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and Equality of Interpersonal
Relationships at Mid-Life

Dean D. Von Dras, Redford B. Williams,
Berton H. Kaplan, and Ilene C. Siegler

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CORRELATES OF PERCEIVED SOCIAL SUPPORT
AND EQUALITY OF INTERPERSONAL
RELATIONSHIPS AT MID-LIFE*

DEAN D. VON DRAS, PH.D.

REDFORD B. WILLIAMS, M.D.

Duke University Medical Center, Durham, North Carolina

BERTON H. KAPLAN, PH.D.

University of North Carolina, Chapel Hill

ILENE C. SIEGLER, PH.D., M.P.H.

Duke University Medical Center, Durham, North Carolina

ABSTRACT

An investigation into the correlates of perceived social support and the equality of interpersonal relationships at mid-life was conducted using a sample of 3954 adults from the University of North Carolina Alumni Heart Study (UNCAHS). Participants ranged in age from forty to fifty years. Results suggested that while the number of family roles and social activities are the same for men and women, women perceive a greater availability of social support and report they give more than they take in relationships with family. There was no association found between the perceived availability of social support and global indices of equality of interpersonal relationships; suggesting an independence between these two psychological aspects of social support. Further, multiple regression correlational analyses indicated gender, level of social activity, and self-esteem as significant predictors of perceived social support; with self-esteem being the best single predictor. Relatedly, gender and number of children were found to be significant predictors of the perceived equality of relationships with family. These findings

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suggest differences in mid-life men and women's psychological perception of the availability of social support, and the give and take of relationships with family.

Social support is an important component of one's ability to cope and function optimally across the life course [1-4]. Indeed, the perception that one can obtain assistance or empathy when needed [5] has been shown to influence psychological well-being, as well as rates of morbidity and mortality [2, 6-11]. However, while perceived social support has been found to be an important influence on the individual's psychological and biophysiological adaptation across the life course, there is a necessary qualification to be made. It is that the perception of social support may be just one of several social factors influencing psychological and biophysiological processes [12-15]. As posited by Revenson, the interaction of person with environment is a functionally complex phenomenon [15]. Thus, she suggests it requires the acknowledgment of individual differences in conjunction with a wide variety of social factors that may moderate psychological and biophysiological processes. Evidence supporting this position is provided by Adler, Boyce, Chesney, Cohen, Folkman, Kahn, and Syme [12] in a review of research that shows different socioeconomic gradients influence health behaviors (e.g., smoking, physical activity, alcohol consumption), psychological characteristics (e.g., depression, hostility), and rates of morbidity and mortality. Similarly, other investigators [16-18] have also noted the importance of person/environment interaction in explaining psychological and biophysiological processes, and have signified the need for empirical research that attempts to clarify relationships between the perception of available social support and personal and demographic characteristics [17].

ELUCIDATING EFFECTS OF PERSONAL AND SOCIOCONTEXTUAL FACTORS ON PERCEPTIONS OF SOCIAL SUPPORT: AN EMPIRICAL EXPLORATION

Given the impact of perceived social support on well-being throughout life [4, 7, 10, 11], and previous research that suggests socioeconomic status [12, 18], family roles [19-22], gender [1, 3, 23-26], and personality characteristics [27-32] are moderators of social support networks and processes, it was reasoned that the elucidation of individual differences and socio-contextual influences on perceptions of social support posed an important and yet unanswered empirical question. Moreover, it was noted that while change in interpersonal relationships is a theme that predominates at mid-life [33], previous investigations of social support have primarily used college students and older adults; we know of no large-scale investigations of perceived social support specifically focused on middle-aged
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men and women. It was further recognized that in the United States and other industrialized countries, significant morbidity and mortality has been substantially delayed until later in life. Hence, we also sought to identify important personal and socio-contextual factors that underlie and influence perceptions of social support before significant morbidity and mortality is observed, and before perceptions of social support are qualified by various psychological and social changes that occur later in the life cycle. Thus, the purpose of the present investigation was to provide an initial, empirically-based exploration of the personal and socio-contextual correlates of perceived social support at mid-life.

