughters than actual aid patterns of help given or help received as pregnancy advances.

Hypotheses 1, 2, and 3 address the association of distance, contact, and emotional closeness. From the review of the intergenerational contact literature it is expected that there is a correlation between contact and distance. The type of association depends of the type of contact. The association of contact patterns and emotional closeness may be influenced by distance.

Hypotheses 4, 5, and 6 address changes in relationship variables over the course of pregnancy. It is expected that these will change

as pregnancy advances. The literature supports that mothers and daughters not only become closer emotionally but become more involved in each others' lives. Types of "involvement" addressed are contact and aid exchange.

Hypothesis 7 addresses the association of emotional closeness and the perception of equity. Based on equity theory, it is expected that the perception of equity is more associated with emotional closeness than are actual aid exchange patterns. It is known through the intergenerational literature that aid patterns are related to intergenerational emotional closeness. This study will differentiate between perception of equity and reports of aid exchange patterns in regard to emotional closeness of mothers and daughters as pregnancy advances.

Chapter 3

METHODS

This study is a cross-sequential repeated measures survey involving four cohorts of pregnant women and their mothers and a control group of non-pregnant women and their mothers.

Sample

The sampling procedure was designed to obtain a representation of middle-class primiparous women across gestational ages and their mothers. Because of limitations of time and money, the sample was a convenient one.

Participant Recruitment

The participants for this study were primiparous women, ages 18 to 30, and their mothers. Even though the current trend is for more women in their thirties and forties to have their first baby, the upper limit of age was set at 30. Baruch and Barnett's (1983) work suggests that major changes in the mother-daughter relationship occur before daughters become 35 years old. Most likely the daughters in Baruch and Barnett's sample had their children before age 30. The association of age and relationship changes was not mentioned in other literature. The pregnant teenager and the over 30 pregnant woman have not been considered the "norm" in health care and family

literature.

Because this was a mail survey, the participants were literate in English. The daughters were married or in what they defined as a stable relationship with the baby's father. Mother's marital status was not controlled for in this study.

Daughters were recruited from private obstetrical practices and childbirth education classes in the Willamette Valley of Oregon. Private obstetrical practices and childbirth education classes tend to draw more middle-class women than hospital and health department clinics. Because this was a fairly small study, the investigator wanted to control variables associated with social class.

Initially the investigator contacted the administrators of obstetrical practices and a childbirth education organization to gain access to potential participants. According to the wishes of the four obstetrical practices and the childbirth education organization, their personnel, rather than the investigator, first informed the primiparous daughters about the study. This was done through information flyers (Appendix A). At the end of the flyer was a tear-off form on which the pregnant women wrote their names and telephone numbers if they were interested in participating. They gave the form to the office nurse or childbirth education instructor who forwarded the forms to the investigator. Within a week of receiving the forms the investigator contacted the participants by telephone to explain the study in more detail, determine if they were eligible, and inquire about their willingness to participate. The investigator asked if they thought their mothers would be willing to

participate. If yes, the researcher obtained the mailing addresses for both women. With the first mailing of the questionnaires, the investigator sent the mothers a letter of explanation about the study and their daughters' participation (Appendix B). Daughters were sent a similar letter with the first questionnaire (Appendix B).

Two women refused to participate in the study because their mothers would be involved. They indicated that their relationship with their mothers was strained. The refusal of these two women indicated that the sample was composed of women who felt they had a positive relationship with their mothers.

A control group of married, childless women ages 18 to 30 were initially contacted through university classrooms and secretarial offices. After they expressed interest in the study, they and their mothers were recruited in similar fashion to the pregnant participants and their mothers. University settings were used because of convenience and the likelihood of contacting middle-class women similar to those found in private obstetrical practices.

Numbers

The proposed statistical analyses determined the minimal number of participants needed. A 2 x 2 x 5 analysis of variance was the statistical method requiring the greatest number of subjects (Table 3). The independent variables were mother or daughter, time of measurement, and cohort based on the gestational age of daughter's pregnancy along with a control group. In this study, the term, "cohort," is the label for group based on gestational age of

Table 3

Repeated Measures Design for Study

	Time 1		Time 2	
Cohort	Mother	Daughter	Mother	Daughter
1.				
2		DEPENDENT VARIABLES		
3				
4				
Control				

Note. Each cell should have a minimum of 10 subjects for analysis. To ensure adequate number for analysis, at least 15 mother-daughter pairs were sought for each cohort. The repeated factors are time of data collection and mother or daughter.

daughter's pregnancy. A minimal set of scores for each cell is ten. Thus, for this study, the minimal number of mother and pregnant daughter pairs desired was 40 plus 10 control pairs. Each pair member had two sets of scores, one for each of two data collection periods.

The investigator aimed to recruit at least 15 mother-daughter pairs for each cohort to insure an adequate number for analysis. Some attrition related to change in residence or change in pregnancy health status was anticipated. In studies in which daughters were recruited directly and they, in turn, solicited their mothers, the return rate of questionnaires from the mothers in proportion to daughters ranged from 41% (Townsend & Worobey, 1987) to virtually 100% (Walker & Thompson, 1983). For this study, the investigator aimed to recruit 50% more pairs than needed for data analysis.

Response Rate

For the first wave, questionnaires were sent to 83 pairs (71 "pregnant" mother-daughter pairs and 12 control pairs). Seventy-six (91.6%) daughters and 72 (86.7%) mothers returned usable questionnaires. The unusable questionnaires were from two daughters who delivered before completing the questionnaires from the first wave which made them and their mothers ineligible for the study.

Between data collection periods, two daughters had miscarriages which made them and their mothers ineligible for the second wave of data collection. One control daughter discovered she was pregnant before the second wave which decreased the control pairs to 11. Out

of 66 sets of questionnaires sent for the second wave of data collection to pregnant daughters and their mothers, 60 (90.0%) daughters and 49 mothers (73.1%) returned questionnaires. All the 11 remaining control mothers and daughters returned questionnaires.

Determination of Cohorts

Pregnancy is typically considered to consist of three trimesters. The division of pregnancy into trimesters has been a matter of convenience rather than reflective of key physiological or psychological events. For instance, fetal movement, or quickening, a significant physiological and psychological event, is most frequently felt for the first time during the eighteenth to the twentieth week of pregnancy. In the trimester system, quickening occurs in the middle of the second trimester; it could also be considered the initiation of a developmental phase. The proposed scheme, shown in Table 4, divided pregnancy into shorter periods. The term, "cohort," refers to group assignment based on the gestational age of daughter's pregnancy.

The cohorts covered ten gestational weeks. For the first data collection time, the periods covered the first 13 weeks of pregnancy through 40 weeks or term. The first cohort was defined as 13 weeks or less for two reasons. Women in early pregnancy are not accessible to researchers until they initiate prenatal health care; many women do not seek obstetrical care early in pregnancy. Also, many may not realize they are pregnant in the first few weeks. The remaining three cohorts covered ten weeks each. The latest time of pregnancy

Table 4

Composition of Stratified Sample of Pregnant Daughters

	1st Data Collection		2nd Data Collection	
Cohort	Weeks	Trimester	Weeks	Trimester
1	≤ 13	1st	14-21	Early 2nd
2	14-23	Early 2nd	21-30	Late 2nd
3	24-33	Late 2nd - Early 3rd	31-40	3rd
4	34-40	3rd	2-8	Postpartum
Control	Not applicable		Not applicable	

included in the last cohort was from 34 to 40 weeks or term. After 34 weeks most women will give birth by the end of the next six to eight weeks. At the time of the second data collection, all of the last cohort had given birth and were in the postpartum period. The smaller-than-trimester divisions were intended to enable the researcher to be more exact in identifying changes in the mother-daughter relationship over the course of pregnancy.

The actual distribution of participants into cohorts was not equal as can be seen in Table 5. Cohort 1, early pregnancy, was over-represented while Cohort 3, middle to late pregnancy, was under-represented. It had been expected that finding participants early in their pregnancy would be difficult. The recruitment strategy in obstetricians' offices may have contributed to the over-representation of Cohort 1. Office nurses spent more time with their clients at the initial visit than in later visits. Nurses also tended to distribute informational material, including this investigator's flyers, at the first visit rather than at subsequent prenatal office visits. Women in Cohort 3 were not very accessible for two reasons. The first is that they were at a stage of pregnancy during which they had one prenatal visit a month. Second, they were not yet in childbirth education classes, which were a major source of participants in late pregnancy.

Demographic Characteristics of the Sample

Demographic information was obtained from the first questionnaire. This is shown in Table 6; detailed information for

Table 5

Distribution of Participants into Cohorts

Cohort (Gestational Age)	n Daughters	n Mothers
1 (≤ 13 weeks)	22	22
2 (14 to 23 weeks)	17	14
3 (24 to 33 weeks)	9	7
4 (34 to 40 weeks)	15	15
5 (not pregnant)	12	12
Total	76	72

Table 6

Demographic Characteristics of Pregnant and Control Groups

Characteristic	Pregnant	Control	Statistic	Value
		Daughters		
M Age (SD)	24.8 (3.29)	23.8 (2.77)	t	1.03
M Education (SD)	13.4 (1.84)	16.1 (1.51)	t	-4.68*
% Married	90.6	75.0	X^2	9.08*
% Employed	79.7	66.7	X^2	3.04
M Distance between residences (SD)	265.3 (612.4)	410.9 (519.0)	t	- .77
		Mothers		
M Age (SD)	49.2 (6.36)	52.1 (5.20)	t	-1.47
M Education (SD)	13.0 (1.83)	13.9 (1.88)	t	-1.60
% Married	78.3	83.3	X^2	2.40
% Employed	74.1	50.0	X^2	12.22*

* $p < .05$

each cohort is in Appendix C.

Pregnant. The ages and marital statuses of the daughters were as expected from the eligibility criteria. The mean age was 24.8 years (SD = 3.31); the range was 18 to 30 years old. Most were married, although six were in a "committed" relationship with a male partner. One daughter stated that her race was Native American while the others listed their race as White. Years of education ranged from 9 to more than 16. Slightly less that half (43.8%) had ended their education with 12 or fewer years. Twenty-one (32.8%) had some college, and 15 (23.4%) had completed college. Most (79.7%) were employed at least part-time.

Mothers' ages and marital statuses were more varied. The mean age was 49.0 years. Most (78.3%) were married. All but one listed her race as White. Years of education ranged from 9 to more than 16. Nine (8.47%) had not finished high school, 28 (47.5%) completed 12 years, and 26 (44.1%) had some post high school education. Most mothers (74%) were employed at least part-time, although 15 (25%) were homemakers.

From the distribution of years of education, it can be concluded that the sample was composed of working- and middle-class mothers and daughters. The lack of racial variation was not unexpected for the Willamette Valley of Oregon.

Distance between mothers' and daughters' residences, which was collected from daughters at Time 1, varied tremendously as seen in the standard deviation, 612.4 miles, which was larger than the mean distance of 265.3 miles. The range was from less than 0.5 miles to

3,600 miles. Most (62.5%) of the pregnant daughters lived within 40 miles of their mothers. Ten (12.5%) lived between 40 and 180 miles, and 14 (21.9%) lived more than 180 miles away from their mothers.

Controls. The mean age of the 12 daughters was 23.8 years, and the range was 21 to 30 years. Nine (75%) were married. All listed their racial background as White. The control daughters were a highly educated group with an average of 16.1 years of education. This was unexpected since the controls were recruited from undergraduate classes and the secretarial staff of two university departments. As expected, the majority (83.3%) were students. Eight were employed (66.7%), and four were unemployed (33.3%). None listed herself as a homemaker.

Control mothers' mean age was 52.1 years. Most (83.3%) were married, although one (8.3%) was divorced, and one (8.3%) was living with a male partner. All stated they were White. Half were employed, and five (41.7%) were homemakers.

Control mothers and daughters lived from 6 to 1,500 miles apart from each other. A third, or 4 daughters, lived within 40 miles of their mothers; 4 lived between 40 and 180 miles, and 4 live more than 180 miles from their mothers.

Comparison of pregnant and control participants. Demographic data were compared to determine if there were significant ($p < .05$) differences between control and pregnant mothers and daughters. Age and years of education were compared with independent group t-tests while chi-square was used to compare employment and marital status. These are displayed in Table 6.

There were no significant differences between control daughters and pregnant daughters in age or employment status but they did differ in marital status and years of education. These differences probably relate to the different recruitment of the two samples. Even though undergraduate classrooms were the main source of control participants, many of these women had more years of education than is typical for undergraduate students. Control daughters recruited from offices in university settings also had higher than expected levels of education. More of the controls stated they were unmarried but were adamant in stating they had a committed relationship with a male partner. At least two of the controls were cohabiting with a male partner but were maintaining separate residences.

Mothers of pregnant and control daughters differed only in employment status. Fewer control mothers were employed. No differences were evident in age, years of education, and marital status. No additional data were collected that could account for the difference in employment status.

Distance between residences was compared with independent groups *t*-test. There were no significant differences between control and pregnant groups.

In summary, the control and pregnant groups were similar in age but were not entirely matched as to years of education, marital status, and occupational status. Most likely the differences can be accounted for by the use of separate settings to recruit the two samples of daughters.

Data Collection

The data were collected through a cross-sequential mail survey. The mailed survey is appropriate for gathering information about feelings and attitudes of family members (Uphold & Harper, 1986) as well as about behaviors that occur infrequently. Both mothers and daughters were mailed questionnaires at eight-week intervals.

Procedures

The strategy for data collection, shown in Table 4, was based on Schaie's (Schaie, 1965) model for studying developmental changes. The cross-sequential strategy is useful for describing patterns of development because it has fewer shortcomings, particularly those that threaten validity, than cross-sectional or longitudinal designs alone (Baltes, 1968; Schaie & Baltes, 1975). This model enabled the researcher to use time efficiently because data were collected from each cohort simultaneously.

Questionnaires were sent to both mothers and daughters simultaneously at eight-week intervals. Eight weeks was chosen because it was believed to be a sufficient amount of time to overcome carry-over effects or sensitization to the questionnaire material. With longer time intervals, attrition would have increased, and time intervals may not have been short enough for the investigator to determine when changes actually occurred.

The first set of questionnaires were sent to mothers and

The first set of questionnaires were sent to mothers and daughters within a week of daughters' recruitment. A request to return the completed questionnaire within seven days was included. The second set was sent eight weeks after the first set with a similar request to return the questionnaire within one week.

If participants did not return the questionnaire within two weeks, a duplicate questionnaire was sent along with a letter (Appendix D) requesting that they complete and return the duplicate as soon as possible. If pages of questionnaires were not completed, photocopies of the missing pages were sent with requests to complete them (Appendix D).

Various means were used to increase the response rate (Dillman, 1978). The questionnaires were designed to be easy to complete in a short period of time. The mailing materials were personalized for each participant, and addressed, stamped, return envelopes were included. When the questionnaires were returned, the investigator sent the participants handwritten postcards to thank them. As a token of appreciation, the investigator put the participants' names in a drawing for a $20 check when they returned the second questionnaire. The check for the controls was $10 because it was a smaller group. There were separate checks for mothers and daughters.

Measures

Instruments were selected or developed to collect data about the major variables in this study. The major variables were contact

patterns, types of aid exchanges, aid exchange patterns, emotional closeness, perceptions of equity, and demographic information including distance between residences. Along with psychometric properties, consideration was given to the suitability of the instruments for a mail survey of dyads.

Contact

The contact instrument was investigator developed for this study (Appendix E). The modes of contact included were telephoning, correspondence, and face-to-face contact. Frequencies for each mode of contact and descriptive information on types of face-to-face contact such as visiting, being at family and social gatherings, and recreational activities were collected. The types of face-to-face activities were based on the work of Adams (1968), Rosenthal (1985), and Kivett (1988). The frequency scale ranged from 1 for "every day" to 6 for "not at all for the past two months." This instrument was piloted to determine ease of administration and clarity in directions and wording.

Aid

Descriptive information about aid was collected with an investigator-developed instrument (Appendix F). This instrument was adapted from one used by Walker in her study of caregiving activities of daughters to their elderly mothers (A. Walker, personal communication, July, 1988). The aid activities were derived from Atkinson and Huston's (1984) measure in which the various categories

of household tasks such as "shopping/errands" were divided into more precisely defined behaviors. Several tasks were added to match better the nature of help needed by pregnant women. Coincidentally, these additional tasks could also pertain to mothers such as "help with moving into a new house or apartment."

Whether these tasks were valid for pregnant women and their mothers was verified by five nurses who work closely with pregnant women throughout pregnancy, labor, birth, and early postpartum. This panel also had been educated about family and intergenerational dynamics. The last item on the instrument asked the respondent to list any help not listed that she gave or received over the past two months.

