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Compensation for the Lack of Support and Companionship among Married and Unmarried Older Adults: Does Relationship Specialization Play a Role?

THESIS

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by

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DEDICATION

To

my grandparents

who loved boundlessly and inspired me to study later life

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ABSTRACT OF THE THESIS

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Some research suggests that different kinds of social ties perform specific functions (i.e., relationship specialization), leading to the idea that there are "customary" sources of support and companionship (Weiss, 1974). In later life, losing a social tie results in losing that support or companionship, unless older adults are able to compensate by finding an alternative (or non-customary) source (Rook & Charles, 2017). Little research has examined the extent of relationship specialization or its implications for well-being, such as loneliness, among married versus unmarried older adults. The current study accordingly examined three questions: To what extent do patterns of support and companionship reflect relationship specialization? To what extent is loneliness elevated when customary sources of support and companionship are absent? Can non-customary sources of companionship and support compensate for the lack of customary sources of companionship and support? Data from wave 1 in-person interviews of a nationally representative, longitudinal study of 916 older adults were analyzed using 3 x 2 x 2 Repeated Measures Multivariate Analysis and Multiple Regression Analyses. Married and unmarried older adults experienced similar patterns of relationship specialization, except with regard to emotional support, which was provided equally across types of relationships among the unmarried, and

more often by family members among the married. Spouses performed more support and companionship functions than did friends or children. Additionally, loneliness was elevated among participants who lacked companionship and instrumental support from friends, as well as among participants who lacked emotional support from either friends or family members. Among unmarried participants, however, loneliness was less elevated if they received instrumental from non-customary sources. Receiving companionship from alternative sources buffered feelings of loneliness, regardless of marital status. Loneliness was also buffered among unmarried participants when they received emotional support from alternative sources. Married participants, contrary to expectations, experienced less loneliness when support was provided not only by non-customary sources, but also by customary sources. The results of this study provided partial evidence for relationship specialization in older adults' social networks, and also suggested that relationship specialization does not constrain effective compensation to some extent.

INTRODUCTION

Older adults often experience losses of social relationships through illness or death. (Rook, Sorkin, & Zettel, 2004). For instance, 25% of older adults ages 65 years or older reported the death of a friend in the preceding year (Aldwin, 1990). Among older adults ages 85 years and older, 59% of men and 42% of women reported having lost a close friend in the past 15 months (Johnson & Troll, 1994). Moreover, the likelihood of being widowed increases with age, with women experiencing overall higher rates than men. Among women 65 to 74 years of age, 19.5% are widowed, compared to only 6.4% of men. Among people 75 to 84 years of age, 42.9% of women and 14.7% of men are widowed. Among individuals ages 85 or older, a staggering 71.9% of women and 35.3% of men are widowed (Roberts, Ogunwole, Blakeslee, & Rabe, 2018). Losing close relationships has the consequence of reducing access to social support and companionship, which may be particularly problematic for older adults.

The loss of a spouse, friends, and other close relationships reduces access to important sources of social support. A study found that older adults within the first year and a half of their bereavement showed a decline in social support (Utz, Swenson, Carserta, Lund, & deVries, 2014). This lack of support is consequential in later adulthood because social support is known to benefit older adults' well-being and physical health. For instance, social support has been shown to buffer the negative effects of depressive symptoms on life satisfaction (Adams, et al., 2016). A lack of companionship (engaging in social or recreational activities) may also result in less positive affect and more negative affect, thus leaving older adults with less psychological resilience to face stress (Rook, August, & Sorkin, 2011). Instrumental support is particularly important for physical health in later life as declines in functional health due to aging may require sustained practical assistance. Older adults who lack instrumental social support have

been found to be at greater risk for the development of disabilities (Avlund, Lund, Holstein, & Due, 2004) and a lack of social engagement was related to a decline in physical functioning (Mendes de Leon, Glass, & Berkman, 2003).

Loss of Social Relationships and Loneliness

Loss of social relationships, whether due to death or residential relocation, has been found to play a role in relatively high rates of loneliness in later life (Lowenthal & Robinson, 1976). A review of loneliness in later life found that approximately 25-29% of older adults report feelings of loneliness (Ong, Uchino, Wethington, 2015). Other studies have yielded higher estimates. For instance, a nationally representative study of 1,604 older adults living in the United States found that 43.2% of the participants reported feelings of loneliness, 32% reported a lack of companionship, 25% experienced feelings of being left out, and 18% reported feelings of isolation at least some of the time (Perissinotto, Cenzer, & Covinsky, 2012). Researchers have posited that the loss of relationships (e.g., widowhood or divorce) is the major mechanism underlying loneliness in later life (Gubrium, 1975). Consistent with the idea that relationship loss drives loneliness, one study found in a sample of people ages 55 to 89, that the loss of a spouse or partner was related to both higher emotional loneliness (yearning for reliable partners) and social loneliness (yearning for social integration) (Van Baarsen, 2002). Researchers have also found that older adults who had most recently lost an intimate attachment through widowhood, divorce, or separation reported experiencing the greatest loneliness among those who had lost an intimate attachment (Revenson & Johnson, 1984). Moreover, the toll of loneliness has been linked to adverse health outcomes. Prospective studies have found that loneliness predicts higher levels of depressive symptoms, impaired cognitive functioning, dementia progression, likelihood

of admission to a nursing home, and multiple disease outcomes in later life (Cacioppo, Capitiano, & Cacioppo, 2014).

Substitution and Compensation following the Loss of a Key Close Relationship

In view of evidence linking relationship losses to increased loneliness in later life, it is important to understand whether alternative sources of support and companionship can compensate for the lost sources. Emerging literature suggests that, after an initial period of grief, the process of substitution unfolds as older adults seek to reorganize their social lives following the loss of a key close relationship (Rook & Schuster, 1996). *Substitution* is a process that entails replacing the lost social tie with an alternate tie that provides the support and companionship that was previously provided by the lost tie. *Compensation* is the outcome of that process by which support and companionship provided by the alternate tie restore older adults' well-being in the wake of a key relationship loss. (Rook & Charles, 2017; Rook & Schuster, 1996; Zettel & Rook 2004). Alternate ties that assume some of the functions previously performed by the lost tie have also been referred to as "substitute" ties in the literature (e.g., Zettel & Rook, 2004). Efforts to forge alternate (or substitute) ties can fail, of course, and an alternate tie that is formed may fail to boost well-being, making it important to examine substitution and compensation as distinct processes (Rook & Schuster, 1996).

The literature examining substitution has often documented the existence of alternative sources of support and companionship either without examining their implications for well-being or has simply assumed that such alternative sources benefit well-being. One prospective study found that widowed older adults, compared with married older adults, were less likely to have a confidant (someone to whom very private feelings could be disclosed), but received greater emotional support (expressions of love and care) from children, friends, and relatives, after

adjusting for support received before widowhood (Ha, 2008). Substitution has also been observed in older adults without children, regardless of their widowhood status. In a representative sample of older adults from over 12 European countries, older adults who lacked instrumental support (e.g., personal care, practical household help, and help with paperwork) from children were found to derive support from extended family, friends, and neighbors (Deindl & Brandt, 2017). A longitudinal study of older adults in Amsterdam revealed evidence of increased support (especially emotional support) from contact with network members after widowhood, relative to pre-widowhood levels (Guiaux, Tilburg, & Groenou, 2007). Across these studies, increases in support and contact experienced by widowed individuals provide evidence of substitution (network members performing functions previously performed by the spouse), and some (though not all) researchers explicitly refer to substitution. Other researchers refer to compensation, suggesting either explicitly or implicitly that increased provision of support and companionship by social network members benefits the widowed individuals' well-being. Empirical differentiation between the availability of alternative sources of support and companionship and their potential impact on well-being is needed, however, to determine whether such substitute social ties effectively compensate (whether fully or partly) for the deceased spouse.

Research examining compensation, as distinct from substitution, is relatively sparse and has yielded mixed evidence. In a study of recently bereaved adults ages 50 and older, increased support from family members and especially friends was related to reduced loneliness (Utz, et al., 2014). Notably, the researchers discovered that making a new friend who was also widowed was especially important in reducing the bereaved participants' feelings of loneliness. Childless older widowed women in another study reported having substitute confidants in their networks

who provided emotional support akin to that previously provided by their marital partner (Rice, 1989). These childless older widowed women subsequently reported higher life satisfaction than did childless older widowed women who lacked substitute confidants. The reduced loneliness and increased life satisfaction in these studies that was associated with having substitute social ties can be viewed as compensating, to some extent, for the lost marital partner. Other work has failed to find evidence that substitute social ties compensate for the loss of a spouse by enhancing the well-being of widowed individuals. A study of widowed women ages 60 and older found that the women formed substitute social ties by forming new ties, rekindling dormant ties, or intensifying patterns of exchange with existing ties, but these substitute social ties were found to be unrelated or, in some analyses, inversely related to the women's psychological health (Zettel & Rook, 2004).

In sum, emerging evidence suggests that substitute social ties often emerge after the loss of a close relationship, and these substitute ties sometimes, but not inevitably, appear to boost well-being. Why substitute social ties do not always boost well-being following the loss of a close relationship may be attributable to a variety of factors, but one possibility is that substitute social ties are not particularly well suited to the functions they assume. The literature on relationship specialization provides insights into this possible source of constraints on effective compensation.