As suggested by Sarason, Shearin, Pierce, and Sarason [34], social support has many dimensions, and previous research has not found strong association between perceived social support and indices of received social support and size of social network [34-36]. Relatedly, other research [37-41] has suggested that the reciprocity of one’s interpersonal relationships mediates the quality of social support that is given and received, as well as the perceived availability of social support [5, 36]. Therefore, two aspects of social support were chosen as primary foci of this investigation: The individual’s perception of the availability of emotional support and practical assistance from others; and the individual’s perception of the give and take of interpersonal transactions shared with family and friends, the people who are most likely to provide social support. Further, as suggested by Sarason, Sarason, and Shearin [29], and others [36, 42-45], social support is a dynamic interactive process that is moderated by influences of the social network as well as individual resources (e.g., self-reliance, self-esteem, social competence). Thus, along with measures of socio-demographic characteristics, family roles and social activities, self-esteem was assessed and treated as an independent predictor variable to further delineate personal and socio-contextual influences on perceived social support and equality of interpersonal relationships.

The logical objective of this research was to provide a mapping out of the personal and social contextual factors that underlie and influence the perceptions of social support at mid-life. Accordingly, the central questions of this investigation asked: First, what is the association of gender, marital status, education, family income, and employment status to perceived social support, and the equality of interpersonal relationships at mid-life? Second, what is the association between the number of family roles and social activities at mid-life and perceived social support and equality of interpersonal relationships? Lastly, after accounting for the influence of variant socio-contextual factors, what is the contribution of self-esteem in predicting perceived social support, and equality of interpersonal relationships at mid-life?

1 While some studies of social support in later adulthood [cf. 2] have included participants in the fourth decade of life, the mean ages of these samples have been significantly older than the sample used in this investigation.
Implicit in this empirical orientation, and in accordance with previous research (e.g., [18, 26]), were the expectations that women and individuals of higher socioeconomic status would report greater perceived social support. Further, it was hypothesized that family roles and social activities would make unique contributions to predictive models of the perception of support and the give and take of interpersonal relationships; specifically, it was expected that individuals involved in many family roles and social activities would perceive a greater availability of social support, and that social activities would yet account for a significant proportion of variance in predictive models of perceived social support after controlling for the influence of various family roles. Moreover, in accordance with the interactional model of perceived social support proposed by Pierce, Sarason, and Sarason [37], it was hypothesized that one’s perceptions of the give and take of interpersonal relationships would be associated with the perceived availability of social support. Further, following from Sarason, Levine, Basham, and Sarason’s research that suggests association between perceived social support and self-esteem, the contribution of self-esteem in the predictive modeling was tested; the expectation here was that self-esteem would be a significant predictor after accounting for all other socio-contextual influences, and that individuals high in self-esteem would perceive greater availability of social support [29].

METHOD

Sample Demographics

Data was obtained through the University of North Carolina Alumni Heart Study (UNCAHS). Selection and recruitment of the participants in the UNCAHS have been reported in depth elsewhere by Siegler, Peterson, Barefoot, Harvin, Dahlstrom, Kaplan, Costa, and Williams [46]. However, it is important to note that the under-representation of women and minorities in this sample reflects the socio-demographic characteristics of the University of North Carolina in Chapel Hill (UNC) student population in the 1960s; during this period the UNC student population was primarily male and minority enrollment was less than 1 percent [46]. This investigation consisted of 3,954 participants from the UNCAHS sample who had participated in Wave Three of data collection and who ranged in age from forty to fifty years ($M = 42.91$, $SD = 1.46$); these individuals represent 95 percent of the UNCAHS sample.2

Participants were 81 percent male ($N = 3197$) and 19 percent female ($N = 757$), and were highly educated, with a baccalaureate degree plus some additional training being the mode of educational attainment for both men and women (Range, “Some college but less than 4 years”; to “Ph.D., M.D., or Law Degree”).

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2 Not all participants responded to all questions; thus some participants’ data is missing from the socio-demographic analyses.
however, men were more likely than women to report having attained a Ph.D., M.D., or Law Degree, \( \chi^2(4, N = 3954) = 93.30, p < .001 \).

With regard to marital status, while most of the sample reported being married, women were more likely than men to report being divorced, separated, or widowed, \( \chi^2(2, N = 3935) = 31.06, p < .001 \).

Regarding income and employment status, the mode of family income was in the $70,000 to $99,999 category (Range, "Less than $10,000" to "Greater than $300,000"), with 23.5 percent of the sample reporting this status, and men were more likely than women to report a high family income, \( \chi^2(3, N = 3671) = 5.99, p < .05 \); further, while most participants reported working full-time, women were more likely than men to report working part-time or in the home, \( \chi^2(2, N = 3945) = 670.91, p < .0001 \).