The participants were asked to indicate the frequency with which they gave and/or received each type of aid. A six-point Likert-type scale with anchor points of 6 for "more than once a week" to 1 for "not at all for the past two months" was used. Responses to the items on each instrument could be summed and averaged to yield help received (RH) and help given (GH) scores. The items could be grouped into categories of help such as "food preparation" and "financial contribution" to facilitate description and analysis of aid patterns.

Emotional Closeness

The elements of attachment and intimacy were the variables defining emotional closeness in this study. Instruments measuring attachment (Thompson & Walker, 1984) and intimacy (Walker & Thompson, 1983) were used to measure emotional closeness because they included

attachment (Thompson & Walker, 1984) and intimacy (Walker & Thompson, 1983) were used to measure emotional closeness because they included a variety of elements of emotional closeness and were suitable for dyads.

Attachment (Thompson & Walker, 1984) includes such things as emotional dependence, need for proximity or access to, and preference for a specific person. Intimacy (Walker & Thompson, 1983) includes such things as affection, altruism, openness, honesty, respect, and acceptance. Satisfaction with the relationship, feeling that the relationship is important, and a sense of certainty are additional attributes of intimacy. Items from the two scales were randomly arranged to compose a 26-item instrument (Appendix G). The form used had a five-point Likert scale for scoring with higher scores indicating greater intimacy or attachment.

These scales were originally part of a larger instrument. Construct validity was established with factor analysis. All the items had loadings of at least .5 on either attachment or intimacy and less than .25 on other factors (Thompson & Walker, 1984; Walker & Thompson, 1983). Reliabilities (Cronbach's alpha) for the attachment scale have ranged from .86 to .91 across relationship reports; Cronbach's alpha for the intimacy scale ranged from .91 to .97. For this study, the attachment and intimacy scales were highly reliable for both data collection periods and for mothers and daughters. Cronbach's alpha values are reported in Table 7. The values are similar to other published reports (Thompson & Walker, 1983; Walker & Thompson, 1984).

Table 7

Reliability Scores (Cronbach's Alpha) for Relationship Quality Measures

	Daughters		Mothers	
Variable	Time 1	Time 2	Time 1	Time 2
Attachment	.90	.92	.85	.87
Intimacy	.96	.96	.90	.91
Perception of Equity	.84	.83	.79	.81

Perceived Equity

For this variable the subscale of reciprocity from Tilden's Interpersonal Relationship Inventory (IPRI, Tilden & Gaylen, 1987) was used. Reciprocity was defined by Tilden as "The perceived occurrence or availability of an exchange or returning of psychological or tangible goods and services; occurrences are informal or non-contractual" (Tilden, personal communication, November, 1987). The concept of "reciprocity" was derived from equity theory (Appendix H). Therefore the reciprocity subscale was considered suitable for this study.

The reciprocity subscale consists of 13 items (Appendix H). The wording of the instrument was modified to be appropriate for mother or daughter. The scoring was based on a five-point Likert-type scale ranging from "strongly disagree" to "strongly agree." For some items, a five-point Likert-type frequency scale of "never" to "very often" was used.

Since the initial publication of this instrument (Tilden & Gaylen, 1987), it has undergone several revisions. Testing of validity and reliability is continuing (Tilden, personal communication, June, 1988). The most recent information about the reliability and validity of this instrument is shown in Appendix H.

Tilden reported that the subscale had a Cronbach's alpha of .83 and test-retest correlation of .84. Even though a value of .83 for Cronbach's alpha is not considered to be indicative of very high reliability, this instrument was chosen over the Traupmann-Utne-

Walster Scales (Traupmann, Petersen, Utne, & Hatfield, 1981). The Traupmann-Utne-Walster scales are strongly grounded in equity theory but focus on the outcomes of perceived equity for married or dating couples. They did not seem to be appropriate for mother-daughter dyads. The reciprocity (or equity) subscale of the IPRI includes items addressing aid exchange and supportive relationships which are more appropriate for this study. For this study, Cronbach's alphas for equity ranged from .79 for mothers at Time 1 to .84 for daughters at Time 1 (Table 7).

Tilden's test-retest correlation of .84 indicated that the instrument is fairly stable over time. Because this study was a repeated measures design, such stability is important.

The average inter-item correlations for this study ranged from .22 to .29 which is similar to Tilden's report of .28. The average inter-item correlation indicated that there is little redundancy or overlap across items.

The validity of the instrument has also undergone rigorous investigation (Appendix H). Construct validity was confirmed with factor analysis. All three subscales, support, conflict, and reciprocity, are clearly distinctive. The moderate to high correlations of the IPRI subscales with similar subscales of other instruments of social support, the Personal Resources Questionnaire, and the Family Relationship Index, indicate concurrent validity (Appendix H, Tilden, personal communication, June 1988). The instrument is sensitive to differences between groups, as shown by significant differences in the scores reported by battered women and

significant differences in the scores reported by battered women and those of a middle-class group of wives (Appendix H).

The rewording of the instrument to be suitable for pregnant daughters and their mothers may have altered some of its psychometric properties. Because the relationship is more precisely defined in the revised items, the psychometric properties were expected to be strengthened. Conceptually, the items appeared to be unaltered by this modification.

Demographics

Demographic information was collected to describe the sample as to age, race, years of education, and marital status. Two other important variables collected were how many weeks pregnant the daughters were and distance between mothers' and daughters' residences. The instrument was investigator developed (Appendix I).

Organization of the Instruments

The instruments were photocopied onto 8 1/2 inch by 14 inch paper and collated into booklets measuring 8 1/2 by 7 inches. Separate booklets were made for mothers and daughters.

The organization of the instruments in the booklets, as suggested by Dillman (1978), was intended to facilitate completion. The first instrument the participants were asked to complete was the one on contact. Next was the giving of help or aid, which was followed by the attachment and intimacy scales, receiving help or aid, and Tilden's IPRI. The last instrument was demographics. The

order was based on the sensitivity of the material. The IPRI items, for example, are more personally sensitive than the questions about contact. The help scales were separated to avoid monotony.

Additional Data

On the last page of the booklet, the participants had the opportunity to tell the investigator more about the subject of the questionnaire (Appendix J) as suggested by Dillman (1978). The open-ended requests were intended to elicit additional data about the mother-daughter relationship and to give the participants the opportunity to explain their responses.

Data Management

When the questionnaires were returned, the data were entered into a personal computer with CRUNCH (Crunch Software Corporation, 1987). CRUNCH not only enabled the investigator to enter data but to transform them into scales and to translate them into ASCII format.

All the data were examined for entry errors. Errors were corrected before statistical analyses were performed.

The responses to the open-ended items were entered into a personal computer with the Word Perfect program. The entries were labeled with the participants' identification number, whether the respondent was a mother or daughter, and data collection period.

Analyses

The statistical procedures used were intended to determine the relationships among variables between data collection times, among cohorts, and between mothers and daughters. The cross-sequential design of the survey enabled the researcher to separate the effects of weeks of gestation from time of measurement and the number of weeks gestation at point of entry into the study (Table 4). The focus of this research was developmental change for which the model was well suited.

Repeated measures multiple analysis of variance (MANOVA) was used to to determine differences in the dependent variables over time and between mothers and daughters. In this study, the repeated measures were time of measurement and mother or daughter. Because mother or daughter are not entirely independent measures, the repeated measures ANOVA can be used to determine intrafamilial changes (Ball, McKenry, & Price-Bonham, 1983). MANOVA rather that ANOVA for each independent variable was chosen because the dependent variables could be related to each other. Also MANOVA is an inferential technique which strengthens the external validity of the study. Correlational techiques were used to explore the relationships of various dependent and independent variables. For hypothesis 7, tests for differences of correlation coefficients were used. The specific details of statistical analyses for each hypothesis are presented in the "Results" section.

Chapter 4

RESULTS

In this chapter, descriptive findings will be presented, and the process of data exploration prior to analysis will be described. The hypotheses presented at the end of Chapter 2 will guide the presentation of the results.

Descriptive Findings

In this section, the contact, emotional closeness, perception of equity, and aid exchange findings for the entire sample are described (Table 8). Specific findings for each cohort are displayed in Appendix K.

Contact

The initial step in analyzing contact variables was to reverse code the scores to be congruent with the direction of the scores for relationship quality and aid exchange. For example, with the aid exchange variables, higher values indicate greater frequency; with the original scores for contact, lower values indicated greater frequency.

Correspondence. Frequency of correspondence or contact by mail between daughters and mothers for both data collection times is summarized in Table 8. Correspondence was the least frequent form of contact for these participants. Typically, respondents reported that

Table 8

Mean (SD) Scores of Dependent Variables for Daughters and Mothers

	Daughters		Mothers	
Variable	Time 1	Time 2	Time 1	Time 2
		Contact[a]		
Letter	1.39 (.84)	1.52 (.92)	1.57 (.96)	1.48 (.86)
Telephone	4.71 (1.00)	4.65 (1.13)	4.73 (.97)	4.72 (.92)
Face-to-face	3.48 (1.63)	3.72 (1.54)	3.67 (1.68)	3.72 (1.54)
		Relationship Quality[b]		
Attachment	3.20 (.87)	3.10 (.87)	3.27 (.78)	3.09 (.85)
Intimacy	4.26 (.70)	4.23 (.70)	4.45 (.46)	4.35 (.53)
Equity	3.76 (.56)	3.78 (.53)	4.01 (.46)	3.96 (.43)
		Aid Exchange[c]		
Help given	1.54 (.42)	1.49 (.45)	1.49 (.36)	1.50 (.40)
Help received	1.55 (.49)	1.58 (.47)	1.38 (.40)	1.33 (.25)

[a] 1 = "not at all the past 2 months" to 6 = "every day"

[b] 1 = "not true" to 5 = "always true"

[c] 1 = "not at all" to 6 = "more than once a week"

they had not written to each other at all in the last two months. Because of the low frequency of this type of contact, correspondence was dropped from further data analysis.

Telephone. Frequency of telephone contact between daughters and mothers for Time 1 and Time 2 is summarized in Table 8. The most frequent response was "every week or more often" at both data collection times.

Face-to-face contact. Frequency of face-to-face contact between daughters and mothers is summarized in Table 8. The most frequently reported response was "every week."

The participants who had face-to-face contact with each other during the past two months were asked to indicate the activity through which they had contact. The number (and percent) of "yes" responses for daughters and mothers for each activity at Time 1 and Time 2 are displayed in Table 9. For both data collection times, the most frequent activities were family get-togethers, helping each other, shopping together, and helping another person. The least frequent activities were working together, going to a meeting or class, and taking a trip or vacation.

Relationship quality variables

Attachment, intimacy, and perception of equity comprise this category of variables. The descriptive statistics for each of these variables are reported below. Findings for each cohort are presented in Appendix K.

Table 9

Number (Percent) of Daughters and Mothers Reporting Face-to-Face Activities

	Daughters		Mothers	
Activity	Time 1 n = 61	Time 2 n = 57	Time 1 n = 55	Time 2 n = 53
Commercial recreation	10 (16)	14 (25)	8 (15)	8 (15)
Outdoor recreation	8 (13)	10 (18)	9 (16)	7 (13)
Home recreation	22 (36)	19 (33)	24 (44)	16 (30)
Family get-togethers	55 (90)	55 (96)	52 (95)	46 (87)
Shopping	44 (72)	45 (79)	45 (82)	39 (74)
Church	17 (28)	19 (33)	11 (20)	15 (28)
Working together	3 (5)	3 (5)	2 (4)	4 (8)
Trip or vacation	8 (13)	12 (21)	7 (13)	7 (13)
Social events	25 (41)	18 (32)	17 (31)	18 (34)
Helping each other	47 (77)	49 (86)	47 (85)	44 (83)
Helping another	32 (52)	29 (51)	25 (45)	23 (43)
Meeting or class	4 (7)	5 (9)	5 (9)	5 (9)

Attachment. The results for attachment are displayed in Table 8. The means for daughters are 3.20 at Time 1 and 3.10 at Time 2; the means for mothers are 3.27 at Time 1 and 3.09 at Time 2. These means are slightly above the midpoint of the possible range of 1 to 5.

Intimacy. The results for intimacy are displayed in Table 8. The means for daughters are 4.26 at Time 1 and 4.23 at Time 2; the means for mothers are 4.45 at Time 1 and 4.35 at Time 2. The scores indicate high levels of intimacy for both mothers and daughters.

Perceived equity. The perceived equity scores are shown in Table 8. The means for daughters are 3.75 at Time 1 and 3.78 at Time 2; the means for mothers are 4.01 at Time 1 and 3.06 at Time 2. These means indicate relatively high levels of perceived equity for mothers and daughters.

Aid Exchange

Aid exchange is composed of two variables, help given and help received. There were 47 help given and 47 help received items. For this analysis, Item 33, "Gave me a gift," was not included in the mean score because of the highly variable incidence of gift giving related to data collection over the Christmas holidays for only some participants.

Help given. The mean scores are summarized in Table 8. The means for daughters are 1.54 at Time 1 and 1.49 at Time 2; The means for mothers are 1.49 at Time 1 and 1.50 at Time 2. No one gave help

more often than two to three times a month. Typically, these women gave help to each other about once every two months.

Means of the different types of help they gave to each other are presented in Table 10. The most frequent type of help given was psychological support; the least frequent types were indoor maintenance and outdoor maintenance.

Help received. The help received mean scores are summarized in Table 8. The means for daughters are 1.55 at Time 1 and 1.58 at Time 2; the means for mothers are 1.38 at Time 1 and 1.33 at Time 2. No one received help more often than two to three times a month. Typically, these women gave help to their intergenerational partner about once every two months.

Means of the different types of help received are presented in Table 10. As with help given, the most frequent type of help received was psychological support; the least frequent types were indoor maintenance and outdoor maintenance.

Summary of Descriptive Findings

The most frequent type of contact between daughters and mothers was by telephone for both data collection periods. For the women who reported face-to-face contact, the most frequent face-to-face activities were helping tasks and the least frequent were recreational. Scores for attachment, intimacy, and perception of equity were high while the frequencies of help given and help received were low. The most commonly reported help (given or received) was psychological support. The impact of other variables,

Table 10

Mean Scores for Help Exchanged in the Two Months Prior to Data Collection

Type	Daughters		Mothers	
	Time 1	Time 2	Time 1	Time 2
		Help Given		
Shopping/Errands	1.70	1.64	1.55	1.62
Routine maintenance	1.44	1.39	1.16	1.29
Clothing upkeep	1.20	1.13	1.26	1.31
Indoor maintenance	1.10	1.07	1.09	1.06
Food preparation	1.79	1.72	1.69	1.76
Outdoor maintenance	1.15	1.09	1.02	1.09
Financial help	1.19	1.13	1.32	1.24
Psychological support	3.48	3.22	3.61	3.31
Leisure activities	1.43	1.25	1.22	1.28
Health care	1.12	1.20	1.14	1.21
Business management	1.47	1.29	1.31	1.23

(Table continues)

(Table 10 continued)

Type	Daughters		Mothers	
	Time 1	Time 2	Time 1	Time 2
		Help Received		
Shopping/Errands	1.74	1.71	1.40	1.42
Routine maintenance	1.23	1.46	1.22	1.42
Clothing upkeep	1.33	1.36	1.05	1.05
Indoor maintenance	1.16	1.11	1.02	1.01
Food preparation	1.17	1.83	1.52	1.42
Outdoor maintenance	1.04	1.05	1.01	1.05
Financial help	1.42	1.35	1.05	1.02
Psychological support	3.81	3.82	3.02	2.77
Leisure activities	1.24	1.29	1.22	1.20
Health care	1.32	1.24	1.05	1.07
Business management	1.53	1.35	1.27	1.16

especially distance between residences, on contact and aid exchange will be address in other sections of this chapter.

Selection of Indicator Variables

At this point, three contact, two emotional closeness, one perception of equity, and two aid exchange variables have been described. Before statistical analyses were performed, indicator variables for contact and emotional closeness were selected. No more than 1 dependent variable for every 10 cases should be included in a MANOVA (Huck, Cormier, & Bounds, 1974). Because the number of cases with complete data for mothers and daughters is 49, five dependent variables were selected to indicate contact, emotional closeness, and aid exchange.

Telephone contact was selected to be an indicator of contact. It was the most frequently occurring mode of contact and was correlated with face-to-face contact for daughters at Time 1 (r = .65, p = <.0001) and Time 2 (r = .59, p < .0001) and for mothers at Time 1 (r = .61, p < .0001) and Time 2 (r = .66, p = <.0001).