Relationship Specialization as a Potential Constraint

Theoretical perspectives on relationship specialization posit that certain relationships provide specific types of support or companionship that cannot be provided effectively by alternative relationships (Weiss, 1974). Psychological distress is posited to result when people lack normative, or customary, sources of support (e.g., Weiss, 1974). Theorists speculate this is

due to the limited interchangeability of sources of support and companionship, thereby making effective substitution difficult (Rook & Schuster, 1996). From this perspective, friends cannot readily substitute for family members as sources of instrumental support, and family members cannot readily substitute for friends as sources of companionship. This pattern of relationship specialization is not believed to be idiosyncratic but, rather, to reflect norms and preferences about the relationships that are best suited to providing companionship and particular types of support (Litwak, 1985; Cantor, 1979, Weiss, 1974). In addition to preferences, implicit social norms are thought to shape patterns of relationship specialization, such that (in many, if not all, cultures) asking friends to provide substantial instrumental support would tend to be viewed as inappropriate and relying on family members as key sources of day-to-day companionship similarly would tend to be viewed as inappropriate. Given these perspectives, relationship specialization may constrain compensation for the loss or lack of customary[1] relationships by limiting the type of relationships that can function effectively as substitute sources of support and companionship (Weiss, 1974).

Empirical investigations of relationship specialization are sparse, but studies of older adults have revealed evidence that is consistent with the idea that relationships specialize, to some extent, in performing particular functions. For example, kin tend to be important sources of instrumental support, but less often serve as sources of everyday companionship (Cantor, 1979; Rook & Ituarte, 1999). Friends tend to be important sources of everyday companionship but less often serve as sources of instrumental support (Crohan & Antonucci, 1989; Felton & Berry, 1989; Rook & Ituarte, 1999). Considering the limited interchangeability of specialized relationships, a lack of companionship from friends may result in a deficit that cannot easily be remedied by companionship from other relationships (Weiss, 1974). Similarly, a lack of

instrumental support provided by family members may result in a deficit that cannot be easily remedied by instrumental support by friends (Crohan & Antonucci, 1989; Litwak, 1985).

Evidence regarding relationship specialization with respect to emotional support is more mixed. Although Weiss (1974) posited that attachment figures (such as a spouse or romantic partner) serve as the primary source of emotional support, evidence suggests that older adults derive emotional support not only from attachment figures but also from children and friends (Crohan & Antonucci, 1989). In other words, multiple sources of emotional support may exist in later life, and additional investigations are needed to clarify which sources of emotional support benefit older widowed individuals following the loss of a spouse.

If the theory of relationship specialization is supported, then widowed individuals' well-being may not be restored optimally when support and companionship are derived from non-customary sources. For example, companionship from family members can be perceived as somewhat obligatory or perfunctory in nature (Antonucci, 1985; Antonucci & Jackson, 1987; Rook & Schuster, 1996) and thus have a less positive impact on well-being.

It is important to note that spouses are believed to offer an exception to relationship specialization because they often provide multiple types of support and companionship (Weiss, 1974). Consistent with this view, spouses have been found to provide both emotional and instrumental support as well as companionship (e.g., Stevens & Weserhof, 2006). For example, the loss of a spouse has been shown to result in elevations in loneliness (Van Baarsen, 2002), which might create greater receptivity to support and companionship from alternative sources. Therefore, it is possible that unmarried older adults may more often need to compensate for a lack of support or companionship and might derive greater benefits from doing so in comparison to married older adults. For instance, unmarried older adults who maintain contact with their

adult children, siblings, friends, and neighbors tend to be less lonely than do married older adults who maintain contact with the same relationships (Pinquart, 2003). Married older adults may benefit less than unmarried older adults from these social contacts because spouses fulfill the social needs of their partner, and therefore unmarried older adults' contacts with these social ties may have a greater impact on their feelings of loneliness (Pinquart, 2003). Weaving together these ideas suggests that older adults who lack a spouse or partner may experience a greater need for compensation, and that married older adults, conversely, may not need to compensate to the same extent.

Research to date has provided some evidence that relationships are indeed specialized. Relationships with widowed older adults' children grow stronger after the loss of a spouse, and widowed older adults do in turn receive more instrumental support from their children (Guiaux, et al., 2007). This finding falls in line with Weiss's (1974) theoretical claim, that family members typically provide instrumental support, with adult children, in particular, assuming this role when a spouse is absent. A study of older adults in Nepal revealed high loneliness and low well-being among participants and, further, that the sources of social support had differential effects on loneliness (Chalise, Saito, Takahashi, & Kai, 2007). Older adult women who received more support from co-habiting children reported less loneliness.

Although some research has examined the implications of relationship specialization for well-being in later life, little research has examined the role of relationship specialization in substitution and compensation when a key close relationship, such as that with a spouse, is absent. Specifically, it is unclear whether subsitution of non-customary sources of support and companionship for customary sources would result in effective compensation by buffering

feelings of loneliness of relationships with non-costumary social ties, and whether marital status moderates those effects.

Current Study

The current study examined three questions in light of the relation between social losses and loneliness in later life, the posited restorative effects of substitute social ties (compensation), and the potential constraints on compensation presented by relationship specialization for both unmarried and married older adults.

Question 1: To what extent do patterns of support and companionship reflect relationship specialization? I hypothesized that family members serve more often as sources of instrumental support than do friends (Hypothesis 1a). In view of mixed evidence regarding customary sources of emotional support, an exploratory aim of the study was to assess whether friends and family members serve equally often as sources of emotional support (Exploratory Question 1a). I also hypothesized that friends serve more often as sources of companionship than do family members (Hypothesis 1b). In light of theoretical arguments that spouses/partners tend to perform multiple support and companionship functions and, thus, represent an exception to relationship specialization, I hypothesized that spouses/partners perform a broader range of support and companionship functions than do friends and other key family members, such as children (Hypothesis 1c).

Question 2: To what extent is loneliness elevated when customary sources of support and companionship are absent? I anticipated that older adults who lack instrumental support from family members would experience greater loneliness than would older adults who receive instrumental support from family members (Hypothesis 2a). Similarly, I sought to explore whether older adults who lack emotional support from either family members or friends would

exhibit higher levels of loneliness, as compared with older adults who receive emotional support from either family members or friends (Exploratory Question 2a). I expected, further, that older adults who lack companionship from friends would experience greater loneliness than would older adults who receive companionship from friends (Hypothesis 2b).

Question 3: Can non-customary sources of support and companionship compensate for the lack of customary sources of support and companionship among unmarried vs. married older adults? The need for compensation and the extent to which non-customary sources of support and companionship compensate for the lack of customary sources is likely to differ for unmarried vs. married older adults. I hypothesized that unmarried older adults would derive greater benefits from non-customary sources of support and companionship than would married older adults. Specifically, I hypothesized that, for unmarried older adults, instrumental support from friends would be associated with less loneliness when instrumental support from family members was absent. Receiving instrumental support from friends was expected to be weakly or non-significantly associated with loneliness among married older adults who lacked instrumental support from family members (Hypothesis 3a). Additionally, I examined whether, for unmarried older adults, emotional support from friends when emotional support from family members was absent would be associated with less loneliness, and similarly, whether emotional support from family members would be associated with less loneliness when emotional support from friends was absent. I also examined whether receiving emotional support from friends was associated with less loneliness among married older adults who lacked emotional support from family members. Similarly, I examined whether receiving emotional support from family members was associated with less loneliness among married older adults who lacked emotional support from friends (Exploratory Question 3a). Lastly, I expected that for unmarried older

adults, companionship from family members would be associated with less loneliness when companionship from friends was absent. Receiving companionship from family members was not expected to be associated with less loneliness among married adults who lacked companionship from friends. (Hypothesis 3b). Considering that spouses are thought to perform various support and companionship functions, I anticipated married older adults to require less compensation when a customary source of support is absent.

Methods

The data were derived from the Later Life Study of Social Exchanges (LLSE), a two-year longitudinal study of a national representative sample. Data collection for the study started in the year 2000 and ended in the year 2003. The current study examined the baseline data from the five-wave dataset.

Sample

The sample consisted of 916 older adults who were non-institutionalized, English speaking, cognitively functional, and lived at the United States at the time of the study. Of the participants, 54% were married; 62% were female; and 46% were widowed, divorced, separated, or never-married. Participants' ages ranged in from 65 to 91 years (M = 74.16 years, SD = 6.63). In terms of education and working status, 63% of the participants had a high school education or less, 20% had vocational training or some college education, and 17% had a college degree. The sample was primarily Caucasian (83%), with approximately 17% belonging to a racial minority group (11% African American, 5% Hispanic, and 1% reporting membership in another minority group, e.g., Asian, Native American). When compared to the census data in 2000, the sample closely resembled the population representing older adults who were ages 65 or older (U.S. Bureau of the Census, 2000).

The sampling frame was the Medicare Beneficiary Eligibility List of the Center for Medicare and Medicaid Services. The list contains the name, sex, and race of almost every older adult in the United States. A nationally representative sample was constructed by randomly sampling 5% of the names of the list. Within the United States, 98% of the counties were used as primary sampling units (PSU). The PSUs were stratified to represent different population densities and geographic locations. From the PSUs, participants were randomly selected to receive a letter asking if they wanted to participate. If interest was expressed, an additional letter or phone call was placed to schedule an in-person interview. About half (53%) of the participants who were sent the recruitment letter decided to participate.

