



Published in final edited form as:

*Fam Relat.* 2010 February 1; 59(1): 28–44. doi:10.1111/j.1741-3729.2009.00584.x.

## Intergenerational Relationship Quality, Gender and Grandparent Involvement

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### Abstract

This prospective, intergenerational study ( $N = 181$ ) considered how parent (G1, generation 1)–child (G2, generation 2) relationship quality during adolescence and adulthood is associated with G1's level of involvement with their 3–4 year-old grandchildren (G3, generation 3). Path model analyses indicated different patterns of results for the involvement of grandmothers and grandfathers with the children of their G2 sons and daughters. Current parent-reported G1-G2 relationship quality was positively associated with G2 report of G1 involvement with G3, especially for G2 daughters. The relations among confounding variables, including geographic distance, socioeconomic status, and grandparent marital status and grandparent involvement with grandchildren were considered. Results highlight the roles of intergenerational relationship quality and gender configuration of the G1-G2 dyad in shaping grandparent involvement with grandchildren.

### Keywords

grandparents; intergenerational relationships; parent-child relationships

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Approximately 56 million adults are grandparents in the United States (United States Census Bureau, 2006), making grandparenthood a normative stage of development. Most children born during the 1990's and later will know both sets of grandparents (Szinovacz, 1998). However, the level of grandparent involvement in the lives of their grandchildren varies considerably. Highly involved grandparents may provide crucial support to the parent and grandchild generations, especially during early childhood when parent and grandchild needs may be greatest as parents learn to successfully navigate the challenges associated with parenthood. Moreover, grandparent involvement with grandchildren is positively associated with satisfaction and well-being for grandparents (Bates, 2009; Reitzes & Mutran, 2004; Smith & Drew, 2002). Therefore, identifying processes influencing grandparent involvement is relevant to multiple generations.

Research regarding the family-based processes influencing grandparent involvement in the lives of their young grandchildren is limited (King, Russell, & Elder, 1998; Smith & Drew, 2002). To date, studies of grandparent involvement have focused on static variables that reflect

characteristics of individual family members or “social addresses” (e.g., geographic distance). Closer geographic proximity, for instance, has been found to be positively associated with grandparent-grandchild contact (Michalski & Schakleford, 2005; Uhlenberg & Hammill, 1998). In addition, maternal grandparents, especially grandmothers, seem to be more involved in the lives of their grandchildren than paternal grandparents (Chan & Elder, 2000; Michalski & Schakleford).

However, focusing on these static factors reveals little about the family processes that underlie grandparent involvement. Understanding how family relationships may shape contact between grandparents and grandchildren provides important information for practitioners and researchers. That is, the quality of specific family relationships, which in turn influences patterns of grandparent involvement with grandchildren, may vary according to the specific relationship dyad.

In addition, the gender configuration of each dyad may be related to both relationship quality and patterns of grandparent involvement. For example, higher quality relationships between grandmothers (G1) and their daughters (G2) in comparison to other G1-G2 relationship dyads may account for observed patterns of greater maternal grandmother involvement with grandchildren (G3). If in fact these relationship dynamics account for differential grandparent involvement, then intervening to improve these relationships may reap benefits for all generations.

Quite possibly, characteristics of the G2 parents’ relationships with their own G1 parents during their adolescence and adulthood affect G2 parents’ willingness to solicit and accept help from their G1 parents (King, 2003; Mueller & Elder, 2003). That is, G2 parents who perceive their relationships with their G1 parents as emotionally close and supportive may be more willing to solicit and accept help from their G1 parents than G2 parents with emotionally contentious relationships. Although the quality of the relationship between G1 and G2 has been positively linked to G1 involvement with G3, these associations have been demonstrated using concurrent assessments of relationship quality, often as reported by the grandparent (Fingerman, 2004; Uhlenberg & Hammill, 1998). However, patterns of family interactions develop over time and variations in grandparent involvement with G3 may depend on variations in G1-G2 relationship quality over time. Moreover, the quality of G2 parents’ relationships with their G1 mothers and fathers may differentially influence the level of grandmother versus grandfather involvement.

The present study focused on grandparent involvement with their preschool-aged grandchildren. Previous work considering factors related to grandparent involvement has focused primarily on older children or adolescents (King, 2003; Szinovacz, 1998) or has controlled for child age within nationally representative samples (Michalski & Shakleford, 2004; Pollet, Nettle, & Nelissen, 2007; Uhlenberg & Hammill, 1998). Importantly, grandparent involvement patterns that are established when grandchildren are young may be maintained over time such that grandparents who are highly involved during early childhood maintain a high level of involvement over time. Moreover, grandparent involvement during early childhood may be particularly beneficial for all generations. First, involvement with grandchildren, provided that it is non-custodial, may keep grandparents active and engaged, and may serve as a considerable source of satisfaction for grandparents (Reitzes & Mutran, 2004; Silverstein & Marengo, 2001; Thiele & Whelan, 2006). Particularly relevant to the present study, Silverstein and Marengo reported that among a nationally representative sample of grandparents, those with younger grandchildren reported higher levels of contact, more salient grandparent role identification, more frequent participation in fun shared activities with grandchildren, and greater emotional closeness to grandchildren. Thus, grandparent

involvement may be highest and most closely related to grandparent well-being when grandchildren are young.

Second, G2 may rely most on the involvement of G1 when G3 are young. Early childhood may be a developmental period in which parents require the most assistance from their own parents. The rapidity of social, biological and cognitive changes associated with early childhood requires considerable adaptation on the part of parents (Shaw & Bell, 1993), and grandparents may provide an important source of practical, informational, and social support. For example, grandparent involvement with childcare is particularly high among preschool age children (Fergusson, Maughan, & Golding, 2007; Fuller-Thomson & Minkler, 2001). Third, although limited empirical research (Fergusson et al., 2007; Pittman & Boswell, 2007) has considered the effects of non-residential grandparent involvement on grandchild development, grandparent involvement may benefit young grandchildren directly through interactions with responsive and committed adults, or indirectly by providing support and material resources to foster positive G2 parenting. In sum, G1 grandparent involvement with G3, perhaps especially during G3's early childhood, may enhance the development of all generations. Because grandparent-grandchild relationships are largely dependent on the parent generation when grandchildren are young, G1-G2 relationship quality may uniquely influence G1 involvement with their G3 grandchildren during early childhood.

The goal of the present study was to consider grandparent involvement within an intergenerational context by examining the extent to which G2-reported grandparent involvement with G3 was associated with variations in G1-G2 relationship quality. Specifically, the potential independent effects of past (i.e., during G2's adolescence) and current (i.e., during G2's adulthood) G1-G2 relationship quality on the level of G1 grandparent involvement with their G3 grandchildren was considered. Further, the extent to which G1-G2 gender configuration moderates associations between relationship quality and grandparent involvement was evaluated. That is, we examined the extent to which relationship quality was differentially associated with the involvement of grandmothers and grandfathers with the children of their sons and daughters. The following section begins by describing how G1-G2 current and past relationship quality may influence grandparent involvement. Next, the role of G2 gender in shaping grandparent involvement is discussed, with particular focus on the processes by which G1-G2 gender configuration may moderate links between past and current relationship quality and grandparent involvement. Finally, we describe confounding factors, specifically geographic distance, G1 marital status, and G2 socioeconomic need that may influence grandparent involvement.