Intimacy was selected to be the indicator of emotional closeness. Intimacy was correlated with attachment for daughters at Time 1 (r = .85, p < .0001) and Time 2 (r = .81, p < .0001) and for mothers at Time 1 (r = .62, p < .0001) and Time 2 (r = .66, p < .0001).

Both aid exchange variables were included because given and receiving are different conceptually. Perception of equity is the

fifth variable included in the MANOVA. Even though equity is not addressed in Hypotheses 4, 5, and 6, it was included because of the researcher's intention to explore equity and its relationship to other variables in the future.

Determination of Covariates

The interval between data collection times had large ranges (Table 11), and distance between residences had a huge standard deviation. These variables were examined to determine if they should be entered as covariates in the MANOVA procedure.

Interval between Data Collection Times

The mean interval between response times for daughters was 8.5 weeks with a range of 4 to 14 weeks. The distribution of intervals was essentially normal in that 52 out of 68 (76.5%) were within one standard deviation, that is, 7 to 10 weeks. The mean interval for mothers was 8.1 weeks with a range of 4 to 13 weeks. This distribution also was essentially normal in that approximately 47 out of 61 (77.0%) were within one standard deviation, that is, 7 to 10 weeks.

The mothers' and daughters' data were regrouped according to intervals; (a) greater than 10 weeks, (b) between 7 and 10 weeks, and (c) less than 7 weeks. Then, the interval data for the entire group and each subgroup were correlated, using Pearson's r, with the dependent variables to be used in the MANOVA. As seen in Table 12,

Table 11

Intervals between Data Collection Times for Daughters and Mothers

Interval	n (% Sample)	M (SD)
	Daughters	
Less than 7 weeks	10 (14.5)	5.3 (.71)
7 to 10 weeks	52 (73.4)	8.6 (1.07)
More than 10 weeks	7 (10.1)	12.0 (1.00)
	Mothers	
Less than 7 weeks	9 (14.8)	5.1 (.78)
7 to 10 weeks	47 (77.0)	8.3 (1.02)
More than 10 weeks	5 (8.2)	11.4 (.89)

none of the correlations for any of the groups was significant. Given that scores by interval were not correlated with any of the MANOVA variables, the interval between data collection period was not considered as a covariate in further analyses.

Distance

According to daughter's reports at Time 1, the distance between their residences and those of their mothers ranged from .5 to 3,600 miles with a mean of 265.3 and a standard deviation of 612.4 miles. Thus, distance was not normally distributed. As Fischer (1981) pointed out, aid exchange is affected by distance. She labeled the two different types of aid as distal and proximal. Both types of aid were reported by the participants in this study (Table 10). Because of the uneven distribution of distance and the varying types of aid possible at different distances, the independent variable, distance, was controlled for in the statistical analysis. Additional support for controlling distance, or considering it as a covariate, resulted from the testing of Hypotheses 1 and 2 described in a later section.

Hypotheses Testing

The hypotheses will be presented in the order in which the statistical analyses were performed beginning with those tested with correlations, followed by those tested with analysis of variance. Last, Hypothesis 7 was tested by exploring the relationship between correlations.

Table 12

Correlations of Dependent Variables with Data Collection Intervals

Variable	Less than 7 weeks	7 to 10 weeks	More than 10 weeks
		Daughters	
	n = 10	n = 52	n = 7
Telephone contact	-.60	.26*	.00
Intimacy	-.17	.13	.61
Equity	-.56	.05	.09
Help received	-.23	.01	-.34
Help given	-.24	.06	.64
		Mothers	
	n = 9	n = 47	n = 5
Telephone contact	.32	.15	.38
Intimacy	.25	.09	-.59
Equity	.39	.06	-.31
Help received	.05	.17	.11
Help given	.51	.00	-.12

* $p < .10$

Hypotheses 1 and 2.

These hypotheses involve the association of distance with contact and emotional closeness. The hypotheses are:

Hypothesis 1. Contact frequency is not associated with distance between mothers' and daughters' residences.

Hypothesis 2. Emotional closeness between mothers and daughters is not associated with distance between mothers' and daughters' residence.

Correlation (Pearson r) was used to test these hypotheses. As can be seen in Table 13, distance is correlated with telephone (r = -.41, $p < .001$) and face-to-face contact (r = -.66, $p < .0001$) for daughters at Time 1 and with telephone contact for mothers (r = -.27, p = .03) at Time 1. Specifically, those who live farther away have less frequent contact.

In order to refine the statistical testing, the data were regrouped according to distance. The short distance group was 40 or fewer miles, or the distance considered to be the greater metropolitan area of the largest city in the region. The middle distance group of more than 40 but less than 180 miles is based on the distance that could be traveled round trip easily within a day. The long distance group, more than or equal to 180 miles, is distance for which a round trip by car would be greater than six to seven hours.

In the correlations for each of the distance groups (Table 14), distance is correlated with telephone contact for daughters and mothers living within 40 miles of each other and for mothers living

Table 13

Correlations between Distance and Dependent Variables

	Daughters		Mothers	
Variable	Time 1	Time 2	Time 1	Time 2
Telephone contact	-.41***	.02	-.27*	.06
Face-to-face contact	-.66****	-.08	.14	.06
Attachment	-.06	.01	.16	-.01
Intimacy	.03	.08	.12	-.09

* $p < .05$, ** $p < .005$, *** $p < .0005$, **** $p < .0001$

between 40 and 180 miles from their daughters. The correlations were also significant for middle distance daughters at Time 1, and long distance daughters and mothers at Time. Based on these findings, Hypotheses 1, contact frequency is not associated with distance between mothers' and daughters' residences, is rejected.

None of the correlations between emotional closeness and distance for either daughters or mothers was significant at either data collection time (Table 13). Based on these findings, Hypothesis 2, emotional closeness between mothers and daughters is not associated with distance, is accepted.

Hypothesis 3.

Hypothesis 3. Emotional closeness between mothers and daughters is not associated with frequency or type of contact.

Correlation (Pearson r) was used to test this hypothesis. As seen in Table 15, attachment and intimacy were more frequently correlated with telephone contact than with face-to-face contact. For daughters, telephone contact was significantly ($p < .05$) correlated with attachment at Time 1 ($r = .40$) and Time 2 ($r = .40$) and with intimacy at Time 2 ($r = .34$). For mothers, telephone contact was associated with attachment ($r = .34$) and intimacy ($r = .31$) at Time 2. Face-to-face contact was associated with attachment only for daughters at Time 1 ($r = .31$).

The positive correlations indicate that increased contact frequency is associated with greater emotional closeness. It is not surprising that attachment was associated with contact more often

Table 14

Correlations between Distance and Telephone Contact

	Daughters		Mothers	
Distance	Time 1	Time 2	Time 1	Time 2
40 miles or less	.64****	.78****	.81****	.61***
> 40 and < 180 miles	.63*	.26	.79**	.85**
180 miles or more	.32	.57*	.16	.74*

* $p < .05$, ** $p < .005$, *** $p < .0005$, **** $p < .0001$

Table 15

Correlations of Emotional Closeness and Contact

	Daughters		Mothers	
Contact Type	Time 1	Time 2	Time 1	Time 2
		Attachment		
Telephone	.40****	.40***	.13	.34*
Face-to-face	.31*	.16	.05	.10
		Intimacy		
Telephone	.19	.34**	.04	.31*
Face-to-face	.20	.15	.15	.02

* $p < .05$, ** $p < .005$, *** $p < .0005$, **** $p < .0001$

than intimacy was. Part of the operational definition of attachment is proximity seeking which could be manifested in more frequent contact.

Based on these findings, Hypothesis 3, emotional closeness between mothers and daughters is not associated with frequency or type of contact is partially rejected. Higher frequency of telephone contact is associated with greater attachment; face-to-face contact is mostly not associated with emotional closeness.

Hypotheses 4, 5, and 6.

Hypothesis 4. Contact between mothers and daughters does not change as pregnancy advances.

Hypothesis 5. Mothers and daughters do not become emotionally closer as pregnancy advances.

Hypothesis 6. Aid patterns between mothers and daughters do not change as pregnancy advances.

In these hypotheses, the phrase, "as pregnancy advances," reflects the cohort variable based on daughters' gestational age as well as the longitudinal collection of data. The repeated or within subjects factors are dyad partner, that is, mother or daughter, and data collection time, first or second. As mentioned previously, the mother and daughter data are considered to be repeated measures because the scores for mothers and daughters are not entirely independent of each other (Ball et al., 1983). Forty-nine mother-daughter pairs returned completed questionnaires for both time intervals. The distribution is shown in Table 16. A 2 x 2 x 5

MANCOVA was performed with dyad partner, data collection time, and cohort as the independent variables, distance between residences as a covariate, and telephone contact, intimacy, equity, help received, and help given as the dependent variables. Before the MANCOVA was performed, the distance data were transformed into logarithms because the scores for this variable were not normally distributed. The distribution of the transformed data ($\underline{M}$ = 3.69, $\underline{SD}$ = 2.09) better matched the underlying assumption that the covariate be normally distributed.

Homogeneity of variance tests, using Bartlett-Box F, were carried out for each variable for mothers and daughters at Time 1 and at Time 2 (Table 17). The homogeneity of the variables differed widely. Intimacy had the most homogeneity while log of distance had the least homogeneity. Even though homogeneity is a desired condition for analysis of variance, this MANCOVA may not be sensitive enough for homogeneity to affect statistical outcome (Kerlinger, 1973).

Repeated measures MANCOVA findings. The repeated measures MANCOVA was performed on a microcomputer using SPSS/PC+ (Norusis, 1988). Means and standard deviations for each cohort are shown in Table 18.

The main effects of cohort, dyad partner, and time of data collection were tested with Wilks' Lambda (Table 19). There were no significant differences among cohorts or between data collection times in the dependent variables. Nor were there cohort-by-time or

Table 16

Respondents per Cell for MANCOVA

	Daughters		Mothers	
Cohort	Time 1	Time 2	Time 1	Time 2
≤ 13 weeks	17	17	17	17
14 to 23 weeks	7	7	7	7
24 to 33 weeks	7	7	7	7
34 to postpartum	9	9	9	9
Not pregnant	9	9	9	9

Note. n = 49 mother-daughter pairs

Table 17

Univariate Homogeneity of Variance Test (Bartlett-Box F)

	Daughters		Mothers	
Type	Time 1	Time 2	Time 1	Time 2
Contact	1.90	1.42	1.41	.47
Intimacy	2.26	3.59*	4.81**	4.35**
Equity	1.69	.31	2.44*	1.59
Help received	1.24*	1.95	2.84	3.48
Help given	2.84*	3.48*	1.32	1.06
Log distance	.46	.46	.46	.46

* $p < .05$, ** $p < .005$

cohort-by-partner-by-time interactions. There were no differences in contact, intimacy, or aid exchange as pregnancy advanced if cohort is interpreted as a measure of the advancement of pregnancy. Based on the MANCOVA, then Hypotheses 4, 5, and 6 are accepted.

The main effect of dyad partner was significant ($p < .001$), and the interaction between dyad partner and time was significant ($p = .02$). The interaction between dyad partner and cohort approached significance ($p = .06$).

Univariate F-tests were performed for all main and interaction effects. Significant results are shown in Table 20. Though differences between dyad partners were not hypothesized, mothers' and daughters' scores did differ. Daughters differed from mothers in intimacy ($p = .02$), equity ($p < .001$), and help received ($p < .001$). From Time 1 to Time 2, daughters differed from mothers in intimacy ($p = .04$) and equity ($p = .02$). The means and standard deviations are shown in Table 20.

The interaction effect of partner-by-time for intimacy and for equity is shown in Figure 1. Daughters' intimacy scores tended to increase over time while mothers' intimacy scores tended to decrease. From Time 1 to Time 2, daughters' perception of equity increased while mothers' perception of equity decreased.

In summary, Hypotheses 4 (contact), 5 (intimacy), and 6 (aid exchange) are accepted; contact, intimacy, and aid exchange patterns did not change as pregnancy advanced. Neither cohort nor time was associated with contact, intimacy, or aid exchange patterns. There were differences in intimacy and equity between daughters and mothers

Table 18

Means (Standard Deviations) for MANCOVA Variables for 49 Daughter-Mother Pairs

	Daughters		Mothers	
	Time 1	Time 2	Time 1	Time 2
		Contact[a]		
≤ 13 weeks	4.71(1.26)	4.71(1.31)	4.77(1.15)	4.71(1.11)
14 to 23 weeks	4.71(.95)	4.56(.69)	5.00(.58)	4.86(.90)
24 to 33 weeks	5.14(.69)	5.14(.69)	5.29(.76)	5.14(1.07)
34 to postpartum	4.44(.53)	4.33(1.41)	4.67(.71)	4.44(.73)
Not pregnant	4.78(1.09)	4.56(1.13)	4.67(.71)	4.78(1.09)
All cohorts	4.74(1.00)	4.69(1.14)	4.84(.87)	4.76(.99)
		Intimacy[b]		
≤ 13 weeks	4.27(.58)	4.35(.66)	4.48(.32)	4.39(.52)
14 to 23 weeks	4.63(.30)	4.63(.22)	4.70(.23)	4.66(.22)
24 to 33 weeks	3.89(1.04)	4.15(.68)	4.39(.63)	4.43(.28)
34 to postpartum	3.94(.85)	3.99(1.08)	4.18(.72)	4.06(.86)
Not pregnant	4.26(.67)	4.19(.45)	4.55(.20)	4.44(.29)
All cohorts	4.20(.71)	4.27(.69)	4.46(.46)	4.38(.52)

[a] 1 = "not at all the past 2 months" to 6 = "every day"

[b] 1 = "not true" to 5 = "always true"

(table continues)

(Table 18 continued)

	Daughters		Mothers	
	Time 1	Time 2	Time 1	Time 2
		Equity[a]		
≤ 13 weeks	3.76(.64)	3.84(.48)	4.01(.36)	3.96(.48)
14 to 23 weeks	4.03(.34)	4.08(.42)	4.01(.18)	4.11(.39)
24 to 33 weeks	3.62(.74)	3.89(.40)	4.06(.58)	3.93(.47)
34 to postpartum	3.42(.34)	3.46(.58)	3.78(.62)	3.76(.62)
Not pregnant	3.78(.47)	3.81(.43)	4.33(.42)	4.17(.24)
All cohorts	3.72(.56)	3.81(.49)	4.03(.46)	3.98(.47)
		Help given[b]		
≤13 weeks	1.52(.46)	1.64(.67)	1.34(.24)	1.64(.67)
14 to 23 weeks	1.71(.62)	1.61(.33)	1.32(.18)	1.61(.33)
24 to 33 weeks	1.60(.49)	1.71(.45)	1.49(.37)	1.71(.45)
34 to postpartum	1.41(.32)	1.58(.52)	1.18(.18)	1.58(.52)
Not pregnant	1.40(.15)	1.51(.25)	1.35(.22)	1.51(.25)
All cohorts	1.52(.42)	1.61(.50)	1.33(.25)	1.61(.50)
		Help received[b]		
≤13 weeks	1.57(.56)	1.59(.69)	1.40(.28)	1.37(.28)
14 to 23 weeks	1.52(.43)	1.46(.27)	1.58(.42)	1.60(.44)
24 to 33 weeks	1.60(.44)	1.64(.53)	1.49(.33)	1.47(.26)
34 to postpartum	1.32(.21)	1.27(.23)	1.33(.19)	1.59(.46)
Not pregnant	1.54(.25)	1.64(.39)	1.31(.23)	1.42(.33)
All cohorts	1.52(.42)	1.53(.51)	1.41(.29)	1.46(.35)

[a] 1 = "never" to 5 = "very often"

[b] 1 = "not at all" to 6 = "more than once a week"

Table 19

Wilks' Lambda and Univariate F-tests for Dependent Variables

Source of Variation (df)	Lambda	SS	MS	MS error	F
Cohort (4,43)	.65				.89
Contact		5.88	1.47	2.34	.63
Intimacy		7.02	1.76	1.05	1.67
Equity		4.11	1.03	.65	1.58
Help received		.28	.07	.31	.22
Help given		.41	.10	.63	.29
Dyad Partner (1,44)	.45				9.90**
Contact		.38	.38	.24	1.60
Intimacy		1.72	1.72	.27	6.26*
Equity		2.61	2.61	.18	14.50**
Help received		2.54	2.54	.18	20.83**
Help given		.16	.16	.12	1.34
Time (1,44)	.93				.60
Contact		.18	.18	.31	.59
Intimacy		<.01	<.01	.07	<.01
Equity		.02	.02	.07	.30
Help received		.05	.05	.05	1.05
Help given		.06	.06	.05	1.29

