



Published in final edited form as:

*Psychol Aging*. 2012 September ; 27(3): 728–741. doi:10.1037/a0026967.

## Enacted Support during Stressful Life Events in Middle and Older Adulthood: An Examination of the Interpersonal Context

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### Abstract

Individuals often turn to their close social ties for support during stressful life events. Although a great deal of work examines perceived support (i.e., support believed to be available should an event occur), less is known about enacted support (i.e., support actually provided during stressful events), especially among middle aged and older people. The present study investigated whether enacted support (emotional or instrumental) varies by relationship quality and stress appraisals. Participants included 152 adults (principal respondents; aged 50 to 69, 63% women) who had experienced three or more stressful life events in the last year and 180 of their identified supportive ties (core network members). Multilevel models revealed that higher quality relationships enact high levels of support irrespective of high or low stress appraisals. In contrast, lower quality relationships enact greater support under conditions of higher stress, but less support under conditions of lower stress, suggesting that lower quality relationships are mobilized only under higher levels of stress. Findings are consistent with the support provision process model and highlight the importance of considering both relationship context and the stress continuum in studies of enacted support among older adults.

### Keywords

support; middle age; older adults; stress; life events; dyads

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Middle-aged and older individuals often experience multiple stressful events and transitions including children leaving home, the development of illnesses, caregiving for parents, parental death, and retirement (Antonucci, Akiyama, & Merline, 2001; Chiriboga, 1997; Lowenthal, Thurner, & Chiriboga, 1975). Stressful life events, defined as acute challenges that require large behavioral adjustments within a limited time period (Thoits, 1995), often have detrimental effects on health and well-being (Cohen & Williamson, 1991; Thoits, 1983). Close social relationships provide a particularly important source of support for individuals coping with stressful life events (Antonucci, Birditt, & Akiyama, 2009), though less is known about support during middle and older age or from a contextual perspective. It is particularly important to examine the factors that predict support in middle and older age because the types of stress as well as individuals social relationships often change as people age (Antonucci, 2001).

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Social support is often distinguished as perceived or enacted. Perceived support is defined as support believed to be available should a stressor occur (e.g., my spouse would help me if I was sick). Support actually mobilized during stressful events is referred to as enacted support (e.g., my spouse helped me when I was sick; Antonucci, 2001; Barrera, 1986). Social support includes emotional and instrumental types of aid. Emotional support includes intangible behaviors such as listening and providing comfort. Instrumental support involves providing tangible assistance such as transportation and practical advice. Although there has been considerable research on the associations between enacted support and health/well-being (e.g., Bolger, Foster, Vinokur, & Ng, 1996; Bolger, Kessler, & Zuckerman, 2000; Franks et al., 2006; Krause, 2007; Liang, Krause, & Bennett, 2001), much less is known about the relational (e.g., relationship satisfaction) and contextual factors (e.g., stress level) that predict enacted support during life events. Indeed, relationship quality is often included as a covariate in analyses examining enacted support-health links (Franks et al., 2006; Stephens, Rook, Franks, Khan, & Iida, 2010).

The present study examined enacted support among middle-aged and older adults experiencing stressful life events, and up to two network members who helped them cope with the most stressful event. In this study, the stressed respondents reported how much support they received (principal respondents, PRs) and the core network members (CNMs) reported how much support they provided. We define support received and provided as enacted support. We specifically examined whether enacted support varied by the quality of the relationship and the stressfulness of the event.

## Theoretical Framework

The support provision process model provides a useful framework for understanding the complex associations among relationship quality, stress appraisals, and enacted support. According to the model, enacted support varies by stressor factors, relationship factors, as well as recipient and provider characteristics. These factors have interactive as well as additive effects (Dunkel-Schetter & Skokan, 1990).

In the present study, the stressor factor referred to the individuals' appraisals of the stressfulness of life events. There are two competing hypotheses in the literature regarding the association between stress appraisals and enacted support: (1) support mobilization suggests that stress increases enacted support (Dunkel-Schetter, Folkman, & Lazarus, 1987; Hobfoll, 1989), and (2) support deterioration suggests that enacted support decreases especially when stress is chronic (Norris & Kaniasty, 1996). Stress appraisals and relationship quality, however, may interact to produce different outcomes. Indeed, under acute stress, enacted support may be motivated by recipient need more than other factors such as relationship quality or personal/situational characteristics (Iida, Seidman, ShROUT, Fujita, & Bolger, 2008).

Relationship factors that may influence enacted support include the overall quality and closeness of the relationship. The convoy model and other prominent relationship theories suggest that the quality of relationships includes both positive and negative dimensions (Antonucci, 2001; Antonucci et al., 2009; Rook, 1984; Rook, Sorkin, & Zettel, 2004). Positive aspects of the relationship include positive regard (i.e., love and enjoyment of one another), perceived support (i.e., availability), and closeness. Negative quality refers to whether the relationship is demanding or irritating.

This study considered whether there are main effects of stress appraisals and relationship quality and whether the association between relationship quality and enacted support is moderated by stress appraisals. Under high levels of stress, the quality of the relationship may matter less as a predictor of enacted support. Under low levels of stress, however, the

quality of relationships may be a better predictor of enacted support, with more positive and less negative relationships enacting greater support.

## Stress Appraisals, Relationship Quality, and Enacted Support

Findings regarding links between stress and enacted support are contradictory. For example, consistent with the stress mobilization hypothesis, greater distress was associated with greater enacted support among young and older romantic and married couples in the contexts of daily stress as well as chronic illness (Iida et al., 2008; Iida, Stephens, Rook, Franks, & Salem, 2010). In contrast, others have found that enacted support decreases when stress is chronic, which is in line with the support deterioration hypothesis. For example, after natural disasters, enacted support tends to deteriorate over time among young and older adults (Kaniasty & Norris, 1993; 1995; Norris & Kaniasty, 1996). Likewise, research shows that greater illness-related distress predicts decreases in enacted support over time among young and older individuals with chronic illness (Bolger et al., 1996; Moyer & Salovey, 1999). Thus, it is unclear whether social ties are motivated by the stress level of individuals or whether they are deterred by higher stress levels.

Enacted support may not only depend on an individual's stress level, but also on the quality of their relationships. Several studies of spousal and romantic relationships among individuals ranging from young to older adulthood have found links between positive relationship quality and enacted support. For example, greater marital satisfaction is associated with greater enacted support among healthy couples (Abbey, Andrews, & Halman, 1995; Acitelli & Antonucci, 1994) and among couples experiencing a health threat or other stressor (Bodenmann, Pihet, & Kayser, 2006; Gale et al., 2001; Martire et al., 2006; Vinokur, Price, & Caplan, 1996). Daily diary studies have revealed that couples with more positive relationships (higher marital satisfaction, enjoyment) report more enacted support on a daily basis (Gleason, Iida, Shrout, & Bolger, 2008; Iida et al., 2008; Iida et al., 2010).

Findings are not as consistent regarding perceived support, another dimension of positive relationship quality. Researchers often find low associations between ratings of perceived support (i.e., beliefs regarding how much support social partners will provide) and enacted support during stressful experiences across individuals from different age groups (Cutrona & Russell, 1990; Lakey et al., 2002; Wethington & Kessler, 1986). In contrast, a meta-analysis of the perceived support literature using predominately student samples revealed an average correlation of 0.35 (accounting for 12% of the variance) between perceived and enacted support (Haber, Cohen, Lucas, & Baltes, 2007). The present study considered whether there are associations among several dimensions of positive relationship quality (positive regard, perceived support, and closeness) and enacted support among middle aged and older adults.

Although relationships also include negative dimensions, the few studies examining links between negative relationship quality and enacted support among middle aged and older couples found contradictory results. Hagedoorn et al. (2000) found greater enacted negative support strategies (e.g., overprotection) predicted lower marital satisfaction among spouses coping with breast cancer. Similarly, Bodenmann et al. (2006) found that greater enacted negative support strategies were associated with lower marital quality among spouses coping with stress. In contrast, Iida et al. (2010) found no link between relationship tension and enacted emotional support among spouses coping with diabetes. It is particularly important to examine negative aspects of relationships as they are more highly associated with well-being than the positive aspects especially among older adults (Newsom, Nishishiba, Morgan, & Rook, 2003; Rook et al., 2004). Research also shows that support enacted in negative ties may be less effective; support received from an ambivalent (high negative, high positive) friend predicted greater cardiovascular reactivity to stress compared to

support from a positive-only friend among college students (Holt-Lunstad, Uchino, Smith, & Hicks, 2007; Uno, Uchino, & Smith, 2002). The present study investigated whether negative relationship quality predicts enacted support among middle aged and older adults.

