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Author
Dible, Leah Ann

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Adolescent Self Reported Health: An Exploration of the Influence of Family System Characteristics And Adolescent Social Supports

by

Leah Ann Dible

THESIS

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DEDICATION:

I believe that I am a most fortunate human being, to have loved ones, friends and teachers who believe in me steadfastly, regardless of whether I succeed or fail. These are the people who have made a difference in my life beyond my ability to express in words. It is to them that I dedicate this effort. May I be worthy of their faith in me, and ever mindful of their gifts.

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Introduction

A novel approach has been chosen for this study that is an attempt to combine those elements demonstrated in previous studies within three disciplines (stress and health, family process, and social support) to have an influence on health. This study attempts to integrate two parallel lines of inquiry -- the effects of the family system and the effects of social support on the health of adolescent family members. Much research that has investigated influences on individuals' health seldom attempted to include the effects of a person in interaction with his or her most important social context, the family. However, there is a small but growing group of family studies that have included investigation into the health of one or more family members (e.g. Olson, 1989; Hanson, et al, 1989; Ransom, 1986). These studies focussed on families -- the operation of the family system, its influence on members, and the family members' individual contributions to the family entity -- in an attempt to integrate these effects into a model that better illuminates processes that impact an individual's health and wellbeing. It is the family system's influence, via the perceptions of parents, and the influence of the adolescents' social networks on adolescent health that is the subject of this investigation. This perspective views the adolescent as embedded in a dynamic system that influences and is influenced by each of the family members.

Influence of the Family System

As the individual's primary social group, the family exerts an influence on its members that may affect the health of individuals through certain characteristics of the group, its operation, structure and shared beliefs. Over the past two decades, the family has also been increasingly viewed as a unit of medical care:

> "In addition to performing such basic functions as biological reproduction, emotional develop-

> ment, socialization, the organization of statuses and roles and relationships with the community, the family constitutes perhaps the most important social context within which illness occurs and is resolved. It consequently serves as a primary unit in health and medical care."
>
> --Theodore J. Litman (1974)

In general, past focus has been on the *individual's* perceptions and experiences that may influence the individual's health. From a family systems perspective this focus changes. What is asked instead is, In what way does the operation of the family *entity* (or system) influence an individual member's health, in spite of or in addition to, that member's experiences and world view? How independently of the family does an individual family member's perceptions regarding his or her health arise? Aside from material or instrumental resources offered by the family, does family operation contribute to, or even form, the individual's coping abilities? Are there characteristics of the system that serve to mediate or to buffer effects of stress or hardship on individual family members? The answer to these and related questions have yet to be successfully extracted by the study of family and health processes from the perspective of any single discipline. The focus of this study is the exploration of the potential buffering role of family organization and social supports on adolescent health.

The family systems approach to health arises from a rich background in which several fundamental observations have been made concerning the influence of the family as a system, on family members. For example, there have been a number of studies of families with one or more members diagnosed with schizophrenia or affective disorder. Investigators who have studied the families' interactions, generally through observation of communication style and conflict management, have related specific family patterns to dysfunction in the individual (Wynne and Singer, 1963; Jacob, 1975; Minuchin, Rosman & Baker, 1978; Kokes, Harder, Fisher & Strauss, 1980). There are also studies that describe complex patterns of adjustment, structure and function and relate these patterns to various health outcomes (Litman, 1974).

Others investigated the effects of variables such as emotional expressiveness (Falloon, et al, 1982), problem-solving, family privacy and organization (Fisher, et al, 1986), family support (Medalie and Goldburt, 1976), and world views of illness behavior (Whitehead, et al, 1986). All of these factors were also found to be related to the emotional, mental or physical health status of family members.

Olson and colleagues (1979, 1980) devised the "Circumplex Model of Family Functioning" in order to attempt to better understand the influence of the family system on individual members. Dimensions of family functioning were inductively derived from several disciplines within the social sciences. The model proposes that families have attributes that lie along conceptually unified dimensions, that affect all members of the family group. These authors hypothesize that a balance of these dimensional attributes of family functioning promotes the development of the family. There is increasing evidence that characteristics of the family system can have a great impact on how well or poorly family members cope with life's challenges and problems, including health challenges (Campbell, 1986).

Olson presented three dimensions of family functioning -- cohesion, adaptability and communication -- which describe types of family systems. These dimensions are conceptualized as family characteristics which include the family's mode of problem-solving, whether there is a structured or chaotic environment, and the clarity of role definition and clarity of leadership within the family (Olson, Fournier & Druckman, 1982). Constructs very similar to those of cohesion and adaptability have been identified by other theorists (using slightly different operational definitions, depending on the purpose of the theorist). Conceptually, however, these dimensions repeatedly present themselves as salient factors in studies concerning the influence of the family system on the physical, emotional and functional health of family members (Olsen, 1989; Beavers and Voeller, 1983; Reis, 1981; Epstein, Bishop & Levin, 1978).

When the family is viewed as reacting to stress and managing resources to enable members to cope with stressors, the concepts of adaptivity and cohesion may usefully reveal characteristics of the social context known as the family, that have an impact on the health of its members. Past research, particularly in the stress and health area, has revealed that life changes can be stressful, that this stress may influence health and functioning, and that adaptive coping may counteract the impact of this stress on health and functioning (for example, see Holmes and Rahe, 1967; Selye, 1976; Cobb, 1976; Billings and Moos, 1981; Hinkle, 1987; Stiltanen, 1987).

In this investigation a measure of "family organization" was used. This measure was designed to reflect the cohesion and adaptability of the family conceptualized by Olson, which is thought to impact most strongly on family members' health. It is a difficult task to measure *system* characteristics, because of the complexity involved in considering all possible influences exerting in an arena, which may result in a combination of influences whose effects are greater than the sum of the parts. In fact, previous research has been plagued by methodological problems to the extent that many of the conclusions held forth need extensive qualification. In this particular study we attempted to illuminate a portion of the *operation* of the family system as an influence on adolescent members' health. In this case, parental views of stress and family organization were used as proxies for *system characteristics* . We chose parental perceptions because they are variables that occur outside of the individual being studied, in this case, the adolescent family member, but still within the system. (In contrast, measures of social support and health are viewed as variables describing the *individual* and arise from within the person in interaction with others within the social context.) In this way we are presenting a cross-generational view of family systems influence on an individual's health.