## **G1 – G2 Relationship Quality and Grandparent Involvement During G3's Early Childhood**

Parents often facilitate grandparent access to grandchildren, especially when grandchildren are young (King, 2003; Szinovacz, 1998). The quality of G2 parents' relationships with their G1 parents likely influences G2 parents' willingness to encourage contact between G1 grandparents and G3 grandchildren. Further, family systems theory suggests that each dyadic family relationship is embedded within a system of relationships such that each relationship influences and is influenced by every other relationship (Cox & Paley, 1997). Grandparent-grandchild relationships are embedded within multigenerational family systems and are contingent upon grandparent-parent relationships (Mueller & Elder, 2003). Similar to marital conflict research, which suggests the quality of the marital relationship may 'spill-over' to influence the relationship between children and parents (Cumings & Davies, 2002), the quality of the G1-G2 relationship potentially demonstrates a similar 'spill-over' effect on the quality of the relationship between grandparents and grandchildren. That is, high quality G1-G2 relationships are likely to be associated with more G1 grandparent involvement in the lives

of their G3 grandchildren. Consistent with this idea, positive G1- G2 relationships have been linked to more frequent G1-G3 interactions (Fingerman, 2004; King; Uhlenberg & Hammill, 1998).

In addition to explaining how characteristics of family relationships influence level of involvement concurrently, a family systems perspective also explains how previous relationship quality influences the family system. Specifically, relationships do not exist within a vacuum and the quality of G1 – G2 relationships during earlier developmental periods likely ‘spills-over’ to influences patterns of G1 involvement with G3 years later. Family of origin experiences, especially the quality of G1 parent-G2 child relationships during G2’s own childhood, may have consequences for intergenerational relationships. Thus, independent of present relationship quality, past G1-G2 relationship quality may shape the willingness of G2 to facilitate interactions between G1 and G3, and the willingness of G1 to participate in those interactions. Further, family systems theory also suggests that family level adaptations to meet the needs of a particular individual (e.g., grandchild) or family subsystem (e.g., parent-child) may have unintended consequences for other individuals or family relationships (Cox & Paley, 1997). Therefore, regardless of past G1-G2 relationship quality, current G1 involvement with G3 may be positively associated with G1-G2 relationship quality. That is, even when a G1-G2 adolescent relationship was characterized by low warmth and support, the addition of G3 may cause a shift in family organization such that G1-G2 relationships are now characterized by high levels of warmth and support, and G1 is actively involved with G3.

The present study considered G1-G2 relationship quality during adulthood (current) and adolescence (past). Given that the developmental trajectories of G1-G2 relationship quality vary across adolescence and adulthood (e.g., Aquilino, 1997; Thornton, Orbuch, & Axinn, 1995), the differential impact of the quality of the G1-G2 relationship either during adolescence (past) or during adulthood (current) on G1 involvement in the lives of their grandchildren is unknown. One possibility is that the quality of the G1-G2 relationship during adolescence has unique and pervasive effects on grandparent involvement in the lives of their grandchildren years later. That is, adolescence has repeatedly been identified as a critical period for G1 parent-G2 child relationships, as it often marks the height of parent-child conflict (Laursen & Collins, 1994; Shanahan, McHale, Crouter, & Osgood, 2007; Steinberg, 2001). The level of G1-G2 conflict experienced during G2’s adolescence may directly influence G2 parents’ willingness to solicit or encourage G1 involvement in the lives of their own G3 children. Specifically, when the G1-G2 relationship during adolescence was highly conflictual, G2 parents’ may be less likely as adults to solicit or encourage G1 involvement in the lives of their G3 children. In contrast, G1-G2 relationships that were warm and supportive during G2 adolescence may provide a context in which G2 are more likely to facilitate and solicit G1 involvement in the lives of their G3 children.

Alternatively, the quality of the G1-G2 relationship during adolescence may have little impact on the level of G1 grandparent involvement in the lives of their G3 grandchildren. Families with highly conflictual G1-G2 adolescent relationships that recover (i.e., the G1-G2 relationship is warm and supportive during adulthood) may demonstrate similar levels of G1 involvement in the lives of their G3 grandchildren as families that maintained high levels of warmth and support during adolescence and adulthood. In this case, G1-G2 adolescent relationship quality should not explain significant portions of the variance associated with G1 grandparent involvement once the current, adulthood, G1-G2 relationship quality is considered.

Disentangling the impact of adolescent (past) and adult (current) relationship quality on grandparent involvement requires prospective longitudinal data. However, prospective studies which include information on grandparent involvement are rare. The present study addresses

this gap. G2 participants' reports of the quality of their relationship with their G1 mother and G1 father were collected during G2's adolescence and again several years later during G2's adulthood, when their G3 child was 3 to 4 years of age. This prospective design provided an opportunity to examine variations in the quality of G1-G2 relationships that are not contaminated by retrospective biases. In addition, we considered the extent to which links between relationship quality and grandparent involvement vary by G1-G2 gender configuration.

## Gender, Relationship Quality, and Grandparent Involvement

The gender configuration of the G1-G2 dyad likely shapes grandparent involvement (Fingerman, 2004; Uhlenberg & Hammill, 1998). In general, maternal grandparents have been found to be more involved in the lives of their grandchildren than paternal grandparents (Fingerman; Michalski & Shakleford, 2004; Pollet et al., 2007). While grandmothers are generally more involved with grandchildren than grandfathers (Reitzes & Mutran, 2004; Smith & Drew, 2002), maternal grandmothers are particularly involved in the lives of their grandchildren (Chan & Elder, 2000; Michalski & Schakleford; Uhlenberg & Hammill). Increased grandmother involvement, especially by maternal grandmothers, may stem from the greater involvement of women in the socialization of children and the maintenance of kinship relations (Bates, 2009; Chan & Elder). Research on grandparenting is limited in that previous work has primarily focused on maternal grandmothers, or has simply contrasted grandmother and grandfather involvement (Bates; Fingerman; Reitzes & Mutran). Little is known about the within family characteristics, such as relationship quality, which influence both grandmother and grandfather involvement with their grandchildren (Bates).

Focusing on relationship characteristics that influence grandparent involvement within G1-G2 gender configurations provides some insight, albeit limited, into family processes. Grandmothers may be more involved with grandchildren because of differences in the quality of their past and current relationships with their sons and daughters. For example, emotionally closer relationships between G1 grandmothers and G2 mothers have accounted for grandchild reports of greater closeness to maternal grandparents (Chan & Elder, 2000) and maternal grandmother reports of more frequent visits (Uhlenberg & Hammill, 1998). In other words, concurrent reports of G1-G2 relationship quality have accounted for the matrilineal advantage in grandparent-grandchild relationships. To date, the extent to which past and current G1-G2 relationship quality may be jointly associated with maternal and paternal grandmother and grandfather involvement remains unexplored. While past and current relationship quality is expected to be positively associated with grandparent involvement, G1-G2 gender configuration may condition these associations. In other words, the impact of relationship quality on grandparent involvement may vary for mothers and sons, mothers and daughters, fathers and sons, and fathers and daughters.