Interestingly, research examining enacted support among romantic couples suggests that the association between relationship quality and enacted support may be moderated by the severity of the stressor. In the aforementioned study, Hagedoorn et al. (2000) found that the links between enacted support and relationship satisfaction among middle aged spouses coping with cancer were much stronger under higher rather than lower levels of stress. In contrast, greater positive relationship quality (reciprocity, satisfaction) predicted greater enacted support in the context of daily stress, but not in the context of more severe stress (preparing for the bar exam) among cohabitating young adult couples (Iida et al., 2008). Thus, under acute stress, support may be motivated by recipient need more than relationship factors. It is unclear from the literature, however, whether the moderating effect of stress on the relationship quality-enacted support link exists in other circumstances (e.g., among non-romantic social partners) or among middle aged and older adults. Therefore, we considered whether links between relationship quality and enacted support are moderated by stress appraisals across different relationships among people in middle and older adulthood.

### Other Factors that May Influence Enacted Support

The present study controls for several personal and situational factors that may influence enacted support (Antonucci, 2001). Personal characteristics of the principal respondents included gender, age, race, educational attainment, and self-rated health, all of which are associated with support exchanges and may influence enacted support (Antonucci & Akiyama, 1987; Birditt & Antonucci, 2007; Keyes, 2002; Neighbors, 1997).

Enacted support also varies depending on situational factors including event type, relationship type, and dyad membership (i.e., reporter). Interpersonal events are rated as more stressful than noninterpersonal events (Bolger, DeLongis, Kessler, & Schilling, 1989) and may elicit more support. People tend to rely on friends for emotional support, but family and spouse for both emotional and instrumental support (Adams & Blieszner, 1995; Sherman, de Vries, & Lansford, 2000). Individuals may disagree about the amount of support enacted, but the literature is inconsistent regarding the level of agreement or disagreement within dyads (Antonucci & Israel, 1986; Cohen, Lakey, Tiell, & Neeley, 2005; Coriell & Cohen, 1995). An examination of enacted support should consider these factors. We therefore included gender, age, race, educational attainment, self-rated health, event type, relationship type, and dyad membership (i.e., reporter is principal respondent [PR] or core network member [CNM]) as covariates.

The majority of studies regarding enacted support have considered only romantic and spousal relationships and associations between positive relationship quality and enacted support in the context of chronic illness. Thus, it is unclear whether the studies to date generalize to more diverse relationships and life stresses experienced among middle aged and older adults. The present study moves the field forward by examining whether enacted support varies by positive (positive regard, perceived support, and closeness) and negative (demands, getting on nerves) aspects of relationships among a variety of social partners among individuals ages 50 to 69. It also contributes to the literature by examining whether those links are moderated by stress appraisals. The purpose of the present study was twofold: (1) to assess associations among stress appraisals, relationship quality, and enacted support, and (2) to examine whether the link between relationship quality and enacted support is moderated by stress appraisals. We hypothesized that under high levels of stress, social partners will enact support irrespective of relationship quality. In contrast, when stress

is lower, social partners with higher quality relationships will enact more support than social partners with lower quality relationships.

## Method

### Participants

Participants included midlife individuals who had experienced recent stressful life events (principal respondents, PRs) and their identified supportive ties (core network members, CNMs). PRs were sampled from the larger Social Relations and Health over the Life Course study, which included a regionally representative sample of 1,703 respondents aged 8 to 98 from the Detroit metropolitan area in 1992 (Wave 1) of which 1,074 participated again in 2005 (Wave 2; see Akiyama, Antonucci, Takahashi & Langfahl, 2003; Birditt, Jackey, & Antonucci, 2009). PRs from Wave 2 who ranged in age from 50 to 69 ( $n = 318$ ) and who reported experiencing three or more life events in the past year ( $n = 182$ ; 57%) were selected to participate in the present study. Of the 182 PRs who had experienced three or more life events, a total of 152 (84%) individuals participated. See Table 1 for a description of the sample.

We asked PRs to name the two people who provided the greatest help with the most stressful life event they had experienced in the past year (i.e., core network members, CNMs). Of the total number of PRs, 136 (89%) reported on two CNMs whereas the remaining 16 reported on one CNM. Of the 288 CNMs who were nominated, 180 participated (63%).

A total of 118 PRs had at least one CNM who participated (78%). We included all PRs irrespective of the number of CNMs who participated. The data included a total of 62 triads (PR and 2 CNMs) and 56 dyads (PR and 1 CNM). In particular, of the participants who reported on two CNMs ( $n = 136$ ), 62 (46%) had both CNMs participate, 42 (31%) had one CNM participate, and 32 (24%) had no CNMs participate. Of the 16 participants who reported on one CNM, 14 (88%) had their CNM participate.

Logistic regression analyses with participation as the outcome (0 = did not participate, 1 = participated) revealed that the PRs who were interviewed were no different from eligible others who did not participate on key demographic variables (gender, race, educational attainment, and self-rated health). Further, PRs with CNMs who participated were no different than PRs without CNMs who participated on those same variables. PR reports of relationship quality and support also did not predict whether core network member participated.

### Procedure

PRs were re-interviewed by phone for approximately 15 minutes. These respondents were asked to identify the most stressful event of the three events reported in the Wave 2 data collection followed by questions regarding the two individuals who provided the most help with the event (i.e., CNMs). At the end of the interview, they were asked to provide the names and phone numbers of those two individuals. We interviewed those CNMs who agreed to participate by phone for about an hour. PRs reported on support received from each CNM, and each CNM reported on the support they provided to the PR.

### Measures

**Enacted support**—Enacted support was assessed with a series of items regarding the emotional and instrumental support PRs received and CNMs provided. Enacted emotional support included two items: “How much did (CNM) listen to you?” and “How much did

(CNM) comfort you?” Enacted instrumental support included three items: “How much did (CNM) give you advice?” “How much did (CNM) help you take action?” and “How much did (CNM) help you with practical or hands on things?” All of the items were also asked of the CNMs, but reworded to reflect support provided. For example, CNMs were asked “How much did you listen to (PR)?” Respondents rated each item from 1 (*not at all*) to 5 (*a great deal*). We created an index of each type of support by calculating the means of the items for enacted emotional and instrumental support for each PR and CNM report. The indexes of enacted emotional and instrumental support were internally consistent (emotional support: PR re: CNM1  $\alpha = .62$ , PR re: CNM2  $\alpha = .69$ , CNM1 re: PR  $\alpha = .85$ , and CNM2 re: PR  $\alpha = .76$ ; instrumental support: PR re: CNM1  $\alpha = .67$ , PR re: CNM2  $\alpha = .80$ , CNM1 re: PR  $\alpha = .70$ , and CNM2 re: PR  $\alpha = .75$ ).

**Positive relationship quality**—PRs and CNMs reported on the positive qualities of their relationships with one another including positive regard, perceived support, and closeness. PR reports were collected in the Wave 2 interview and CNM reports of relationship quality were collected in the core network interviews. Positive regard included 5 items: “When my (PR/CNM) is having a hard time, I want to help (him/her),” “It makes me happy to know my (PR/CNM) is happy,” “I enjoy being with my (PR/CNM),” “I think that my relationship with my (PR/CNM) is a good one,” and “I feel that my (PR/CNM) believes in me.” Participants rated each item from 1 (*agree*) to 5 (*disagree*). We reversed the scores so that higher scores represented more positive regard. We calculated the mean of the items for each of the PR and CNM reports (PR re: CNM1  $\alpha = .43$ , PR re: CNM2  $\alpha = .55$ , CNM1 re: PR  $\alpha = .80$ , and CNM2 re: PR  $\alpha = .91$ ). There was much less variance in PR reports compared to those of the CNMs, which may explain the lower levels of internal consistency in the PR reports. Perceived support available from social partners included 6 items: “I feel my (PR/CNM) supports me, that (he/she) is there when I need (him/her),” “I can share my very private feelings and concerns with (PR/CNM),” “I feel my (PR/CNM) encourages me in whatever I do,” “I feel my (PR/CNM) would take care of me when I’m sick,” “My (PR/CNM) always understands me,” and “My (PR/CNM) always appreciates the things I do for (him/her).” Participants rated each item from 1 (*agree*) to 5 (*disagree*). We reversed the items so that higher scores reflected greater perceived support and then, created an average perceived support index for each of the PR and CNM reports (PR re: CNM1  $\alpha = .64$ , PR re: CNM2  $\alpha = .66$ , CNM1 re: PR  $\alpha = .78$ , and CNM2 re: PR  $\alpha = .83$ ).