Social Support

There are several hypotheses regarding the exact mechanism by which social support may alter the effects of stress on an individual's

health. The first is that social support serves as a buffer against the negative effects of stress or life events on health; persons with high stress would benefit more from social support than would persons with lower levels of stress. Alternatively, social support could have a direct effect on health by unknown physiological mechanisms, benefitting low and high stress persons equally. The third view is that social support may serve as a mediator of the effects of stress, providing a means, for example, by which the individual maintains a sense of well-being and mastery or control either through social feedback about behavior, social learning, or enhanced coping efforts. Measures of social support have ranged in complexity from counts of the number of persons in the network to intricate product measures such as the number and kind of persons in the network by how often they are seen, and/or the types of support obtained (such as instrumental or emotional support) and the benefit that resulted from that contact.

Social support, measured in a variety of ways, has been demonstrated to influence certain aspects of individual health and health behaviors. These influences include aiding patient compliance with medical regimens, moderating the effects of stressful events, aiding recovery from or coping with illness, surgery, or injury, enhancing self help efforts and predicting morbidity and mortality (e.g. Dean & Lin, 1973; Lieberman, 1979; Billings and Moos, 1981; DiMatteo and Friedman, 1982; DiMatteo and DiNicola, 1982; Cummings, Becker & Kirscht, 1982; Blake & McKay, 1986; Seeman, Kaplan, et al, 1987). Social support has also proven to be a strong and consistent influence on the psychological well-being of persons from a variety of populations (Cohen and Wills, 1985). Social support, however, has also been shown to have a less clear and more moderate effect on physical health as measured either by self-report or proxy (Cohen & Wills, 1985; Wallston, et al, 1983; Shafer, Coyne & Lazarus, 1981). Additionally, the mechanism by which social support affects health, whether directly or as a buffer, remains unknown, although some interesting work has begun on this question within the last five years (for example, Kiecolt-Glaser, et al, 1985). There remain significant

questions concerning which aspect of social contacts constitute support (Reis, et al, 1985; Wallston, et al, 1983) as well as questions concerning the strength of the evidence in this area, since findings are primarily correlational in nature (Cohen and Syme, 1985).

From a family systems perspective, questions concerning which aspect of social contacts constitute support take on renewed importance. An analytical perspective that reduces support received from social contacts to its various forms such as affiliative, instrumental, etc. fails to reflect the interactive nature of exchanges that occur within the family. Additionally, caution must be employed to avoid the assumption that all social contacts that arise, particularly from within the family, constitute positive support. In fact, there is ample evidence to indicate that certain types of contacts or support from family members contribute more to an individual's conflict state rather than a resolution of the situation for which support was sought. (Lieberman, 1986; Coyne, 1986; Pearlin, 1989; Fisher, 1990).

Rationale

This study investigates the effects of the family characteristic called 'organization', parental perceptions of stress and perceived-negative life events, and adolescents' social networks *within the context of the family* on adolescents' health, so that a better understanding of the processes by which family operation and structure may influence individual family members' health may be gained. Particular attention was given to the source, closeness and quantity of adolescent social support. A community-based sample of intact families provided the opportunity for a study that emphasized family systems operations and the utilization of a cross-generational framework of family functioning and adolescent social supports. The health status of adolescents of these families (aged 13 to 18) was assessed, and measures of the adolescents' familial and extrafamilial social networks were obtained. In addition, the level of family organization and parental stress was obtained through the self-reports of each parent in order to assess the effects of perceived family system variables on the adolescent individual members' health.

Hypotheses

1. Family effects, as measured by parental perceptions of stress, parental negative life events and parental perceived level of family organization will each account for a significant proportion of the variance in adolescents' self-reported health as measured by three scales -- General Wellbeing, Health Perceptions and Somatic Symptoms.

2. Parental stress scores will interact with parental perceived level of family organization to influence adolescent health.

3. Familial and extrafamilial social networks scores will interact with parental stress scores to influence adolescent health

4. Familial and extrafamilial social networks will interact with family organization to influence adolescent health.

5. These effects will be the same for girls as for boys.

Methods

Sample and Recruitment

Families residing in Fresno County, California were recruited via a telephone screening survey. Fresno County was selected because it has a broad socio-economic and ethnic diversity. A community-based sample was chosen over a clinic based sample in order to study individuals who are primarily well and whose families are not experiencing the challenges of having extremely ill family members.

Computer generated random 4-digit telephone suffixes were attached to residential local prefixes and an estimated 31,000 calls were made in order to obtain a sample of 225 intact families with at least one adolescent. Additional requirements of the study were that the families must have resided together for at least three years, and

members must have lived in this country since at least the age of five years old. Because of the low representation of Asians (8%) and Blacks (8%) in this county, the sample was also restricted to Anglos and Hispanics.

After an initial telephone screen to ascertain if the family was eligible to participate, telephone numbers of families were cross-indexed with names and addresses so that a letter of introduction could be sent. The letter included several supporting endorsements from community organizations as well as newspaper clippings about the project. Several days later the family was contacted by telephone and asked for a recruitment home visit.

The sample consisted of 225 Anglo and Hispanic families in which two adults and at least one adolescent were present in the home. The average household size was 4.27 members. The average family income was $43,000 per year and parents were married for an average of 17.18 years. Most of the children living in these families were the biological offspring of the parents, but about 30% were stepchildren or adopted children. Average parents' age was approximately 43 years old. A more complete description of the sample is included in the Appendix.

Procedures and Scales

During the recruitment home visit, which included all family members, the project was explained. Additionally, all family members were asked to agree to attend a two-and-one-half hour session in the laboratory at the VA Medical Center to answer questionnaires and to participate in family interaction exercises, and the adult couple was asked to attend an additional 2.5 hours session scheduled one week after the family session

During the home visit participants were asked to fill out questionnaires. Adults and adolescents were left with a social network questionnaire and medical histories which they completed privately and brought with them to the first family meeting. While visiting the

laboratory, family members filled out a variety of questionnaires. Couples returned to the laboratory for a second time during which they again completed a number of questionnaires.

Included in the present analysis were a social network questionnaire, utilizing a revision of the Fischer and Phillips (1982) social network content areas, the Perceived Stress Scale (Cohen, Kamarck & et al, 1983), and the California Family Life Scales (Fisher, et al, 1986b).