(table continues)

(Table 19 continued)

Source of Variation (df)	Lambda	SS	MS	MS error	F
Cohort X Partner (4,44)	.49				1.59
Contact		.14	.04	.24	.15
Intimacy		.56	.14	.27	.51
Equity		.94	.24	.18	1.31
Help received		.25	.06	.12	.51
Help given		1.20	.30	.12	2.52
Cohort X Time (4,44)	.78				.50
Contact		.14	.04	.31	.12
Intimacy		.24	.06	.07	.85
Equity		.11	.03	.05	.39
Help received		.05	.01	.05	.22
Help given		.14	.03	.05	.71
Partner X Time (1,44)	.73				2.98*
Contact		.03	.03	.22	.14
Intimacy		.19	.19	.04	4.39*
Equity		.23	.23	.04	5.47*
Help received		.09	.09	.03	2.69
Help given		.03	.03	.04	.84

(table continues)

(Table 19 continued)

Source of Variation (df)	Lambda	SS	MS	MS error	F
Cohort X Partner X Time (4,44)	.62				1.03
Contact		.45	.11	.22	.52
Intimacy		.06	.01	.04	.33
Equity		.21	.05	.04	1.28
Help received		.18	.04	.03	1.28
Help given		.24	.06	.04	1.59

* $p < .05$, ** $p < .001$

Table 20

Means (Standard Deviation) of Variables with Significant Effects

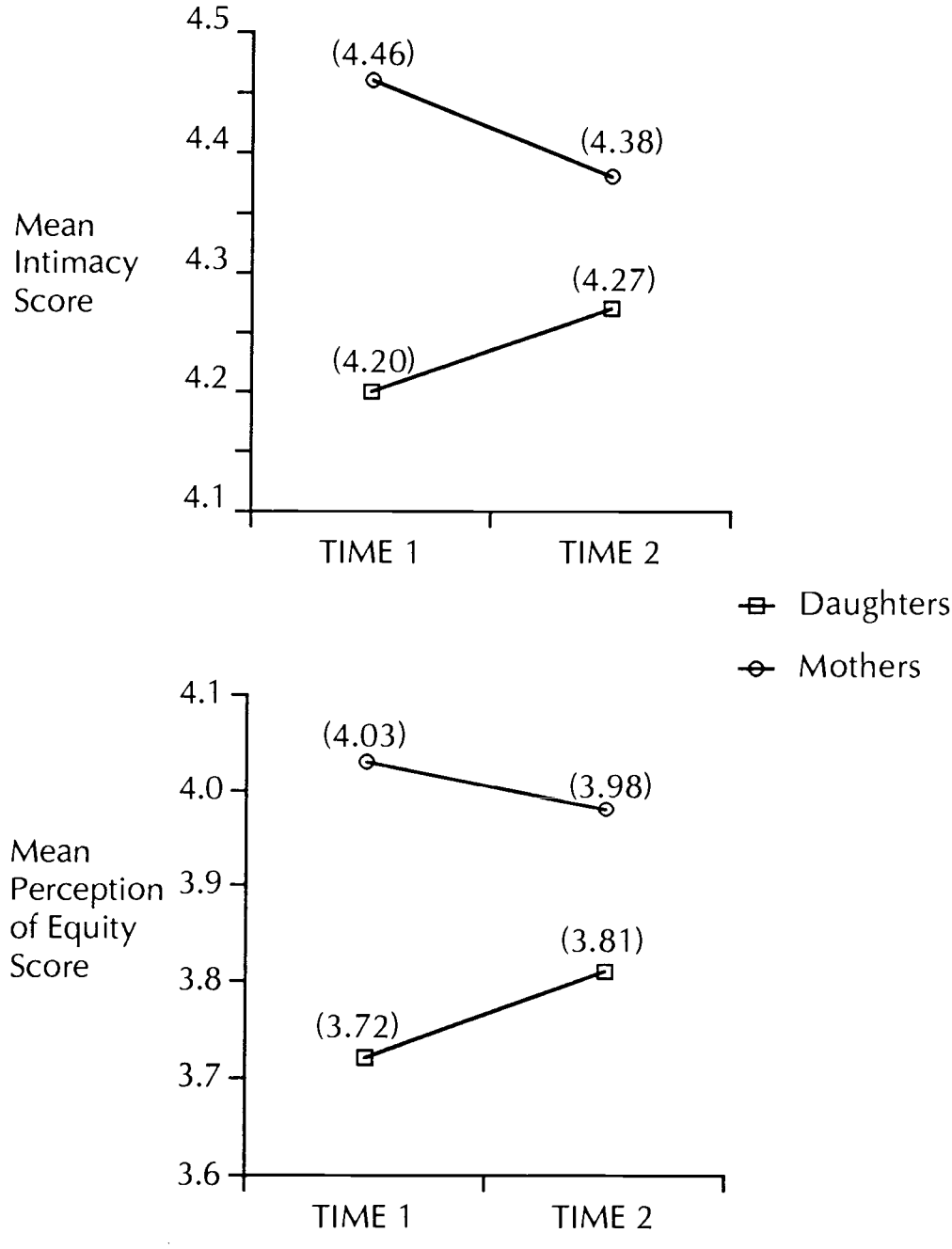
Variable	Time	Daughters		Mothers	
		M	SD	M	SD
		Dyad Partner			
Intimacy*	--	4.24	(.70)	4.42	(.49)
Equity**	--	3.76	(.52)	4.01	(.46)
Help Received**	--	1.56	(.46)	1.32	(.25)
		Dyad Partner x Time			
Intimacy*	1	4.20	(.71)	4.46	(.46)
	2	4.27	(.69)	4.38	(.52)
Equity*	1	3.72	(.56)	4.03	(.46)
	2	3.81	(.49)	3.98	(.46)

* $p < .05$, ** $p < .001$

Note. Higher scores indicate greater amounts.

Figure 1.

Changes in Intimacy and Perception of Equity from Time 1 to Time 2 for Mothers and Daughters



as well as an interaction effect between time and dyad partner. For daughters, intimacy and equity increased from Time 1 to Time 2; for mothers, intimacy and equity decreased.

Hypothesis 7

Hypothesis 7 is that emotional closeness (IN) is more strongly associated with the perception of equity (EQ) between mothers and daughters than with aid patterns (GH = help given, RH = help received) as pregnancy advances. As equity theory would suggest, the perception of fairness rather than the actual transaction determines how the parties feel about each other. In this study daughters reported that they received more help than mothers which means that their transaction was not even. At the same time both mothers and daughters reported high levels of emotional closeness. With this hypothesis, the impact of the perception of equity as well as reported help given and received are explored.

As with the other hypotheses, "as pregnancy advances" is conceptualized to mean daughters' gestational age and time of data collection. Because of the small numbers of pairs in the two cohorts, 14-to-23 weeks (n = 14) and 24-to-33 week (n = 9), these two cohorts were combined for this analysis. This combined group is referred to as the mid-to-late pregnancy group. Even though the non-pregnant control cohort (n = 11) and the 34-to-40-week, or late pregnancy, cohort (n = 14) also had relatively small numbers, they were not collapsed because the control group is not related in any way to the pregnant groups. Also, by the second wave of data

collection, all of the women in the late pregnancy cohort were in the postpartum phase.

Before analyzing the association between intimacy and equity and aid exchange, the correlations were grouped into two sets: (a) the correlation between equity and intimacy ($\underline{r}_{EQ/IN}$) and the correlation of help given and intimacy ($\underline{r}_{GH/IN}$) and (b) the correlation of equity and intimacy ($\underline{r}_{EQ/IN}$) and the correlation of help received and intimacy ($\underline{r}_{RH/IN}$).

To determine if the correlations in each set were significantly different, from each other, $\underline{t}$-tests were performed as suggested by McNemar (cited in Downie & Heath, 1959). The formula for this $\underline{t}$-test is displayed in Appendix L. This $\underline{t}$-test is appropriate because it accounts for differences between pairs of correlation coefficients when measurements are taken from the same sample. The comparisons for each set of correlations, $\underline{r}_{EQ/IN}$ with $\underline{r}_{GH/IN}$ and $\underline{r}_{EQ/IN}$ with $\underline{r}_{RH/IN}$, for daughter cohorts at Time 1 and Time 2 are shown in Table 21; those for mothers are shown in Table 22.

The $\underline{t}$-tests showed significant differences for daughters at Time 1, between the two sets of correlations for the early pregnant and mid-to-late pregnancy cohorts. That is, intimacy was more strongly associated with the perception of equity than with help given or help received at Time 1. At Time 2, the correlations in both sets were significantly different with intimacy being more strongly associated with the perception of equity than with help given or received for the mid-to-late pregnant cohort; for the early pregnant cohort intimacy was more strongly associated with the

Table 21

Correlations of Intimacy (IN) with Equity (EQ) and Aid Exchange (RH = Help Received, GH = Help Given) for Daughters

Time (n)	$r_{EQ/IN}$	$r_{RH/IN}$ or $r_{GH/IN}$		t-test[a]
		Early pregnancy		
1 (22)	.72	RH	.32	2.18**
		GH	.31	2.26**
2 (21)	.62	RH	.31	1.64
		GH	.28	1.98*
		Mid to late pregnancy		
1 (27)	.84	RH	.41	3.65***
		GH	.41	3.65***
2 (24)	.78	RH	.36	2.50**
		GH	.29	2.76***
		Late pregnancy to postpartum		
1 (14)	.68	RH	.61	.36
		GH	.39	1.43
2 (12)	.85	RH	.68	1.16
		GH	.67	1.18
		Non pregnant control		
1 (10)	.44	RH	.22	.60
		GH	.18	.96
2 (10)	.20	RH	-.55	1.56
		GH	-.49	1.68

** $p < .02$ one-tailed, *** $p < .005$ one-tailed

[a] $df = n - 3$

Table 22

Correlations of Intimacy (IN) with Equity (EQ) and Aid Exchange (RH = Help Received, GH = Help Given) for Mothers

Time (n)	$r_{EQ/IN}$	$r_{RH/IN}$ or $r_{GH/IN}$		t-test[b]
		Early pregnancy		
1 (22)	.55	RH	.13	2.18**
		GH	.09	2.33**
2 (21)	.85	RH	.57	2.49**
		GH	.39	4.23***
		Mid to late pregnancy		
1 (23)	.71	RH	.10	2.95***
		GH	.01	3.15***
2 (17)	.48	RH	.39	.42
		GH	.27	.86
		Late pregnancy to postpartum		
1 (13)	.85	RH	.44	2.32**
		GH	.10	3.52***
2 (11)	.84	RH	.26	2.84**
		GH	.39	2.17**
		Non pregnant control		
1 (10)	.45	RH	-.14	1.83
		GH	-.80	4.08***
2 (10)	.44	RH	.15	.66
		GH	-.02	1.00

** $p < .02$ one-tailed, *** $p < .005$ one-tailed

[b] df = n - 3

perception of equity than with help given only. None of the comparisons was significantly different for the late pregnancy and non-pregnant control groups at either data collection time.

For mothers in all three pregnancy-related groups, intimacy was more strongly associated with the perception of equity than with the aid exchange variables at Time 1, as shown in the significant differences between $\underline{r}_{EQ/IN}$ and $\underline{r}_{GH/IN}$ and between $\underline{r}_{EQ/IN}$ and $\underline{r}_{RH/IN}$. For control mothers, intimacy was more strongly associated with equity than with help given. At Time 2, these trends persisted only for the mothers of early pregnant daughters.

For control mothers and daughters, the correlations between intimacy and the aid exchange variables were inverse which was opposite to the pregnancy-related groups. In other words, higher scores of intimacy were associated with less frequent giving and receiving help for control mothers.

The $\underline{t}$-tests illustrate trends for each group of mothers and daughters at Time 1 and Time 2. The trends are different for the various groups. Intimacy is less likely to be associated with the perception of equity than with help given or help received for pregnant respondents than for control respondents.

To determine if the association between the perception of equity and emotional closeness changed from Time 1 to Time 2, the correlations for each time period were compared using Z transformations of the correlation coeficients (Downie & Heath, 1959). The formula for the test of significance using Z is displayed in Appendix L. The results for the comparisons of $\underline{r}_{EQ/IN}$ between

data collection times are displayed in Tables 23 and 24. The only significant difference from Time 1 to Time 2 was for mothers of early pregnant daughters when correlations of intimacy with the perception of equity increased over time (Table 24).

Hypothesis 7 is partially rejected. Intimacy was more strongly associated with equity than with aid exchange for the early pregnancy and mid-to-late pregnancy groups but not for the late pregnancy or control groups. The correlations between the perception of equity and intimacy increased from Time 1 to Time 2 only for mothers of early pregnant daughters.

Summary

Mother-daughter pairs who live farther apart have less frequent telephone and face-to-face contact. But emotional closeness was not significantly correlated with distance, contact type, or frequency. Contact, emotional closeness, the perception of equity, and aid exchange patterns did not differ significantly by cohort, the variable defined by pregnancy status. Nor were there differences based on time of data collection. But daughters and mothers did differ significantly on intimacy (the indicator of emotional closeness), equity, and help received. Daughters had lower intimacy and equity scores than mothers. Daughters also received more help than mothers. The relationship-by-time interaction was significant for intimacy and equity; daughters' scores increased while mothers' scores decreased from Time 1 to Time 2.

Table 23

Correlations between Intimacy (IN) and Equity (EQ) from Time 1 to Time 2 for Daughters

Time (weeks)	n	$r_{EQ/IN}$	Z	z
		Early pregnancy		
1 (9-13)	22	.72	.91	
2 (17-29)	21	.62	.73	1.32
		Middle to late pregnancy		
1 (14-32)	27	.84	1.23	
2 (22-40)	24	.78	1.06	.52
		Late pregnancy to postpartum		
1 (34-40)	14	.68	.83	
2 (postpartum)	12	.85	1.26	.97
		Non-pregnant		
1	10	.44	.47	
2	10	.20	.20	.61

Table 24

Correlations between Intimacy (IN) and Equity (EQ) from Time 1 to Time 2 for Mothers

Time (weeks)	n	$r_{EQ/IN}$	Z	z
		Early pregnancy		
1 (9-13)	22	.55	.62	
2 (17-29)	21	.85	1.26	1.95*
		Middle to late pregnancy		
1 (14-32)	23	.71	.89	
2 (22-40)	17	.48	.52	1.06
		Late pregnancy to postpartum		
1 (34-40)	13	.85	1.26	
2 (postpartum)	11	.84	1.22	.09
		Non-pregnant		
1	10	.45	.49	
2	10	.44	.47	.03

* $p < .05$

The perception of equity rather than help given and help received was more associated with intimacy for early pregnant and mid-to-late pregnant groups but not for the late pregnancy and control groups. For mothers of the early pregnant group, the correlation of intimacy with perception of equity increased from Time 1 to Time 2.

Chapter 5

DISCUSSION

The question addressed by this study was: Is daughter's childbearing a turning point in the relationship with her mother? The results of this study support the position that the relationship is stable over time which is consistent with the work of Wood, Trautmann, and Hay (1984). Given the literature on pregnant daughters and their mothers, the findings of this exploratory study are novel. They should stimulate further investigation about the stability of mother-daughter relationships.

Indirectly, this study examined the suitability of various theoretical perspectives for explaining the impact of daughter's childbearing on the mother-daughter relationship for contemporary women. Specifically, these are psychoanalytic theory and equity theory. The prior psychoanalytic research stressed changes over time in the mother-daughter relationship during daughters' pregnancy; changes related to pregnancy were not found in contact frequency and relationship quality in this study. This study was unique in that perception of equity as well as actual aid patterns were used to increase understanding of intergenerational relationships.

Contact. Geographical distance played an important role in intergenerational contact in this study. For daughters and mothers who lived within 40 miles of each other, contact was significantly correlated with distance. For those living farther than 40 miles from each other, contact was not associated with distance. These

findings support Adams' (1968) position that, beyond a certain distance, contact is affected by the logistics of travel rather than the needs, obligations, or desires of the intergenerational partners.

The types of activities engaged in during face-to-face contact by these daughters and mothers were not those usually associated with enjoyment such as recreation. Most of the activities involved helping others or shopping. The activities during face-to-face contact were similar to those reported by Kivett (1988); activities that mothers and daughters do together tend to be those traditionally associated with women.