To assess the closeness of the relationship, we used the hierarchical mapping technique which asks participants to place the people who are close and important to them in three concentric circles (Kahn & Antonucci, 1980). Both PRs and CNMs completed these diagrams. The first circle represents individuals with whom they feel closest; the middle and outer circles represent relationships that are still close, but less so to varying degrees. We used these network data to create the closeness variable in which we identified how close the PR felt to the CNM and how close the CNM felt to the PR. We refer to this as the circle number: 1 (*inner, closest*), 2 (*middle, closer*), and 3 (*outer, close*). Thus, higher scores represent less closeness.

**Negative relationship quality**—PRs reported negative relationship quality with CNMs and CNMs reported negative quality with PRs. The negative quality scale consisted of two items (Akiyama et al., 2003), which included: “My (PR/CNM) gets on my nerves” and “My (PR/CNM) makes too many demands on me.” Participants rated each item from 1 (*agree*) to 5 (*disagree*). We reversed the scores so that higher scores represented more negative relationships. We calculated the mean of the items for each of the PR and CNM reports. Consistent with previous research using a similar scale (Umberson, 1992), the internal consistency was moderate to low, which may be a result of the small number of items (PR

re: CNM1  $\alpha = .43$ , PR re: CNM2  $\alpha = .60$ , CNM1 re: PR  $\alpha = .62$ , and CNM2 re: PR  $\alpha = .63$ ).

**Stress appraisal**—PRs reported how stressful the most stressful life event they experienced in the past year was from 1 (*not at all*) to 5 (*extremely*).

**Covariates**—We included characteristics of the PR (gender, age, race, educational attainment, and self-rated health) and situational characteristics (type of life event, relationship type, and dyad membership) as covariates. We coded gender as 0 (*men*) or 1 (*women*), and age as a continuous variable. Educational attainment was defined as the number of years of education. Race was coded as 0 (*non-White*) or 1 (*White*). Participants rated their physical health from 1 (*excellent*) to 5 (*poor*), which we reverse coded so that higher scores represented better health.

PRs completed an 18-item stressful life events scale taken from the widely used Holmes and Rahe (1967) measure, which includes items regarding the respondent's experiences over the past year. These were categorized as interpersonal (e.g., death of a close social partner, severe conflicts, divorce) or noninterpersonal (e.g., financial, health, or work problems; Ajrouch, Wong, & Antonucci, 2007). A total of 55% of the events were interpersonal (coded as 1) and the rest were noninterpersonal (coded as 0).

We categorized relationship type as spouse/romantic partner, other family, and friend or other non-family. These relationship types are often used in the literature, and there are reliable differences between them in terms of support and well-being (Birditt, Fingerman, & Almeida, 2005; Fingerman, Hay, & Birditt, 2004). The CNMs were spouse/romantic partner (39%) followed by other family (38%), and friend/other nonfamily (23%). The dyad membership variable included whether the person reporting was a PR (0) or CNM (1).

### Analysis Strategy

Because the PR reports of relationship quality were based on Wave 2 data collection, there were missing data on relationship quality for some of the CNMs. The dataset included 468 separate records of participant data (288 PR reports and 180 CNM reports). Of the 468 records, 73% had data on positive quality relationships (positive regard, perceived support), 75% had relationship closeness information, and 83% had negative relationship quality data. Due to missing data, the number of cases varies depending on the variables in the analysis. Our analysis strategies discussed below are optimal for unbalanced or missing data.

First, we calculated descriptive statistics to describe the variables. We computed the means and standard deviations of stress appraisals, relationship quality, and enacted support. We then estimated correlations among all of the variables separately for PRs and CNMs. We next calculated difference scores between the PRs and CNMs to describe how much they agreed regarding the quality of their relationships and the support enacted. We then examined the percentage of dyads that had perfect agreement (PR = CNM) or disagreement (PR < CNM; PR > CNM) for each PR-CNM dyad.

Due to the multiple reporter design of this study, we then used multilevel models (SAS PROC MIXED) to examine whether support varied by relationship quality and stress appraisals. Multilevel models are ideal when the data are nested (i.e., the PR reported on up to two CNMs who could then report on the PR) and unbalanced (i.e., unequal responses across participants). Thus, there were up to four records of data for each PR (up to two PR reports on CNMs and two CNM reports on the PR).

We tested a series of models with varying levels of covariance to determine the best-fitting models. The final models included three levels of covariance for emotional support and two levels for instrumental support. Emotional support varied at three levels: between networks (i.e., PR and two CNMs versus a different PR and two CNMs), between dyads in networks (i.e., between one PR and his or her two CNMs), and within dyads/residual (i.e., between a PR and CNM). Instrumental support varied at two levels: between networks, and within networks/residual.

We examined the predictors of enacted emotional and instrumental support with several models, which included: (1) the main effects of stress appraisals and relationship quality, and (2) the main effects plus the interactions between stress appraisals and relationship quality. All models included gender, age, race, educational attainment, self-rated health, event type, relationship type, and dyad membership as covariates. The relationship quality variables were cluster mean centered (i.e., the mean of the network) and stress was grand mean centered (i.e., mean stress of all PRs). To examine significant interactions, we divided stress into two groups representing high and low scores using a median split (high = 5, low = 1 through 4). We did this rather than split the stress variable using +1 and -1 SD because the distribution was negatively skewed and the +1 SD was beyond the maximum stress score allowable. We then estimated separate multilevel models examining enacted support as a function of relationship quality for low and high levels of stress. In addition, we graphed predicted values of enacted support derived from the interaction models. Relationship quality was placed on the X axis as a continuous variable.

We calculated pseudo  $R^2$ s in order to estimate the proportion of variance accounted for by the predictors in each multilevel model. We used a method proposed by Singer and Willett (2003) which examines associations between the estimated predicted values and the actual values of the outcome variables. There is disagreement in the literature regarding the best methods for estimating  $R^2$  in multilevel models and these statistics should be interpreted with caution.

Because associations among stress appraisals, relationship quality, and enacted support may vary depending on whether the reports were from the PR or CNM and the type of relationship (e.g., spouse, family), we conducted all of the multilevel model analyses again and included two-way interactions between stress and dyad membership (or relationship type), two-way interactions between relationship quality and dyad membership (or relationship type), and a three-way interaction between relationship quality, stress, and dyad membership (or relationship type).

## Results

The results are presented in two sections. First, we provide descriptive results of study variables. We then examine whether relationship quality and stress appraisals predict enacted support.

### Descriptives

PRs reported high levels of stress with an average between 'quite a bit' and 'extremely' stressed (Table 1). The PRs and CNMs reported that their relationships with one another were high in positive regard, perceived support, and closeness, and low in negative relationship quality. PRs and CNMs reported more enacted emotional support with an average between 'quite a bit' and 'a great deal' compared to enacted instrumental support with an average between 'some' and 'quite a bit.'



Interestingly, there were minimal to moderate associations among stress appraisals, relationship quality, and enacted support with one exception (positive regard and perceived support were correlated at .70 for CNM reports; Table 2). Thus, we did not expect to have multicollinearity problems ( $p > .80$ ) and all measures represented distinct constructs.

The level and direction of agreement varied depending on the construct being rated and the dyad (Table 3). PRs and CNMs tended to agree about the level of positive regard and closeness of the relationship. There was less agreement about negative quality, perceived support, and enacted support. PRs tended to rate the relationship as less negative than CNMs and they reported receiving less instrumental support than CNMs reported providing.