The Family Life Scales have been factor analyzed and independently replicated to yield 24 family structural and world view dimensions. In this analysis, consideration is given to only one factor-analyzed subscale of 14 items, that of perceived family organization (alpha = .81). This scale contains items related to orderliness (We have a regular time for dinner at our house.), rule clarity (It is unclear what will happen when rules are broken in our family.), clarity of leadership (It is clear about what is best for the children.), and organization of household tasks (We all agree as to who does what around the house.).

The Life Events Questionnaire is a 63-item questionnaire derived from items of commonly used scales that are lists of events. Each adult was asked to mark whether the event occurred, when it occurred, whether it was a negative event and whether the effect of the event still persists, as in continuing to think about it. Checked items were weighted for negativity and importance in the present, yielding a single weighted score called Perceived-Negative Life Events.

Three measures of adolescent self-reported health served as the dependent variables. These are General Wellbeing, Health Perceptions and Somatic Symptoms. While it is possible that utilizing more than one dependent variable will result in an increase in the investigator-wise error, in this exploratory phase it is important to, as fully as possible, sample several aspects of the complex concept of health. These three measures are subscales of the Rand Corporation Medical History Questionnaire (Ware, et al, 1984).

The Appendix contains the outline of the study protocol, a description of the sample characteristics and a description of the measures used in this study.

Analysis

These data were analyzed using hierarchical multiple regression techniques (Cohen and Cohen, 1983). From an N of 225 families health scores of 187 adolescents were available for analysis providing a power of approximately .80 to detect effects ($R^2 > .05$) when the p-level is set at .05.

Males and females were analyzed separately. While there is some loss of power with this approach, because of developmental differences in males and females during each year of adolescence, the concern was to avoid masking effects that were specific to males and females.

An index of socioeconomic status was entered first as a control, followed by parental perceived stress, parental perceived negative life events and parental perceived level of family organization as a set. Adolescent social network, dubbed 'extrafamilial' and 'familial' social networks, acting as a buffer was entered third. Interactions were entered last, as a set. The analysis design and order of entry of variables is presented in the Appendix.

The order of entry was determined primarily by the purpose of this research. Since the effects of family characteristics and adolescent social support on adolescent health over and above the effects of socioeconomic climate was of interest, socioeconomic status was controlled by entering it first. Then, as there were no overriding assumptions, theoretical or otherwise, to guide the order of entry of the parental stress variables and the family organization variable, these were forced to enter second, as a set. Because a buffering effect of adolescent social network has been hypothesized in much previous work on social support and health, this measure was forced to enter

following the family/parental effects step, as its own step. Finally, since interactions must follow main effects entry, a selected subset of two- and three-way interactions based upon the hypotheses are allowed to enter in steps 4 and 5, depending upon meeting a preset F criterion.

The method of analysis chosen provides an F-test of significance for the increments in R^2 of each step and of each variable. Because of the large setwise Type I error rate that would occur over testing many variables consecutively, a conservative approach was taken. Only those variables within steps that were found to be significant as a whole were subjected to further analysis via a t-test of the contribution in R^2 by the individual variable (where $t^2=F$ with df 1, n-2) (Cohen and Cohen, 1983).

Results

General Wellbeing

Socioeconomic status of the family contributed to the explanation of less than 1% of the variance in general wellbeing scores of the females. Male adolescents' results were quite different. For them, the socioeconomic status of the family contributed a larger increment in R^2 (increment in $R^2=.1261$, $F=13.42$, df 1, 93, $p<.01$), than the contribution of the second step, parental scores.

For females, perceived-negative life events and perceived family organization, explained 15.85 % of the variance ($F=2.86$, df 6,85, $p<.05$) in General Wellbeing. Within the step, the mothers' perceived family organization scores accounted for almost 9% of the variance in General Wellbeing for female adolescents (R^2 increment = .0897, $F=9.06$, df 1,92, $p<.01$) and was the only variable to meet the F criterion associated with a p-value of less than .05.

Contrary to expectations, the increment in R^2 for Step 3, the social network variable, failed to reach significance. For females, the

increment in R^2 for extrafamilial social network was .0335, compared to an increment in R^2 for familial social network of .0003, about a 3% difference in effect size for these research factors. Similarly to the females, the males' variance in General Wellbeing scores explained by the extrafamilial social network variable was noticeably larger than that of the familial network (increment in R^2=.0345 for extrafamilial versus increment in R^2=.0012 for familial). This means that extrafamilial and familial social networks contribute differentially to General Wellbeing scores for both male and female adolescents, suggesting that they operate differentially in their influence on these health scores.

For adolescent females, Step Four, the step containing the two-way interactions, was significant as a whole. Therefore, individual interactions were subjected to a protected t-test to control the setwise Type I error rate. Within the step, the two interactions that were found to be significant depended upon whether the equation contained the extrafamilial social network measure or the familial social network measure. For the equation that included the extrafamilial measure, 1) dads' perceived stress scores interacted with dads' perceived-negative life events (increment in R^2=.0514, F=4.985, df 1, 92, $p<.05$) and 2) extrafamilial social network scores interacted with dads' perceived family organization scores (increment in R^2=.0491, F=4.7504, df 1,92, $p<.05$). The equation that included familial social network scores shared the first interaction and almost identical partial coefficients, but the second interaction was the interaction of familial social network scores with mothers' perceived stress (increment in R^2=.0480, F=4.5882, df 1,91, $p<.05$). The step containing 2-way interactions for males' General Wellbeing was significant as a whole; therefore a protected t-test was used to test the significance of the increment in R^2 for each individual variable, as was done with the females. Interactions with the social network variables did enter into the equations for the males, but unlike the females', did not meet the criterion for significance under the more conservative t-tests used here.

In sum, it was found that for General Wellbeing, Hypothesis 1 was supported in part, for females through mothers' perceptions of family organization, but not for males. Parental stress scores did not interact with perceived family organization scores, thus Hypothesis 2 was not supported for either females' or males' General Wellbeing. Hypothesis 3 was supported only in part, and once again, only for females. Mothers' perceived stress interacted with familial social supports, but not the extrafamilial, to influence females adolescents' General Wellbeing.

Partial support was also observed for Hypothesis 4 in that fathers' perceptions of family organization interacted with extrafamilial social supports, but for female adolescents only. No interactions were found between familial social supports and either mothers' or fathers' perceptions of family organization.