Procedure and Measures

The UNCAHS study is a mail survey designed to assess a broad spectrum of psychosocial and health variables. The Wave Three questionnaire contained measures that inquired about socio-demographic characteristics, family relationships, social activities, self-esteem, perceived social support, and equality of relationships with family and with friends.

Family Roles and Social Activities

To investigate family roles and social activities, two sets of questions modeled after those used by Kaplan, Salonen, Cohen, Brand, Syme, and Puska were asked [47]. One set of questions inquired into the number of family roles of the individual and included the self-report of the number of parents living (biological as well as step-parents), siblings, children, and grandchildren. In addition to these questions, marital status was dichotomized into living with (i.e., married or living with a companion) or without a partner (i.e., divorced, separated, widowed, or never married); this new variable served as another subscale of the family role set and was dummy coded 0 (without partner) or 1 (with partner). An index of the total number of family roles was created for each participant by summing their responses to these family role questions.

Another set of questions inquired into the number of social activities the individual participated in and included the self-report of the number of different friends or family members visited per month, the number of friends who telephone or visit at home each day, the number of friends who telephone or visit at work each day, and the number of religious services attended per month. Participants were also asked about the number of visits with friends and family per month, and responses were recorded using the format, "Rarely, less than 1 a month (1), About once a month (2), 2-7 a month (3), 8 or more a month (4). Additionally, participants were asked about the number of meetings of clubs, societies, or associations attended per month, and responses were recorded using the format, "Rarely,
less than 1 a month (1), About once a month (2), 2-3 a month (3), 4 or more a month (4). An index of the total number of social activities was created for each individual by summing their responses to these social activity questions.

Self-Esteem

The Rosenberg Self-Esteem Scale was chosen as the measure of self-esteem due to its brevity and widespread use [48]. This ten-item measure contains a Likert-type response format ranging from, strongly agree (1), to agree (2), to disagree (3), to strongly disagree (4). Level of self-esteem is assessed by summing item responses; in the data reported below, a high score indicates high self-esteem. A review of the psychometric characteristics of this measure can be found in Crandall [49].

Perceived Social Support

The appraisal scale of The Interpersonal Support Evaluation List (ISEL) was chosen as the measure of perceived social support due to its brevity and because it was deemed to have an appropriate level of face validity for the relatively high socioeconomic status of the middle-aged subjects comprising this sample [27]. The ten-item appraisal scale of the ISEL contains a Likert-styled response format ranging from, definitely true (1), to probably true (2), to probably false (3), to definitely false (4). Level of appraised social support is assessed by summing item responses; in the data reported below, a high score indicates greater perceived availability of support. A discussion of the psychometric characteristics of this scale are found in Cohen and Hoberman [50] and Cohen et al. [27].

Equality of Interpersonal Relationships

The equality of relationships with family and with friends measure was designed for the UNCAHS and consisted of two questions. These items are analogous to other measures designed to assess reciprocity of interpersonal transactions [36-38, 41], and were included to specifically assess aspects of perceived social support not addressed by the appraisal scale of the ISEL, i.e., the perceived role expectations and reciprocity of relationships of men and women [36, 51]. These items stated, “In general, to what extent do you feel there is equal give and take in your relationships with regards to doing favors, listening to problems or giving and taking advice.” Participants were asked to respond in reference to, “With Family,” and “With Friends,” using a balance-oriented scale ranging from, I probably give more than I take (1) to, It seems like equal give and take (2), to I probably take more than I give (3).

Data Analysis

To investigate relationships among socio-contextual and psychosocial variables, zero-order correlational analyses and hierarchical multiple regression correlational (MRC) analyses were conducted [52]. The order of variable entry into
the MRC equations was determined a priori and follows the aforementioned research questions. Thus, the first variable of entry into all MRC equations was the set of socio-demographic characteristics that included gender (coded as 1 = male, 2 = female), marital status (coded as 1 = married, living with partner or as couple, or living with heterosexual or homosexual partner, 2 = divorced, separated, or widowed, 3 = single/never married), level of attained education, family income, and employment status (codes as 1 = working full-time, 2 = working part-time, 3 = homemaker, retired, disabled, or student). To examine the independent contribution of social activities controlling for the number of family roles, the second and third steps of variable entry were the family roles variable set followed by the social activities variable set. The final step examined the contribution of self-esteem after controlling for the contribution of all other factors. Participants with missing data on any of the measures included in a particular MRC analysis were excluded from that investigation.