Procedure

Interviews conducted in participants' homes assessed the participants' social network membership, specific functions performed by the network members, and demographic characteristics. A self-administered questionnaire assessed participants' feelings of loneliness. The interviews and assessments lasted approximately 70-min. and were administered by a survey research firm with extensive experience conducting interviews with older adults, Harris Interactive Inc. Informed consent was obtained at the time of the interviews.

Measures

Loneliness. Loneliness was assessed using a 6-item abbreviated version of the UCLA Loneliness Scale (Russell, 1996) (M = 5.53, SD = 3.43, Cronbach's α = .71). Loneliness was measured on a 4-point Likert scale (0 = *never*, 3 = *often*), and included items such as "How often do you feel isolated from others?" and "How often do you feel that your relationships with others are not meaningful?"

Network elicitation. Participants were prompted to think about the people in their everyday lives when answering questions about social support and companionship. Follow-up questions asked who provided the support reported for each of the 3 types of support (instrumental support, emotional support, informational support) and companionship. Up to 8 first names and last initials were recorded for each type of support as well as companionship. Specified social relationships included spouses/partners, children, siblings, grandchildren, parents, in-laws, friends, neighbors, acquaintances, home aides, and other relatives and non-relatives whose relationship types were specified. For the purposes of this study, family members were coded to include spouses, children, siblings, and parents. Spouses were included because of their role as a critical member of the family. If a participant stated that they had not received a particular type of support in the past month, they were then asked whether other people in their lives sometimes provided them with that support. This form of network elicitation was adapted from McCallister and Fischer's social network grid (1978).

Social support and companionship. Interviews gathered information on both the amount of social support received and the social network members who provided support. Twelve items assessed how often in the past month (0 = *never*, 4 = *very often*) participants had received four types of support. Three items each represented informational support, instrumental support, emotional support, and companionship. Theoretical and empirical investigations of relationship specialization do not specify customary sources of informational support; thus, the analyses presented here exclude informational support. A sample item for instrumental support asked "provide you with aid and assistance?" A sample item for emotional support asked participants how often someone they knew "… do or say things that were kind or considerate toward you?" A sample item for companionship asked who in participants' social network was

said to "… provide you with good company and companionship?" Social support and companionship items were dichotomized and coded for the role relationship with the social network member who performed the particular function. For instance, companionship provided by friends was dichotomized to represent either the lack of companionship provided by friends or the presence of companionship provided by friends (0 = *lacked companionship from friends*; 1 = *friends provided companionship*). Additional variables were computed to represent the proportion of support providers and companions that was a specific relationship type (e.g., the proportion of companions in the previous month who were friends). The number of support and companionship functions performed by spouses, children, and friends were summed and computed into variables with a range of 0-3 (0 = *network member provided no support or companionship*, 1 = *network member performed a single support or companionship function in the past month*, 2 = *network member performed 2 support or companionship functions in the past month*, 3 = *network member performed 3 support or companionship functions in the past month*).

Data Analysis

The data were analyzed using SPSS and the PROCESS macro (Hayes, 2017). An initial independent samples *t*-test was conducted to see if unmarried older adults were significantly lonelier than were married older adults. To address the extent of relationship specialization in our sample, a 3 x 2 x 2 Repeated Measures Multivariate Analysis was conducted to evaluate whether customary relationships provided more support than did non-customary relationships by marital status. Post hoc pairwise comparisons were conducted to determine whether the proportions of instrumental support providers, emotional support providers, and companions who were friends or family members differed significantly among both unmarried and married older adults. The

3 x 2 x 2 Repeated Measures Multivariate Analysis adjusted for the age, gender, self-rated health, and education. Two paired samples *t*-tests were also conducted among the married older adults to examine whether spouses provided significantly more types of support and companionship than did friends and children.

To test for social network compensation in this sample of older adults, multiple regression analyses of loneliness were conducted that included interaction terms between customary sources of social support and companionship and non-customary sources of social support and companionship; the regression analyses also included the dichotomous marital status variable as a higher order moderator in order to examine whether compensation differed for those who were married or unmarried. Considering the literature examining relationship specialization doesn't outline a customary source of support for emotional support, two multiple regression analyses were conducted for emotional support, one with family members as the focal predictor and the other with friends as the focal predictor. All multiple regression analyses adjusted for age, gender, self-rated health, and education. Lastly, analyses of the conditional effects were conducted for significant three-way interactions to determine whether the conditional effects of the non-customary support provision were significant within each level of the customary support provision and marital status.

Assumption Tests for the Dependent Variable of Loneliness

Assumption tests were conducted to determine whether our analyses of loneliness met the assumptions for OLS linear regression. Our tests indicated a slight departure from normality for the criterion variable loneliness. The score for skewness was .28, which is 3.5 standard deviation units away from no skewness, and kurtosis was -.54, which is -3.18 standard deviation units away from excess kurtosis. Our Shapiro Wilk's test of normality was significant ($W = .97$, $p <$

.001), as was the Kolmogorov-Smirnov test (D = .08, p < .001). Thus, at a .05 alpha level, we rejected the null hypothesis that loneliness is normally distributed in the population. A monotonic and non-monotonic transformation of loneliness did not improve the skewness or kurtosis of the criterion variable. The analysis is also robust to departures from normality given the sample size of 890 participants. Therefore, given the sample size, transformations to address violations of normality are not warranted. The standardized residuals for the three multiple regression analyses appeared to be normal in shape. There was some evidence of heteroscedasticity, however, after running the multiple regression analyses with the monotonic and non-monotonic transformed versions of loneliness; the scatterplots did not show reductions in heteroscedasticity. Diagnostic tests for outliers were conducted for our criterion variable of loneliness. Two of the models met the heuristic cutoff of 2.5 to 3.0 for the studentized residuals, however, the model examining instrumental support from family members as the focal predictor and instrumental support from other sources and marital status as moderators, had one data point that marginally exceeded the cutoff (3.06). All three of the models had appropriate leverage in the data points, and none of the data points met the standardized DFFIT (global index of influence) heuristic cutoff of 1.0.

Results

Descriptive Analyses

Of the 916 older adults at baseline in the Later Life Study of Social Exchanges, 890 were ultimately included in the analyses. Details about participants' relationships with 50 of the 5,124 network members who were reported as sources of support or companionship were missing (due either to participant refusals or interviewer error). For 26 participants, their networks consisted

solely of one individual for whom the relationship information was missing; these 26 participants accordingly were deleted from the analyses.

An independent samples *t*-tests revealed that, on average, unmarried older adults were marginally lonelier (M= 5.77) than married older adults (M= 5.32) [$t(853) = 1.94$, $p = .05$, 95% CI_{boot} (-.00, .91)]. Descriptive information for the key study variables and covariates is presented in Table 1 and Table 2.

Tests of Study Questions

Question 1: To what extent do patterns of support and companionship reflect relationship specialization?

Several analyses were conducted to examine Hypotheses 1a through 1c. To examine the extent of relationship specialization in the sources of instrumental support, emotional support, and companionship, a 3 x 2 x 2 Repeated Measures Multivariate analysis was conducted to determine the effect of support and companionship (instrumental support, emotional support, and companionship) by relationship (family members and friends) and marital status (unmarried and married); the analyses adjusted for our covariates. After correcting for sphericity by using a Greenhouse-Geisser correction, the main effect was significant [$F(1.99, 469) = 3.69$, $p = .03$]. Post-hoc pairwise comparisons (see Table 3) were conducted to assess the average proportions of support providers and companions that were friends or family members, with a focus on whether support and companionship were more often provided by customary support sources for both married and unmarried older adults. For Hypothesis 1a, I expected that family members would more often serve as sources of instrumental support. For the unmarried older adults, the pairwise comparison supported the hypothesis. On average, family members provided a greater proportion of instrumental support ($M_{Proportion}$= .43) than did friends ($M_{Proportion}$= .25) [$M_{Differemce}$ = .18, *SE* =

.05 p <.001, 95% CI (.08, .27)]. Similarly, for the married older adults, the pairwise comparison supported the hypothesis; on average, family members provided a greater proportion of instrumental support ($M_{\text{Proportion}}$= .49) than did friends ($M_{\text{Proportion}}$= .29) [$M_{\text{Differemce}}$ = .20, SE = .04, p <.001, 95% CI (.12, .29)]. For Exploratory Question 1a, pairwise comparisons examining family members vs. friends as sources of emotional support for unmarried older adults revealed that, on average, neither friends ($M_{\text{Proportion}}$ = .40), nor family members ($M_{\text{Proportion}}$ = .37) provided a significantly greater proportion of emotional support [$M_{\text{Differemce}}$ = .03, SE = .05, p .51, 95% CI (-.13, .06)]. For the married older adults, however, pairwise comparisons revealed that, on average, family members provided a greater proportion of emotional support ($M_{\text{Proportion}}$ = .54) than did friends ($M_{\text{Proportion}}$= .31) [$M_{\text{Differemce}}$ = .23, SE = .05, p < .001, 95% CI (.15, .32)]. For Hypothesis 1b, pairwise comparisons examining friends vs. family members as sources of companionship revealed, as expected, that for unmarried older adults, friends provided a significantly greater proportion of companionship ($M_{\text{Proportion}}$= .52), on average, than did family members ($M_{\text{Proportion}}$ = .23), [$M_{\text{Differemce}}$ = .29, SE = .04, p < .001, 95% CI (.20, .38)]. Similarly, for married older adults, as expected, friends provided a significantly greater proportion of companionship ($M_{\text{Proportion}}$= .50), on average, than did family members ($M_{\text{Proportion}}$ = .32), [$M_{\text{Differemce}}$ = .17, SE = .04, p < .001, 95% CI (.09, .25)]. These findings were largely consistent with perspectives on relationship specialization because customary sources of support and companionship provided a greater proportion of the support and companionship received by the participants.