### Stress Appraisals, Relationship Quality, and Enacted Support: Main Effects and Interactions

Multilevel models revealed main effects of stress appraisals and relationship quality on enacted emotional and instrumental support. Greater stress appraisals tended to predict greater enacted emotional and instrumental support. Thus, consistent with the support mobilization hypothesis, participants who reported greater stress tended to enact more support. There were few main effects of relationship quality. Greater positive regard and greater perceived support predicted greater enacted emotional support, but there were no other associations ( $B = .51, SE = .17, p < .01$ ;  $B = .33, SE = .11, p < .01$ ). In the interest of space and in light of the interactions presented below, the results of the main effect models are not presented in the Tables.

Consistent with our hypothesis, multilevel models revealed several interactions between stress appraisals and relationship quality indicating that the association between relationship quality and enacted support is moderated by stress level (Table 4; Table 5). First, there were significant interactions between stress and positive regard when predicting enacted emotional and instrumental support (Model 1 in Tables 4 and 5). There was a significant positive association between positive regard and enacted emotional support under lower levels of stress ( $B = .85, SE = .23, p < .01$ ) but not higher levels ( $B = .14, SE = .24, p = .56$ ; Figure 1). Similarly, there was a higher positive association between positive regard and enacted instrumental support among people with lower levels of stress ( $B = .38, SE = .26, p = .15$ ), but not higher levels of stress ( $B = -.05, SE = .31, p = .88$ ; Figure 2). Both of these interactions indicate that higher quality relationships enacted high levels of support irrespective of stress levels whereas lower quality relationships enacted higher levels of support only when stress levels were higher.

There were also significant interactions between stress appraisals and perceived support when predicting enacted emotional and instrumental support (Model 2 in Tables 4 and 5). There was a positive association between perceived support and enacted emotional support under lower levels of stress ( $B = .62, SE = .15, p < .01$ ), but not higher levels ( $B = .07, SE = .15, p = .62$ ; Figure 3). Likewise, there was a positive association between perceived support and enacted instrumental support among lower ( $B = .55, SE = .18, p < .01$ ), but not higher levels of stress ( $B = -.07, SE = .19, p = .71$ ; Figure 4). Similar to the positive regard-stress interactions, it appears that higher quality relationships enacted high levels of support irrespective of stress level whereas lower quality relationships only enacted higher levels of support when stress levels were higher.

Turning next to relationship closeness, there was a significant interaction between stress appraisals and relationship closeness (circle number) when predicting enacted instrumental support but not enacted emotional support (Table 5; Figure 5). Lower levels of closeness (i.e. higher circle numbers) were associated with less enacted instrumental support under lower levels of stress ( $B = -.59, SE = .20, p < .01$ ) but not under higher levels of stress ( $B$

= .01,  $SE = .17$ ,  $p = .93$ ). Consistent with previous findings, closer social partners enacted high levels of instrumental support irrespective of stress level whereas less close relationships only enacted higher levels of support when stress levels were higher.

Finally, there was an interaction that approached significance between stress appraisals and negative relationship quality when predicting enacted emotional support (Table 4; Figure 6). We found a larger negative association between enacted emotional support and negative relationships under conditions of lower stress ( $B = -.07$ ,  $SE = .06$ ,  $t = -1.11$ ,  $p = .28$ ) than higher stress ( $B = -.01$ ,  $SE = .07$ ,  $t = -.11$ ,  $p = .91$ ). This finding suggests that relationships lower in negative quality enacted high levels of support irrespective of stress level whereas more negative relationships only enacted higher levels of support when stress levels were higher.

Finally, there were associations among covariates and enacted support that were fairly consistent across the models. Specifically, greater enacted emotional support occurred when principal respondents were women. There was also an interesting age difference in enacted emotional support. Greater enacted emotional support occurred when principal respondents were younger. Finally, greater enacted instrumental support occurred when principal respondent had poorer self rated health.

### Post Hoc Analyses

There were no significant three-way interactions among the reporter (PR vs. CNM), relationship quality, and stress appraisals when predicting enacted emotional or instrumental support. There were also no significant three-way interactions among the type of relationship, stress appraisals, and relationship quality when predicting enacted support. Thus, the moderating effect of stress on the relationship quality-enacted support link does not appear to vary by reporter or relationship type.

Because individuals who had more social network members may have had better quality and more supportive relationships from which to choose when experiencing life events, we also examined whether the findings varied when including the total number of network members as a covariate. Analyses revealed all of the same interactions between stress and relationship quality when predicting enacted support.

### Discussion

This study examined whether enacted support varied by relationship quality and stress appraisals and whether the link between relationship quality and support is moderated by stress level. Unlike previous literature which examined these associations among romantic couples and spouses, the present study assessed these issues among a middle-aged and older adult sample experiencing a variety of life events and across different types of relationships. Consistent with the support provision process model, this study shows that enacted support varies by stressor and relationship factors (Dunkel-Schetter & Skokan, 1990; Iida et al., 2008). The link between relationship quality and enacted support is moderated by the stress context. Critically, this study revealed that high quality relationships tended to enact consistently high levels of support irrespective of stress appraisals whereas low quality relationships enacted higher levels of support when PRs were more highly stressed.

Enacted emotional support varied by a unique combination of stress appraisals and relationship quality. Individuals with higher quality relationships (greater positive and lower negative relationship quality) enacted high levels of emotional support regardless of stress level. In contrast, individuals with lower quality relationships only enacted greater emotional support when their stress levels were higher. Thus, it appears that individuals can rely on

their lower quality ties for their support needs when they are under extreme stress, but not under all circumstances (i.e. under conditions of lower stress). Indeed, social partners may feel obligated to provide support to those experiencing extreme stress regardless of the quality of their relationships. This is consistent with Iida and colleagues' (2008) findings that relationship satisfaction predicted greater enacted support under daily stress, but that the quality of relationship did not predict enacted support when individuals were preparing for the bar exam (i.e., high stress). They concluded that under high levels of stress, respondent need determines enacted support rather than other characteristics of the individuals or relationships. Iida and colleagues examined these associations among a select group of young couples. The current study identified the same findings among a more diverse sample of individuals who were older, reported on a variety of social partners, and experienced a wide array of stressful experiences. Consequently, it appears that high quality relationships are more consistent in the level of enacted support whereas low quality relationships only enact support under conditions of high stress. This finding may provide important insights into when and why there are differences in enacted support.

Instrumental support also varied by relationship quality and stress appraisals. Individuals with higher quality relationships enacted high levels of instrumental support irrespective of stress level whereas individuals with lower quality ties only enacted higher levels of support under higher levels of stress. Interestingly, closeness interacted with stress when predicting instrumental support, but not emotional support. Instrumental support is often more demanding and usually requires greater proximity, which may account for these findings. For example, a spouse may be available to provide instrumental support regardless of stress level whereas less close network members may be called upon to provide support when the situation is more dire.

There are several potential reasons why relationship quality does not predict enacted support under conditions of higher stress, but does under conditions of lower stress. First, individuals in negative or low positive quality relationships may avoid interacting with one another and only feel obligated to enact support when the situation becomes extremely stressful. Moreover, people may not ask for support from ties that are unpleasant or lack in positivity unless they are under duress. In addition, lower quality relationships may enact ineffective support that causes people to report more stress. Of course, because of the cross-sectional data, the causal associations among variables are not clear. Nevertheless, we find these associations intriguing. Further research should attempt to uncover the implications of enacted support and examine these associations over time. For example, how are these variables associated over time? Is support helpful when provided by lower quality ties? What are the implications of enacted support in low quality relationships for well-being?

These findings may have important implications for understanding the association between enacted support and well-being (Martire, Stephens, Druley, & Wojno, 2002; Revenson, Schiaffino, Majerovitz, & Gibofsky, 1991). It is possible that previous findings have been inconsistent because they do not consider the quality of the relationships in which the support is enacted or the stress level experienced by the respondents. Enacted support may only have positive effects on well-being under certain circumstances (i.e., when provided in a positive relationship) and may have negative effects on well-being under other circumstances (i.e., when provided in a negative relationship).