Research on parent-child relationships during adolescence suggests that the level of G1-G2 conflict varies by G1-G2 gender configuration. For example, Scaramella and Conger (2004) examined change in parent-adolescent conflict from seventh through twelfth grades and found that, for all dyadic configurations, parent-adolescent conflict peaked in tenth grade. Of the four dyadic configurations, mother-daughter, followed by mother-son, interactions had the highest levels of observed negative affect and the slowest rates of decline in negative affect from middle to late adolescence (Scaramella & Conger). Although G1-G2 conflict seems to dissipate during the late adolescent and early adult years, both sons and daughters have been found to report feeling closer to mothers than fathers during the adult years, with mother-daughter dyads reporting the closest relationships (Lawton, Silverstein, & Bengtson, 1994; Thornton et al., 1995). Similarly, Shanahan and colleagues (2007) noted increases in G1-G2 warmth and



support during late adolescence regardless of parent or child gender, but the greatest increase in warmth and support was noted for mothers and daughters.

If adolescent relationship quality impacts G1 grandparent involvement in the lives of their grandchildren, then the G1-G2 gender configuration may differentially affect the level of grandparent involvement. That is, while mother-child relationships may be the most contentious during adolescence, such contentiousness also may indicate more emotional closeness, but only for mothers and daughters (Steinberg, 2001). Quite possibly, G1 mother-G2 daughter relationship quality during adolescence may more strongly impact the level of G1 involvement in the lives of their G3 grandchildren than their current relationship quality. In contrast, mothers' relationships with their sons and fathers' relationships with their children (of both genders) may demonstrate similar patterns of influence, such that the level of G1 involvement may be similarly affected by past and current relationship quality. To date, no research has examined how G1-G2 gender configuration and prospective adolescent G1-G2 relationship quality influence later G1 involvement with G3. In the present study, we considered how gender of both generations may moderate the expected associations between past and current relationship quality and grandparent involvement in the lives of their G3 grandchildren.

### Potential Confounds Affecting Grandparent Involvement

Beyond relationship quality, a number of factors have been identified as impacting the level of G1 involvement in the lives of their G3 grandparents. First, living near grandchildren creates opportunities for grandparents to become involved with grandchildren, and close geographic proximity to grandchildren has been consistently related to more grandparent involvement (Smith & Drew, 2002; Uhlenberg & Hammill, 1998). Second, grandparent divorce may differentially affect grandmother and grandfather involvement. Divorced grandfathers have been found to report less contact with their grandchildren than either divorced grandmothers or married grandparents (King, 2003; Reitzes & Mutran, 2004; Uhlenberg & Hammill). Third, higher levels of G2 socioeconomic need may be linked to greater grandparent involvement. For example, grandparents often support grandchildren following parental divorce, and they are more involved in child care for single versus married parents (Clingempeel, Colyar, Brand, & Hetherington, 1992; Fergusson et al., 2007; Hilton & Koperafrye, 2007). In order to rule out the effects of geographic distance, G1 parental divorce, and G2 socioeconomic need, these potential confounds were statistically controlled in the present analyses.

### Goals of the Present Study

The present study examined the associations among G2 perceptions of the quality of their relationships with their G1 mothers and fathers during their adolescence (past) and adulthood (current) and their reports of the level of involvement of G1 grandmothers and grandfathers with their G3 children. Two primary research questions were addressed.

#### Question 1

Do G2 parent perceptions of past and current relationship quality predict levels of grandmother and grandfather involvement when G3 children are 3 or 4 years of age? Higher levels of warmth and support in the G1-G2 relationship reported by G2 participants during adolescence (past) and adulthood (current) were expected to predict more grandparent involvement in the lives of their G3 grandchildren.

## Question 2

Does G2 parent gender moderate the association between past and current intergenerational relationship quality and the level of G1 grandmother and grandfather involvement? Adolescent (past) relationship quality was expected to be positively associated only with grandmother involvement with the children of their G2 daughters.

## Method

### Sample

Participants were drawn from the Family Transitions Project (FTP), an ongoing, longitudinal study of 558 adolescents, their parents, and selected close relationships. Interviews were first conducted with adolescents (G2) and their parents (G1) as early as 1989, when the target youth were in the seventh grade. Data were collected annually thereafter with an average retention rate of 92% through 2005. In 1991, the earliest time point included in the present study, all target participants were in the ninth grade and completed the same assessment battery. See Conger & Conger (2002) for a complete description of the Iowa Youth and Families Project, the original study, and Conger, Nepl, Kim, and Scaramella (2003) for a complete description of the FTP.

Biological G3 children of the G2 participants who were at least 18-months old and who resided with G2 parent at least 2 weekends a month were recruited into the study beginning in 1997. G3 children were assessed annually, but cost restrictions prohibited full assessments of the G2 target participants on an annual basis. Beginning in 1999, full assessments of G2 participants occurred on a biennial schedule. In 1999, questions about G1 grandparent involvement in the lives of their G3 grandchildren were added to the G2 assessment battery. Thus, only data collected during the full G2 assessment years (i.e., 1999i.e., 2001i.e., 2003, and 2005) and when their G3 children were 3 or 4 years of age are included in this report. A total of 181 G3 children who were 3 or 4 years old at the time of their assessment are included in this report; seven G2 participants with a 3 or 4 year old G3 child were excluded because their assessments occurred during 1997 and 1998. Results from one-way Analysis of Variance procedures indicated no differences in past and current relationship quality among the G2 participants included and excluded in the present study. Other constructs used in the present analysis were not assessed prior to 1999. Two of the G3 children included in the present study did not reside with their G2 parents full time because the other parent had child custody.

At the time of the G2-G3 assessment, G3 children averaged 39.80 ( $SD = 6.64$ ) months and their G2 parents' age ranged from 22 to 30 ( $M = 26.01$ ,  $SD = 2.32$ ). Approximately 59% ( $n = 106$ ) of G2 target parents were female, and 50% ( $n = 91$ ) of the G3 children were female. The sample was predominantly White, with approximately 97.2% ( $n = 176$ ) of G2 parents self-identifying as White and 2.8% ( $n = 5$ ) self-identifying as Native American, Hawaiian, or other. Similarly, 96.5% ( $n = 175$ ) of the G3 children were White, while 3.5% ( $n = 6$ ) were non-White (i.e., African-American, Native American, Hawaiian, or other). G2 education ranged from 8 to 19 years ( $M = 14.37$ ,  $SD = 1.91$ ).