Clearly these effects are not the same for male and female adolescents, thus no support for Hypothesis 5 was obtained. The observed results also indicate that familial and extrafamilial supports influenced adolescent health differently, at least for females' General Wellbeing.

Health Perceptions

Concerning males health perception scores, none of the first three steps were significant as a whole, so that any significant within-step variables that appeared to reach the F criterion were not considered. Effects on females' health perception scores were limited to a significant Step Two, the step containing the parental scores on stress, perceived-negative life events and perceived family organization. Within the step, as before, protected t-tests on individual variables were performed. The result was that only one variable, mothers' perceived family organization was found to reach significance with an R^2 increment of .1092 ($F=11.16$, df 1,91, $p<.01$). Neither of the social network measures of Step Three proved to have significant increments in R^2 for females, and in fact, contributed far less in increment in R^2 than the extrafamilial scores did in General Wellbeing.

Males' Step Four, containing the two-way interactions, was significant as a whole, and therefore t-tests were performed on individual variables with the result that fathers' perceptions of family organization interacted with mothers' perceived-negative life events (R^2 increment = .0528, F=5.1280, df 1, 92, p<.05) to influence male adolescents' health perceptions. Fathers' perceived stress also interacted with mothers' perceived-negative life events (R^2 increment = .0568, F=5.5403, df 1, 92, p<.05). Again, contrary to expectations, neither of the social network variables interacted significantly with any of the parental variables and the observed interaction of fathers' perceptions of family organization and mothers' perceived-negative life events was the same for both the equation containing the familial social supports measure and that containing the extrafamilial supports measure. In contrast to the General Wellbeing equation, the Step Three social network variables contributed virtually nothing to variance explained (extrafamilial increment in R^2=.0024, F=<1; familial increment in R^2.0018, F=<1).

In sum, there was partial support for Hypothesis 1 for the females' Health Perceptions as was observed for females' General Wellbeing in that mothers' perceptions of family organization again contributed significantly to the amount of variance accounted for in health scores. There was partial support for Hypothesis 2, this time for males, in that fathers' perceptions of family organization interacted with mothers' perceived-negative life events to influence health perceptions. However, unlike General Wellbeing, there were no significant contributions of social supports to health scores for either boys or girls, suggesting that social supports may have little influence on these adolescents' health perceptions.

Somatic Symptoms

For females, none of the first three steps were found to be significant contributors to the amount of variance accounted for by the equation. Again, as in Health Perceptions, both social network steps contributed virtually no increment in R^2. For males, as with their Health

Perception scores, none of the first three steps was significant. Both social network scores' increment in R^2 were quite small. However, in contrast to General Wellbeing and Health Perceptions, the familial social network variable had the larger influence, with an increment in R^2 of .0220 versus an increment in R^2 of .0023 for the extrafamilial social network variable.

For females, Step Four, containing two-way interactions, was significant as a whole (increment in R^2=.2389, F=2.6551, df 10,74, p<.01) but no significant interactions involving either of the two social network variables occurred. Instead interactions observed were fathers' perceived stress with fathers' perceived-negative life events (increment in R^2=.0426, F=4.049, df 1,91, p<.05) and fathers' perceived stress with mothers' perceived stress (increment in R^2=.0700, F=6.8495, df 1,91, p<.05).

For males, the equation that contained the extrafamilial social network variable, had a significant Step Four (increment in R^2=.2286, F=2.2577, df 11,74, p<.05). Within the step only one interaction demonstrated a significant increment in R^2 via the protected t-test, which was that of extrafamilial social network with fathers' perceived-negative life events (increment in R^2=.0632, F=6.2067, df 1,92, p<.05). In the equation containing the familial social network variable, Step Four, the two-way interactions and Step Five, the three-way interactions were both significant (Step Four increment in R^2=.2419, F=2.2703, df 12,73, p<.05; Step Five increment in R^2=.2983, F=11.0825, df 5, 65, p<.01), but no one interaction's increment in R^2 in either step reached significance level via the protected t-test, even though the entire steps were significant as a whole. In sum, partial support was obtained for only one hypothesis, Hypothesis 3, and then only for male adolescents.

Comparison of the Female and Male Scores on Health Measures

Differences between males and females for the two measures, Health Perceptions and Somatic Symptoms were dramatic. On both measures, female adolescents demonstrated poorer health than male

adolescents (t with pooled variances: t=9.9523, df 187, p<.001 for Health Perceptions and t=5.8099, df 187, p,.001 for Somatic Symptoms). Females scored only slightly lower on General Wellbeing than males but the difference was not significant (t with pooled variances = 1.0134, df 187, p<.50>.20). A comparison of means of dependent health measures can be found in Table 1.

Discussion

It was hypothesized that each of the Step Two factors would contribute significantly to the amount of variance accounted for by the adolescent health dependent variables, with socioeconomic status controlled (Hypothesis 1). In female adolescents, mothers' perceived family organization was a significant contributor to variance in General Wellbeing and Health Perceptions, but not to Somatic Symptoms. Fathers' perceptions of family organization did not predict any females adolescent health scores. For male adolescents, neither mothers' or fathers' perceptions of family organization scores predicted any of the three health scores. Contrary to expectations, none of the parental stress scores were found to be a predictor of health for both genders.

It was hypothesized that, as in previous research (Olson, et al, 1980; Beavers and Voeller, 1983), moderate levels of family organization would be health-enhancing, i.e., would buffer the adolescent against the negative health consequences of family stress. Only in one instance, however, did parental stress interact with family organization in predicting adolescent health. Males' Health Perceptions scores were affected by the interaction of mothers' perceived-negative life events with fathers' perceived family organization. Figure 1 illustrates that under conditions of moderate levels of dad's perceived family organization, mother's perceived-negative life events level makes no difference on adolescent males' health perception scores. At low and high levels of father-perceived family organization, however, health scores are greatly affected by mother-perceived stress. Moderate levels of father-perceived family organization appear

to protect male adolescents from the negative effects of mother stress. Protection does not occur at low and high levels of father-perceived family organization.