Hypothesis 1c predicted that married/partnered older adults would receive more types of support and companionship from their spouses than from friends and adult children. As shown in Table 4 (first row), paired *t*-tests conducted with the married participants revealed that spouses

performed significantly more support and companionship functions (M= 1.78), on average, than did friends (M = 1.26) [$t(217) = 6.94$, p <.001, 95% CI_{boot} (.38, .67)]. Similarly, the second row in Table 4 shows that spouses performed significantly more support and companionship functions (M = 1.92) than did children (M = 1.26) [$t(246) = 9.14$, p = .001, 95% CI_{boot} (.52, .80)]. These findings provide evidence for the view that spouses represent an exception to specialization in patterns of support and companionship provision.

Question 2: To what extent is loneliness elevated when customary sources of support and companionship are absent?

To test whether loneliness is elevated when customary sources of support and companionship are absent (Hypothesis 2), several multiple regression analyses were conducted using the PROCESS macro. To evaluate whether loneliness is elevated primarily when customary sources of support and companionship are lacking, we also examined whether loneliness was elevated when non-customary sources of support and companionship are lacking. Evidence that loneliness is elevated only when customary sources of support and companionship are lacking would be consistent with perspectives on relationship specialization, whereas evidence that loneliness is elevated when customary and non-customary sources of support and companionship are lacking would challenge perspectives on relationship specialization. Hypothesis 2 was evaluated by examining the main effects of having or lacking customary and non-customary sources of companionship on loneliness. These multiple regression analyses also included three-way interaction terms to examine whether unmarried and married older adults differed in the extent to which support and companionship provided by non-customary sources compensated for the lack of support and companionship from customary sources (Hypothesis 3); these three-way interaction tests are addressed in the next section that focuses on Question 3.

For Hypothesis 2a, I predicted that older adults who lacked instrumental support from family members would experience greater loneliness than would older adults who received instrumental support from their family members. As reported in Table 5, the effect of instrumental support provision from family members was non-significant. Specifically, older adults who lacked family members who provided instrumental support were not significantly more lonely (M = 5.64, SD = 3.54), on average, than were older adults who had family members who provided instrumental support (M = 5.46, SD = 3.38) [b = -.71, 95% CI_{boot} (-1.56, .15), t(838) = -1.62, p = .11, d = .05]. Although friends are not considered to be customary sources of instrumental support, additional analyses revealed that older adults who lacked friends who provided instrumental support (M = 5.73, SD = 3.47) were marginally lonelier, on average, than were older adults who had friends who provided instrumental support (M = 5.08, SD = 3.33) [b = -.96, 95% CI_{boot} (-1.97, .05), t(838) = -1.87, p = .06, d = .19]. Thus, the lack of non-customary sources of instrumental support was associated with greater loneliness. Considered together, these results did not provide evidence for Hypothesis 2a.

The next analysis examined whether a lack of emotional support from friends and family members was associated with elevated levels of loneliness (Exploratory Question 2a). As reported in Table 6, the lack of emotional support from both friends and family members was associated with elevated loneliness. In particular, older adults who lacked friends who provided emotional support (M = 5.71, SD = 3.57) were significantly lonelier, on average, than were older adults who had friends who provided emotional support (M = 5.21, SD = 3.19) [b = -1.75, 95% CI_{boot} (-2.74, -.77), t(838) = -3.50, p < .001, d = .15]. Similarly, older adults who lacked family members who provided emotional support were significantly lonelier (M = 5.79, SD 3.62), on average, than were older adults who had family members who provided emotional support (M =

5.38, *SD* = 3.33) [*b* = -1.08, 95% CI_{boot} (-1.99, -.17), *t*(838) = -2.32, *p* = .02, *d* = .12]. Although family members served more often as sources of emotional support than friends in this sample, a lack of emotional support from each source was associated with greater loneliness.

Lastly, an additional analysis examined Hypothesis 2b, which predicted that older adults without friends who provided companionship would experience greater loneliness, compared to older adults who had friends who provided companionship. As shown in the main effects presented in Table 7, the results supported this hypothesis. Specifically, older adults who lacked friends who provided companionship were significantly lonelier (*M* = 5.99, *SD* = 3.71), on average, than were older adults who had friends who provided companionship (*M* = 5.05, *SD* = 3.07) [*b* = -2.39, 95% CI_{boot} (-3.33, -1.45), *t*(838) = -5.00, *p* < .001, *d* = .28]. Older adults who lacked family members who provided companionship were significantly lonelier (*M* = 5.84, *SD* = 3.54), on average, than were older adults who had family members who provided companionship (*M* = 5.28, *SD* = 3.34) [*b* = -1.77, 95% CI_{boot} (-2.75, -.79), *t*(838) = -3.55, *p* < .001, *d* = .16]. These results provide only partial evidence for the hypothesis that older adults who lack friends who provided companionship would experience greater loneliness because older adults who lack companionship from family members also experienced greater loneliness.

Considered together, this set of analyses yielded limited evidence for the idea that a lack of customary sources of support and companionship is associated with elevated loneliness. For instrumental support, the lack of customary sources was unrelated to loneliness, whereas the lack of non-customary sources was related to greater loneliness; this finding is contrary to predictions derived from theories regarding relationship specialization. For companionship, the lack of both customary and non-customary sources was related to greater loneliness, which only partly supports predictions derived from theories regarding relationship specialization. Theories

regarding relationship specialization do not provide a strong basis for predicting that emotional support is optimally derived from particular social network sources. The current study revealed that a lack of emotional support from either friends or family members was associated with greater loneliness. Thus, although the frequency with which support and companionship are derived from various social network sources may reflect some evidence of relationship specialization, such specialization does not appear to afford straightforward protection from loneliness. Whether some protection would be evident in the context of specific gaps in the provision of support or companionship is a separate question, however, that requires attention to possible compensation.

Question 3: Can non-customary sources of support and companionship compensate for the lack of customary sources of support and companionship among unmarried vs. married older adults?

In order to address whether marital status differences existed in the extent to which non-customary sources of support and companionship compensate for the lack of customary sources, the aforementioned three-way interactions were further examined. Analyses of the conditional effects of customary support and non-customary support by marital status on loneliness were conducted to further probe significant three-way interactions. I predicted in Hypothesis 3a that unmarried older adults who lacked instrumental support from family members would experience less loneliness if they received instrumental support from friends (a non-customary source of support). Hypothesis 3a was partially supported. As noted earlier, older adults who lacked family members who provided instrumental support were not lonelier, on average, than were older adults who had family members who provided instrumental support. However, this conclusion was qualified by a marginally significant three-way interaction of family provision of

instrumental support, friend provision of instrumental support, and marital status [b = -2.00, 95% CI_{boot} (-4.02, .03) t(838) = -1.94, p = .053)]. Figure 1 illustrates the three-way interaction with instrumental support from family members as the focal predictor, instrumental support from friends as the primary moderator, and marital status as the higher-order moderator. As depicted on the left side of Figure 1a, the conditional effect reveals that unmarried older adults who lacked instrumental support from family members were marginally less lonely when friends provided instrumental support (M = 5.44), than when friends did not provide instrumental support (M = 6.40) [F(1,838) = 3.48, p = .06]. As depicted on the right side of Figure 1b, the conditional effect reveals that married older adults who received instrumental support from friends as well as family members (M = 4.23) were significantly less lonely than if they did not receive instrumental support from their friends (M = 5.59) [F(1,838) = 9.22, p = .002]. In other words, Hypothesis 3a was partially supported, as non-customary sources of instrumental support, in this case from friends, were associated with lower feelings of loneliness. Overall, the model examining sources of instrumental support among the unmarried vs. the married, along with the covariates, explains a significant proportion of variation in loneliness [R^2 = .06, F(11, 838) = 4.85, p < .001].

The next exploratory analysis examined sources of emotional support among the unmarried vs. the married, with a focus on the question of whether emotional support provided by family members would compensate for the lack of emotional support provided by friends, and vice-versa (Exploratory Question 3a). The three-way interaction (see Figure 2) examined loneliness as a function of emotional support from family members as the focal predictor, emotional support from friends as the primary moderator, and marital status as the higher-order moderator. Analyses revealed a significant three-way interaction [b= -2.37, 95% CI_{boot} (-4.39, -

.36) $t(838) = -2.31$, $p = .02$]. The left side of Figure 2a shows a significant conditional effect, which illustrates that unmarried older adults who lacked family members to provide emotional support were less lonely if they received emotional support from friends ($M = 5.04$) than if they did not receive emotional support from their friends ($M = 6.79$) [$F(1,838) = 12.23$, $p < .001$]. A comparable conditional effect was not observed among married older adults, as demonstrated in Figure 2b. The overall model examining sources of emotional support among the unmarried vs. the married, along with the covariates, was significant [$R^2 = .07$, $F(11,838) = 5.37$, $p < .001$].