G1 grandmother age ranged from 41 to 63 years ( $M = 50.98$ ,  $SD = 4.38$ ) and G1 grandfather age ranged from 42 to 66 years ( $M = 53.01$ ,  $SD = 4.93$ ) at the time of the G2-G3 assessment. Approximately 84% ( $n = 151$ ) of G2 parents were married or living in a 'married like' relationship. Most G1 grandparents were married to each other, with approximately 81% ( $n = 131$ ) of G1 grandparents married to each other during G2 adolescence, and nearly 74% ( $n = 113$ ) married to each other at the time involvement with G3 was assessed. G1 grandmother and grandfather educational attainment ranged from 9 to 19 years ( $M = 13.39$ ;  $SD = 1.52$ ).

**Procedures: 1991 – 1992**

Trained interviewers visited all participating families twice each year when the G2 adolescents' were in ninth and tenth grades. Each visit lasted about two hours and each year's assessment followed the same procedures. During the visit, family members completed a set of questionnaires, including G1 parent reports of their current income, age of parenthood and level of education. G2 assessments included a self-report of relationship quality with each parent.

**Procedures: 1999 – 2006**

From 1997 onward, G2 participants with an eligible G3 biological child completed a one-hour home visit with their G3 children. Home visits with G3 occurred annually when G3 children were between the ages of 18 months and 7 years of age. Only data collected when G3 children were 3 or 4 years of age are included in this report. The same procedures and measures were used at the 3- and 4-year old assessments. Prior to the in-home visit, G2 parents completed questionnaires, some of which included questions about their family demographic characteristics, their G3 children's adjustment, and their current relationships with their own parents (G1). During the in-home assessment, G2 parents and G3 children participated in a variety of observational tasks; only questionnaire data are used in this report. See Table 1 for descriptive statistics for all independent and dependent variables considered in the present study.

**Measures: 1991 – 1992**

**Past (adolescent G1-G2) relationship quality**—G2 participants reported separately on their relationship quality with each G1 parent in 1991 and 1992 or when they averaged 13 and 14 years of age, respectively. During each assessment year, G2 adolescents responded how often 17 specific behaviors had occurred during the past 12 months using a 7-point Likert scale ranging from 1 (always) to 7 (never). Only the seven items tapping warmth and support in their relationship with their parent were used in the present analysis. Sample items include, during the past 12 months, how often did your mother: “act loving and affectionate toward you,” and “let you know that she appreciates your ideas or things you do.” G2 adolescents completed the same items regarding their relationship with their father. This scale has consistently demonstrated acceptable reliability and validity (see Conger & Conger, 2002; Donnellan, Conger, & Bryant, 2004). Items were scored so that higher scores indicate more warmth and support in the relationship. Scores were internally consistent for reports on mothers ( $\alpha = .91$  in 1991, and  $.91$  in 1992) and fathers ( $\alpha = .91$  in 1991, and  $.92$  in 1992). Scores were significantly correlated within parent in 1991 and 1992, showing consistency over one year for G2 reports of relationship quality with their mothers and with their fathers. ( $r = .59$  for mothers;  $r = .55$  for fathers). Scores were created by averaging across the seven items and across the two time points separately for mothers and fathers. Mean G2 reports of adolescent relationship quality was 4.98 ( $SD = .73$ ) with mothers and 4.88 ( $SD = 1.14$ ) with fathers. Past G2 reports of mother and father relationship quality were positively correlated ( $r = .44, p < .001$ ). There were no mean differences between mother and father relationship quality, but G2 sons rated their relationships with their G1 fathers as more supportive than G2 daughters' ratings of relationship quality with G1 fathers ( $t = -2.11(179), p < .05$ ). G2 gender did not differentiate mother relationship quality ratings.

**Measures: 1999 - 2006**

**Current (adult G1-G2) relationship quality**—At the time of the G3 assessment, G2 participants completed the same seven items regarding the current level of warmth and support in their relationship with each G1 parent. This measure of relationship quality continued to display high internal consistency ( $\alpha = .93$  for mothers, and  $\alpha = .93$  for fathers). Mean



G2 reports of current relationship quality with mothers was 5.48 ( $SD = 1.02$ ) and 4.88 ( $SD = 1.23$ ) with fathers. Current G2 reports of mother and father relationship quality were positively correlated ( $r = .56, p < .001$ ). On average, G2 daughters indicated higher levels of warmth and support in their current relationships with their mothers than G2 sons ( $t = 2.04(179), p < .05$ ). No G2 gender differences in perceived present G1 father relationship quality emerged.

**G1 grandparent involvement**—G2 parents completed two items regarding how involved G1 grandparents currently are in the lives of their G3 grandchildren. First, G2 parents rated how involved each grandparent was in raising their G3 child on a 3-point Likert scale ranging from 1 (*not at all involved*) to 3 (*very involved*). Mean reported G1 grandmother involvement was 2.30 ( $SD = .52$ ), and G1 grandfather involvement was 2.13 ( $SD = .51$ ). Second, G2 parents reported how often, during the past 12 months, they had contact (in person, in letters, on the phone, or over e-mail) with each G1 parent. Level of contact was rated on a 6-point Likert scale ranging from 1 (*every day*) to 6 (*never*). Items were reverse-scored so that higher scores indicate more contact. Average reported contact for G1 grandmothers was 4.89 ( $SD = .89$ ) and for G1 grandfathers was 4.12 ( $SD = 1.24$ ). Responses on these two items were highly correlated for G1 grandmothers ( $r = .60$ ) and for G1 grandfathers ( $r = .62$ ). Grandparent involvement was calculated by averaging the standardized mean of the two items. Scores were created separately to reflect G1 grandmother ( $M = .03, SD = .87$ ) and G1 grandfather ( $M = .01, SD = .89$ ) involvement.

### Measures of potential confounds

**G2 adult socioeconomic need**—In order to rule out the possibility that G1 grandparent involvement was dependent on G2 participants' current socioeconomic need, an index of socioeconomic risk was computed using three different risk indicators collected when G1 involvement with G3 was assessed: G2 educational attainment, G2 income-to-needs ratio, and G2 age of parenthood. G2 parents reported the highest level of education they had received to date when their children were 3- or 4-years old ( $M = 14.38$  years;  $SD = 1.91$ ). Income-to-needs ratios were calculated by dividing the total income by the appropriate federal poverty threshold for the number of people G2 parents reported in the household. Scores below 1 indicate that a family is unable to afford basic needs. On average G2 parents reported income-to-needs ratios of 3.56 ( $SD = 2.73$ ) with a range of 0 – 32.33, indicating that most parents had incomes that exceeded poverty levels, but there was the considerable variability within the sample. Finally, G2 parents' reports of their age at their G3 child's birth were used to measure G2 age at parenthood. Mean G2 age at the birth of the G3 child was 22.01 ( $SD = 2.32$ ), with a range of 18 to 26 years.

A cumulative risk index was also created. G2 parents reporting low parental education (i.e., below high school), low income-to-needs ratios (i.e., below 1.5), and young parental age at the time of G3's birth (i.e., below age 22) received a score of 1, all other responses received a score of 0. The three risk indicators were summed to create an overall index of risk. The average risk score was .86 ( $SD = .90$ ), indicating that most G2 parents reported less than one risk factor.