It was also hypothesized that both familial and extrafamilial social supports would provide a buffer from the negative health effects of family stress for these adolescents. This effect was observed only for female adolescents and only with *familial* social supports, when mothers' perceived stress interacted with familial social supports, but not with the extrafamilial social supports, to influence General Wellbeing. The effect on the female adolescents of mother-perceived stress depended upon the level of their familial social networks. Daughters' wellbeing was relatively unaffected when mothers' perceived stress was at a moderate level and there were moderate levels of familial social contacts . An increase in familial contacts under conditions of low mothers' perceived stress resulted in a decrease in wellbeing. Under high levels of mothers' perceived stress, increased familial contacts resulted in improved wellbeing for the female adolescents (see 2). When the parent is stressed, it may be that contacts from within the family provide support. When mothers are less able to provide support, familial replacements may enhance the female adolescents' wellbeing. No buffering effects from social supports of any kind were observed for the male adolescents' General Wellbeing.

For adolescent females, *extrafamilial* social support interacted with fathers' perceptions of family organization. Figure 3 illustrates that when the female adolescent has a moderate level of extrafamilial support, father-perceived family organization makes very little difference in General Wellbeing. An increase above this level in extrafamilial social contacts means a decrease in Wellbeing when family organization is at low or moderate levels, and an improvement in Wellbeing when family organization was at a high level. Olson et al (1980) considered moderate levels of cohesion and adaptability (from which the concept of family organization arises) in the family, to be optimum for the wellbeing of family members. Extreme levels on

these dimension of family functioning would indicate a chaotic environment, poor problem solving and enmeshment at one extreme, and rigidity and inability to adapt to or support family members' growth and change on the other. However, concerning social support, there are findings to indicate that family members can be too involved with each other (Coyne and Holroyd, 1982) -- that instead of a direct relationship between closeness and wellbeing, individuals do better with only moderate levels of involvement in close relationships, particularly with family members (see Coyne and DeLongis, 1986, for a review of these studies).

For males, their Somatic Symptom scores, but not General Wellbeing, were affected by the interaction of the extrafamilial social network and fathers' perceived-negative life events. Similar to previous findings (Coyne and Holroyd, 1982), under moderate levels of extrafamilial social supports, dad's perceived-negative life events made little difference in Somatic Symptoms for the males. Under conditions of fewer or many more extrafamilial social supports, dad's perceived-negative life events had a strong effect (see Figure 4). Those whose fathers reported low and moderate levels of perceived-negative life events benefitted from increased extrafamilial contacts. Those whose fathers reported high levels of perceived-negative life events experienced an increase in somatic symptoms with an increase in extrafamilial contacts. It is possible to envision the needs or demands of the family under stress coming in conflict with peer pressures from outside the family. It is also possible that under increased parental stresses, increased social contacts outside the family become stressful in and of themselves. It is possible that the demands of socializing exceed the adolescents' capacities to respond and interact comfortably with others.

Health perceptions scores have been shown to be reliably predictive of morbidity and mortality for some adults (Davies and Ware, 1981; Kaplan and Camacho, 1983). It is unknown whether this would be true of measures taken at adolescence. In fact, the equations devised for this exploratory study accounted for very little of the variance in

female adolescents' Health Perceptions scores overall, whereas the opposite was true for male adolescents. We can only speculate, at this point, about the differences between boys and girls that influence the predictive validity of our assembled measures. In the case of health perceptions and somatic symptoms, why should family variables predict health better for boys than for girls? And in the case of General Wellbeing, why should family variables predict health better for girls?

Generally, the direct and interactive effects of the parental/family measures and the social network measures are different for females than for males (thus failing to support Hypothesis 5). What is also seen here is that the purported beneficial effects of social supports are not the same for all families, and that in some families, such contact is a detriment. Within families, the benefit of contact was different for boys and girls and seems to depend upon the situation. It also appears that parental perceptions of stress and family organization contribute differentially for males than for females, and depending upon which health measure one considers.

What is observed from the results of this exploratory study is that extrafamilial and familial social supports do not influence adolescent health scores in the same manner. Additionally, it does appear that different health scores display different sensitivities for males and females. Extrafamilial social contacts, persons with whom the adolescent feels close to and sees frequently, is beneficial only to the females' wellbeing and is highly influenced by the level of father-perceived family organization. This is possibly a reflection of the adolescent females' ability to make good use of outside social contacts, the ability reflecting social skills developed and shared among members in cohesive and organized family systems. Under less than optimum levels of father-perceived family organization, it is as if these contacts interfered with what benefit would be provided by family organization. Additionally, perhaps lower levels of family organization do not provide adolescents with the personal or social skill necessary to recognize or gain benefit from outside social contacts. One can

imagine, perhaps, a scene of conflict between family ties and expectations that are less supportive of the developing individual, and those of peers outside the family. That it is wellbeing, the emotional or evaluative domain of health that is involved, does make sense.

The entry of the familial social network variable into an equation accounted for very little increment in R^2 in and of itself. But when compared, the equations containing the familial network measure, as a whole, accounted for more non-error variance in the General Wellbeing and Somatic Symptoms scores. The opposite was observed for the Health Perceptions dependent measure, in which the extrafamilial network measure accounted for more variance, especially for males. (This, 51.85%, is the largest proportion of variance in health scores explained by use of any of the equations.) This differential effect of familial versus extrafamilial networks may be indicative of a difference in health dimension tapped by the Health Perceptions measure that may be more determined by peer influence than are the other two dimensions. It is possible that because the Health Perceptions measure is quite belief-centered, and asks for comparisons with others, that adolescents draw their comparisons from peers and others outside their families rather than from family members.

Most worthy of note, however, is not necessarily that one kind of social network accounted for more or less variance in health scores than the other, but rather, that their effects were *different*. Social support from the family did not have the same effect as social support from outside the family. It seems that what can be stated from these observations is that what matters very much is *who* is providing the support -- not just how many or how close the relationship is -- and in what situation that support is provided. Pearlin (1989) writes that as stress on a particular family member who fulfills a critical role increases, role overload may occur, the demands of the situation exceeding the capacity of the individual. As family members grow, change and individuate restructuring of entrenched relationships may occur. This in itself is stressful and when overlaid with negative life

events or other chronic stresses, provides an effect that may ripple throughout the entire family unit.