Contact frequency did not change as pregnancy advanced. This finding was counter to the position of psychoanalytic investigators (Ballou, 1978; Bibring et al., 1962; Deutsch, 1945) that pregnant women increase contact with their mothers as pregnancy advances. Nor was it supportive of Fischer's finding that daughters who were mothers have more contact with their mothers than daughters who were not mothers. Fischer's work was partially retrospective. The daughter participants who were mothers had children up to age 2 1/2 years; possibly the recall of mothers and daughters about contact during pregnancy was inaccurate. In this study, the changing role of daughters, that is, becoming mothers, was not a factor in contact patterns with their mothers. This was the trend that Walker, Thompson, and Morgan (1987) found in their study of the influences of role on mother-daughter relationships; mother-daughter relationships are stable and unaffected by most roles.

Belsky and Rovine (1984) found that contact between pregnant

couples and their families of origin increased from the last three months of pregnancy to the third postpartum month. This study did not cover such long intervals. Yet, even for those women who moved into the postpartum period, contact with their mothers did not increase. The findings do support Leigh's (1982) and Reiss' (1982) work that intergenerational contact is not affected by family life cycle stage; though control and pregnant daughters were in different family life cycle stages, they did not differ as to contact with their mothers.

Emotional Closeness. Emotional closeness between pregnant women and their mothers did not change dramatically in this sample as pregnancy advanced. The lack of significant differences between the "pregnant" and "non-pregnant" cohorts suggests that daughters' pregnancy is not a major influence on relationship quality. This finding is counter to older psychoanalytic investigations (Ballou, 1979; Bibring, 1961; Deutsch, 1945) and the more recent work of Fischer (1981) in which daughters were seen to become emotionally closer to their mothers as pregnancy and/or motherhood advanced. Differences in measures and methods could account for the discrepancies. The measures used in this study were reliable and valid while emotional closeness was measured qualitatively from interview data by these other investigators. Coincidentally, this finding supports the empirical work of Walker, Thompson, and Morgan (1987) that most roles assumed by mothers and daughters are not related to emotional closeness. In contrast to Fischer's work (1981), data collection for this study was not retrospective and it

was limited to pregnancy and the early postpartum period.

Mothers tended to report higher levels of emotional closeness than daughters; yet, both mothers and daughters had high levels of emotional closeness. While the sample represented a select group of women, these findings are congruent with those of other investigators (Aldous, Klaus, & Klein, 1985; Fischer, 1981; Thompson & Walker, 1984; Townsend & Worobey, 1987; Walker & Thompson, 1983; Walker, Thompson, & Morgan, 1987) of intergenerational relationships.

The significant interaction effect of dyad partner and time resulted from divergent trends. Daughters' intimacy scores increased while mothers scores decreased from Time 1 to Time 2. These changes were not related to pregnancy as seen by lack of change related to gestational age. The findings may be due to the divergence between mothers and daughters rather than actual changes in mothers' or daughters' feelings.

Prior to this study, the mother's perspective of the mother-daughter relationship during daughter's pregnancy had not been systematically investigated. The slightly higher intimacy scores for mothers may reflect the developmental stake of older generations tending to direct their emotional resources to younger generations. Possibly the decrease of mothers' intimacy over time was from the mothers feeling less intimacy as their daughters were investing their emotional energy to the expected baby.

Even though the findings of this study cannot be generalized, they support that the mother-daughter relationship is stable during pregnancy. The magnitude of the intimacy scores and the relatively

small differences between partners and over time does support that the changes in emotional closeness are not extreme.

The context of contemporary women may explain the stability of the mother-daughter relationship. The daughters of this study were considered to be adults before childbearing and marriage, unlike their predecessors described by the psychoanalysts. In the 1940s and 1960s, daughters' age at marriage and childbearing was lower than it is currently. The upheaval of the mother-daughter relationship surrounding daughter's pregnancy seen by the psychoanalysts may still occur but not at time of daughter's childbearing. Several responses to the open-ended questions indicated that the mother-daughter relationship was "better" than it had been "in the past." What was "the past" was sometimes associated with adolescence but often "the past" was not specified.

An additional explanation for the difference between this study's findings and the work of the psychoanalytic investigators is the different populations studied. Deutsch (1945) drew her conclusions from pregnant women who were psychiatric patients who may have had atypical relationships with their mothers. Bibring and associates (1961) recruited from one hospital-based prenatal clinic rather than from a range of obstetrical practices. Possible these women selected the hospital clinic for idiosycratic reasons not explained in the study. All the psychoanalytic studies (Ballou, 1978; Bibring et al., 1961, 1975, 1976; Colman & Colman, 1972) had fewer participants than this study. Also they used leading questions guided by the psychoanalytic model. The model could have influenced

what they found in womens' responses to open-ended interview questions.

Aid Exchange. The frequency of aid exchange between these mothers and daughters was low. Distance was a factor in aid exchange. Distance and aid exchange were significantly correlated for mothers and daughters living within 40 miles of each other but not for other distance groupings. Thus, distance may have presented logistical barriers to aid exchange. These barriers may account for the low frequencies of aid especially for types based on proximity such as household maintenance and meal preparation. The most frequent type of aid, psychological support, did not depend on proximity of dyad partners.

As Leapley (1988) pointed out, people in different roles such as spouses, friends, mothers, mothers-in-law, and fathers give different types of support during pregnancy. Perhaps the daughters in this study were receiving different types of aid from persons other than their mothers. Walker, Thompson, and Walker (1987) found that young married women had less dependence on their mothers than young single women. They speculated that these young married women in their study were shifting their loyalties from filial to conjugal bonds. The daughters in this study were mostly married; they too could have shifted their loyalties and dependency from their parents to their husbands.

Daughters in this study received significantly more help than their mothers which is similar to previous studies of intergenerational aid exchange (Adams, 1964; Hill, 1970; Sussman,

1952; Thompson & Walker, 1984). As Hill (1970) pointed out, intergenerational aid exchange is based on need. A recurring trend is that the early years of marriage and the transition to parenthood are times of high need (Belsky & Rovine, 1984; Leapley, 1988; Sussman, 1952). The control daughters were mostly in the early years of marriage and all the pregnant daughters were beginning the transition to parenthood. Thus, both groups were in family life cycle stages of high need.

Coincidentally there was little difference in the frequency of help given between mothers and daughters. With daughters receiving more help, it would be expected that mothers would report giving more help than daughters. Perhaps daughters over-report the help they receive or mothers under-report the help they give. Yet, most of the correlations in this study between help given and help received were significant suggesting that the rates were similar or that help was reciprocated. Aid exchange between mothers and daughters was not associated with the emotional closeness variables of intimacy and attachment.

There were no differences in aid exchange variables by cohort. In other words, gestational age was not related to aid exchange variables, and aid exchange did not differ between controls and "pregnant" participants. Both Belsky and Rovine (1984) and Leapley (1988) found that frequency of help from parents to their adult children increased from the last trimester of pregnancy into the postpartum period. Postpartum was also the time of the most help from mothers to daughters in Fischer's (1981) study, yet some of her

data were obtained retrospectively from daughters with children up to age 2 1/1 years. Data collection for this study did not continue to the sixth week postpartum as did Leapley's (1987) or into the third month as did Belsky and Rovine's (1984). Few respondents in this study were beyond the third postpartum week for the second data collection.

In summary, aid exchange frequency was low between the mothers and daughters participating in this study. Distance was a factor in the low rates because most of the types of aid measured depended on proximity. Even those pairs who lived within 40 miles of each other had low frequencies of help given and help received. The measures for aid exchange could account for the low rates. Some of the items were so specifically proximity-based that few participants could have performed them. The inclusion of such specific items accounted for the low total scores. Stage of pregnancy cannot explain the higher frequency of help received by daughters. The higher frequency of daughters receiving aid most likely is related to all the daughters being in family life cycle stages that are associated with high rates of aid from their parents (Adams, 1964; Belsky & Rovine, 1984; Fischer, 1981, 1983; Hill, 1970; Sussman, 1952).

This contemporary sample of mothers and daughters had lower frequencies of help given and help received than would be expected from previous research. As stated previously, geographical proximity is necessary for many of the types of aid addressed in the questionnaires. In Fischer's (1981) study of mothers and daughters, "near" daughters had more help that required proximity than "far"

daughters. In this study, the participants may be having their need for the types of help measured met by others who were not so geographically separated. de Anda and Becerra, in their study (1984) of support to pregnant Hispanic teens, found different sources of aid to Spanish- and English-speaking participants. The Spanish-only group was helped by husbands and the English-speaking group was helped primarily by their mothers. They attributed the differences to geographical proximity to mothers; the mothers of the Spanish-only group were in Mexico while the mothers of the English- speaking group were in the same area as the participants. de Anda and Becerra used cultural preference for mother's help as an explanation; they hypothesized that the Spanish-only group used husbands' support because their mothers were not available. While Leapley (1988) did not consider distance in her study of support to middle-class American women in late pregnancy and the postpartum period, she did find that they received more help from their male partners than anyone else. She explained her findings by availability and preference for partner support. The participants in the present study were predominantly middle class and married. Perhaps they preferred to have their husbands' rather than their mothers' help.

Lack of time as well as distance could have hindered aid exchange. Most of the women were employed or engaged in other time-consuming activities such as attending college. The highest frequency of help exchange, psychological support, could be given without regard for distance or time. For example, psychological support could even be given during telephone contact. This is

similar to Walker and Thompson's (1983) finding that frequency of "distal" aid is not associate with distance.

Perception of Equity. Perception of equity did not change over the course of pregnancy, but mothers' scores were higher than daughters' scores. This difference can be explained partially by their differing experiences in aid exchange as adults. Daughters have limited experience of aid exchange with their mothers while mothers' have participated in exchanges with their own mothers and other older adults. The daughters' may not have had sufficient aid exchange experiences on which to evaluate the fairness of the exchange. Mothers' experiences may have enhanced their awareness of the aid exchange that will occur as daughters assume the parenting role.

The perception-of-equity scores were relatively high which indicates that these mothers and daughters think the current and potential aid exchange situations are fair. They perceived that the other would be available if help was needed, which was illustrated by such open-ended responses as, "I know she would do anything for me if I needed it," and "I don't mind helping her out because I know she will help me when the baby comes."

This study is unique because it explored the impact of equity and aid exchange on the emotional aspects intergenerational relationships. Previous investigators (Adams, 1968; Hill, 1970) found that aid-exchange patterns were associated with emotional closeness across generations. More recently, a study of college-age daughters and mothers found that aid-exchange patterns accounted for

little of the variance in emotional closeness (Thompson & Walker, 1984). With this sample, perception of equity was associated more strongly with intimacy, a component of emotional closeness, than with help given or received. Several previous investigators alluded to aspects of equity in intergenerational aid exchange. For example, Hill (1970) found that family members involved with aid giving and/or receiving felt that there were "strings attached." In Sussman's (1952) qualitative study about parents' aid to married children, aid giving was not entirely altruistic; parents did want to enjoy their grandchildren and have access to them. These parents perceived that their children accepted aid in exchange for access to the grandchildren but no mention was made about the emotional quality of their relationship.

The association of equity and intimacy was stable over time. The only significant change over time was the increase for mothers of daughters in early pregnancy. The change in mothers' perception of equity may have resulted from increasing awareness of daughter's pregnancy. In the interval between data collection time periods for these women, 9 to 29 weeks gestation, the pregnancy was becoming much more apparent to others. Most women begin wearing maternity clothes during this time. Fetal movement becomes noticeable, and the discomforts of nausea and urinary frequency diminish. Mothers may have witnessed these changes either through observation or conversation with their daughters. Through these observations, mothers' perception of daughters as partners in equity-based relationship could have changed. Visable signs of pregnancy could

have induced mother into considering daughters as equal partners.

Equity theory offers a plausible explanation for the influence of aid exchange on emotional closeness between daughters and mothers during daughters' childbearing. The perception of equity is more strongly related to emotional closeness than actual aid. The investigation of equity in this relationship does support that the mother-daughter relationship is stable during daughters' first pregnancy.

Limitations and Strengths

Several characteristics of this study affect the interpretation of the findings. These involve the sample and analytic methods.

The findings cannot be applied to the entire population and different subpopulations of childbearing women and their mothers because of the sampling. First, the sample was non-random; volunteers were recruited from a narrow range of health care settings in a specific region of the United States. Volunteer participants could be quite different from the general population of pregnant women and their mothers. Also the inclusion of mothers in the study could have contributed to the self-selection of women who had more positive relationships with their mothers. Two potential participants refused to participate because they did not want to have their mothers included. Yet, not all the participants had high quality relationships. Second, the investigator's access to potential participants in obstetrical practices and childbirth classes was constrained in several ways. Information about the study

was distributed by agency personnel. Nurses and childbirth educators may have limited distribution of flyers to those whom they thought would be "good subjects" rather than informing all the primigravid women in their obstetrical practices and classes even though the investigator asked that all perspective first-time mothers receive them.

A control group of non-pregnant daughters and their mothers was included to strengthen the interpretation related to pregnancy. Demographically, the control and pregnant daughters were not matched as to education and marital status, although marital status would have been matched had some student daughters not been reluctant to report cohabitation with a male partner. Employment status also differed for control and "pregnant" mothers. Even though inclusion of non-pregnant women and their mothers increases the explanatory power of pregnancy, the differences between groups limit interpretation. In general, though, the two samples were well matched on the major demographic variables.

The third limitation was the relatively small number of participants. The uneven distribution across cohorts resulted in fewer cases per cell for MANCOVA than the standard recommendation of at least ten. Because this is an initial study involving both pregnant women and their mothers, the results should be regarded as an exploration of trends rather than testing of theory.

Another limitation to be considered is interpretation of statistical tests. The p-values are not as meaningful as they would be in tests on a random sample. Nevertheless, mean scores indicate

definite trends. Adequate tests of the hypotheses presented in this study await a random sample.

The research method was appropriate for studying changes over time for cohorts of mothers and daughters during daughters' childbearing. Even though pregnancy was not a factor in differences between mothers and daughters, pregnancy cannot be inferred to cause changes because of the nonrandom assignment of participants to "control" and "experimental" groups. Strengthening the non-pregnant control group through more refined matching and a greater number of participants could increase the explanatory power of pregnancy as an invoker of change in the mother-daughter relationship.

Suggestions for Further Study

As with most exploratory research, this study raises questions that lend themselves to additional research. Expansion of the current study to women of different socioeconomic, cultural, and regional backgrounds could increase its applicability to a broader range of mothers and daughters. It was suspected that the volunteer nature of participant recruitment was biased toward daughters who had positive relationships with their mothers. Using random sampling techniques would diminish any such bias. With such expansion and randomization, the results could be readily generalized to the entire population of mothers and their pregnant daughters.

Increasing the number of subjects, especially non-pregnant controls, would improve the sensitivity of the statistical measures. Sensitivity to changes over time may be improved by increasing the

number of cohorts by using shorter or longer ranges of gestational age to define cohorts. Another strategy to increase sensitivity to change is to increase data collections from two to three or more. The work of Belsky and Rovine (1984) and Leapley (1988) suggest that the greatest changes occur from pregnancy to beyond early postpartum. Extending data collection from early pregnancy into the third or fourth month postpartum may increase sensitivity to change.

The instruments for measuring the constructs of emotional closeness and equity had highly acceptable psychometric properties. The low scores for aid exchange could have resulted from the instruments not capturing the types and range of help exchanged by mothers and daughters. Continued development of the current instrument or use of a different instrument to measure aid exchange may yield different findings. It was apparent that distance prevented either partner from performing many helping tasks. A study limiting the distance between partners or using an instrument that addresses help not based on proximity may result in significant results.

This study focused on cohorts of mothers and daughters. With changes in scoring and statistical analysis, the focus could be dyadic, that is, what transpires between partners rather than the experiences of mothers or daughters.

A recurring question provoked by this study is when does the mother-daughter relationship become stable. It may be that this relationship is steady throughout life, but the open-ended responses of the participants indicate that stability is not present sometime

prior to daughter's pregnancy. Perhaps more intense life course study of girls and young women could help determine when stability in the relationship begins.

Three aspects of this study's research methods lend strength to the idea of stability in the relationship over time. First, the cross-sequential design has the strengths of both longitudinal and cross-sectional methods. Longitudinal designs capture changes within groups over time while cross-sectional designs capture differences between groups. The attrition common in longitudinal studies is diminished with the cross-sequential design. At the same time the use of the cross-sequential design can enhance explanation of differences across groups better than the cross-sectional designs alone. Differences among groups can be attributed to developmental change rather than other characteristics. Also the cross-sequential approach was time saving because the researcher did not have to collect data for participants' entire pregnancies. Second, this study was prospective. By studying aspects of the relationship during the pregnancy and postpartum period, many of the limitations of previous retrospective work such as that of Fischer (1981, 1983) and Baruch and Barnett (1983) were eliminated. Third, the study was empirically sound. The variables of contact, emotional closeness, aid exchange, and perception of equity, which are components of the construct of relationship quality, were measured with reliable and valid instruments. The convenience sample was adequate for an exploratory study, and the statistical methods were appropriate for determining change over time.