Consistent with previous research, women and younger respondents reported greater enacted emotional support. Women both receive and provide more support than men (Antonucci, 2001; Antonucci & Akiyama, 1987). Previous studies have also found that older individuals reporting giving and receiving less support than younger individuals and we found this among individuals and their core network members (Keyes, 2002). This age related decline

may be due to the fact that older adults become more selective of their social ties as they become more invested in maintaining emotionally meaningful relationships (Carstensen et al., 1999).

The present study indicated that the moderating effects of stress on the relationship quality–support link did not vary across different contexts. These associations existed across PR and CNM reports, different relationship types (spouse, family, non family), and life events (interpersonal and noninterpersonal). These findings provide a valuable addition to the literature, which has predominately focused on spousal and romantic ties and chronic illness. Middle-aged individuals rely on a diverse array of social partners for help while experiencing a wide range of stressful life events.

### Future Research

There are several potential limitations in the present study that should be addressed in future research. Because the participants were under high levels of stress, it is uncertain whether these findings apply to persons experiencing fewer stressful life events. Indeed, additional analyses revealed that these individuals have other difficulties that may influence support exchange including greater depressive symptoms, lower life satisfaction and poorer self-rated health. Furthermore, the core network members were identified as helpful social partners by participants, thus, it is also unclear whether these findings apply across social partners that range in supportiveness. In addition, we need more information regarding support satisfaction. Although these social ties were enacting