Figure 3 illustrates the significant three-way interaction with a focus on compensation for the lack of emotional support from friends. As depicted Figure 3a, a significant conditional effect revealed that unmarried older adults without friends who provided emotional support were less lonely if they received emotional support from family members ($M = 5.72$) than if they did not receive emotional support from family members ($M = 6.79$) [$F(1,838) = 5.39$, $p = .02$]. For unmarried older adults, a marginally significant conditional effect also emerged, such that older adults were less lonely if both friends and family members provided emotional support ($M = 5.04$) than if they did not receive emotional support from family members ($M = 6.02$) [$F(1,838) = 3.68$, $p = .06$]. Among married older adults, shown in the right side of Figure 3b, there was also a significant conditional effect, revealing that married older adults were less lonely if both friends and family members provided emotional support ($M = 4.48$) than if they did not receive emotional support from family members ($M = 5.58$) [$F(1,838) = 3.92$, $p < .05$].

Finally, analyses tested the prediction that companionship provided by family members would be associated with less loneliness among unmarried older adults who lacked companionship from friends, but not among the married older adults (Hypothesis 3b). This hypothesis was not supported. More specifically, the three-way interaction with friends

providing companionship as the focal predictor, family members providing companionship as the primary moderator, and marital status as the higher-order moderator was nonsignificant [b = -1.57, 95% CI_{boot} (-3.46, .33) t(838) = -1.62, p = .11]. Although the three-way interaction was non-significant, a two-way interaction with friends providing companionship as the predictor and family providing companionship as the moderator was significant [b = 2.19, 95% CI_{boot} (.84, 3.54) t(838) = 3.18, p = .002]. As depicted on the left side of Figure 4, the conditional effect reveals that older adults (regardless of marital status) who lacked companionship from friends were less lonely when family members provided companionship (M = 5.48), than when family members did not provide companionship (M = 7.16) [F(1,850) = 22.92, p = < .001]. The overall model examining sources of companionship, along with the covariates, was significant [R^2 = .08, F(11,838) = 7.06, p < .001].

Discussion

The purpose of this study was to examine the extent and role of relationship specialization in older adults' well-being and their ability to compensate for a lack of social ties to provide particular kinds of support or companionship. The study had three objectives: 1) to examine the extent of relationship specialization in a nationally representative sample of older adults; 2) to determine whether loneliness was elevated when customary sources of support and companionship were absent; and 3) to examine whether non-customary sources of companionship and support would compensate for the lack of customary sources and, thus, reduce loneliness. The findings of this study provided mixed evidence for relationship specialization. Relationship specialization was evident for sources of instrumental support and companionship, but was not evident for sources of emotional support. Additional findings provided evidence against relationship specialization as a constraint with regard to substitution

and compensation. These findings, and the complex considerations they raise, are discussed below.

To what extent do patterns of support and companionship reflect relationship specialization?

The first question we examined concerned the extent to which patterns of support and companionship reflect relationship specialization. The findings suggested that patterns of support and companionship in our sample indeed reflected a degree of relationship specialization. Instrumental support was more often provided by customary support providers, or family members, rather than by friends for both married and unmarried older adults. Similarly, companionship was more often provided by friends, rather than by family members for both married and unmarried older adults, which reinforces the idea that friends are the customary support providers for companionship. Emotional support was provided by both family members and friends, but more so by family members among the married. Additionally, the view that spouses are an exception to relationship specialization because they perform multiple support and companionship functions was reinforced by the findings. Specifically, spouses performed significantly more support and companionship functions than did either friends or children.

Thus, the findings regarding patterns of relationship specialization were largely as expected. Married older adults appear to rely on their partners for intimacy and multiple support functions as well as companionship. With respect to other social network members, older adults seem to derive support and companionship from somewhat specialized sources. They appear to rely more on family members for instrumental support, such as caregiving, financial assistance, and daily support tasks. Older adults going to their family members for instrumental support makes sense according to relationship specialization because it may be more appropriate or more

comfortable to ask kin for help that involves tangible assistance or long-term care (Litwak, 1985; Rook & Schuster, 1996). The results for emotional support converge with the findings of previous studies in suggesting that emotional support more often comes from family members than friends among the married (e.g., Rook & Ituarte, 1999). In other words, married older adults may be more comfortable going to their family members, rather than their friends, to discuss personal matters and emotional concerns.

To what extent is loneliness elevated when customary sources of support and companionship are absent?

The second set of analyses examined the extent to which loneliness is elevated when customary sources of support and companionship are absent. The results were mixed. For example, contrary to expectation, a lack of instrumental support from family members (considered to be the customary source of instrumental support) was not related to loneliness. On the other hand, the lack of customary sources of other support and companionship functions was associated with elevated levels of loneliness. Specifically, a lack of companionship from friends was related to greater loneliness. Yet a lack of companionship from family members was also related to greater loneliness, suggesting that the absence of a non-customary source of companionship detracted from older adults' well-being. Additionally, both a lack of emotional support from friends and a lack of emotional support from family members were related to greater loneliness.

Thus, one puzzle raised by the results is why the lack of support or companionship from non-customary sources was associated with elevated loneliness, contrary to perspectives on relationship specialization that posit an opposite pattern – that the lack of support or companionship from customary sources of support or companionship would be most likely to

arouse feelings of loneliness (Weiss, 1974). One potential reason for this finding is the nature of the task being fulfilled by either friends or family members. Instrumental support provided by family members may seem obligatory, whereas instrumental support provided by friends may seem more voluntary, which may connote greater care and thus help to afford some protection from loneliness (Litwak, 1985; Rook & Schuster, 1996). Also, instrumental support is often essential in later life, and some instrumental support provision can be demanding or chronic in nature. Family members, for example, may be providing support that is more demanding, which could contribute to relationship strains or feelings of indebtedness. Friends, on the other hand, may be providing instrumental support that is less demanding (e.g., fulfilling a favor). Therefore, having friends to provide such less demanding or fraught instrumental support may partially boost older adults' well-being. This finding, however, was marginally significant, and its implications, therefore, should not be overstated.

Can non-customary sources of support and companionship compensate for the lack of customary sources of support and companionship among unmarried vs. married older adults?

The third and final set of analyses examined the extent to which non-customary sources of companionship and support compensate for the lack of customary sources. More specifically, the analyses evaluated whether support and companionship from non-customary sources helped to buffer older adults' feelings of loneliness. Findings revealed that support and companionship functions were successfully compensated for by non-customary sources. For example, when unmarried older adults lacked instrumental support from family members, instrumental support from friends marginally buffered feelings of loneliness. In other words, among unmarried older adults, instrumental support in later life from non-customary sources may partially alleviate the

adverse effects on well-being when customary sources of instrumental support are lacking, a finding at odds with perspectives on relationship specialization. Unlike the research assessing relationship specialization patterns of instrumental support, theoretical and empirical work examining relationship specialization has found mixed results regarding posited benefits of customary sources of emotional support (Weiss, 1975; Litwak, 1985). Our results revealed that, for unmarried older adults, emotional support was provided by both friends and family members alike, and that receiving emotional support from friends when emotional support from family members was lacking buffered feelings of loneliness, and vice versa. Lastly, for both unmarried and married older adults, companionship provided by family members also buffered feelings of loneliness when companionship from friends was lacking. Considered together, these findings provide evidence against constraints brought on by relationship specialization.

Marital status also seems to play a role in social network compensation in later life. In particular, it appears that unmarried older adults benefit to a somewhat greater extent than do married older adults from non-customary sources of support, as was seen with instrumental support. Unmarried older adults in our sample were marginally lonelier than married older adults, which might mean that unmarried older adults benefit more from compensation when a customary support provider is lacking. Among married older adults, in contrast, findings contrary to expectation indicated that having both customary support providers and non-customary support providers was related to less loneliness, as was seen with instrumental and emotional support. Findings for compensation when older adults lacked companionship from friends, on the other hand, revealed that both married and unmarried older adults benefited from companionship provided by their family members.

Overall, the current study extended previous research on relationship specialization in older adults' social networks to an extent. Compensation analyses, however, revealed that missing customary sources of support and companionship can be compensated for by alternative (non-customary) sources, although evidence of compensation by alternative sources tended to be greater among unmarried older adults for instrumental support, but not for emotional support or companionship. The results indicated, moreover, that spouses are indeed an exception to relationship specialization. Yet married participants reported less loneliness when they derived instrumental and emotional support from non-customary as well as customary sources, a pattern that does not necessarily fall in line with relationship specialization. Also, non-customary sources of companionship (family members) compensated for a lack of companionship from friends for both unmarried and married participants.

Limitations and Future Directions

Several limitations of this study warrant consideration. First, the data examined in the current study were cross-sectional in nature, which means that no causal claims can be made on the basis of our results. Although it seems unlikely that loneliness would substantially influence patterns of relationship specialization, cross-sectional analyses prevent us from ruling out reverse causation. Additionally, the data were collected in 2000-03, when access to social media and online communication was less prevalent. Online social interactions may provide greater access to emotional support and companionship from non-customary sources, such as companionship from family members. Furthermore, companionship from family members or friends, may be more accessible and immediate when communicating online. Active online communication has been shown to aid in overcoming loneliness (Leist, 2013) as well as higher levels of social support and connectedness (Fuss, Dorstyn, & Ward, 2019). A review of research on older adults'

social media usage also reported that the main motivations for older adults to use social media are enjoyment, engaging in social contact, and to exchange social support (Leist, 2013). Future studies would benefit from assessing potential support received from customary and non-customary sources online and the impact of online compensation on older adults' well-being.