Conclusions

The results of this study indicate that the mother-daughter relationship during daughters' first pregnancy is stable. This conclusion is counter to current theorization on women's development during pregnancy; that is, pregnant women become closer to their mothers as pregnancy advances. Psychoanalytic theory, which guided the work on which many developmental frameworks were based (Rubin, 1984; Tilden, 1980; Valentine, 1982), was not supported by the findings. A plausible explanation for this is that psychoanalytic theory is not applicable to contemporary pregnant women and their mothers. Equity theory was satisfactory in explaining the interplay of aid exchange and emotional closeness for these women.

This work was exploratory in nature but it was more empirical than previous research on mother-daughter relationships during daughter's first pregnancy. Because of the potential for generalizability of quantitative research, this study's findings may be more reflective of what actually occurs with mothers and daughters during this life transition than previous investigations.

Further study is needed to support the stability of mother-daughter relationships during daughter's pregnancy. Expansion of the current study, shift of focus from cohorts to dyads, and more rigorous theory testing and development could change the thinking of family researchers, educators, and allied professionals about the nature of the mother-daughter relationship during daughter's first pregnancy.

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APPENDICES

APPENDIX A

Example of Study Information Flyer

Distributed to Potential Participants

(Reduced 74% from Original)

ARE YOU -

- Expecting your first baby?
- Between 18 and 30 years old?
- Married or in a stable relationship with a male partner?
- Not living with your mother?
  and
- Can your mother be reached by mail?

If you answered YES to all these questions, you may eligible to participate in my research about pregnant women and their mothers. Here is some more information for you to consider.

WHAT WOULD YOU BE ASKED TO DO -

Fill in two questionnaires that would be mailed to you.

The first questionnaire would be sent to you within one week of my first contact with you. The second questionnaire will sent to you eight (8) weeks after the first questionnaire.

I will send your mother the same type of questionnaires.

WHAT IS THIS RESEARCH ABOUT -

I am investigating the relationship between pregnant women and their mothers as to how often they have contact with each other, help they give each other, and some aspects about their feelings toward each other.

WHAT ARE THE BENEFITS -

Information from this study may be useful in the future to plan programs and health care for women.

Unfortunately, I cannot pay people to fill out questionnaires. When you mail back your second questionnaire, I will put your name in a drawing for a cashier's check for $20.

WHO WILL SEE THE QUESTIONNAIRES -

All questionnaires will have an ID number for mailing purposes only. Only I will know the code of ID numbers. The staff at this clinic will not even know if you are involved with the study.

WHAT IS THE NEXT STEP -

If you are interested in more information on the study, put your name and phone number on the bottom of this sheet, tear it off, and give it to your nurse. I will call you within a week.

I can be reached at 235-3487 (Portland) or at 3224 NE Couch, Portland, OR 97232.

Louise Martell
Doctoral Candidate
Human Development and Family Studies
Oregon State University

--- Tear here ----------

NAME PHONE NUMBER

APPENDIX B

Example of Cover Letter Sent with Questionnaires

1. Mothers

2. Daughters

Department of
Human Development
& Family Studies
College of
Home Economics

Oregon State University

Corvallis, Oregon 97331-5109
United States of America

(503) 754-4765

Date

Ms. Participant Mother
5678 Dissertation Dr.
Indulge, ME 00090

Dear Ms. Mother,

Your daughter, Participant Daughter, volunteered to complete two questionnaires for my study on mother-daughter relationships during pregnancy. She gave me your name and address and indicated to me that you may be willing to complete the two questionnaires for parts of my study about mothers.

By participating in this study, you and your daughter will provide important information about contact, help exchanged, and feelings between mothers and daughters. At this time, very little is known about pregnant women's relationships with their mothers. We know even less about how women feel during their daughter's first pregnancies. This information may eventually be used in planning health and social programs for pregnant women and their mothers.

The first of the two questionnaires is enclosed. If you should choose to participate, please fill it in and mail it back to me in the self-addressed envelope this week. It will take about 30 minutes to complete. The second questionnaire will be mailed to you in eight weeks. It will be very similar to the first one.

You may be assured of complete confidentiality. I will not tell your daughter about your answers. The questionnaire has an identification number for mailing purposes only. This is so that I may check your name off the mailing list when your questionnaire is returned. Your name will never be placed on the questionnaire, nor will you as an individual be identifiable in any materials published as a result of this research.

I will be happy to answer any questions you may have. Please write to me at 3224 NE Couch St., Portland, OR 97232, or call me at (503) 235-3487. You may call Alexis Walker, my professor at Oregon State University, at 1-800-462-3287, extension 4765.

Thank you for your assistance.

Sincerely,

Louise K. Martell
Doctoral Candidate

Department of
Human Development
& Family Studies
College of
Home Economics

Oregon State University

Corvallis, Oregon 97331-5109 (503) 754-4765
United States of America

Date

Ms. Participant Daughter
1234 Research Rd.
Either, OR 97300

Dear Ms. Daughter,

Thank you for agreeing to be in my study on mother-daughter relationships during pregnancy and giving me your mother's name and address. I will be sending her information about the study this week.

As we discussed when I talked with you, you and your mother will provide important information about contact, help exchanged, and feelings between mothers and daughters. At this time, social scientists know very little about pregnant women's relationships with their mothers. We know even less about how women feel during their daughter's first pregnancies. This information may eventually be used in planning health and social programs for pregnant women and their mothers.

The first of the two questionnaires is enclosed. Please fill it in and mail it back to me in the self-addressed, stamped envelope this week. It will take about 30 minutes to complete. A second questionnaire will be mailed to you in eight weeks. It will be very similar to the first one.

You may be assured of complete confidentiality. I will not tell your mother about your answers. The questionnaire has an identification number for mailing purposes only. This is so that I may check your name off of the mailing list when your questionnaire is returned. Your name will never be placed on the questionnaire, nor will you as an individual be identifiable in any materials published as a result of this research.

I will be happy to answer any questions you may have. Please write to me at 3224 NE Couch, Portland, OR 97232, or call me at 235-3487. You may call Alexis Walker, my professor at Oregon State University, at 1-800-462-3287, extension 4765.

Thank you for your assistance.

Sincerely,

Louise K. Martell
Doctoral Candidate
Oregon State University

APPENDIX C

Demographic Information for Cohorts

1. Age
2. Years of Education
3. Marital Status
4. Employment
5. Distance between Residences

Table C1.

Ages of Daughters and Mothers

	Daughters			Mothers		
Cohort	n	M	(SD)	n	M	(SD)
≤ 13 weeks	22	24.7	(3.0)	22	49.0	(7.2)
14 - 23 weeks	17	24.5	(3.5)	14	49.1	(4.9)
24 - 33 weeks	10	24.5	(3.2)	9	47.4	(5.0)
34 - 40 weeks	15	25.5	(3.7)	15	50.0	(7.1)
All "pregnant"	64	24.8	(3.3)	60	49.2	(6.4)
Non-pregnant	12	23.8	(2.8)	12	52.1	(5.2)

Table C2.

Years of Education for Daughters and Mothers

	Daughters			Mothers		
Cohort	n	M	(SD)	n	M	(SD)
≤ 13 weeks	22	13.5	(1.7)	22	13.3	(1.8)
14 - 23 weeks	17	12.9	(2.0)	14	11.9	(1.3)
24 - 33 weeks	10	13.8	(1.9)	9	13.2	(2.3)
34 - 40 weeks	14	13.8	(1.9)	15	13.4	(1.8)
All "pregnant"	64	13.4	(1.8)	60	13.0	(1.8)
Non-pregnant	12	16.1	(1.5)	12	13.9	(1.8)

Table C3.

Marital Status of Daughters and Mothers

Cohort	Married n	(%)	Cohabitating n	(%)	Unmarried n	(%)
			Daughters			
≤ 13 weeks	19	(86.4)	3	(13.6)	0	
14 - 23 weeks	16	(94.1)	1	(5.9)	0	
24 - 33 weeks	9	(90.0)	1	(10.0)	0	
34 - 40 weeks	14	(93.3)	1	(6.7)	0	
All "pregnant"	58	(90.6)	6	(9.4)	0	
Non-pregnant	9	(75.0)	1	(8.3)	2	(16.7)
			Mothers			
≤ 13 weeks	17	(77.3)	0		5	(22.3)
14 - 23 weeks	11	(78.6)	0		3	(21.5)
24 - 33 weeks	7	(77.8)	1	(11.1)	1	(11.1)
34 - 40 weeks	12	(80.0)	0		3	(20.0)
All "pregnant"	48	(78.3)	1	(1.7)	12	(20.0)
Non-pregnant	10	(83.4)	1	(8.3)	1	(8.3)

Note. Unmarried category includes never married, divorced, and widowed.

Table C4.

Employment Status of Daughter and Mother Cohorts

Cohort	Employed n	(%)	Homemaker n	(%)	Student n	(%)
			Daughters			
≤ 13 weeks	18	(81.8)	3	(13.6)	2	(9.1)
14 - 23 weeks	13	(76.5)	3	(17.6)	1	(5.9)
24 - 33 weeks	6	(60.0)	4	(40.0)	1	(10.0)
34 - 40 weeks	13	(86.7)	1	(13.3)	0	
All "pregnant"	50	(78.1)	11	(17.2)	4	(6.2)
Non-pregnant	8	(66.7)	4	(33.3)	10	(83.3)
			Mothers			
≤ 13 weeks	17	(77.3)	0		5	(22.3)
14 - 23 weeks	11	(78.6)	0		3	(21.5)
24 - 33 weeks	7	(77.8)	1	(11.1)	1	(11.1)
34 - 40 weeks	12	(80.0)	0		3	(20.0)
All "pregnant"	48	(78.3)	1	(1.7)	12	(20.0)
Non-pregnant	10	(83.4)	1	(8.3)	1	(8.3)

Note. Totals may be greater than 100% because respondents selected more than one category.

Table C5.

Distance between Daughters' and Mothers' Residences

Cohort	n	M	(SD)
≤ 13 weeks	22	252.2	(839.6)
14 - 23 weeks	17	239.3	(527.5)
24 - 33 weeks	10	165.9	(469.2)
34 - 40 weeks	15	229.6	(35.3)
All "pregnant"	64	265.4	(612.4)
Non-pregnant	12	410.9	(519.0)

Note. Data based on daughters' reports. Distance reported in miles.

APPENDIX D

Follow-up Letters

1. Request to Return Questionnaire
2. Request to Complete Missing Data

Department of
Human Development
& Family Studies
College of
Home Economics

Oregon State University

Corvallis, Oregon 97331-5109
United States of America

(503) 754-4765

Date

Ms. Participant Daughter
1234 Research Rd.
Either, OR 97300

Dear Ms. Daughter

Over two weeks ago, I mailed you a questionnaire about mother-daughter relationships. According to my records, your questionnaire has not been returned.

Enclosed is another questionnaire. Would you please fill it out and send it back as soon as possible? When you return this questionnaire, I will put your name in a drawing for a $20 check.

I you have already sent back the first one, please discard this one. Thank you for participating in this research.

Yours truly,

Louise K. Martell
Doctoral Candidate

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(503) 754-4765

Date

Ms. Participant Mother
5678 Dissertation Dr.
Indulge, ME 00090

Dear Ms. Mother,

Thank you for returning my questionnaire. I noticed that you did not complete some of the pages. Would you please complete the copy of these pages that are enclosed and return them to me?

I appreciate your effort to contribute to this study. If you have questions please call me at (503) 235-3487 or write to me at 3224 NE Couch, Portland, OR 97232.

Sincerely,

Louise K. Martell
Doctoral Candidate

APPENDIX E

Frequency and Type of Contact Instrument

CONTACT WITH YOUR MOTHER

In this series of questions you will be asked how often you have contact with your mother. For each type of contact, please circle the number that best describes your situation for the past two months.

1. How often do you talk with your mother on the telephone?

    1. EVERY DAY
    2. EVERY WEEK OR MORE OFTEN
    3. EVERY 2 WEEKS OR MORE OFTEN
    4. EVERY MONTH OR MORE OFTEN
    5. EVERY 2 MONTHS OR MORE OFTEN
    6. NOT AT ALL FOR THE PAST 2 MONTHS

2. How often do you write letters to your mother?

    1. EVERY DAY
    2. EVERY WEEK OR MORE OFTEN
    3. EVERY 2 WEEKS OR MORE OFTEN
    4. EVERY MONTH OR MORE OFTEN
    5. EVERY 2 MONTHS OR MORE OFTEN
    6. NOT AT ALL THE PAST 2 MONTHS

3. How often do you see your mother?

    1. EVERY DAY
    2. EVERY WEEK OR MORE OFTEN
    3. EVERY 2 WEEKS OR MORE OFTEN
    4. EVERY MONTH OR MORE OFTEN
    5. EVERY 2 MONTHS OR MORE OFTEN
    6. NOT AT ALL THE PAST TWO MONTHS

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CONTACT WITH YOUR DAUGHTER, continued

4. If you have seen your daughter during the past two months, circle YES or NO for the activities you did together.

COMMERCIAL RECREATION SUCH AS MOVIES	YES	NO
OUTDOOR RECREATION SUCH AS HIKING.	YES	NO
HOME RECREATION SUCH AS CARD GAMES	YES	NO
FAMILY GET-TOGETHERS	YES	NO
SHOPPING TOGETHER.	YES	NO
CHURCH	YES	NO
WORKING (EMPLOYMENT) TOGETHER	YES	NO
TRIP OR VACATION	YES	NO
SOCIAL EVENTS SUCH AS A WEDDING	YES	NO
HELPING EACH OTHER	YES	NO
HELPING ANOTHER PERSON OR FAMILY MEMBER . . .	YES	NO
GOING TO A MEETING OR CLASS.	YES	NO

5. How far does your daughter live from you? _____ miles.

APPENDIX F

Aid Exchange Instruments

1. Giving help
2. Receiving help

GIVING HELP

Please read each statement and circle the number that best describes how often you have done the activity for your mother during the past two months.

6 means more than once a week
5 means about once a week
4 means about two to three times a month
3 means about once a month
2 means about once every two months
1 means not at all

		Circle your best answer					
1.	Did her grocery shopping	6	5	4	3	2	1
2.	Ran errands (bank, cleaners, gas station, etc.)	6	5	4	3	2	1
3.	Went shopping with her	6	5	4	3	2	1
4.	Bought household items	6	5	4	3	2	1
5.	Bought clothes	6	5	4	3	2	1
6.	Helped make an expensive purchase (furniture, car, etc.)	6	5	4	3	2	1
7.	Made or changed her bed	6	5	4	3	2	1
8.	Straightened up the house, put things away	6	5	4	3	2	1
9.	Cleaned the house (mopped, vacuumed, dusted, waxed, etc.)	6	5	4	3	2	1
10.	Took out the garbage	6	5	4	3	2	1
11.	Did the laundry	6	5	4	3	2	1
12.	Ironed clothes	6	5	4	3	2	1
13.	Mended or sewed for her	6	5	4	3	2	1
14.	Decorated (painted, wallpapered)	6	5	4	3	2	1
15.	Did repairs around the house	6	5	4	3	2	1

- GO TO NEXT PAGE -

GIVING HELP, continued

6 means more than once a week
5 means about once a week
4 means about two to three times a month
3 means about once a month
2 means about once every two months
1 means not at all

		Circle your best answer					
16.	Rearranged household furnishings	6	5	4	3	2	1
17.	Repaired, finished, or upholstered furniture	6	5	4	3	2	1
18.	Helped her with moving to a new house or apartment	6	5	4	3	2	1
19.	Made a meal	6	5	4	3	2	1
20.	Prepared food for later (freezing, canning, etc.)	6	5	4	3	2	1
21.	Did the dishes	6	5	4	3	2	1
22.	Cleaned up dining area or kitchen after a meal	6	5	4	3	2	1
23.	Gardened (weeded, planted, etc.)	6	5	4	3	2	1
24.	Trimmed trees/shrubs	6	5	4	3	2	1
25.	Mowed lawn, raked leaves, or shoveled snow	6	5	4	3	2	1
26.	Washed windows	6	5	4	3	2	1
27.	Repaired car or other vehicle	6	5	4	3	2	1
28.	Washed or waxed car or other vehicle	6	5	4	3	2	1
29.	Made home improvements (storm windows, carpentry, etc.)	6	5	4	3	2	1
30.	Helped pay for living expenses (groceries, rent, etc.)	6	5	4	3	2	1
31.	Gave her money	6	5	4	3	2	1
32.	Loaned her money	6	5	4	3	2	1
33.	Gave her a gift	6	5	4	3	2	1

- GO TO NEXT PAGE -

6 means more than once a week
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3 means about once a month
2 means about once every two months
1 means not at all

		Circle your best answer					
34.	Let her tell you her worries	6	5	4	3	2	1
35.	Discussed her decisions with her	6	5	4	3	2	1
36.	Gave her advice	6	5	4	3	2	1
37.	Cheered her up	6	5	4	3	2	1
38.	Took her to a meeting or a class	6	5	4	3	2	1
39.	Worked on a hobby or craft with her . . .	6	5	4	3	2	1
40.	Arranged for her to have time to herself	6	5	4	3	2	1
41.	Called doctor, clinic, or hospital for her	6	5	4	3	2	1
42.	Took her to the doctor, clinic, or hospital	6	5	4	3	2	1
43.	Stayed with her during her visit to doctor, clinic, hospital	6	5	4	3	2	1
44.	Got medicine or prescription for her . . .	6	5	4	3	2	1
45.	Obtained information for her	6	5	4	3	2	1
46.	Arranged for services for her	6	5	4	3	2	1
47.	Answered, addressed, or mailed letters, cards, or bills	6	5	4	3	2	1

Can you think of anything else you did for your mother during the past two months that was not included on this form? If so, please write it below and state how often you did it.