The picture that is presented by the above information is that of complex interactions between parental perceptions, the influences of familial and extrafamilial contacts that depend upon certain characteristics of the family which, in fact describe only a portion of its functioning. As expected from previous research (Verbrugge, 1985), there are differences between males and females in their level of somatic symptoms and health perceptions. However, there was no significant difference between boys and girls in General Wellbeing scores. There seem to be differential effects of mothers' and fathers' perceptions of family organization and stress between males and females, and there are most certainly different effects of familial versus extrafamilial social supports on the health scores of these adolescents.

An additional complexity was observed when the influence of socioeconomic status on the males' wellbeing scores was found to be extraordinarily large relative to its contribution to other male scores and to any of the females' scores. This particular measure accounted for almost 13% of the non-error variance in General Wellbeing scores Perhaps the influence of socioeconomic status fluctuates with developmental changes of males at this stage in their lives that may affect their sense of wellbeing in a much more pronounced manner than at other times.

Another notable finding, although not related to our hypotheses, was that the parents of the females and the parents of the males differed greatly on their reports of stress, perceived-negative life events and perceived family organization. Parents of girls reported higher levels in all of these factors than did parents of boys. It would be, however, necessary to have additional information on these families in order to ascertain the source of these differences, because the reported stress did not necessarily have anything to do with the stress of parenting.

This exploratory model begins to capture the complexity of the information being sought -- that of the influence of family characteristics on adolescent health and the differential effects that extrafamilial versus familial social networks may have on the health of family members. The factors examined in this study accounted for between 27.45% and 51.85% of non-error variance. General Well-being scores were best predicted for both males and females, by this exploratory model, and Somatic Symptoms the least well predicted. Health Perception scores were predicted well for males, but very poorly for females. The study does, however, provide interesting insight into the importance of considering the characteristics of the social support network when attempting to understand its influence on the health of adolescents.

It does seem to matter which aspect of multi-faceted health is chosen to be viewed, and it seems that social contacts may have effects on the health of adolescents that are highly interdependent of other family characteristics, and not necessarily in predicted directions. The next step, it seems, would be to define more clearly the hypothesized role of family characteristics other than stress.

An attempt must also be made to clarify, from a family systems perspective, the proposed role of social supports, both extra- and intrafamilial, within family types. Much exciting and progressive work is being done on the typology of families and family functioning, and on the interaction between an individual and the system in which (s)he operates. This work needs to be utilized and built upon in order to further understanding of the subtle and conditional nature of family influences on individual health in all of its aspects.

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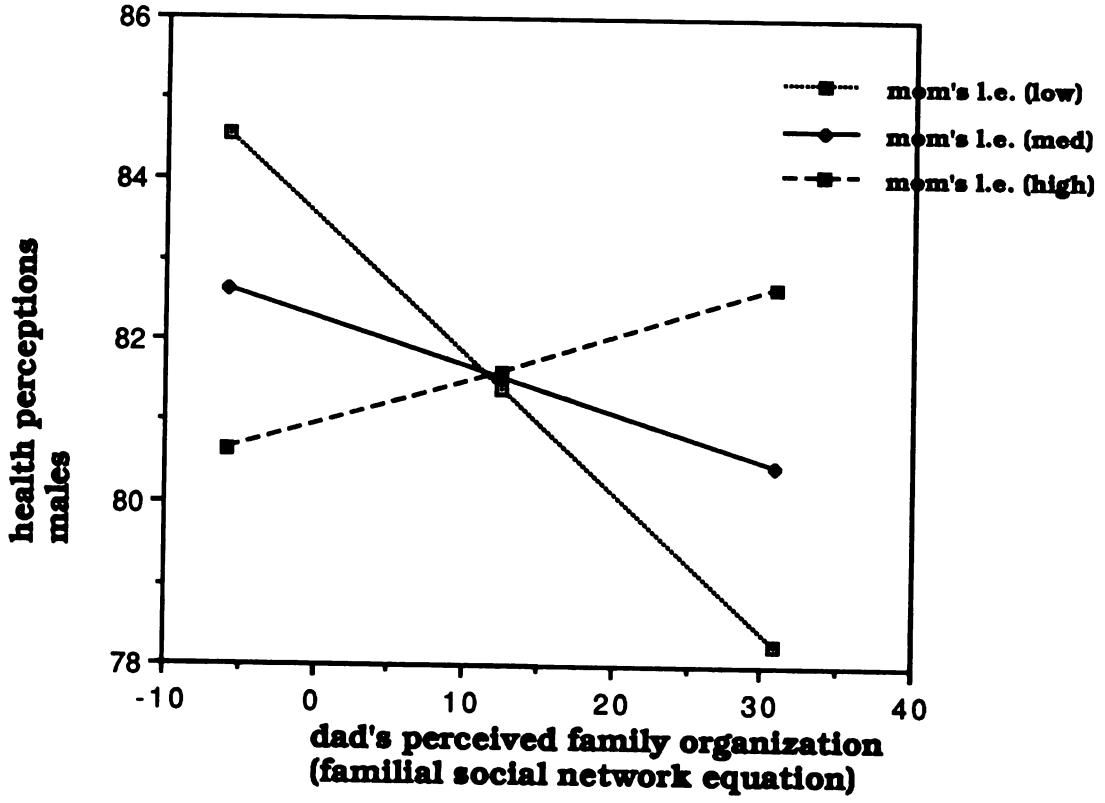
MALE AND FEMALE ADOLESCENT DEPENDENT HEALTH SCORES

means and standard deviations

	males means	s.d.	**females** means	s.d.	t
General Wellbeing	28.46	6.97	28.04	8.76	1.0314
Health Perceptions	80.05	8.37	75.69	9.78	9.9523**
Somatic Symptoms	6.23	2.17	7.56	2.80	5.8099**

**t-value (with pooled variances), p<.001, df 187

Table 1.


86
84
82
80
78
-10
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10
20
30
40
health perceptions
males
dad's perceived family organization
(familial social network equation)
mom's l.e. (low)
mom's l.e. (med)
mom's l.e. (high)

Figure 1.