**Geographic distance**—G2 parents reported how many miles they currently lived from each G1 parent. None of the G1 grandparents were residing with the G2 parents at the time of assessment. Mean geographic distance between G1 grandfathers and G2 was 208.81 miles ( $SD = 457.87$ ) and between G1 grandmothers and G2 was 214.34 ( $SD = 525.73$ ).

**G1 marital status**—G2 parents reported on G1 marital status during the G3 age 3 or 4 year assessment. Responses were classified as married (scored as 1) or not married (scored as 0). Approximately 74% ( $n = 119$ ) of G1 grandmothers and grandfathers were married to each other when G3 were 3–4 years old.

## Analytical Procedures

Path models to test the hypotheses were estimated using the Full Information Maximum Likelihood (FIML) estimation. Overall model fit was evaluated using several different fit indices: the comparative fit index (CFI), for which values above .90 indicate a good model fit (Bentler, 1990; Bollen, 1989; Kline, 2005), the Root Mean Square Error of Approximation (RMSEA, Steiger, 1990), for which values below .05 indicate an excellent model fit and values of .05 to .08 indicate a good fit (Browne & Cudeck, 1993), and the  $\chi^2/df$  ratio for which ratios of less than 2.5 or 3 reflect a good model fit (Kline). Analyses proceeded in two steps. First, as shown in Figure 1, a model was estimated for the entire sample. Within family influences of grandmother and grandfather involvement were estimated within the same model and the disturbance terms for G1 grandmother and G1 grandfather involvement were allowed to covary, as were the disturbance terms for past G1 mother-G2 and G1 father-G2 relationship quality and current G1 mother-G2 and G1 father-G2 relationship quality. If a variable was significantly associated with the involvement for only one grandparent, the model was re-estimated with an equality constraint imposed on the path from the particular variable to G1 grandmother involvement and the path from the same predictor to G1 grandfather involvement (Kline). If the model fit (as measured by the  $\chi^2$  statistic) of the model with the imposed equality constraint decreased significantly from the model fit of the model without the equality constraint, then the association between this variable and G1 grandmother involvement was significantly different from its association with G1 grandfather involvement. Conversely, if imposing the equality constraint did not produce a statistically significant decrement in the model fit, it could be inferred that the relationship between the specific predictor and G1 involvement with G3 was similar for grandmothers and grandfathers.

Next, hypothesized differences in the patterns of associations for G2 sons and daughters were estimated with stacked models. First, all paths were constrained to be equal for G2 sons and daughters. Next, individual paths were released one at a time, and significant change in the  $\chi^2$  statistic was examined. A statistically significant change in  $\chi^2$  indicates that the magnitude of the path coefficient was statistically and significantly different for sons and daughters.

## Results

### Correlational analyses

As shown in Table 1, study variables were correlated to examine associations among independent and dependent variables. First, G2 participants' ratings of their past relationship quality with their mothers and with their fathers ( $r = .44, p < .001$ ), as well as their current relationship quality ratings with each parent ( $r = .56, p < .001$ ) were moderately positively associated, suggesting that G2 participants viewed their relationships with mothers and fathers somewhat differently. Second, relationship quality demonstrated stability within mother or father relationships, but not across relationships. That is, G2 participants' reports of their past relationship quality with G1 mothers were significantly correlated with current reports of relationship quality with G1 mothers ( $r = .14, p < .05$ ). Likewise, G2 participants' reports of their past and current relationship quality with their G1 fathers were significantly positively correlated ( $r = .19, p < .05$ ). However, past reports of G1 mother-G2 relationship quality were unrelated to their current relationship quality with fathers. Similarly, past G2 relationship quality with G1 fathers was unrelated to current relationship quality with G1 mothers.

Regarding hypothesized expectations, G2 reports of their past relationship quality with G1 mothers and fathers were generally unrelated to current G1 grandparent involvement, with one exception. G1 father-G2 past relationship quality was significantly correlated with G1 fathers current involvement ( $r = .19, p < .05$ ). In contrast, stronger associations emerged between G2 parents' reports of their current relationship quality with G1 and G1 grandparents' current

involvement, particularly for G1 grandmothers ( $r = .39, p < .001$ ). Taken together, the patterns of statistically significant correlations suggest that the involvement of the G1 grandparent in the lives of their G3 grandchildren may be affected by the quality of G2 parents' specific relationship with their G1 mothers and G1 fathers.

The correlational analyses also revealed different patterns of associations for G2 sons and daughters. G2 gender was significantly correlated with G1 grandmother but not G1 grandfather involvement, such that more G1 grandmother involvement occurred with the children of G2 daughters than sons ( $r = .27, p < .001$ ). G2 gender was differentially associated with G1 mother and father relationship quality both during adolescence (past) and adulthood (current). G2 sons reported higher quality relationships with fathers during adolescence (past) than G2 daughters ( $r = -.16, p < .05$ ), and G2 daughters reported higher quality relationships with mothers during adulthood (current) than G2 sons ( $r = .15, p < .05$ ).

Finally, statistically significant correlations among potential confounding variables and grandparent involvement emerged. As expected, G2 participants who reported living at greater geographic distances from G1 reported lower levels of G1 grandmother ( $r = -.29, p < .001$ ) and grandfather ( $r = -.19, p < .001$ ) involvement. Further, G1 marital status was associated with current G1 father-G2 relationship quality ( $r = .34, p < .001$ ) and G1 grandfather involvement ( $r = .41, p < .001$ ). Specifically, when G1 mothers and fathers were married, G2 reported a more warm and supportive current relationship with their fathers, and they reported greater G1 grandfather involvement with G3.

### Path Model Analyses

Study hypotheses were evaluated by estimating a path model using AMOS 6.0 FIML procedures. Figure 1 provides a graphical representation of the estimated structural model. The model was estimated in three different ways. First, the model was estimated as depicted with no equity constraints. Second, in order to evaluate whether factors influencing G1 grandmother involvement and G1 grandfather involvement varied, the model was re-estimated after constraining matching G1 constructs to be equal. Finally, G2 gender differences were evaluated by estimating stacked models to evaluate variability in the magnitude of the path coefficients separately for G2 sons and daughters. The following section describes the results of each of these three analyses.

First, the model depicted in Figure 1 was estimated for the entire sample. Although not depicted in Figure 1, the disturbance terms of G1 grandmother and G1 grandfather involvement were allowed to co-vary, as were the disturbance terms for adolescent G2 relationship quality with G1 mothers and G1 fathers, and current relationship quality with G1 mothers and G1 fathers. This model fit the data well ( $\chi^2(27) = 51.31, p < .05, \chi^2/df = 1.90, CFI = .95, RMSEA = .06, N = 181$ ). Several statistically significant paths associated with G1 involvement with G3 emerged. Consistent with expectations, current G1-G2 relationship quality was positively associated with G1 involvement with G3 grandchildren for grandmothers ( $\beta = .28, p < .001$ ) and grandfathers ( $\beta = .25, p < .001$ ). Contrary to expectations, past (adolescent) G1-G2 relationship quality did not predict current G1 grandmother or G1 grandfather involvement with G3 grandchildren.