RESULTS

The statistical results presented here first report on the descriptive analyses of men and women’s total number of family roles and social activities, appraised social support, self-esteem, and equality of relationships with family and with friends. Thereafter, zero-order correlational, and hierarchical MRC analyses predicting perceived social support, and equality of relationships with family and with friends are presented. To control for inflation of experimentwise Type I error rate when multiple statistical tests are performed, alpha level was adjusted using a Bonferroni correction for all tests performed within a conceptual category. Moreover, it is noted that due to this investigation’s very large sample size, the power to detect statistically significant but relatively small effects is amplified. Thus, interpretation of effect size index follows the convention posited by Cohen and Cohen [52] that suggests, $r^2 = .01$, $r^2 = .09$, and $r^2 = .25$ represent small, moderate, and large effect sizes; respectively. It is further noted that due to missing data, degrees of freedom may vary throughout all analyses.

Family Roles and Social Activities

ANOVA and Chi-square techniques were used to investigate gender differences on the scales comprising the total number of family roles and social activities. Alpha level was adjusted to .0045 to protect against inflation of Type I error rate.

The means and standard deviations of different family roles and social activities of men and women are shown in Table 1. Of note here is that men and women report a similar number of different family roles involving parents, siblings, and children; and, while a gender difference favoring women was detected in the number of grandchildren, the magnitude of this effect is negligible; $F(1,3951) = 20.90, p < .0001, \omega^2 = .0052$. Of greater interest, however, is that women were
Table 1. Means and Standard Deviations of the Component Scales Included in the Number of Family Roles and Social Activities Variable Sets for Men and Women from the UNCAHS

<table>
<thead>
<tr>
<th>Variable</th>
<th>Men</th>
<th></th>
<th>Women</th>
<th></th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td></td>
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<tr>
<td><strong>Family Roles</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of parents living</td>
<td>1.48</td>
<td>(0.67)</td>
<td>1.43</td>
<td>(0.69)</td>
<td>ns</td>
</tr>
<tr>
<td>Number of siblings</td>
<td>1.92</td>
<td>(1.37)</td>
<td>1.88</td>
<td>(1.28)</td>
<td>ns</td>
</tr>
<tr>
<td>Number of children</td>
<td>1.70</td>
<td>(1.19)</td>
<td>1.58</td>
<td>(1.18)</td>
<td>ns</td>
</tr>
<tr>
<td>Number of grandchildren</td>
<td>0.01</td>
<td>(0.18)</td>
<td>0.06</td>
<td>(0.51)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Total number of roles^2</td>
<td>5.82</td>
<td>(2.12)</td>
<td>5.63</td>
<td>(2.15)</td>
<td>ns</td>
</tr>
<tr>
<td><strong>Social Activities</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of visits with friends or</td>
<td>2.60</td>
<td>(0.79)</td>
<td>2.83</td>
<td>(0.82)</td>
<td>ns</td>
</tr>
<tr>
<td>family per month(^2)</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Number of meetings per month(^2)</td>
<td>2.30</td>
<td>(1.20)</td>
<td>2.34</td>
<td>(1.19)</td>
<td>ns</td>
</tr>
<tr>
<td>Number of different friends or</td>
<td>6.24</td>
<td>(7.18)</td>
<td>6.15</td>
<td>(7.89)</td>
<td>ns</td>
</tr>
<tr>
<td>relatives visited per month</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>At home: Number of friends per day</td>
<td>0.86</td>
<td>(1.02)</td>
<td>1.08</td>
<td>(1.20)</td>
<td>&lt;.005</td>
</tr>
<tr>
<td>who call or visit(^d)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>At work: Number of friends per day</td>
<td>1.90</td>
<td>(2.98)</td>
<td>1.52</td>
<td>(3.14)</td>
<td>&lt;.005</td>
</tr>
<tr>
<td>who call or visit(^d)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of religious services</td>
<td>1.98</td>
<td>(2.41)</td>
<td>2.06</td>
<td>(2.29)</td>
<td>ns</td>
</tr>
<tr>
<td>attended per month</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Total number of social activities</td>
<td>15.64</td>
<td>(8.16)</td>
<td>15.42</td>
<td>(7.72)</td>
<td>ns</td>
</tr>
</tbody>
</table>

^2Being with partner (1) or without partner (0) was also a component of the total number of family roles variable set; significantly more men (84.7%) than women (78.4%) reported being in a partner style relationship, \(\chi^2(1, N = 3935) = 14.09, p < .001\).