support, we do not know how satisfied individuals were with the enacted support. Finally, it would be useful for future research to examine the implications of enacted support for health and well-being. Indeed, the support enacted in certain relationship and stress contexts may be associated with lower well-being.

Furthermore, there are a number of complexities in interpreting the causal associations among enacted support, relationship quality, and stress appraisals. For example, higher levels of enacted support may lead to greater feelings of closeness and perceived support rather than the reverse (Gleason et al., 2008). Studies of natural disasters reveal that when people receive less support than they need, there are declines in perceived relationship quality (Kaniasty & Norris, 1995). Also, enacted support in stronger relationships may lead individuals to appraise events as less stressful rather than the stressfulness of the event serving as a determinant of enacted support. Future studies should examine these dynamics as they unfold over time to better understand the potential causal pathways.

Overall, the current study's findings emphasize the importance of considering the contexts of the relationship and the stressor when attempting to understand patterns of enacted support. People can rely on their lower quality ties for support when they are under extreme stress, but there may be a cost to receiving this support that is not yet understood. Future studies should consider the contexts of the relationships and the stressfulness of the events when examining enacted support.

### Acknowledgments

This research was supported by K99/R00 AG029879 (Kira S. Birditt), and R01 AG030569 and F015818 (Toni C. Antonucci).

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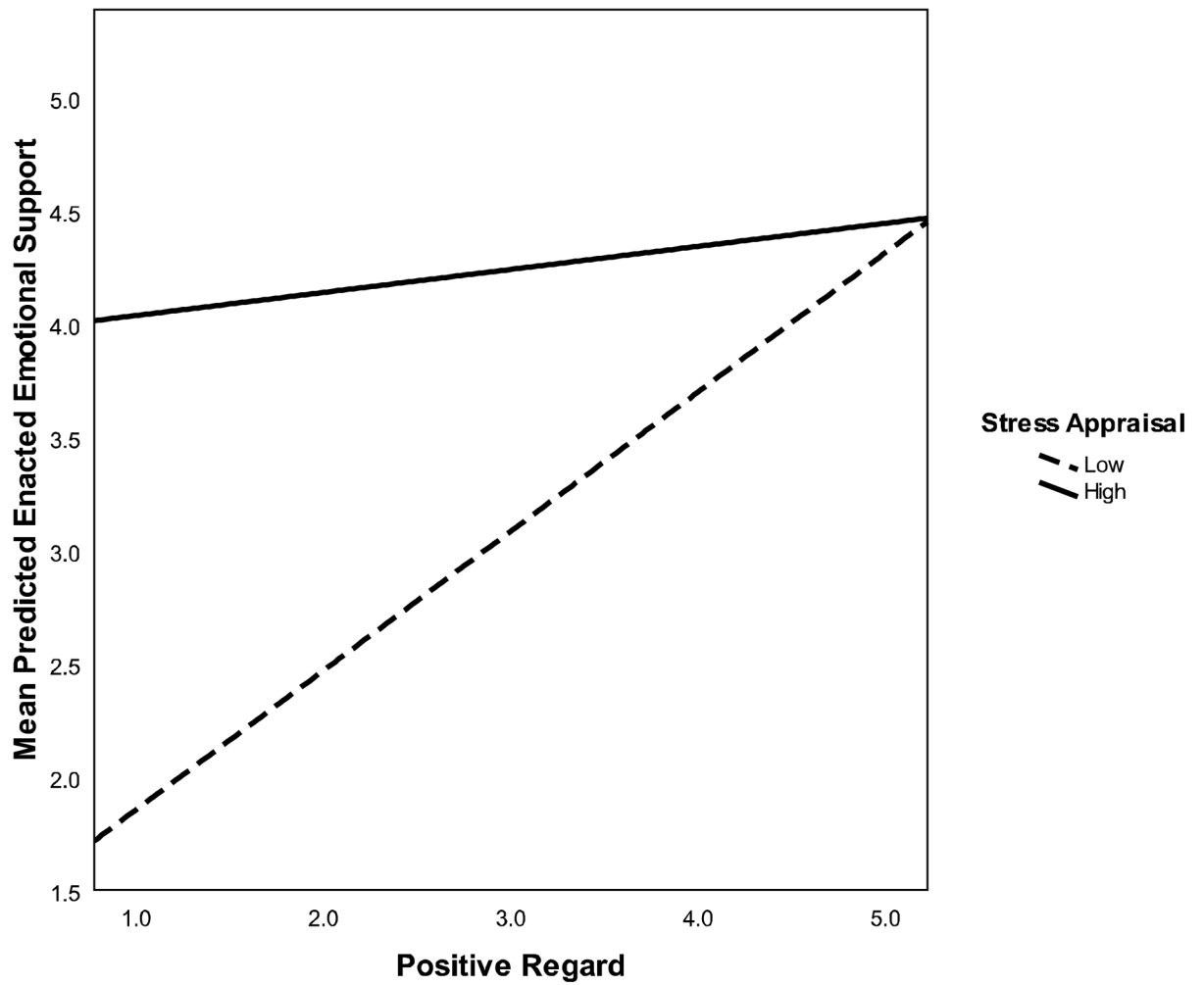
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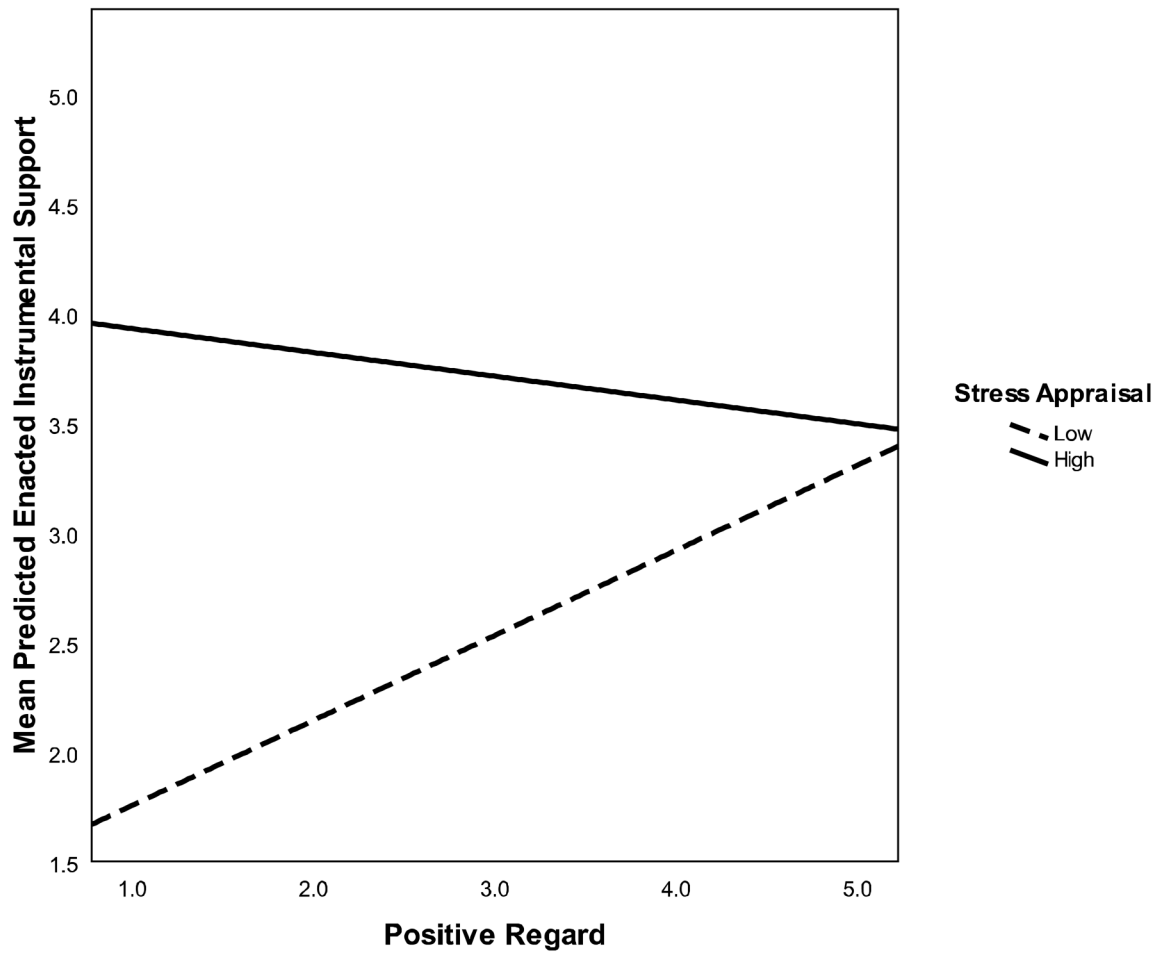
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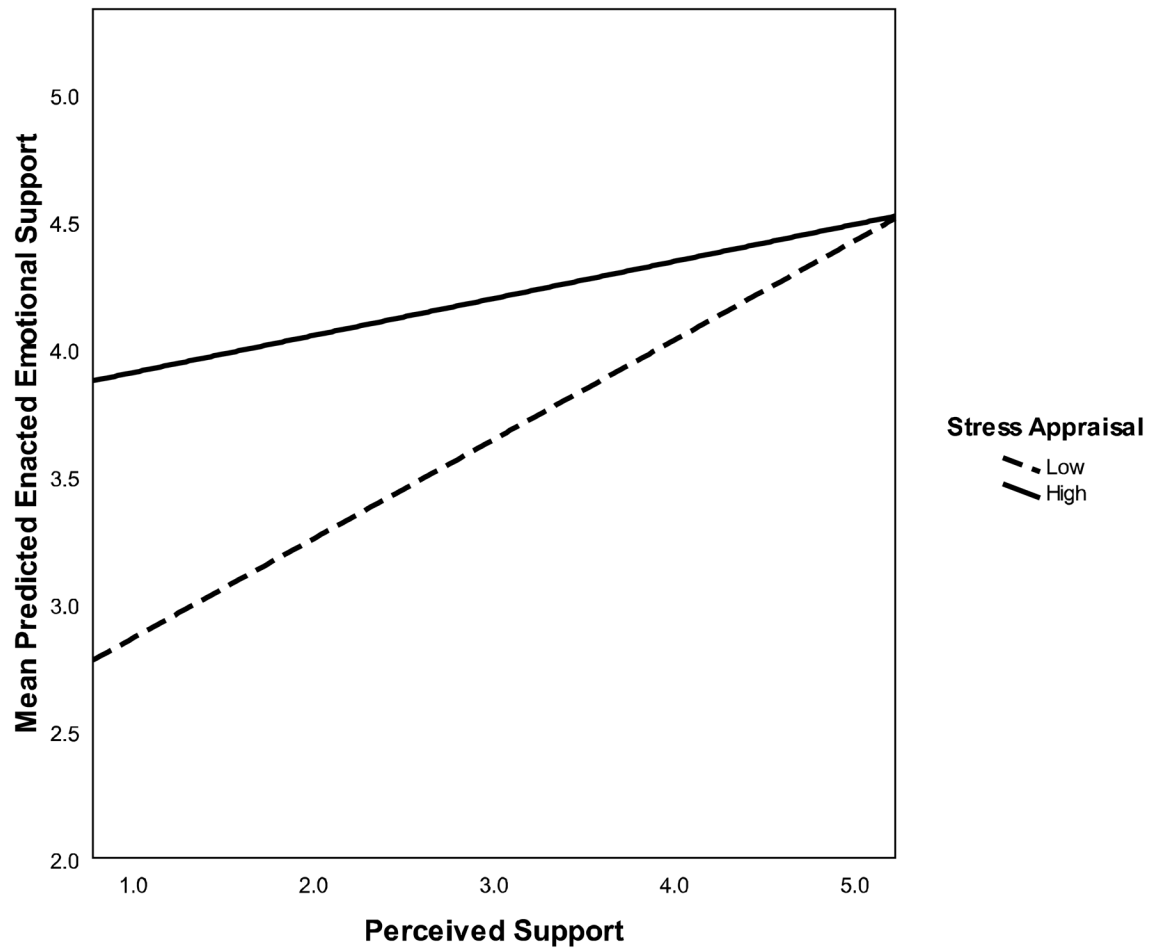