Second, the model depicted in Figure 1 was re-estimated, this time constraining the G1 grandmother paths to be equal to the corresponding G1 grandfather paths. For instance, G1 mother -G2 past relationship quality was constrained to be equal to G1 father-G2 past relationship quality. This analysis clarified the extent to which similar processes describe G1 grandmother and grandfather involvement. G1 gender moderated the association between three factors and grandparent involvement. First, geographic distance negatively predicted grandmother involvement only ( $\beta = -.12, p < .01$ ), such that when grandmothers lived at a

greater distance, G2 parents reported lower levels of grandmother involvement with G3. Second, G1 marital status predicted grandfather involvement only ( $\beta = .29, p < .001$ ), such that when G1 grandfathers were married to G1 grandmothers, G2 reported higher involvement with G3. Finally, current G2 socioeconomic need was positively associated with G1 grandfather involvement with G3 only ( $\beta = .12, p < .05$ ).

Finally, models were estimated separately for sons and daughters to evaluate the extent to which the patterns of associations varied by G2 gender. When gender differences did occur, stacked models were computed to estimate whether the difference was statistically significant. For G2 daughters ( $n = 109$ ), the model fit the data well ( $\chi^2(27) = 47.23, \chi^2/df = 1.75, CFI = .95, RMSEA = .08$ ). For G2 sons ( $n = 72$ ), the model provided a less than adequate fit to the data ( $\chi^2(27) = 53.19, \chi^2/df = 1.97, CFI = .89, RMSEA = .10$ ). Contrary to expectations, past G1 mother-G2 relationship quality predicted grandmother involvement with their G3 grandchildren for sons ( $\beta = .12, p < .05, \Delta\chi^2(1) = 4.51, p < .05$ ), not daughters. Although not hypothesized, the path reflecting continuity across time in G1 mother-G2 relationship quality emerged as statistically significant for daughters only ( $\beta = .19, p < .05, \Delta\chi^2(1) = 3.86, p < .05$ ), indicating that G2 daughter ratings of G1 mother-G2 relationship quality during adolescence predicted current ratings of relationship quality. Two factors were associated with G1 involvement with the G3 grandchildren of their G2 daughters only. First, current G1-G2 relationship quality was positively associated with G1 grandmother and grandfather involvement with grandchildren for G2 daughters only ( $\beta = .33, p < .001, \Delta\chi^2(1) = 3.88, p < .05$ ). Second, geographic distance was negatively associated with G1 grandmother involvement with the G3 grandchildren of G2 daughters only ( $\beta = -.19, p < .01, \Delta\chi^2(1) = 3.89, p < .05$ ). No other statistically significant differences emerged for G2 sons and daughters.

## Discussion

During early childhood, when grandparent involvement may be particularly beneficial for all generations, G2 parents facilitate interaction between G3 grandchildren and G1 grandparents. Family systems perspectives suggest that the quality of the grandparent-parent relationship affects the level of grandparent involvement in the lives of their young grandchildren (King, Russell & Elder, 1998; Mueller & Elder, 2003). The goal of this study was to place grandparent involvement within an intergenerational context by examining the relations between G2 perceptions of G1-G2 relationship quality over time and grandparent involvement during early childhood. Specifically, using prospective, longitudinal data, the effects of past (adolescence) and current (adulthood) G1-G2 relationship quality on the level of grandparent involvement in the lives of their preschool-aged G3 grandchildren were examined. In addition, the impact of G1-G2 gender configuration was considered as a possible moderator of the association between relationship quality and grandparent involvement.

Mixed support emerged for the independent associations between past and current relationship quality and grandparent involvement; gender composition did seem to impact patterns of grandparent involvement. Consistent with existing research, maternal grandmothers were the most involved with G3 grandchildren (Chan & Elder, 2000; Michalski & Schakleford, 2004). However, the factors linked to grandmother and grandfather involvement with the G3 children of their G2 sons and daughters differed. Therefore, the current study added to existing research examining gender and lineage based differences in grandparent involvement by identifying specific family processes (i.e., intergenerational relationship quality) that underlie observed differences in grandmother and grandfather involvement. The following sections discuss these research findings as well as their theoretical and practical implications.

## The Timing of G1-G2 Relationship Quality and Grandmother and Grandfather Involvement

The findings highlight the important role of G1-G2 gender configurations in shaping patterns of grandparent involvement. The associations between past and present G1-G2 relationship quality and G1 involvement with G3 differ across G1-G2 dyads. In partial support of hypothesized expectations, G2 parents who considered their current relationship with their G1 fathers to be characterized by warmth and support reported higher levels of G1 grandfather involvement in the lives of their G3 children. Adolescent relationship quality with their G1 fathers was not associated with grandfather involvement for either G2 sons or daughters. However, consistent with existing research, both sons and daughters reported continuity in relationship quality with fathers from adolescence to adulthood (see Aquilino, 1997). That is, the positive nature of the G1 father-G2 relationship during adolescence may 'spill-over' to adulthood and, in turn, encourage G1 grandfather involvement with G3. Thus, continuity in relationship quality, as reflected by the statistically significant association between past and current relationship quality, may be especially relevant for enhancing grandfathers' involvement in the lives of their grandchildren.

A more complex pattern of associations emerged for G1 grandmothers. In contrast to the hypothesis focused on the adolescent G1 mother-G2 daughter relationship, G2 sons who perceived their relationships with their G1 mothers during adolescence as warmer and more supportive reported higher levels of grandmother involvement approximately ten years later. For G2 sons only, the quality of the G1 mother-G2 relationship during adolescence significantly impacted the level of G1 grandmother involvement with G3. For G2 daughters but not G2 sons, the quality of the current G1 mother-G2 relationship significantly influenced the level of G1 grandmother involvement in the lives of their G3 grandchildren.

This finding may in part be explained by the observed continuity in relationship quality for mothers and daughters, but not for mothers and sons, from adolescence to adulthood. In other words, G2 daughters who perceived a warm and supportive relationship with their G1 mothers during adolescence were likely to report a similarly warm and supportive current relationship with their mothers. In other words, there appears to be 'spill-over' for G1 mother-G2 daughter relationship quality from adolescence to adulthood. In contrast, reporting a warm and supportive relationship with G1 mothers during adolescence did not predict reporting a warm and supportive relationship during adulthood for sons. There were no mean differences in G2 son and daughter reports of maternal relationship quality during adolescence, but G2 daughters reported more warm and supportive relationship with mothers as adults. Given the greater likelihood of grandparent involvement with the children of their daughters (Chan & Elder, 2000; Pollet et al., 2007), perhaps greater paternal grandmother involvement only occurs in the context of particularly close mother-son relationships during adolescence.

Paternal grandmother involvement may be unrelated to current G2 ratings of relationship quality because unlike in the families of G2 daughters, the involvement of grandmothers in the families of G2 sons may at times be considered interference, depending on the relationship with the G3 grandchild's mother, who may very well be the primary family gatekeeper (Fingerman, 2004). In other words, when mother-son dyads were particularly close during adolescence, this relationship quality may encourage later involvement with grandchildren, but this involvement may not be as welcome or expected as involvement from maternal grandparents, and thus it is associated with past relationship quality only.