Additionally, the study assessed a delimited number of functions performed by network members, although emotional support, instrumental support, and companionship have been identified as key relationship functions that affect health and well-being (Rook, 2015). Social control was not assessed because it was beyond the scope of the Later Life Study of Social Exchanges. Social control refers to efforts by network members to control, or regulate, a person's behavior (Rook, August, & Sorkin, 2011), and it tends to be performed by family members, rather than friends (Rook & Ituarte, 1999). The exclusion of social control from the current study could have resulted in an underestimation of the extent of relationship specialization. Theorists of relationship specialization have also discussed the opportunity to nurture and provide support to others as an important function of social relationships (Weiss, 1974). Research has found, moreover, that providing social support yields benefits for longevity in later life (Brown, Nesse, Vinokur, & Smith, 2003). This nurturing/support-providing function, too, was not assessed in the current study, and future research might benefit from developing and testing predictions about compensation for the lack of customary social network members toward whom older adults could express nurturance and support. The breadth of questions required to measure sources of a broader range of support and companionship functions could become quite large, however, and consideration would need to be given to minimizing participant burden.

As rates of marriage and child-bearing continue to decline in many economically developed nations (Lin & Brown, 2012), there is an urgent need to investigate how non-

customary sources of support and companionship may influence prospects for compensation. Instrumental support is particularly important for physical health in later life, as declines in physical health due to aging may require additional social support in the form of caregiving. As population demographics begin to shift, changes may exist in access to customary, kin-based instrumental support. More specifically, older adults who are not married or partnered, and who may lack adult children, could potentially turn to friends or neighbors for instrumental support, yet friends may lack the capacity or level of comfort needed to provide sustained instrumental support and care over time. Researchers have posited that the permanent nature of family members in individuals' social networks make them better suited than friends for tasks that require long-term commitment (e.g., intense caregiving) (e.g., Litwak, 1985; Rook & Schuster, 1996). Future research would benefit from examining compensation for instrumental support specifically associated with caregiving. Doing so will provide greater insight into the ways in which non-customary sources provide instrumental support in later life, and will also provide a preview of potential challenges that may lie ahead for future generations of older adults.

Conclusion

The current study sought to assess the extent of relationship specialization in older adults' social networks along with its implications for substitution and compensation and, in turn, for loneliness. Given the prevalence and impact of loneliness on older adults' health and well-being, it is important to understand whether loneliness resulting from the loss or lack of a customary source of support or companionship can be alleviated by alternative sources of support. The results of this study yielded little support for theoretical perspectives on relationship specialization by demonstrating that specialized support functions are at times interchangeable.

The results reveal a need for further theory-guided investigation of the prospects for, and constraints, on social network compensation in later life.

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Footnotes

[1]The literature examining relationship specialization has yet to pinpoint impartial language that accurately describes specialized support and companionship sources. The term normative is sometimes used, but it can connote heteronormative patterns, which is not our intention. For the purposes of this study, we will refer to the relationships posited by theorists to provide specialized support and companionship functions as "customary" sources of support, and alternative sources of support and companionship functions as "non-customary."

Table 1
Descriptive Characteristics of Key Measures

Variable[a] (*N* = 890)	Mean (*SD*) or %
Loneliness[b]	5.53 (3.43)
Age	74.16 (6.63)
Health[c]	2.09 (1.13)
Education[d]	4.55 (1.99)
Unmarried	46.7%
Married/Partnered	53.3%
Male	38%
Female	62%
Support and Companionship Functions by Spouses[e]	2.55 (1.18)
Support and Companionship Functions by Friends[e]	1.57 (.82)
Support and Companionship Functions by Children[e]	1.92 (1.12)

Note. SD = standard deviation.

[a]All variables were measured at baseline for the Later Life Study of Social Exchanges. [b]The possible range for loneliness is 0-18. Health refers to perceived health. [c]The possible range for health is 0-4; 0 = poor, 4 = excellent. [d]The possible range for education is 1-9; 1 = less than 8th grade, 2 = 8th grade, 3 = 1-3 years of high school, 4 = high school graduate, 5 = vocational, 6 = 1-3 years college, 7 = college degree, 8 = some grad work or professional training, 9 = completed grad or professional school. [e]The possible range for support and companionship provided by spouses, friends, or children is 0-3; 0 = network member provided no support or companionship, 1 = network member provided a single support or companionship function in the past month, 3 = network member provided 3 support or companionship functions in the past month.

Table 2

Descriptive Statistics: Support and Companionship Provided by Friends vs. Family Members

Variable (N = 890)		n (%) or Mean (SD)
Instrumental Support		
	Family Members	554 (62.2%)
	Friends	284 (31.9%)
Emotional Support		
	Family Members	573 (64.4%)
	Friends	339 (38.1%)
Companionship		
	Family Members	499 (56.1%)
	Friends	440 (49.4%)
Proportion of Instrumental Support Providers		
	Family Members	.53 (.41)
	Friends	.32 (.39)
Proportion of Emotional Support Providers		
	Family Members	.55 (.41)
	Friends	.38 (.40)
Proportion of Companionship Providers		
	Family Members	.42 (.40)
	Friends	.53 (.40)

Note. Support provision variables are dichotomized, with 0 representing a lack of support from the particular type of social network member. The proportion variables are the proportion of support providers or companions in participants' networks that are either friends or family members.

Table 3

Pairwise Comparisons of Family Members vs. Friends as Sources of Instrumental Support, Emotional Support, and Companionship among Unmarried and Married Older Adults

								95% CI	
	Measure	$M_{Proportion}$ (Family)	*SE* (Family)	$M_{Proportion}$ (Friends)	*SE* (Friends)	$M_{Difference}$	*p*	LL	UL
Unmarried	Instrumental Support	.43	.03	.25	.03	.18	<.001***	.08	.27
	Emotional Support	.37	.03	.40	.03	.03	.51	.06	.13
	Companionship	.23	.02	.52	.03	.29	<.001***	.20	.38
Married	Instrumental Support	.49	.03	.29	.02	.20	<.001***	.12	.29
	Emotional Support	.54	.03	.31	.02	.23	<.001***	.15	.32
	Companionship	.32	.02	.50	.03	.17	<.001***	.09	.25

Note. The upper and lower panels of the table each present pairwise comparisons derived from a 3 x 2 x 2 Repeated Measures Multivariate Analysis that contrast instrumental support, emotional support, and companionship derived from family members vs. friends; the upper panel presents findings for the unmarried participants, and the lower panel represents the findings for the married participants.

$^{\dagger}p < .09$ *$p<.05$, **$p<.01$, ***$p<.001$.

Table 4

Paired Sample T-Tests of Number of Support and Companionship Functions Performed by Spouses Versus Friends and Spouses Versus Adult Children among Married Participants

Spouses		Friends				95% CI_{boot}[a]	
M	*SD*	*M*	*SD*	*t(df)*	*p*	LL	UL
1.78	.92	1.26	.69	6.94(217)	<.001***	.38	.67
Spouses		Children				95% CI_{boot}[a]	
M	*SD*	*M*	*SD*	*t(df)*	*p*	LL	UL
1.92	.94	1.26	.83	9.14(246)	<.001**	.52	.80

Note. This analysis was based on married participants (*N*=474). The range for the number of support and companionship functions performed by spouses, friends, and adult children is 0-3. The paired sample *t*-test in row 1 included 218 participants. The paired sample *t*-test in row 2 included 247 participants. The difference in number of participants included in each paired sample *t*-test was because there were more participants with children than friends. [a]All bootstrapped confidence intervals used 5000 resamples.

$^{\dagger}p < .09$ *$p<.05$, **$p<.01$, ***$p<.001$.

Table 5

Multiple Regression of Loneliness on Family Members Providing Instrumental Support, Friends Providing Instrumental Support, and Marital Status

Predictor (N = 850)	*B*	*t*(df)	*p*
Constant	8.54	5.54 (838)	< .001***
Age	-.02	-.87 (838)	.38
Health	-.59	-5.52 (838)	< .001***
Education	.10	1.66 (838)	.10
Gender[a]	-.32	-1.27 (838)	.20
Family Providing Instrumental Support[b]	-.71	1.62 (838)	.11
Friends Providing Instrumental Support[b]	-.96	-1.87 (838)	.06[†]
Marital Status[c]	-.92	-1.73 (838)	.08[†]
Family Providing Instrumental Support x Friends Providing Instrumental Support	1.28	1.74 (838)	.08[†]
Family Providing Instrumental Support x Marital Status	.81	1.31 (838)	.19
Friends Providing Instrumental Support x Marital Status	.32	.42 (838)	.67
Family Providing Instrumental Support x Friends Providing Instrumental Support x Marital Status	-2.00	-1.94 (838)	.053[†]

Note. Fit for Model R^2 = .06, $F(11, 838) = 4.85$, $p < .001$. [a]Gender (0 = male, 1 = female). [b]Support provision variables were dichotomized (0 = family members or friends did not provide support, 1 = family members or friends provided support). [c]Marital status was dichotomized (0 = not married or partnered, 1 = married or partnered).