\(^d\)The number of visits with friends and family per month scoring: Rarely, less than 1 a month (1), About once a month (2), 2-7 a month (3), 8 or more a month (4).

\(^2\)The number of meetings of clubs, societies, or associations attended per month: Rarely, less than 1 a month (1), About once a month (2), 2-3 a month (3), 4 or more a month (4).

\(^d\)Statistical analysis revealed a significant Gender x Site interaction, \(p < .0001\).

more likely than men to report being without a partner; in this sample 21.6 percent of the women and 15.3 percent of the men reported being without a partner, \(\chi^2(1, N = 3935) = 14.09, p < .001\).

As also shown in Table 1, men and women report a similar number of social activities. However, women report more contact with friends at home than do men, \(F(1,3669) = 24.02, p < .0001, \omega^2 = .0065\); while in contrast, men report more contact with friends at work than do women, \(F(1,3669) = 8.52, p < .0035, \omega^2 = .0023\). While a test of this Gender x Site interaction was significant, \(F(1,3669) = 22.46, p < .0001, \omega^2 = .0058\); the effect size index is very small. However, subsequent investigation revealed more substantive effects, and indicated that men receive significantly more calls and visits from friends at work than at home,
\[ F(1,3027) = 399.46, p < .0001, \omega^2 = .1162; \text{ while this difference is attenuated in women, } F(1,642) = 11.34, p < .001, \omega^2 = .0158. \]

**Perceived Social Support, Self-Esteem, and Equality of Interpersonal Relationships**

ANOVA procedures were used to investigate gender differences on the psychosocial measures using an adjusted alpha of .01. A significant gender difference was found on the appraisal scale of the ISEL, \( F(1,3952) = 110.29, p < .0001, \omega^2 = .0282; \) indicating women perceive higher levels of social support than do men, \( M = 24.38, SD = 5.65, \) and \( M = 21.84, SD = 6.06, \) respectively. There was a negligible gender effect observed on The Rosenberg Self-Esteem Scale \((48), F(1,3916) = 20.58, p < .0001, \omega^2 = .0052; \) mean scores for men and women were 24.27 \((SD = 4.48), \) and 23.42 \((SD = 4.96), \) respectively. A gender difference was also observed on the equality of relationships with family, \( F(1,3917) = 102.54, p < .0001, \omega^2 = .0255; \) suggesting that in comparison to men, women say they give more than they take in their family relationships. Mean ratings of men and women on the equality of relationships with family were 1.81 \((SD = 0.62)\) and 1.55 \((SD = 0.59), \) respectively. In contrast, there was no gender difference detected on the equality of relationships with friends, \( F(1,3912) = 5.14, p > .01; \) means for men and women were 1.81 \((SD = 0.49), \) and 1.76 \((SD = 0.52), \) respectively.

**Zero-Order Correlational Analyses**

Correlational analyses were used to investigate relationships among sociodemographic variables, the total number of family roles and social activities, self-esteem, perceived social support, and the equality of interpersonal relationships. Alpha was adjusted to .0001 to control for Type I error rate inflation. As shown in Table 2, the total number of family roles was significantly correlated with only one of the psychosocial variables, self-esteem \((r = .10, p < .0001); \) this relationship suggests that a greater number of family roles is associated with higher levels of self-esteem. Further, the total number of social activities was found to be significantly correlated with the appraisal scale of the ISEL \((r = .26, p < .0001)\) and self-esteem \((r = .18, p < .0001); \) suggesting a high level of social activity is associated with high perceived social support and high self-esteem. Moreover, of special note is that with the exception of the ratings of equality of relationships with family, self-esteem was found to be significantly correlated with all variables in this analysis \((absolute \, rs > .07, p < .0001); \) of particular interest is the relationship between perceived social support and self-esteem \((r = .28, p < .0001), \) indicating that high perceived social support is associated with high self-esteem. It was also observed that ratings of equality of relationships with family and with friends were not correlated with perceived social support \((r = .04,\) and \( r = .02; \) respectively); suggesting independence between these different aspects of social support.
Table 2. Zero-Order Correlational Matrix of Sociodemographic Characteristics, Total Number of Family Roles, Total Number of Social Activities, Perceived Social Support, Self-Esteem, and Equality of Relationships with Family and with Friends