Alternatively, perhaps the transition to motherhood, a shared experience, draws mothers and daughters closer, especially when there is a history of past warm and supportive relationships, and thus G2 mothers report higher levels of adult G1-G2 relationship quality that in turn predict higher levels of G1 grandmother involvement. Finally, it is important to note that although mother-daughter adolescent relationships are typically the most conflict ridden, mother-son



relationships rank a close second, and both sets of G1 mother-G2 relationships generally experience declines in conflict during late adolescence (Scaramella & Conger, 2004; Shanahan et al., 2007). The ability to maintain a warm and supportive relationship despite typical mother-adolescent son conflict may be particularly important for the continued involvement of mothers in the lives of the children of their adult sons.

### Factors Associated With Grandmother and Grandfather Involvement

Although geographic distance, G1 marital status, and G2 socioeconomic need were expected to impact G1 involvement and, thus, controlled in the analyses, an interesting pattern of results emerged regarding these confounds. First, geographic distance was negatively associated with maternal grandmother level of involvement only. This is in contrast to the work of Pollet and colleagues (2007), who showed within a Dutch sample that geographic proximity predicted frequency of contact for paternal grandparents and maternal grandfathers, but not for maternal grandmothers. Differences in grandchild age and measurement of G1 involvement might explain the discrepancy because the Dutch sample, which measured involvement as in-person contact and included children from 0 – 15 years of age who could visit with their grandparents independent from G2. Perhaps in-person contact is the preferred or expected mode of involvement for grandmothers of young children. That is, higher levels of maternal grandmother involvement may reflect greater engagement in visiting and child care, and thus distance inhibits this kind of involvement, affecting G2 mother ratings of the involvement of their own mothers in raising G3, one element of the current measure of grandparent involvement. Future research is needed to disentangle the ways in which various dimensions of grandparent involvement may vary according to G1-G2 gender configuration and G3 age.

Second, marital status and G2 socioeconomic need only influenced grandfather involvement. Grandfathers who were divorced from G1 grandmothers were significantly less involved with their G3 grandchildren than married grandfathers. This finding is consistent with other research linking grandparent divorce to limited grandfather involvement in the lives of their grandchildren (see King, 2003; Reitzes & Mutran, 2004). Given that G2 reports of grandmother and grandfather involvement were highly correlated, grandmothers may facilitate and enhance grandfather involvement. That is, when grandparents are married, grandmothers may initiate visits and phone calls with grandchildren, and grandfathers may participate in those visits or calls. Such passive or indirect involvement may in turn promote more involvement of grandfathers in the lives of their grandchildren. In addition, father-child relationships tend to be less close following divorce (e.g., Arditti & Prouty, 1999), and this pattern may persist into adulthood, with indirect implications for grandfather involvement with G3 grandchildren.

G2's level of socioeconomic need also impacted grandfather involvement but not grandmother involvement. Specifically, higher levels of G2 socioeconomic need, defined by low income, fewer years of education, and a younger G2 age at the birth of G3, were related to higher levels of G1 grandfather involvement. These findings suggest that G2 parents may be more likely to turn to grandfathers than to grandmothers in the face of socioeconomic adversity. Alternatively, given that women tend to be actively engaged in kin-work, grandmother involvement may be more normative or expected, regardless of economic need within the G2 or G3 generation. In contrast, grandfather involvement may be more reactive to current conditions such that grandfathers step in, or are asked to step in, when help is most needed. From a family systems perspective (e.g., Cox & Paley, 1997), this adaptation to meet the socioeconomic needs of G2's family may have the unintended consequence of facilitating greater G1 grandfather involvement with G3. Most research on grandparent involvement and socioeconomic disadvantage has focused on grandmother involvement in single-mother, especially adolescent mother, families (Dunifon & Kowaleski-Jones, 2007). The present finding suggests the value of considering grandfather involvement across socioeconomic contexts.

## Strengths and Limitations

The present investigation has a number of strengths. First, by using G2 participants' reports of their past and current relationship quality with G1 mothers and fathers, potential biases associated with retrospective reports were avoided and the influence of the timing of G2's perception of relationship quality on grandparent involvement was evaluated. Second, potentially different processes influencing grandmother and grandfather involvement were considered. Specifically, the quality of the G1 mother–G2 relationship during adolescence may more strongly impact level of G1 involvement among the children of G2 sons than daughters. Thus, the family processes underlying grandmother and grandfather involvement account for observed differences in maternal and paternal grandparent involvement. Finally, the study relied on a large sample of three-generation families. As G2 participants continue to have children, more complex models regarding grandparents' roles in the lives of their grandchildren can be considered.

The present study is not without limitations. First, the findings may not generalize to more ethnically and geographically diverse samples with greater socioeconomic need. Second, although no retrospective reports were used, all measures were based on G2 self-reports. Perceptual differences between G1 and G2 reports of their relationship quality or G1 levels of involvement in the lives of their G3 grandchildren represents an interesting question for future research. Relatedly, grandparent involvement was based on parental reports of two items regarding contact frequency and involvement and, thus, does not necessarily reflect the quality of the G1-G3 relationship. Future investigations should include more comprehensive measures of grandparent involvement that include multiple reporters (e.g., G1, G2, older G3), and multiple methods (e.g., self-reports and observations of G1-G3 interactions). Third, the present study focused on the influence of the G1-G2 relationship quality on the level of G1 involvement with their G3 grandchildren. Although considering the role of G2 socioeconomic need, G1 geographic distance, and G1 marital status as confounds, quite possibly characteristics of G1 grandparents (e.g., health), G2 parents (e.g., marital relationship), or G3 grandchildren (e.g., temperament) affect both current G1-G2 relationship quality and grandparent involvement. In addition, the present analyses focused on one set of grandparents for each G3 grandchild and on the relationship between one G2 parent and one set of G1 grandparents.

Despite these limitations, the results of the present study suggest that the quality of the G1 parent - G2 child relationship during adolescence and adulthood may influence the quality of relationships across generations. The middle generation appears to be a crucial link in fostering grandparent involvement in the next generation of children. Perhaps most interestingly, processes promoting grandmother and grandfather involvement appear to be distinct.

## Implications for Research and Practice

The present findings have several implications for research and practice. Future studies should consider the role of individual characteristics of all three generations as moderating the level of grandparent involvement in the lives of their grandchildren. For example, G1 age and remarriage may be related to grandparent involvement. Further, the within family approach to studying grandmother and grandfather involvement could be expanded to include maternal and paternal grandparents of G3. Future research should consider how relationship quality with in-laws is linked to grandparent involvement. The findings regarding paternal grandmother involvement are particularly worthy of follow-up, as we know little about the circumstances facilitating paternal grandparent involvement, and even less about the implications of that involvement for grandchildren or grandfathers (Bates, 2009; Thiele & Whelan, 2006). Further, we considered the associations between past relationship quality assessed at one point in time and present grandparent involvement assessed during early childhood. These associations may change over time as parents face new challenges and rewards in parenting across developmental

stages. Finally, a clear next step is to explore the implications of these observed patterns of G1-G2 relationship quality and grandparent involvement for the well-being of all generations.