_____	6	5	4	3	2	1
_____	6	5	4	3	2	1

RECEIVING HELP

Please read each statement and circle the number that best describes how often your mother has done the activity for you during the past two months.

6 means more than once a week
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3 means about once a month
2 means about once every two months
1 means not at all

		Circle your best answer					
1.	Did my grocery shopping	6	5	4	3	2	1
2.	Ran errands (bank, cleaners, gas station, etc.)	6	5	4	3	2	1
3.	Went shopping with me	6	5	4	3	2	1
4.	Bought household items	6	5	4	3	2	1
5.	Bought clothes	6	5	4	3	2	1
6.	Helped make an expensive purchase (furniture, car, etc.)	6	5	4	3	2	1
7.	Made or changed my bed	6	5	4	3	2	1
8.	Straightened up the house, put things away	6	5	4	3	2	1
9.	Cleaned the house (mopped, vacuumed, dusted, waxed, etc.)	6	5	4	3	2	1
10.	Took out the garbage	6	5	4	3	2	1
11.	Did the laundry	6	5	4	3	2	1
12.	Ironed clothes	6	5	4	3	2	1
13.	Mended or sewed for me	6	5	4	3	2	1
14.	Decorated (painted, wallpapered)	6	5	4	3	2	1
15.	Did repairs around the house	6	5	4	3	2	1
16.	Rearranged household furnishings	6	5	4	3	2	1

- GO TO NEXT PAGE -

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3 means about once a month
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1 means not at all

		Circle your best answer					
17.	Repaired, finished, or upholstered furniture	6	5	4	3	2	1
18.	Helped me move to a new house or apartment	6	5	4	3	2	1
19.	Made a meal	6	5	4	3	2	1
20.	Prepared food for later (freezing, canning, etc.)	6	5	4	3	2	1
21.	Did the dishes	6	5	4	3	2	1
22.	Cleaned up dining area or kitchen after a meal	6	5	4	3	2	1
23.	Gardened (weeded, planted, etc.)	6	5	4	3	2	1
24.	Trimmed trees/shrubs	6	5	4	3	2	1
25.	Mowed lawn, raked leaves, or shoveled snow	6	5	4	3	2	1
26.	Washed windows	6	5	4	3	2	1
27.	Repaired car or other vehicle	6	5	4	3	2	1
28.	Washed or waxed car or other vehicle	6	5	4	3	2	1
29.	Made home improvements (storm windows, carpentry, etc.)	6	5	4	3	2	1
30.	Helped pay for living expenses (groceries, rent, etc.)	6	5	4	3	2	1
31.	Gave me money	6	5	4	3	2	1
32.	Loaned me money	6	5	4	3	2	1
33.	Gave me a gift	6	5	4	3	2	1

- GO TO NEXT PAGE -

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5 means about once a week
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1 means not at all

		Circle your best answer					
34.	Let me tell her my worries	6	5	4	3	2	1
35.	Discussed my decisions with her	6	5	4	3	2	1
36.	Gave me advice	6	5	4	3	2	1
37.	Cheered me up	6	5	4	3	2	1
38.	Took me to a meeting or a class	6	5	4	3	2	1
39.	Worked on a hobby or craft with me	6	5	4	3	2	1
40.	Arranged for me to have time to myself	6	5	4	3	2	1
41.	Called doctor, clinic, or hospital for me	6	5	4	3	2	1
42.	Took me to the doctor, clinic, or hospital	6	5	4	3	2	1
43.	Stayed with me during my visit to doctor, clinic, hospital	6	5	4	3	2	1
44.	Got medicine or prescription for me . . .	6	5	4	3	2	1
45.	Obtained information for me	6	5	4	3	2	1
46.	Arranged for services for me	6	5	4	3	2	1
47.	Answered, addressed, or mailed letters, cards, or bills	6	5	4	3	2	1

Can you think of anything else your mother did for you during the past two months that was not included on this form? If so, please write it below and state how often she did it.

_____	6	5	4	3	2	1
_____	6	5	4	3	2	1

APPENDIX G

Emotional Closeness Instrument

1. Instrument
2. Coding for Attachment and Intimacy Subscales

RELATIONSHIP WITH YOUR MOTHER

In this series of questions, you will be asked to rate your relationship with your mother. The rating scale, ranging from "Not True" to "Always True" is the same throughout and appears at the top of each page.

Here is an example of a completed item.

NOT TRUE	SOMETIMES TRUE	TRUE ABOUT 1/2 THE TIME	MOSTLY TRUE	ALWAYS TRUE
1	2	3	4	5

__4__ We get along well.

You mostly get along well with your mother, so your relationship with her rates a four (4) on this item. Proceed through the questions, answering them for your relationship with your mother. Please try to answer all the items.

_____ 1. She always thinks of my best interest.

_____ 2. Our lives are better because of each other.

_____ 3. We nurture each other.

_____ 4. When we anticipate being apart, our relationship intensifies.

_____ 5. She shows that she loves me.

_____ 6. There's a great amount of unselfishness in our relationship.

_____ 7. We love each other.

_____ 8. We like each other

_____ 9. She makes me feel better.

_____ 10. We enjoy the relationship.

_____ 11. I'm sure of this relationship.

_____ 12. I'm lucky to have her in my life.

_____ 13. She is closer to me than others are.

_____ 14. I feel like I want to support her.

- GO TO NEXT PAGE -

NOT TRUE	SOMETIMES TRUE	TRUE ABOUT 1/2 THE TIME	MOSTLY TRUE	ALWAYS TRUE
1	2	3	4	5

_____ 15. She is important to me.

_____ 16. We want to spend time together.

_____ 17. She cares about the way I feel.

_____ 18. We can accept each other's criticism of our faults and mistakes.

_____ 19. We anticipate each other's moods.

_____ 20. We're honest with each other.

_____ 21. We're dependent on each other.

_____ 22. We're emotionally dependent on each other.

_____ 23. Our best times are with each other.

_____ 24. We anticipate each other's needs.

_____ 25. We respect each other.

_____ 26. We feel like we're a unit.

Coding for Attachment and Intimacy Subscales

Attachment:	Mean of Items 3, 4, 13, 14, 19, 21, 22, 23, 24
Intimacy:	Mean of Items 1, 2, 5, 6, 7, 8, 9, 10, 11, 12, 15, 16, 17, 18, 20, 25, 26

APPENDIX H

The Tilden Interpersonal Relationship Inventory (IPRI)

1. IPRI Instrument

2. Instrument Development Summary
   (Personal Communication From
   V.P. Tilden, November, 1987)

INTERPERSONAL RELATIONSHIPS INVENTORY

Most relationships with people we feel close to are both helpful and stressful. Below are statements that describe close personal relationships. Please read each statement and circle the number that best fits your situation. There are no right or wrong answers. These first statements ask you to agree or disagree.

1 means you strongly disagree
2 means you disagree
3 means you are neutral
4 means you agree
5 means you strongly agree

	Circle your best answer				
1. My mother makes me feel confident in myself	1	2	3	4	5
2. With my mother, I get just as much as I give	1	2	3	4	5
3. My mother shares similar views with me	1	2	3	4	5
4. I'm available to my mother when she needs to talk	1	2	3	4	5
5. When I have helpful information, I try to pass it on to my mother	1	2	3	4	5
6. I think I put more effort into my mother than she puts into me	1	2	3	4	5
7. I can turn to my mother for helpful advice about a problem	1	2	3	4	5
8. I don't mind loaning money if my mother needs it	1	2	3	4	5
9. I can talk openly about anything with my mother	1	2	3	4	5
10. I'm satisfied with the give and take between me and my mother	1	2	3	4	5
11. I could go to my mother for anything	1	2	3	4	5
12. My mother is too pushy	1	2	3	4	5

- GO TO NEXT PAGE -

INTERPERSONAL RELATIONSHIPS INVENTORY, continued

1 means you strongly disagree
2 means you disagree
3 means you are neutral
4 means you agree
5 means you strongly agree

	Circle your best answer				
13. I'm happy with the balance of how much I do for my mother and how much she does for me	1	2	3	4	5
14. I can count on my mother to make me feel better when I need it	1	2	3	4	5
15. When I need help, I get it from my mother and when she needs help, I give it back . .	1	2	3	4	5
16. My mother gets mad if we have different opinions	1	2	3	4	5
17. It's safe for me to reveal my weaknesses to my mother	1	2	3	4	5
18. My mother stands by me through good times and bad times	1	2	3	4	5
19. I have the kind of mother who really helps out in an emergency	1	2	3	4	5
20. I can't count on my mother	1	2	3	4	5
21. If I need help, all I have to do is ask . .	1	2	3	4	5
22. I have enough opportunity to talk things over with my mother	1	2	3	4	5

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INTERPERSONAL RELATIONSHIPS INVENTORY, continued

These next statements ask you how often something happens.

1 means never
2 means almost never
3 means sometimes
4 means fairly often
5 means very often

	Circle your best answer				
23. I have enjoyable times with my mother . . .	1	2	3	4	5
24. I spend time doing things for my mother when I'd really rather not	1	2	3	4	5
25. My mother invades my privacy	1	2	3	4	5
26. I let my mother know that I appreciate her	1	2	3	4	5
27. I am embarrassed by what my mother does . .	1	2	3	4	5
28. My mother comes to me for a boost in her spirits	1	2	3	4	5
29. My mother tends to take advantage of me . .	1	2	3	4	5
30. My mother is a burden to me	1	2	3	4	5
31. I tell my mother when I think she's great .	1	2	3	4	5
32. I wish my mother was more sensitive to my needs	1	2	3	4	5
33. My mother makes me do things I don't want to do	1	2	3	4	5
34. My mother comes to me for advice	1	2	3	4	5
35. There is tension between me and my mother .	1	2	3	4	5
36. I have trouble pleasing my mother	1	2	3	4	5
37. My mother lets me know she believes in me .	1	2	3	4	5
38. My mother expects too much of me	1	2	3	4	5
39. I let my mother know I care about her . . .	1	2	3	4	5

The Tilden Interpersonal Relationship Inventory (IPRI)

Instrument Development Summary

The development and psychometric evaluation of a multidimensional measure of interpersonal relationships has been on-going since 1983. The final form of the instrument, called the Tilden Interpersonal Relationship Inventory (IPRI), contains an index of network structure and 3 subscales of network function (interpersonal support, reciprocity, and conflict). Each functional subscale contains 13 items for a total of 39 items.

The measure is based on social exchange theory (Cook, 1987) and equity theory (Messick & Cook, 1983). Together, these compatible theories hold that interpersonal relationships within social networks depend on reciprocal exchanges of emotional and tangible supplies. People consider cost-benefit ratios of relationships, reciprocation is implicit, and cost and conflict are inherent.

Item Development and Content Validity Assessment

Pilot drafts of the instrument performed well during psychometric evaluation. However, qualitative data were needed to enrich and extend the theoretical framework. Therefore, in the first phase of the Federal grant project, interview data were collected during semi-structured interviews with 44 adults in a range of stressful life situations, such as being homeless, having cancer, and having an emotionally disturbed child. Respondents were asked to describe qualities of relationships that are supportive, how equity or balance occurs in relationships, and what is stressful about relationships in the network. Transcriptions of interviews were analyzed by 4 investigators and inter-rater reliability was found to be 92.3%. Verbatim data provided native language from which to write items, and these items were supplemented by items from the pilot instrument to produce a total of 140 items. These items were submitted to a panel of 11 experts (4 nationally known experts in social support, a mental health clinician, and 6 lay persons who had been original interview respondents). Ratings from this panel reduced the item pool to 79; only those items rated at 89% agreement or better were retained.

Item Analysis

The 79 item instrument was administered to a sample of undergraduate nursing, psychology, and community college students (n = 97), and data were used for item analysis and item reduction. Six psychometric criteria were used to select items for the final form of the IPRI. 1. The frequency distribution of responses to the item should show sufficient range (about four points) and high standard deviation (>.8) to indicate a population spread on the item. 2. The item-to-subscale total correlation should be between .2 and .7.

Items that are too highly correlated with the subscale are so homogeneous as to provide no new information. Items correlated too low with the subscale are suspected of belonging to a different conceptual domain. Items in the mid-range (.2 to .7) should ensure fairly broad domain coverage without being overly redundant or overly idiosyncratic. 3. Items should correlate more highly with their own subscale than with either of the two other subscales. 4. At least one adequate item should be retained from each of the conceptual subcategories derived from the qualitative data collected from 44 respondents, from which items were originally written. 5. All factors (from factor analysis) within each subscale should be represented by at least one adequate item. 6. Wording of items should be clear, unambiguous, and understood by all respondents.

Item Reduction and Formatting

Using these criteria, 35 items were eliminated and 39 items were retained. Each subscale now contained 13 items. The instrument was reformatted using the 5-point Agree-Disagree anchor for the first 22 items, and the 5-point Never-Often anchor for items 22 through 39. Two anchor styles were used for two reasons; first, items fit conceptually with one or the other anchor, so both anchors were needed. Second, even though having two anchor styles leads to slightly lower item-to-subscale correlations, this is desirable as it reflects reduced method error that occurs when a scale is too uniform. Wording of two items was altered slightly, and the network list was moved from ahead of the items to behind the items to reduce the biasing affect of its placement noted in the last administration. Next, items of the three subscales were interdigitated. Instead of using a table of random numbers to place items, which had resulted in several "runs" of similar items in the last form of the instrument, items were placed using logic to avoid runs and intersperse conflict items throughout the support and reciprocity items. The conflict items serve to reduce response sets, as they act as reverse wording.

Reliability Assessment

Reliability analysis of the new 39 item instrument was performed, and is portrayed below.

Table 1
Reliability Analysis

subscale	alpha (n = 235)	test-retest correlation (n = 97)	average inter-item correlation (n = 235)
interpersonal support	.92	.91	.47
reciprocity	.83	.84	.28
conflict	.91	.81	.42

Validity Assessment

Three approaches to the marshalling of evidence of construct validity of the instrument were taken. These approaches, and the findings from each approach, were outlined in a poster presentation (copy attached), and are summarized briefly here.

Construct validity is the degree to which the measure captures the construct; it is considered the essence of validity (Messick, 1980; Nunnally, 1976). Evidence for construct validity must be marshalled successively over time. The use of several methods by which to marshall the evidence helps to strengthen the argument that the measure is, indeed, capturing the construct.

In a theory testing approach, data were collected from a sample of students (n = 105), cancer patients (n = 40), patients enrolled in an obesity program (n = 45), adult women in the community (n = 72), and hypercholesteremia patients (n = 45). Subsets of subjects also were administered a measure of stress, a second measure of social support, a measure of psychological symptoms, a measure of family relationships, and a measure of social desirability.

A confirmatory principal components factor analysis with varimax rotation was performed on the data (n = 340), and indicated a three factor solution with clear distinction of the three subscales of support, reciprocity, and conflict. Multiple regression analysis (n = 235) showed that group (students versus patients), age, stress, social support, reciprocity, conflict, and interaction terms of these variables accounted for 39% (adjusted R-square) of the variance in psychological symptoms. Both support and conflict had strong main effects, and also affected symptoms in interaction with other variables. Conflict is thus distinct from life stress, and support buffers the impact of conflict on symptoms. Only reciprocity had no effect on symptoms; all other variables had main or interaction effects. Table 2 portrays the b's, betas, and significance levels for each of the variables in the model.