**Figure 1.** Predicted values of enacted emotional support as a function of positive regard and stress appraisals.

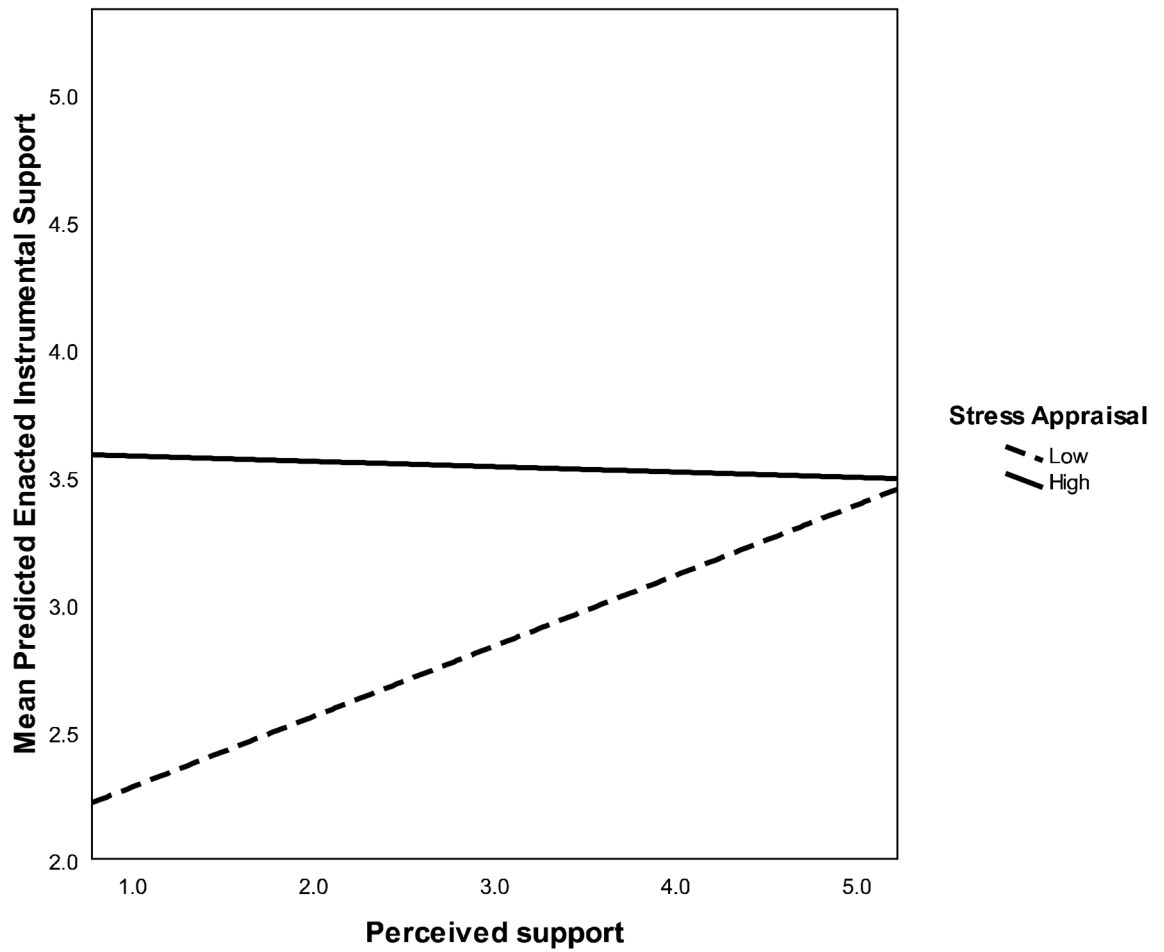




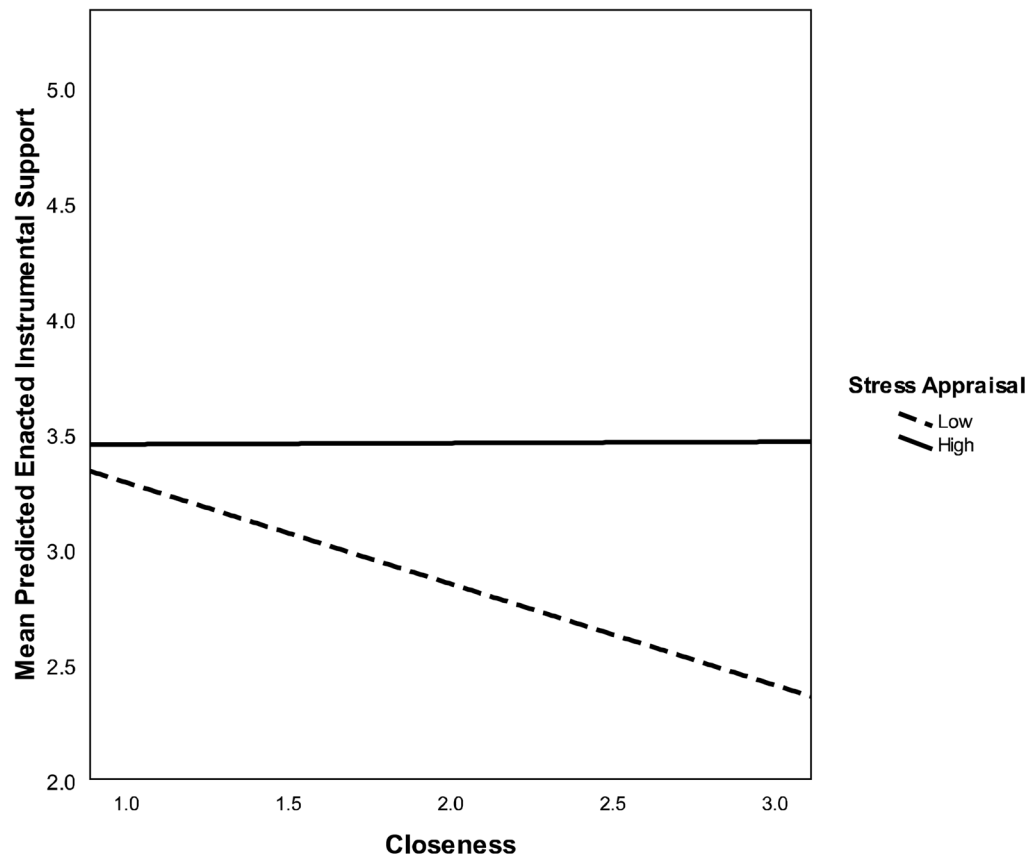
**Figure 2.** Predicted values of enacted instrumental support as a function of positive regard and stress appraisals.



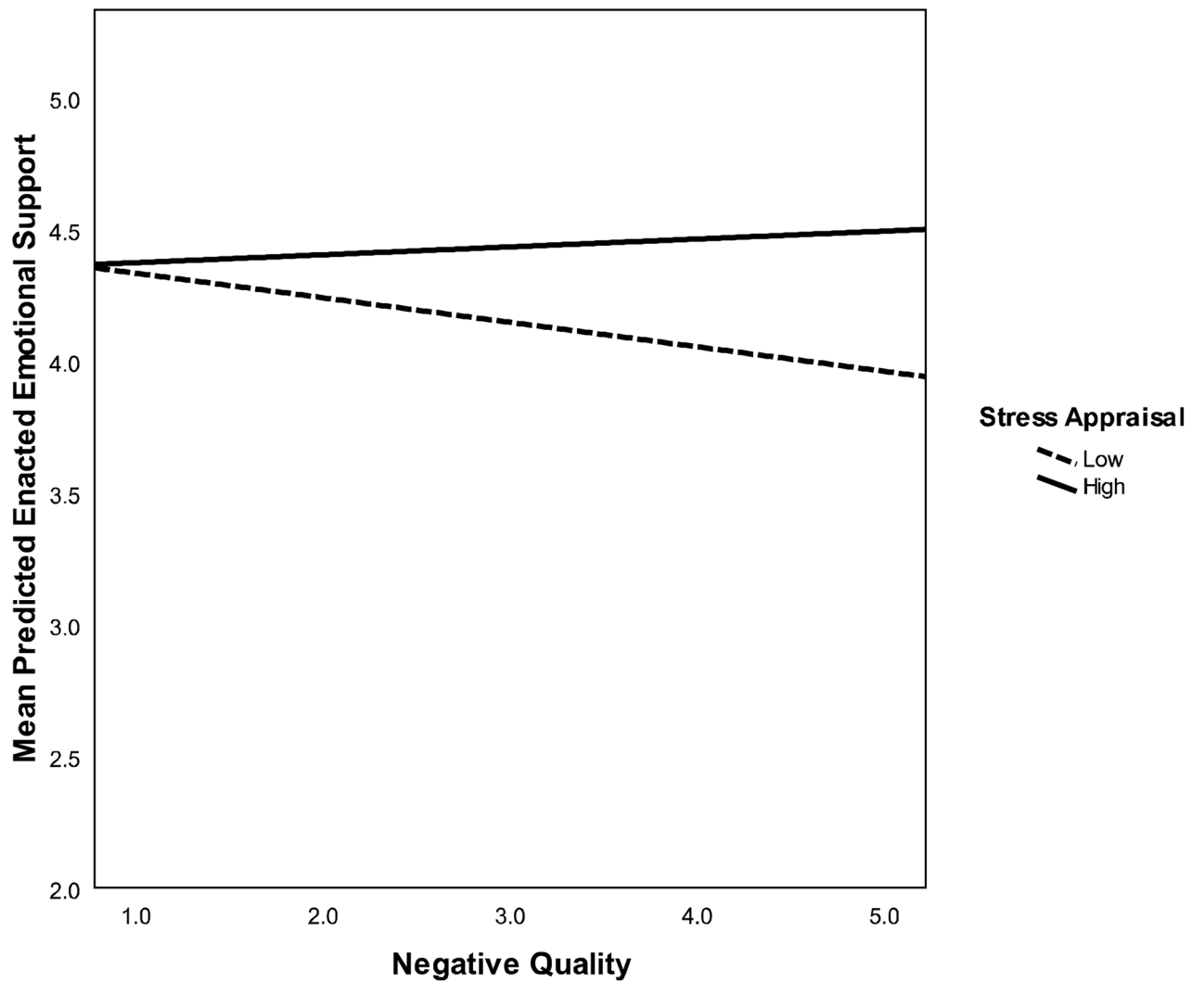
**Figure 3.** Predicted values of enacted emotional support as a function of perceived support and stress appraisals.



**Figure 4.** Predicted values of enacted instrumental support as a function of perceived support and stress appraisals.



**Figure 5.** Predicted values of enacted instrumental support as a function of closeness and stress appraisals.



**Figure 6.** Predicted values of enacted emotional support as a function of negative relationship quality and stress appraisals.