[†]$p < .09$ *$p<.05$, **$p<.01$, ***$p<.001$.

Table 6

Multiple Regression of Loneliness on Family Members Providing Emotional Support, Friends Providing Emotional Support, and Marital Status

Predictor (N = 850)	*b*	*t*(df)	*p*
Constant	8.72	5.79 (838)	< .001***
Age	-.01	-.82 (838)	.41
Health	-.57	-5.41 (838)	< .001***
Education	.12	1.91 (838)	.06†
Gender[a]	-.25	-.99 (838)	.32
Family Providing Emotional Support[b]	-1.08	-2.32 (838)	.02*
Friends Providing Emotional Support[b]	-1.75	-3.50 (838)	< .001***
Marital Status[c]	-.76	-1.24 (838)	.21
Family Providing Emotional Support x Friends Providing Emotional Support	2.06	2.98 (838)	.003**
Family Providing Emotional Support x Marital Status	.29	.42 (838)	.68
Friends Providing Emotional Support x Marital Status	1.30	1.62 (838)	.11
Family Providing Emotional Support x Friends Providing Emotional Support x Marital Status	-2.37	-2.31 (838)	.02*

Note. R^2 = .07, $F(11,838) = 5.37$, $p < .001$. [a]Gender (0 = male, 1 = female). [b]Support provision variables were dichotomized (0 = family members or friends did not provide support, 1 = family members or friends provided support). [c]Marital status was dichotomized (0 = not married or partnered, 1 = married or partnered).

†$p < .09$. *$p<.05$. **$p<.01$. ***$p<.001$.

Table 7

Multiple Regression of Loneliness on Friends Providing Companionship, Family Members Providing Companionship, and Marital Status

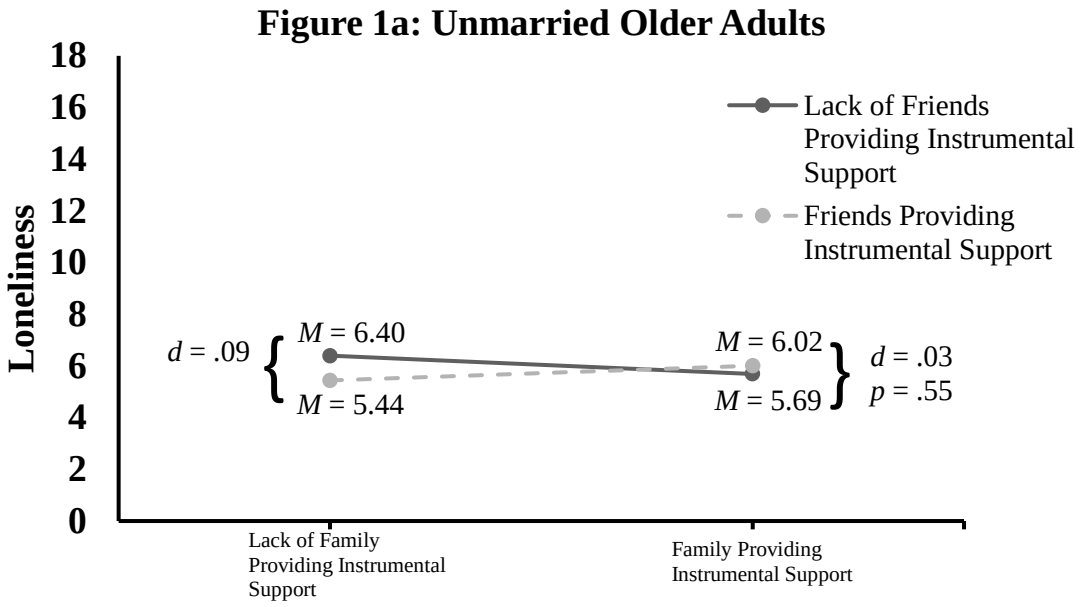
Predictor (N = 850)	*b*	*t*(df)	*p*
Constant	10.01	6.67 (838)	< .001***
Age	-.02	-1.31 (838)	.19
Health	-.54	-5.11 (838)	< .001***
Education	.12	1.95 (838)	.05†
Gender[a]	-.23	-.94 (838)	.35
Friends Providing Companionship[b]	-2.39	-4.99 (838)	< .001***
Family Providing Companionship[b]	-1.77	-3.55 (838)	< .001***
Marital Status[c]	-1.02	-1.71 (838)	.09
Friends Providing Companionship x Family Providing Companionship	2.19	3.18 (838)	.002*
Friends Providing Companionship x Marital Status	1.04	1.43 (838)	.15
Family Providing Companionship x Marital Status	.53	.75 (838)	.46
Friends Providing Companionship x Family Providing Companionship x Marital Status	-1.57	-1.62 (838)	.11

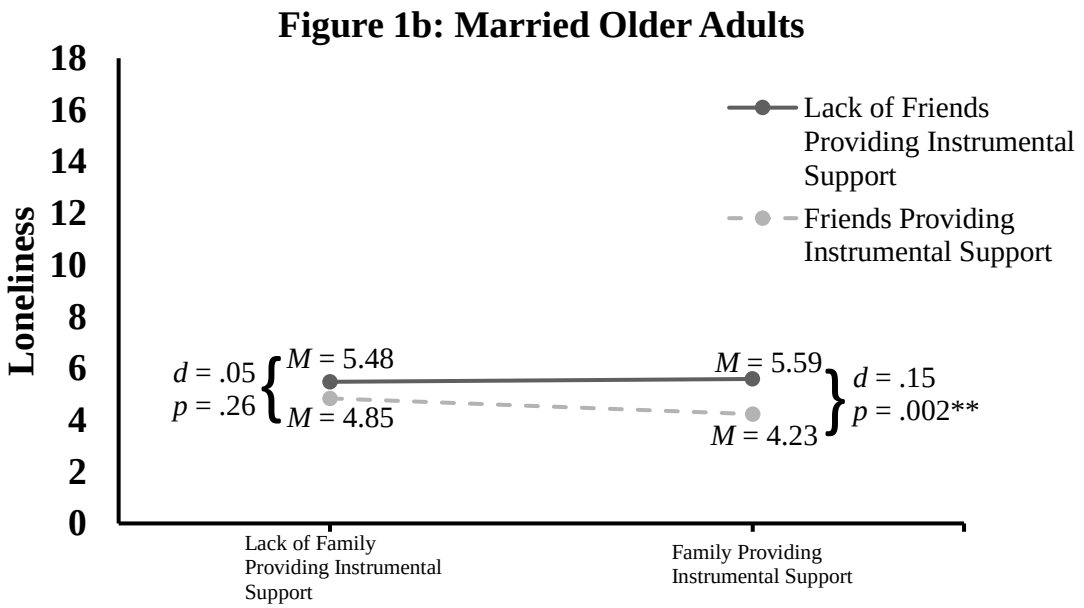
Note. R^2 = .08, $F(11,838) = 7.06$, $p < .001$. [a]Gender (0 = male, 1 = female). [b]Companionship provision variables were dichotomized (0 = family members or friends did not provide companionship, 1 = family members or friends provided companionship). [c]Marital status was dichotomized (0 = not married or partnered, 1 = married or partnered).

†$p < .09$. *$p<.05$. **$p<.01$. ***$p<.001$.

Figure 1

Loneliness as a Function of Family Members Providing Instrumental Support, Friends Providing Instrumental Support, and Marital Status