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
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<tr>
<td>1. Gender</td>
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<td>2. Education</td>
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<td>3. Marital status</td>
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<td>4. Family income</td>
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<td>5. Employment status</td>
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<td>6. Total number of family roles</td>
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<td>7. Total number of social activities</td>
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<td>8. Perceived social support</td>
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<td>9. Self-esteem</td>
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<tr>
<td>10. Equality of relationships with family</td>
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<tr>
<td>11. Equality of relationships with friends</td>
<td>—</td>
<td>—</td>
<td>—</td>
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</tbody>
</table>

Note: Gender was coded 1 = male, 2 = female. The total number of family roles and the total number of social activities are the sum of each respective variable set's component scales.

*p < .0001
Hierarchical MRC Analyses to Predict Perceived Social Support and the Equality of Interpersonal Relationships with Family and Friends

Hierarchical MRC analyses were conducted to determine the predictors of perceived social support, and equality of interpersonal relationships. Predictor variable entry into the MRC equations occurred in the following order: First, the set of socio-demographic characteristics; second, the set of family roles; third, the set of social activities; and last, self-esteem. To control for Type I error rate inflation, alpha was adjusted to .0001 as the criterion of statistical importance for interpreting all standardized betas (β), the unique contribution of any particular variable to the predictive equation, i.e., the squared semi-partial correlation coefficient (sr²), and increase in adjusted R² F ratios following variable set entry.

The full MRC model of perceived social support accounted for over 18 percent of the variance, \( \text{adjusted } R^2 = .1856, F(17, 3050) = 42.13, p < .0001 \). As shown in Table 3, gender made a significant contribution to the predictive equation (\( \beta = .16, \ sr^2 = .0256, p < .0001 \)), while there was no contribution of other socio-demographic variables (\( sr^2s < .0024 \)). Further, while the number of family roles set made negligible contribution (increase in \( \text{adjusted } R^2 < .01 \)), a substantial increase was observed when the social activity set was entered; increase in \( \text{adjusted } R^2 = .0846, F(6, 3050) = 49.09, p < .0001 \). Moreover, the component scales of the number of meetings per month, visits with friends and family per month, calls and visits at home per day, and religious services attended per month all suggested significant and positive predictive association with the perception of available social support scale (\( \beta_s < -.07, ps < .0001 \)); again suggesting a high level of social activity is associated with a high level of perceived social support. Lastly, inclusion of self-esteem into the model also produced a substantial increase in \( \text{adjusted } R^2 \), and overall was the largest single contributor to the predictive equation (\( \beta = .27, \ sr^2 = .0661, p < .0001 \)); indicating self-esteem remains correlated with perceived social support after accounting for the influences of socio-demographics, family roles and social activities.

The full MRC model predicting equality of relationships with family accounted for less than 4 percent of the variance, \( \text{adjusted } R^2 = .0341, F(17, 3026) = 7.32, p < .0001 \). The hierarchical procedure indicated only gender and the number of children as significant contributors (\( \beta = -.14, \ sr^2 = .0204, p < .0001 \), and \( \beta = -.11, \ sr^2 = .0110, p < .0001 \); respectively); suggesting women and those with children report that they give more than they take in family relationships.

The full MRC model of equality of relationships with friends accounted for a very small proportion of the variance, \( \text{adjusted } R^2 = .0106, F(17, 3022) = 2.92, p < .0001 \). Self-esteem was the only component that entered the predictive equation significantly and its contribution was negligible (\( \beta = -.08, \ sr^2 = .0051, p < .0001 \)).
### Table 3. Hierarchical Multiple Regression Correlational Analysis Predicting Perceived Social Support