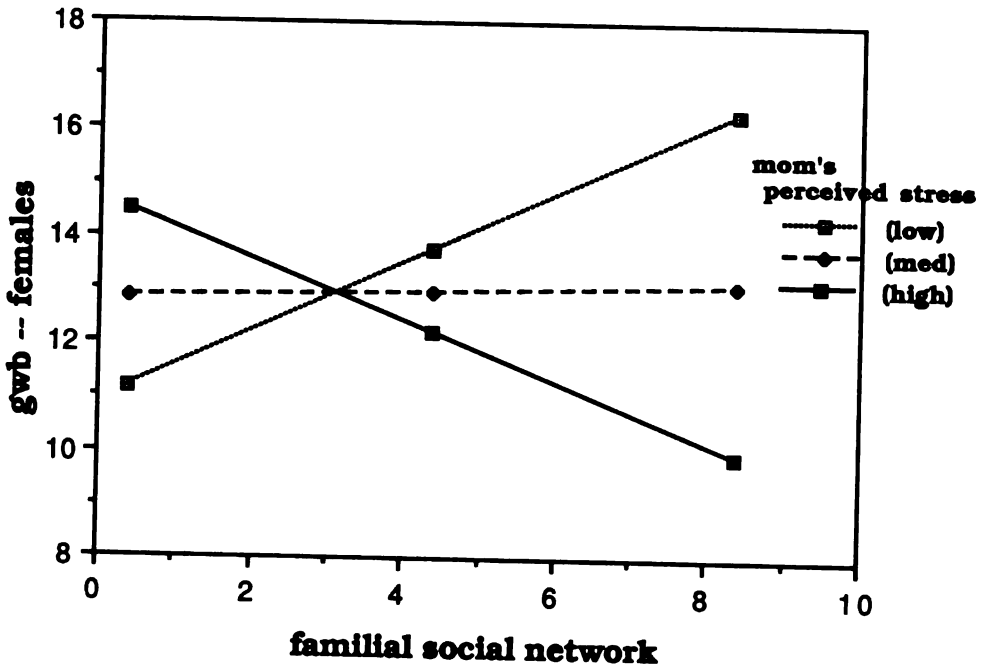
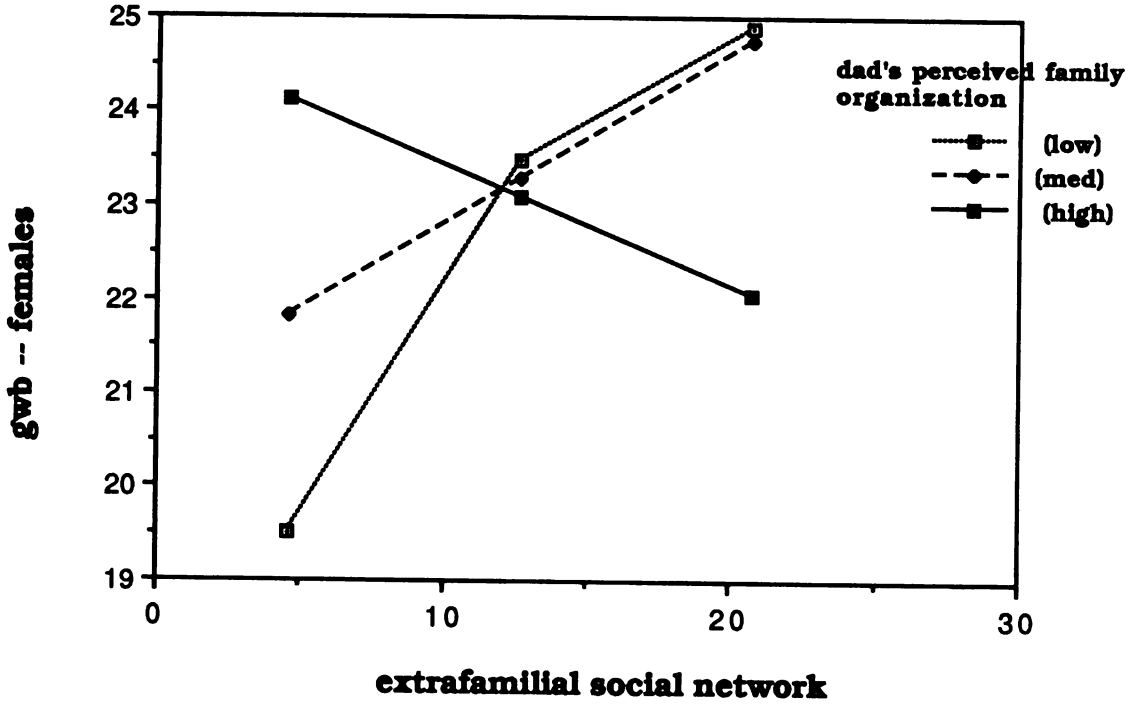

18
16
14
12
10
8
gwb -- females
0
2
4
6
8
10
familial social network
mom's
perceived stress
(low)
(med)
(high)

Figure 2.


25
24
23
22
21
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19
0
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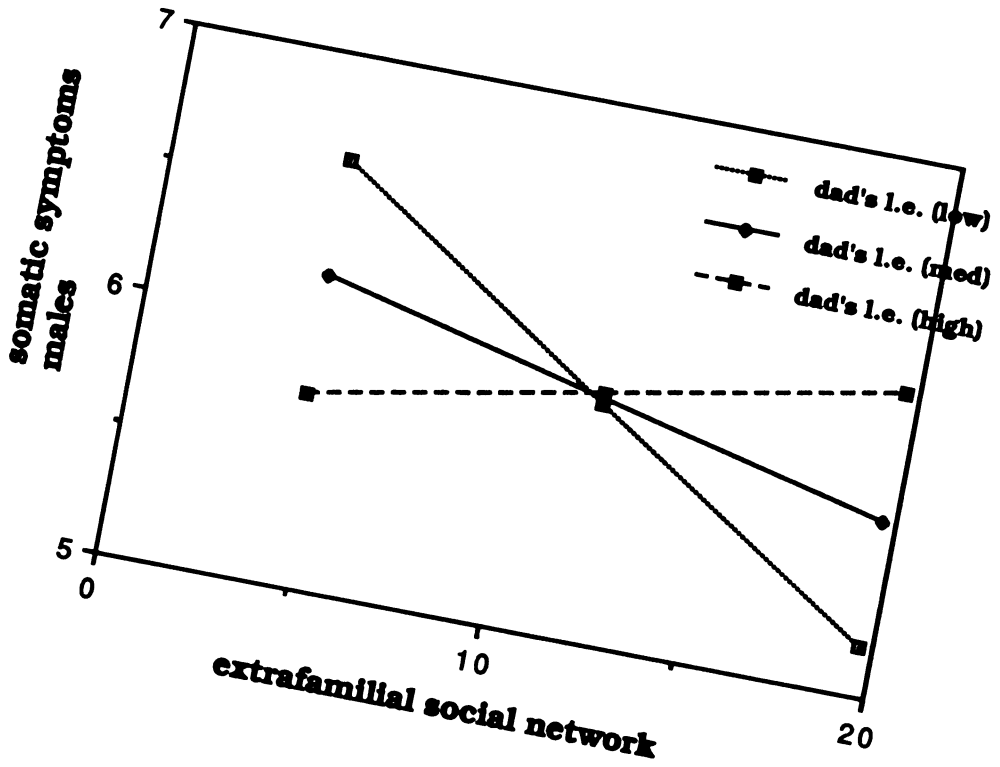
gwb -- females
extrafamilial social network
dad's perceived family organization
(low)
(med)
(high)