**Table 1**

## Description of Principal Respondents and Core Network Members

Variable	Principal N = 152	Core Network Members N = 180
Means and Standard Deviations		
Age	58.31 (5.42)	50.61 (14.86)
Education	13.88 (2.20)	13.41 (2.69)
Self-rated health	3.64 (1.09)	3.77 (0.91)
Stress appraisal	4.31 (0.83)	
Positive quality		
Positive regard	4.95 (0.16)	4.86 (0.41)
Perceived support	4.67 (0.40)	4.50 (0.61)
Circle #	1.25 (0.53)	1.27 (0.53)
Negative quality	2.04 (1.18)	2.20 (1.19)
Enacted support		
Emotional	4.21 (0.85)	4.38 (0.80)
Instrumental	3.18 (1.12)	3.46 (0.99)
Proportions		
Women	.63	.64
Race		
White	.72	.75
Black	.26	.23
Married	.63	.62
Life event type		
Interpersonal	.55	-
Noninterpersonal	.45	-
Relationship type		
Spouse/partner	.39	-
Other family	.38	-
Friend/other	.23	-

*Note.* Physical health was rated from 1 (*poor*) to 5 (*excellent*). Appraised stress was rated from 1 (*not at all*) to 5 (*extremely*). Positive regard, perceived support and negative quality were rated from 1 (*disagree*) to 5 (*agree*). Circle number included 1 (*inner, closest*), 2 (*middle, closer*), and 3 (*outer, close*). Enacted support was rated from 1 (*not at all*) to 5 (*a great deal*).

**Table 2**  
 Correlations among Stress Appraisals, Relationship Quality, and Enacted Support as Reported By Principal Respondents and Core Network Members

	Stress appraisals	Positive regard	Perceived support	Circle #	Negative quality	Enacted Emotional support	Enacted Instrumental support
Stress appraisals							
Positive regard	.07		-.06	.18**	.03	.14*	.15*
Perceived support	.11	.70**	.35**	-.11	-.12	.07	.03
Circle #	.10	-.24**	-.25**	.08	-.30**	.21**	-.01
Negative quality	.01	-.32**	-.25**	.20*	-.01	.03	-.01
Enacted Emotional support	.11	.31**	.29**	-.24**	-.05	-.09	-.04
Enacted Instrumental support	.12	.15*	.23*	-.20*	.06	.50**	.44**

*Note.* Principal respondents are above the diagonal and core network members are below the diagonal.

**Table 3**

Percentages of Principal and Core Network Member Dyads with Perfect Agreement or Disagreement (PR > CNM; PR < CNM) Regarding Relationship Quality and Support

	Principal-Core Network 1		Principal-Core Network 2	
	Perfect Agreement	P > CNM	Perfect Agreement	P < CNM
Positive regard (%)	72.9	17.1	72.3	12.8
Perceived support (%)	31.4	38.6	19.1	40.4
Closeness (%)	79.4	8.8	61.8	23.6
Negative quality (%)	25.9	32.1	33.9	42.9
Enacted Emotional support (%)	46.0	20.0	32.5	33.8
Enacted Instrumental support (%)	15.2	31.3	12.5	51.2



Table 4

Multilevel Models examining Enacted Emotional Support as a Function of Relationship Quality and Stress Appraisal Interactions

Predictor	Model 1 <i>B (SE)</i>	Model 2 <i>B (SE)</i>	Model 3 <i>B (SE)</i>	Model 4 <i>B (SE)</i>
Intercept	6.05 (0.58)	6.03 (0.58)	5.63 (0.61)	5.43 (0.55)
Positive regard	0.55 (0.16)**			
Perceived support		0.33(0.11)**		
Closeness			-0.15 (0.11)	
Negative quality				-0.02 (0.05)
Stress appraisals	0.11 (0.06) <sup>†</sup>	0.11 (0.06)	0.07 (0.06)	0.11 (0.06)*
Stress X Positive regard	-0.58 (0.24)*			
Stress X Perceived support		-0.29 (0.13)*		
Stress X Closeness			0.12 (0.13)	
Stress X Negative quality				0.10 (0.06) <sup>†</sup>
Gender	0.20 (0.10)*	0.21 (0.10)*	0.18 (0.10) <sup>†</sup>	0.28 (0.09)**
Age	-0.03 (0.01)**	-0.03 (0.01)**	-0.02 (0.01) <sup>†</sup>	-0.02 (0.01)*
Race	0.02 (0.11)	0.02 (0.11)	0.02 (0.12)	0.04 (0.10)
Education	-0.04 (0.02)	-0.04 (0.02)	-0.04 (0.02)	-0.04 (0.02) <sup>†</sup>
Self-rated health	0.00 (0.04)	0.01 (0.04)	0.00 (0.05)	0.00 (0.04)
Type of event	0.05 (0.09)	0.05 (0.09)	0.00 (0.10)	0.09 (0.09)
Spouse/romantic	0.04 (0.13)	0.03 (0.13)	0.01 (0.14)	0.11 (0.12)
Other family	0.03 (0.13)	0.03 (0.13)	-0.05 (0.14)	0.09 (0.12)
Friend/other	-	-	-	-
Dyad membership	0.17 (0.08)*	0.17 (0.08)*	0.26 (0.08)**	0.14 (0.07) <sup>†</sup>
Covariance parameters				
Between Networks	0.00 (0.04)	0.00 (0.04)	0.04 (0.04)	0.01 (0.04)
Between Dyads in Networks	0.19 (0.12)	0.26 (0.11)*	0.19 (0.14)	0.23 (0.12)*
Within Dyad	0.39 (0.11)**	0.34 (0.09)**	0.39 (0.12)**	0.36 (0.10)**
Pseudo <i>R</i> <sup>2</sup>	.73	.82	.80	.84
-2 log likelihood	772.3	773.5	825.3	896.9

Note.

\*  
*p* < .05,

\*\*  
*p* < .01,

<sup>†</sup>  
*p* < .10

Table 5

Multilevel Models examining Enacted Instrumental Support as a Function of Relationship Quality and Stress Appraisal Interactions

Predictor	Model 1 <i>B (SE)</i>	Model 2 <i>B (SE)</i>	Model 3 <i>B (SE)</i>	Model 4 <i>B (SE)</i>
Intercept	4.00 (0.81) **	4.00 (0.81) **	4.24 (0.89) **	3.60 (0.79) **
Positive regard	0.22 (0.20)			
Perceived support		0.25 (0.13) †		
Closeness			-0.24 (0.13) †	
Negative quality				-0.09 (0.05) †
Stress appraisals	0.20 (0.08) *	0.20 (0.08) *	0.23 (0.09) **	0.22 (0.08) **
Stress X Pos. regard	-0.59 (0.30) *			
Stress X Perceived support.		-0.46 (0.16) **		
Stress X Closeness			0.37 (0.15) *	
Stress X Negative quality				0.11 (0.07)
Gender	0.15 (0.13)	0.15 (0.13)	0.11 (0.15)	0.17 (0.13)
Age	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)	0.00 (0.01)
Race	-0.22 (0.15)	-0.22 (0.15)	-0.41 (0.17) *	-0.21 (0.15)
Education	0.01 (0.03)	0.01 (0.03)	0.00 (0.03)	0.02 (0.03)
Self-rated health	-0.16 (0.06) **	-0.16 (0.06) **	-0.15 (0.07) *	-0.17 (0.06) **
Type of event	-0.02 (0.13)	-0.02 (0.13)	-0.11 (0.14)	-0.01 (0.13)
Spouse/romantic	0.24 (0.18)	0.25 (0.18)	0.33 (0.20)	0.33 (0.17) †
Other family	0.01 (0.18)	0.01 (0.18)	0.06 (0.21)	0.05 (0.17)
Friend/other	-	-	-	-
Dyad membership	0.21 (0.11) *	0.23 (0.10) *	0.38 (0.10) **	0.22 (0.10) *
Covariance parameters				
Between Network	0.12 (0.07) †	0.13 (0.07) *	0.33 (0.08) **	0.19 (0.06) **
Within Dyad	0.88 (0.09) **	0.86 (0.08) **	0.72 (0.07) **	0.82 (0.07) **
Pseudo $R^2$	.34	.36	.58	.43
-2 log likelihood	957.3	951.1	985.1	1089.3

Note.

\*  $p < .05$ ,

\*\*  $p < .01$ ,

†  $p < .10$