<table>
<thead>
<tr>
<th>Order of Variable Entry</th>
<th>β</th>
<th>(s^2)</th>
<th>Adjusted (R^2)</th>
<th>Increase in Adjusted (R^2)</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Gender</td>
<td>.16*</td>
<td>.0256*</td>
<td>.0298</td>
<td>—</td>
<td>19.82</td>
<td>&lt;.0001</td>
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<tr>
<td>Education</td>
<td>.04</td>
<td>.0023</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital status</td>
<td>.06</td>
<td>.0020</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Income</td>
<td>.03</td>
<td>.0008</td>
<td></td>
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<tr>
<td>Employment status</td>
<td>.02</td>
<td>.0002</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>Step 2</strong></td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Number of parents living</td>
<td>.05</td>
<td>.0023</td>
<td>.0364</td>
<td>.0066</td>
<td>4.14</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Number of siblings</td>
<td>-.01</td>
<td>.0002</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of children</td>
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<td>.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of grandchildren</td>
<td>-.04</td>
<td>.0022</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>With or without partner</td>
<td>-.16</td>
<td>.0034</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>Step 3</strong></td>
<td></td>
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<td></td>
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<tr>
<td>Meetings/mo</td>
<td>.07*</td>
<td>.0224*</td>
<td>.1195</td>
<td>.0831</td>
<td>47.55</td>
<td>&lt;.0001</td>
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<tr>
<td>Visits with friends and family/mo</td>
<td>.18*</td>
<td>.0452*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Different people visited/mo</td>
<td>.06</td>
<td>.0054</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Home: Calls and visits/day</td>
<td>.08*</td>
<td>.0052*</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Work: Calls and visits/day</td>
<td>.00</td>
<td>.0000</td>
<td></td>
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<tr>
<td>Religious services/mo</td>
<td>.08*</td>
<td>.0062*</td>
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<tr>
<td><strong>Step 4</strong></td>
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<tr>
<td>Self-esteem</td>
<td>.27*</td>
<td>.0661*</td>
<td>.1856</td>
<td>.0661</td>
<td>245.28</td>
<td>&lt;.0001</td>
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<tr>
<td><strong>Full Model</strong></td>
<td></td>
<td></td>
<td>.1856</td>
<td>—</td>
<td>42.13</td>
<td>&lt;.0001</td>
</tr>
</tbody>
</table>

*Note that each variable’s standardized beta (β) and squared semi-partial correlation coefficient (\(s^2\)) represent that variable’s unique effect at the step in which it entered. Further, to control for Type I error rate inflation, alpha was adjusted to .0001 as the criterion of statistical importance for interpreting all βs, \(s^2\)s, and increase in adjusted \(R^2\) F ratios following variable set entry.

*p < .0001

### DISCUSSION

This investigation focused on the correlates of perceived social support and equality of relationships with family and with friends at mid-life. As found here, while the number of family roles and social activities were similar for men and women, women perceived greater availability of social support than did men. Further, the MRC analysis to predict perceived social support indicated that gender, frequency of meetings attendance, visits with friends and family, reception of calls and visits from friends at home, and attendance of religious services,
along with self-esteem were significant predictors of perceived social support. Contrary to expectation, family socioeconomic status was not a significant correlate of perceived social support; this lack of association may be due to the relatively high economic status and educational attainment of the sample. Further, the total number of family roles were found not to be correlated with perceived social support; but rather, as revealed in the MRC analysis, the frequency of calls and visits with family and friends were significant predictors of perceived social support. Taken together, these results agree with other research that suggests that women perceive a higher level of available social support than men [1] and that self-esteem is positively associated with the perceived availability of support [27]. Moreover, these data indicate that the frequency of contact with family and friends as well as participation in various organizations are important correlates of one's perception of having others to turn to when a problem is confronted or some form of assistance is needed.