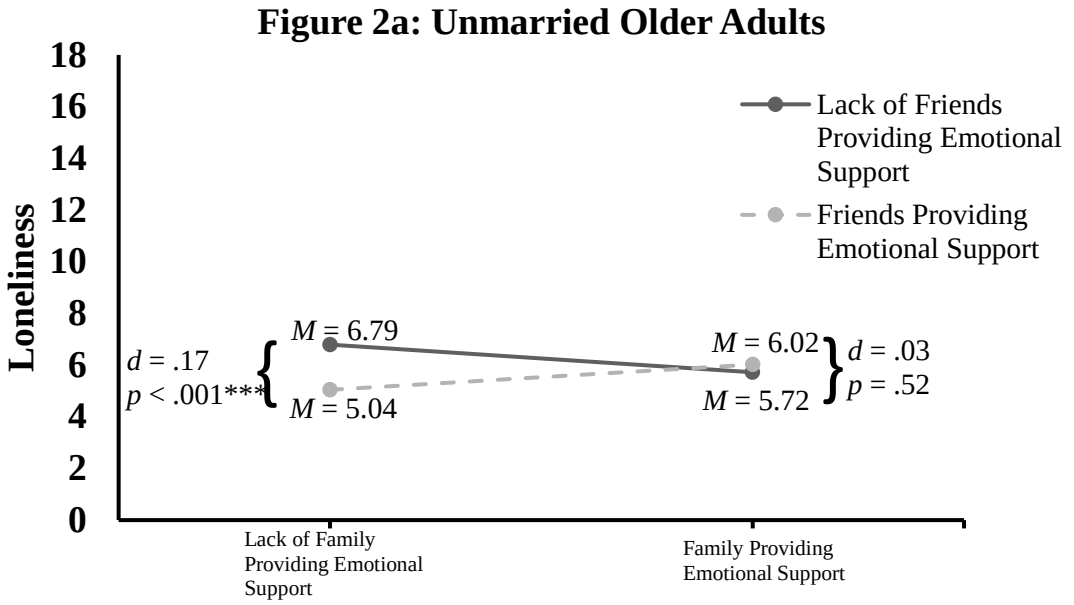


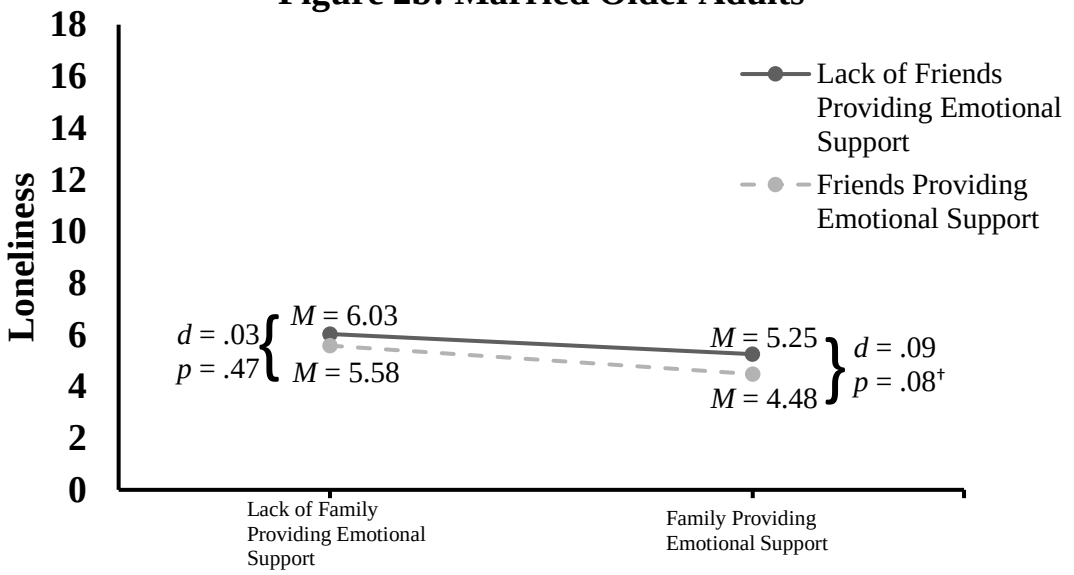
Note. This figure highlights potential compensation by friends providing support for a lack of family members providing instrumental support.

$^{\dagger}p < .09$. *p<.05. **p<.01. ***p<.001.

Figure 2

Loneliness as a Function of Family Members Providing Emotional Support, Friends Providing Emotional Support, and Marital Status



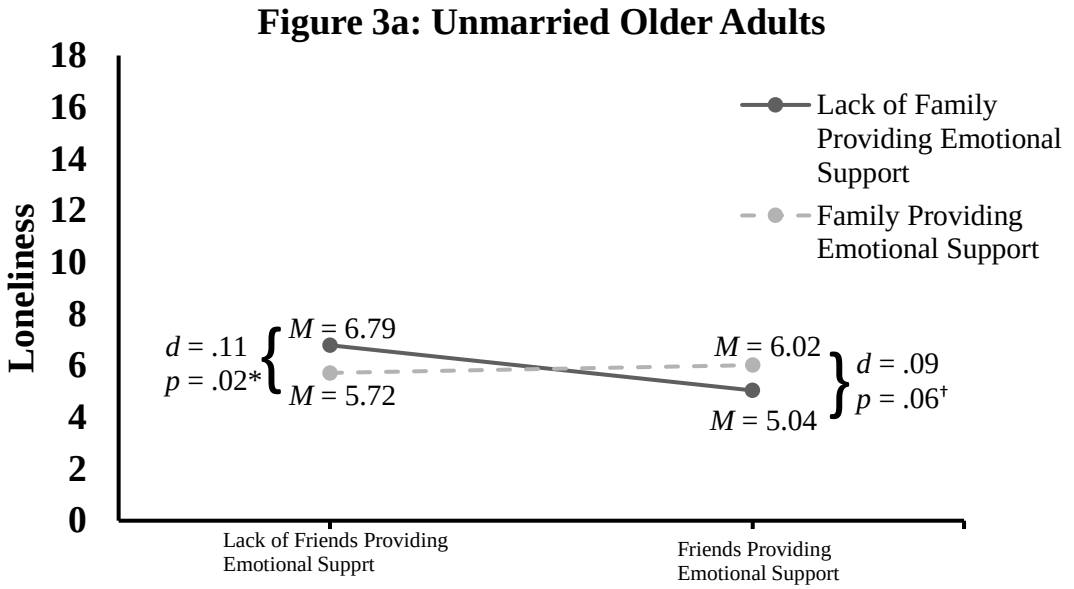


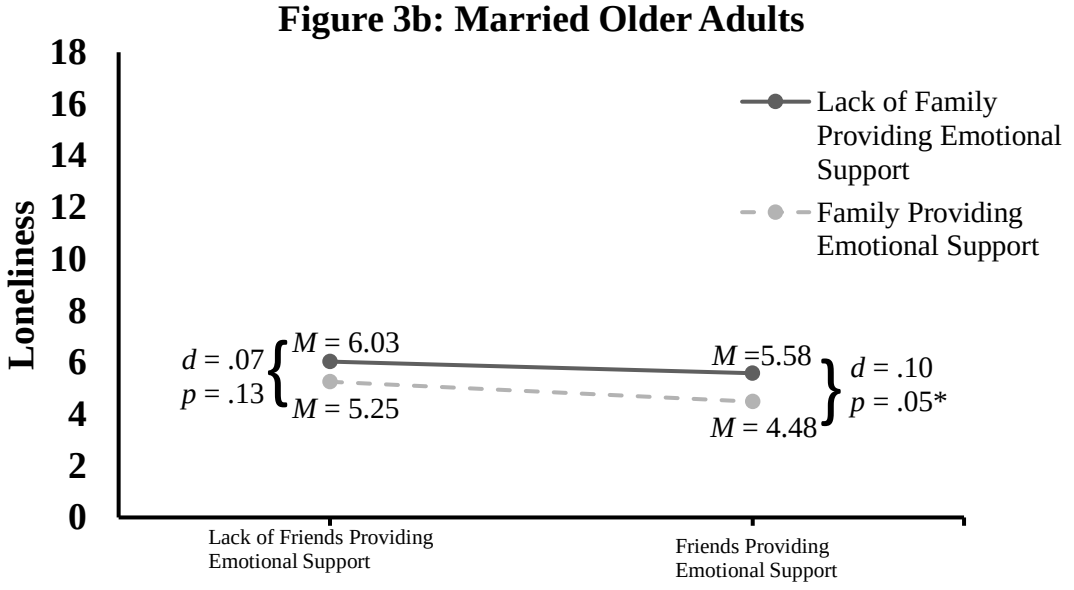
Note. This figure highlights potential compensation for a lack of family members providing emotional support.

†$p < .09$. *$p<.05$. **$p<.01$. ***$p<.001$.

Figure 3

Loneliness as a Function of Friends Providing Emotional Support, Family Members Providing Emotional Support, and Marital Status



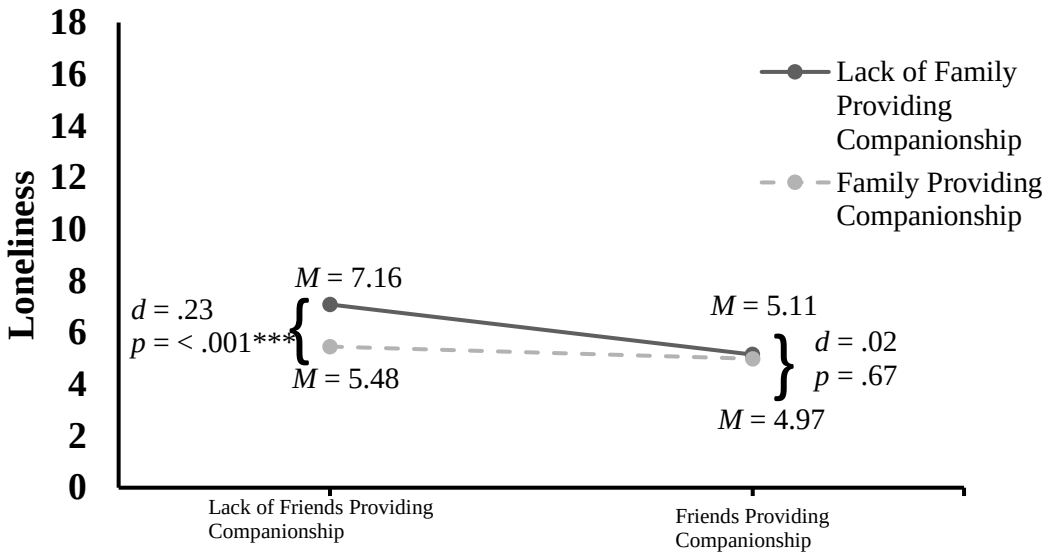


Note. This figure highlights potential compensation for a lack of friends providing emotional support.

†$p < .09$. *$p<.05$. **$p<.01$. ***$p<.001$.

Figure 4

Loneliness as a Function of Friends Providing Companionship and Family Members Providing Companionship



Note. This figure highlights potential compensation for a lack of friends providing companionship.

†$p < .09$. *$p<.05$. **$p<.01$. ***$p<.001$.