Figure 3.


somatic symptoms
males
7
6
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extrafamilial social network
dad's l.e. (low)
dad's l.e. (med)
dad's l.e. (high)

Figure 4.

APPENDIX

Study Protocol
Variables and Measures

DESCRIPTION OF SAMPLE

Mean number of years married		17.18 (s.d. 7.97)
Mean household size		4.27
Mean socioeconomic level (Hollingshead and Redlich Scales)		2.67
Mean total family income per year		$43,000
Mean fathers age		45.3 (s.d. 7.09)
Mean mothers age		41.08 (s.d. 6.00)
Household proportion of biological offspring of parents		69%
Ethnicity	Anglo	85%
	Hispanic	15%
Adult years in school	males	12.37
	females	11.52

SCALES AND MEASURES

completed by <u>each parent</u>

Perceived Family Organization -- 14 items

Perceived Stress -- 14 items

Perceived-Negative Life Events

completed by <u>each adolescent</u>

Health Perceptions -- 21 items

General Wellbeing -- 9 items

Somatic Symptoms -- 17 items

Extrafamilial Social Network Grid

Familial Social Network Grid

HIERARCHICAL ANALYSIS
ORDER OF ENTRY OF VARIABLES

Step One (forced to enter)

Socioeconomic Status

Step Two (forced to enter)

Mothers	Fathers
perceived family organization	perceived family organization
perceived stress	perceived stress
perceived-negative life events	perceived-negative life events

Step Three (forced to enter)

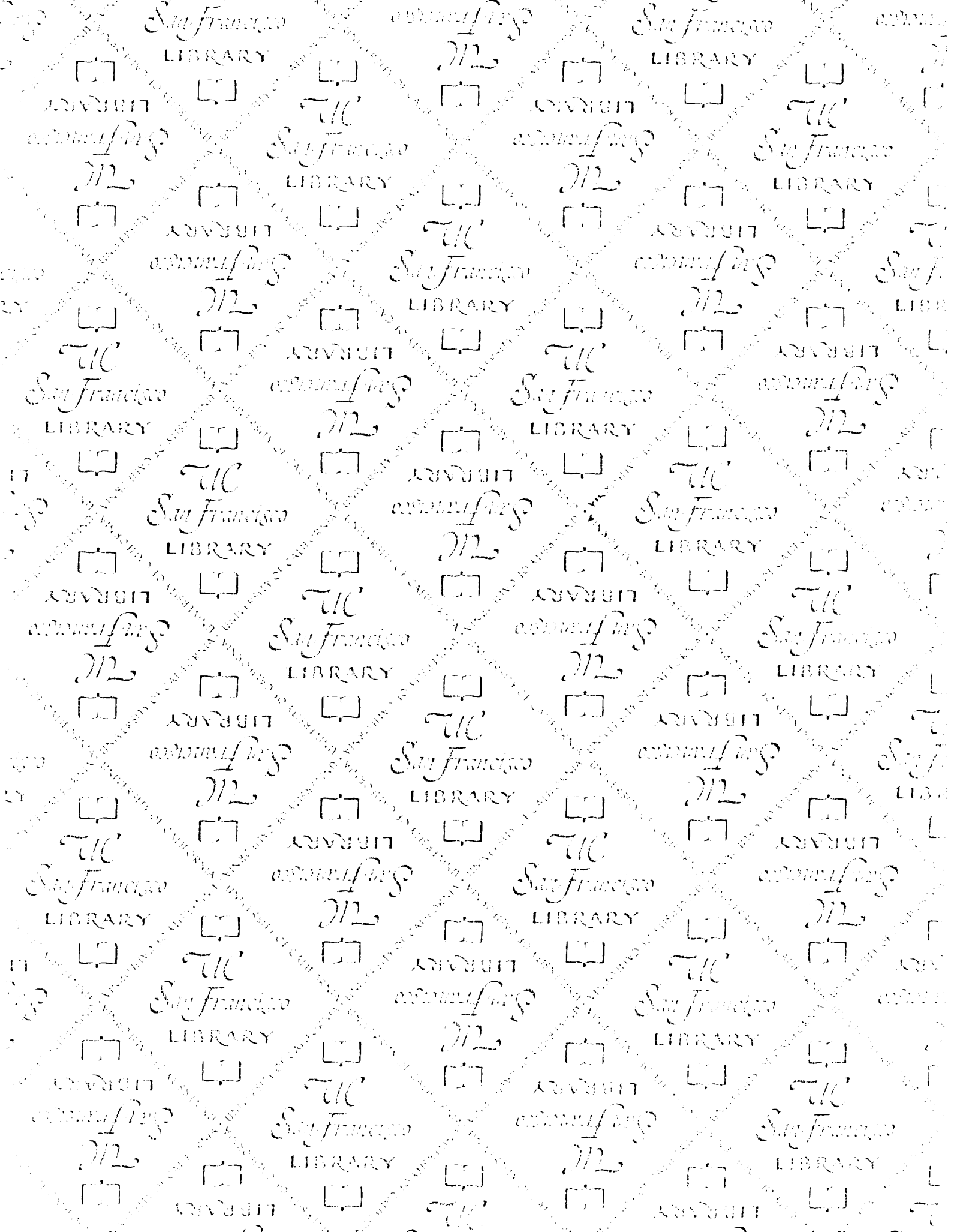
Adolescents' *extrafamilial* social supports
OR
Adolescents' *familial* social supports

Step Four (allowed to enter)

Two way interactions

Step Five (allowed to enter)

Three-way interactions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