Table 2
Multiple Regression (n = 235)

Variable	B	Beta	p
Group	-.664	-.64	.002
Age	-.005	-.16	.38
Stress	.018	.40	.39
Stress X Group	.013	.23	.01
Age X Group	.012	.65	.03
Stress X Age	-.0007	-.71	.0001
Support	.490	.62	.02
Reciprocity	-.074	-.07	.41
Conflict	1.098	1.39	.0000
Support X Stress	.004	.35	.39
Support X Conflict	-.220	-1.16	.0003

Criterion related validity (concurrent type) was apparent in the moderate to high correlations between subscales of the instrument and subscales of the Family Relationship Index (cohesion, expression, and conflict). Concurrent validity was also suggested by the moderate correlation between the IPRI and the Personal Resources Questionnaire (PRQ), another measure of social support.

Table 3
Concurrent Validity

	interpersonal support	reciprocity	conflict
PRQ (n = 235)	.64	.56	-.35
FRI (n = 72)			
Cohesion	.67	.47	-.71
Expression	.45	.30	-.65
Conflict	-.60	-.44	.61

In a contrasted groups approach, groups expected to differ on the concepts of interest are compared. Data were collected from a sample of battered women (n = 30) and compared to data from a sample of wives who were members of a medical auxilliary in the community (n = 42). A t-test for independent groups was used to assess the magnitude of the difference of the three subscale scores between groups. Findings, portrayed in Table 4, demonstrate the sensitivity of the measure to differences in support, reciprocity, and conflict between the two groups. As can be seen, groups differed significantly in expected directions. Battered women were significantly lower in support and reciprocity, and significantly higher in conflict.

Table 4
T-Test Differences

	Battered Women	Medical Auxiliary Wives	t	p
IPSUPP	3.05	4.32	-6.55	0.000
IPRECIP	3.53	3.99	-4.08	0.0002
IPCONFLC	3.71	2.56	8.25	0.000

In order to consider the potential of scores for clinical assessment (or for scores to be used as dependent measures for a

future clinical intervention), data were displayed visually, as shown in Table 5. Subjects were dichotomized at subscale scores that allowed 10% of medical wives to fall at the low end of support and reciprocity, and the high end of conflict. Thus, 10% of medical wives and 77% of battered women fell in the low range of support. 10% of medical wives and 57% of battered women fell in the low range of reciprocity. 10% of medical wives and 83% of battered women fell in the high range of conflict. The scores of 3.7 on support, 3.46 on reciprocity, and 3.2 on conflict may be useful clinically in the future.

Table 5
High/Low Dichotomies

SUPPORT

	score range	1.0 - 3.7	3.8 - 5.0
group	Med Aux Wives	10%	90%
	Battered Women	77%	23%

RECIPROCITY

	score range	1.0 - 3.46	3.5 - 5.0
group	Med Aux Wives	10%	90%
	Battered Women	57%	43%

CONFLICT

	score range	1.0 - 3.15	3.2 - 5.0
group	Med Aux Wives	90%	10%
	Battered Women	17%	83%

The final approach to construct validity is occurring in a multitrait-multimethod correlation analysis of data collected on the three constructs (support, reciprocity, and conflict) using four methods. Methods include a subject self-report, a spouse or partner rating of the subject, an expert's rating of the subject following an interview, and an expert's rating of the subject using a visual analog. Data from 30 pregnant couples are currently being analyzed.

The final phase of instrument evaluation is the establishment of norms from a large random sample of adults in the community. Using survey methods, data are being collected presently from Kaiser subscribers (n = 500) in a large metropolitan area.

References

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IPRI

Interpersonal Relationships Inventory

Scoring Information

The IPRI consists of 39 Likert items, each scored from 1 to 5. Item 6 requires recoding to reverse score.

Items were derived initially from qualititive interview data from 44 respondents, and were written to be congruent conceptually with the multidimensions of interpersonal relationships within support networks. There are three subscales: interpersonal support, reciprocity, and conflict. Items from the 3 scales are mixed to avoid response sets.

Definitions of the subscales and the items that comprise each follow:

interpersonal support: The perceived availability or enactment of helping behaviors by persons with whom one is engaged in relationships that are usually informal or non-contractual. 13 items; numbers 1, 3, 7, 9, 11, 14, 17, 18, 19, 21, 22, 23, 37.

reciprocity: The perceived occurence or availability of an exchange or returning of psychological or tangible goods and services; occurences are informal or non-contractual. 13 items; numbers 2, 4, 5, 6, 8, 10, 13, 15, 26, 28, 31, 34, 39.

conflict: Perceived discord or stress in relationships is considered ubiquitous in social networks. Conflict can be occasional, periodic, or consistent, and can either be caused by behaviors of others actually enacted, or by the absence of behavior enacted by others, such as the withholding of supportive behaviors. 13 items; numbers 12, 16, 20, 24, 25, 27, 29, 30, 32, 33, 35, 36, 38.

Two different anchor styles were needed. Items were clustered by perceived states and anchored with agree-disagree (those numbered 1 through 22), or by enacted behaviors and anchored with often-never (those numbered 23 through 39.) Thus the interpersonal support subscale consists of 11 perceived and 2 enacted behaviors; the reciprocity subscale consists of 8 perceived and 5 enacted behaviors; and the conflict subscale consists of 3 perceived and 10 enacted behaviors.

The IPRI yields three scores, one for each subscale. Construct validity testing, including factor analysis, have shown that social support and reciprocity scores can be added in order to derive a single score for social support. The conflict score stands alone as an index of interpersonal stresses. Thus, the three subscales can be reduced to two main scores, one for social support and one for interpersonal stresses.

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APPENDIX I

Example of Demographic Information Instrument

A FEW LAST QUESTIONS FOR DAUGHTERS

1. Your Birthdate: _____
   Month Day Year

2. Circle the one that best describes your marital status:

   1. SINGLE (NEVER MARRIED)
   2. PARTNERED BUT NOT MARRIED
   3. MARRIED
   4. DIVORCED OR SEPARATED
   5. WIDOWED

3. Circle the highest grade or school that you completed:

GRADE SCHOOL	HIGH SCHOOL	COLLEGE
1 2 3 4 5 6 7 8	9 10 11 12	1 2 3 4 4+

4. Circle the one that best describes your race:

   1. ASIAN
   2. BLACK
   3. HISPANIC
   4. NATIVE AMERICAN INDIAN
   5. WHITE
   6. OTHER
   7. PREFER NOT TO ANSWER

5. Circle the one that best descibes your situation:

   1. EMPLOYED
   2. EMPLOYED PART-TIME
   3. UNEMPLOYED
   4. HOMEMAKER
   5. STUDENT-EMPLOYED
   6. STUDENT-UNEMPLOYED

7. Today's date: _____
   Month Day Year

6. When, according to your doctor or midwife, is your baby due?

   _____
   Month Day Year

APPENDIX J

Open-ended Questions on Last Page of Questionnaire

Is there anything else you would like to tell about your relationship with your mother during your pregnancy? If so, please use this space for that purpose.

Also, any comments you wish to make that you think may help in future efforts to understand the mother-daughter relationship during daughters' childbearing will be appreciated.

APPENDIX K

Mean (SD) Scores for Dependent Variables for Cohorts of Daughters and Mothers

1. Contact Variables
2. Relationship Quality Variables
3. Aid Exchange Variables

Table K1.

Contact Variables

	Daughters						Mothers					
	Time 1			Time 2			Time 1			Time 2		
Cohort	n	M	SD	n	M	SD	n	M	SD	n	M	SD
					Telephone Contact							
≤ 13 weeks	22	4.68	(1.13)	21	4.71	(1.27)	20	4.75	(1.70)	21	4.67	(1.02)
14 - 23 weeks	17	4.53	(1.07)	15	4.40	(1.12)	13	4.23	(1.24)	9	4.78	(.83)
24 - 33 weeks	10	5.30	(.68)	9	5.11	(.78)	9	5.33	(.71)	7	5.14	(1.07)
34 - 40 weeks	14	4.57	(.85)	13	4.54	(1.20)	15	4.87	(.74)	12	4.50	(.67)
All "pregnant"	63	4.71	(1.01)	58	4.66	(1.15)	57	4.75	(1.02)	49	4.71	(.91)
Non pregnant	12	4.67	(.99)	10	4.60	(1.08)	12	4.58	(.67)	11	4.73	(1.01)
					Face-to-Face Contact							
≤ 13 weeks	22	3.59	(1.82)	20	3.85	(1.66)	20	3.65	(1.81)	21	3.81	(1.57)
14 - 23 weeks	17	3.59	(1.54)	15	3.73	(1.53)	12	3.58	(1.73)	9	3.44	(1.67)
24 - 33 weeks	10	4.20	(1.32)	9	4.11	(1.45)	9	4.22	(1.64)	7	4.14	(1.67)
34 - 40 weeks	14	3.36	(1.60)	12	3.33	(1.23)	14	3.79	(1.53)	12	3.50	(1.62)
All "pregnant"	63	3.64	(1.61)	58	3.75	(1.49)	67	3.60	(1.68)	49	3.71	(1.58)
Non pregnant	12	2.67	(1.56)	9	3.56	(1.88)	12	2.83	(1.59)	11	3.73	(1.42)

(Table K1 continued)

	Daughters						Mothers					
	Time 1			Time 2			Time 1			Time 2		
Cohort	n	M	SD	n	M	SD	n	M	SD	n	M	SD
						Correspondence						
≤ 13 weeks	22	1.05	(.21)	21	1.29	(.64)	19	1.32	(.58)	21	1.24	(.54)
14 - 23 weeks	17	1.35	(.70)	15	1.53	(.74)	11	1.64	(1.12)	9	1.44	(.53)
24 - 33 weeks	10	1.60	(1.35)	9	1.56	(1.01)	8	1.88	(1.13)	6	2.17	(1.33)
34 - 40 weeks	14	1.50	(.94)	12	1.62	(1.23)	14	1.50	(.94)	11	1.46	(.82)
All "pregnant"	63	1.32	(.80)	58	1.47	(.90)	64	1.55	(.96)	47	1.45	(.78)
Non pregnant	12	1.75	(.97)	10	1.80	(1.03)	12	1.67	(1.23)	11	1.64	(1.21)

Note: Scores were reversed for statistical analyses so the range is

1 = "Not at all the past two months" to 6 = "Every day"

Table K2.

Relationship Quality Variables

	Daughters						Mothers					
	Time 1			Time 2			Time 1			Time 2		
Cohort	n	M	SD	n	M	SD	n	M	SD	n	M	SD
					Attachment							
≤ 13 weeks	22	3.18	(.90)	21	3.26	(.91)	22	3.08	(.67)	21	3.08	(.80)
14 - 23 weeks	17	3.36	(.84)	15	3.16	(1.01)	14	3.37	(.87)	10	3.05	(.90)
24 - 33 weeks	10	3.19	(.92)	9	2.84	(.76)	9	3.78	(.84)	7	3.81	(.67)
34 - 40 weeks	15	3.10	(.99)	13	2.93	(.89)	15	3.18	(.82)	12	2.88	(.89)
All "pregnant"	64	3.21	(.89)	58	3.09	(.90)	60	3.28	(.80)	50	3.13	(.85)
Non pregnant	11	9.15	(.74)	11	3.14	(.69)	12	3.23	(.73)	11	2.89	(.84)
					Intimacy							
≤ 13 weeks	22	4.28	(.65)	21	4.43	(.63)	22	4.49	(.32)	21	4.39	(.48)
14 - 23 weeks	17	4.37	(.59)	15	4.23	(.71)	14	4.47	(.47)	10	4.49	(.38)
24 - 33 weeks	10	4.15	(.95)	9	4.18	(.65)	9	4.46	(.57)	7	4.43	(.28)
34 - 40 weeks	15	4.22	(.82)	13	4.09	(.96)	15	4.33	(.67)	12	4.06	(.86)
All "pregnant"	64	4.27	(.72)	58	4.26	(.73)	60	4.44	(.49)	50	4.33	(.57)
Non pregnant	11	4.22	(.63)	11	4.08	(.47)	12	4.48	(.31)	11	4.41	(.27)

(Table K2 continued)

	Daughters						Mothers					
	Time 1			Time 2			Time 1			Time 2		
Cohort	n	M	SD	n	M	SD	n	M	SD	n	M	SD
					Perception of Equity							
≤ 13 weeks	22	3.77	(.63)	21	3.92	(.48)	22	4.00	(.39)	21	3.96	(.46)
14 - 23 weeks	17	3.71	(.49)	15	3.67	(.66)	14	3.85	(.37)	10	4.02	(.41)
24 - 33 weeks	10	3.79	(.70)	9	3.79	(.46)	9	4.19	(.57)	7	3.93	(.47)
34 - 40 weeks	15	3.79	(.58)	13	3.65	(.60)	15	3.87	(.51)	12	3.77	(.58)
All "pregnant"	64	3.76	(.58)	58	3.78	(.56)	60	3.96	(.45)	50	3.92	(.48)
Non pregnant	12	3.75	(.41)	11	3.81	(.41)	12	4.23	(.48)	11	4.11	(.31)

Note: Range 1 to 5. Higher scores indicate greater attachment, intimacy, and equity

Table K3.

Aid Exchange Variables

	Daughters						Mothers					
	Time 1			Time 2			Time 1			Time 2		
Cohort	n	M	SD	n	M	SD	n	M	SD	n	M	SD
					Help given							
≤ 13 weeks	22	1.51	(.51)	21	1.56	(.63)	21	1.33	(.23)	21	1.35	(.26)
14 - 23 weeks	16	1.56	(.43)	15	1.39	(.26)	14	1.49	(.74)	10	1.56	(.43)
24 - 33 weeks	10	1.70	(.40)	9	1.57	(.48)	9	1.59	(.34)	7	1.47	(.26)
34 - 40 weeks	15	1.47	(.38)	13	1.30	(.22)	15	1.42	(.23)	12	1.59	(.42)
All "pregnant"	63	1.54	(.44)	58	1.46	(.46)	59	1.50	(.35)	50	1.47	(.35)
Non pregnant	12	1.50	(.24)	11	1.66	(.35)	11	1.48	(.44)	11	1.64	(.58)
					Help received							
≤ 13 weeks	22	1.47	(.42)	21	1.61	(.62)	21	1.41	(.26)	21	1.32	(.25)
14 - 23 weeks	17	1.58	(.55)	15	1.49	(.38)	14	1.65	(.52)	10	1.36	(.25)
24 - 33 weeks	10	1.78	(.69)	9	1.64	(.42)	9	1.49	(.33)	7	1.38	(.33)
34 - 40 weeks	15	1.55	(.47)	13	1.60	(.49)	14	1.28	(.24)	12	1.19	(.16)
All "pregnant"	64	1.57	(.51)	58	1.58	(.50)	58	1.38	(.42)	50	1.31	(.24)
Non pregnant	12	1.49	(.33)	11	1.58	(.27)	11	1.39	(.23)	11	1.44	(.25)

Note: Range 1 = "not at all" to 6 = "more than once a week"

APPENDIX L

Formulas Used for Tesing Hypothesis 7

1. McNemar's *t*-test
2. Z Transformation

Table L1

McNemar's t-test

For "help received"

$$t = \frac{(r_{IN/EQ} - r_{IN/RH})\sqrt{(n-3)(1 + r_{EQ/RH})}}{\sqrt{2[1 - (r_{IN/EQ})^2 - (r_{IN/RH})^2 - (r_{EQ/RH})^2 + 2(r_{IN/EQ})(r_{IN/RH})(r_{EQ/RH})]}}$$

For "help given"

$$t = \frac{(r_{IN/EQ} - r_{IN/RH})\sqrt{(n-3)(1 + r_{EQ/RH})}}{\sqrt{2[1 - (r_{IN/EQ})^2 - (r_{IN/RH})^2 - (r_{EQ/RH})^2 + 2(r_{IN/EQ})(r_{IN/RH})(r_{EQ/RH})]}}$$

Table L2

Z Transformation

First, rEQ/IN for Time 1 and Time 2 were transformed into Fisher's Z-statistic by use of a Z table.

The standard error was calculated using the formula:

$$SEz = \frac{1}{\sqrt{n_1 - 3}} + \frac{1}{\sqrt{n_2 - 3}}$$

The formula for the test of significance:

$$z = \frac{Z_1 - Z_2}{SE_z}$$