In contrast to the interactional model of perceived social support proposed by Pierce, Sarason, and Sarason [37] that suggests one's expectations of support and conflict in interpersonal relationships influence the perception of available social support, there was no significant correlation found between the perception of available social support and the global ratings of equality of relationships with family and with friends. This suggests that at mid-life perceived social support and global assessments of equality of interpersonal relationships may be independent of one another, or indirectly related through a mediating third variable. However, as found on the perceived social support measure, a gender difference was observed in the equality of relationships with family; suggesting that women were more likely to report that they give more than they take in family relationships. This finding is in accordance with previous investigations that indicate mid-life women are most often the primary confidant and source of support for husbands [25, 26, 53], while at the same time they provide the greatest assistance and support to older parents and children [20, 21, 25]. Moreover, perhaps as a result of the greater demand on women to provide assistance and support to family and friends, there was a Gender x Site (i.e., home versus work) interaction observed on the ratings of social contact with friends; men indicated they have more contact with friends at work than at home, while women report relatively similar patterns of social contact between home and work. This interaction agrees with previous reports that suggest the work site has greater importance for men than for women in providing support [37, 38]. Speculatively, however, given that there are gender differences in social support networks and processes [1, 2, 25], a differential pattern of men and women's contact with friends at home and at work would suggest that other factors may be responsible for gender differences in perceived social support. For example, women's greater contact with friends at home may enhance intimacy and quality of support, and thus the perception of available support. Relatedly, the central role women play within the family may make social support more available to them. Taken together, these findings indicate
differences in mid-life men and women's perception of the availability of social support and equality of relationships with family; and give hint that gender associated socialization processes may influence the psychological perception of the availability of help and empathic understanding as well as the give and take of interpersonal relationships. Additional research is needed, however, to fully explore and understand the socialization processes that may underlie gender differences in perceived social support and equality of interpersonal relationships across the life course.

Of special note is that self-esteem was found to be correlated with most variables of this investigation, and that it was the single largest contributor to the MRC equation predicting perceived social support. These effects are concordant with other research that suggests interactive and reciprocal relationships between self-esteem and factors in the social environment, and that indicate personality characteristics (e.g., self-esteem) are significant predictors of perceived social support [29, 30, 42, 45, 54]. Further, while statements concerning the direction of causality involving self-esteem, socio-contextual factors, and the appraisal of social support are not possible due to the cross-sectional nature of this research, it seems reasonable to hypothesize that, overtime, individuals high in personality traits such as self-esteem, extraversion, and concern for others, would be more likely to involve themselves with and attract the company of people who share similar characteristics, and resulting report greater perceived availability of social support. Future research should also attempt to explore the relationships between personality traits, socio-contextual factors, and other aspects of social support and interpersonal exchange across the life course.

Framed within the context of Erikson's theory of psychosocial development, mid-life is suggested to be a time in which the person's involvement with different generations and social institutions reach an ascendancy [55]. Indeed, as Erikson, Erikson, and Kivnick have posited, at mid-life the individual encounters the central crises of generativity versus stagnation, where one's generative responsibility is reconciled in the experiences of nurturing and guiding the next generation of people who will succeed them as adults, caring for parents and older relatives and friends, and participating in the development and maintenance of societal institutions [56]. Relatedly, with regard to interpersonal relationships, Valliant [57] has indicated that one of the most important factors facilitating adaptation throughout adulthood is the enduring relationships we have with others. Similarly, Antonucci [2] has suggested that one's social network or convoy of social support provides essential coping and adaptive resources across the life-span. Thus, given these life course perspectives, the perception that one is cared for and that assistance is available when needed, and that the give and take of interpersonal relationships are in balance would appear to be important pre-requisites of actualizing one's generative capacities and promoting adaptation at mid-life.
SUMMARY

This investigation was an empirically-based exploration into the correlates of perceived social support and equality of interpersonal relationships at mid-life. Results suggest that while the number of family roles and social activities are the same for men and women, women report a greater availability of social support and that they give more than they take in relationships with family. Speculatively it was suggested that differences in the socialization patterns of men and women with friends at home and at work may be one factor contributing to the gender difference in perceived social support. Results of correlational analyses indicated no association between perceived social support and global indices of equality of interpersonal relationships; suggesting an independence between these two aspects of perceived social support. Further, MRC analyses indicated that gender, level of social activity, and self-esteem are significant predictors of perceived social support; with self-esteem being the best single predictor. Relatedly, gender and number of children were found to be significant predictors of the give and take of relationships with family. It is noted that these mid-life participants have yet to experience significant morbidity or mortality and thus this was not a focus of investigation; later research is planned to address morbidity and mortality in this sample. Additionally, noting the selectivity of this sample, other research incorporating adults of diverse ethnic and socioeconomic backgrounds is needed to more clearly delineate relationships between personal and socio-contextual factors and perceived social support and equality of interpersonal relationships at mid-life.

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REFERENCES


Direct reprint requests to:

Dean D. Von Dras, Ph.D.
Psychology Department
Washington University
Campus Box 1125
St. Louis, MO 63130