This study includes implications for practice. Grandparent involvement, especially in families in which grandparents do not assume primary caregiving or custodial roles, is linked to greater well-being of all generations (Reitzes & Mutran, 2004; Theile & Whelan, 2006). Thus, a goal of practitioners could be to strengthen intergenerational bonds. The present results suggest that one important target, especially for maternal grandmothers and maternal and paternal grandfathers, may be the quality of current G1-G2 relationships. For example, family strength and liability assessments that often inform the design of specific family support programs for parents with young children may be improved by including measures of G1-G2 relationship quality. The present findings also suggest that the key targets vary according to G1-G2 gender configuration. Further, the findings suggest that interventions to improve adolescent family relationships could carry long-term consequences. In addition, given the links between G2 socioeconomic need and G1 divorce and grandfather involvement, two vulnerable populations emerged. First, G2 and G3 from divorced G1 families facing socioeconomic need may be the most at risk. Second, this study adds to previous research concerns that divorced elderly men may face the greatest risks for social isolation (see King, 2003; Lawton et al., 1994). Taken together, our findings highlight the value of considering how intergenerational family processes (e.g., relationship quality) across time may shape current levels of grandparent involvement, and how these relations may vary according to grandparent and parent gender.

## Acknowledgments

This research is currently supported by grants from the National Institute of Child Health and Human Development, the National Institute on Drug Abuse, and the National Institute of Mental Health (HD047573, HD051746, and MH051361). Support for earlier years of the study also came from multiple sources, including the National Institute of Mental Health (MH00567, MH19734, MH43270, MH59355, MH62989, and MH48165), the National Institute on Drug Abuse (DA05347), the National Institute of Child Health and Human Development (HD027724), the Bureau of Maternal and Child Health (MCJ-109572), and the MacArthur Foundation Research Network on Successful Adolescent Development Among Youth in High-Risk Settings.

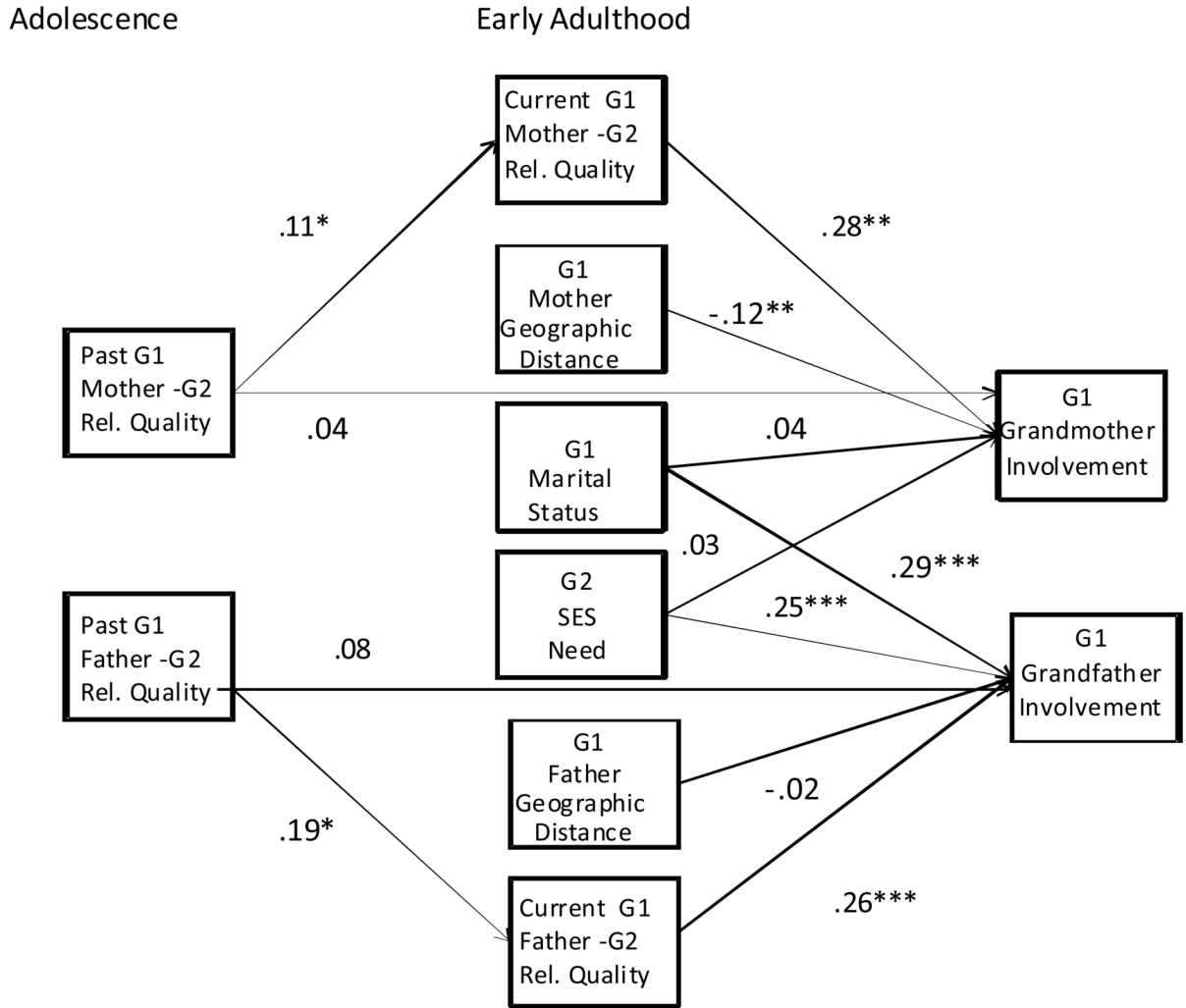
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*Note.* Only path coefficients that differ for grandmothers and grandfathers after imposing equality constraints for grandmother and grandfather involvement are shown as statistically significant.

**Figure 1.** Path model predicting grandmother and grandfather involvement (N = 181)

**Table 1**  
 Bivariate Correlations and Means of Independent and Dependent Variables (N = 181).

Variables	1	2	3	4	5	6	7	8	9	10	11
1. G1 Grandmother Current Involvement	–										
2. G1 Grandfather Current Involvement	.63***	–									
3. G1 Mothers – G2 Past Rel. Quality	.02	.10	–								
4. G1 Fathers –G2 Past Rel. Quality	.08	.19*	.44***	–							
5. G1 Mothers – G2 Current Rel. Quality	.39***	.16*	.14*	.09	–						
6. G1 Fathers – G2 Current Rel. Quality	.18*	.43***	.15	.19*	.56***	–					
7. G2 Gender <sup>a</sup>	.27***	.06	-.07	-.16*	.15*	.06	–				
8. G1 Mother Geographic Distance	-.29***	-.18*	.07	.03	-.04	-.06	-.14	–			
9. G1 Father Geographic Distance	-.19**	-.28***	-.01	.02	.07	-.05	.03	.48**	–		
10. G1 Marital Status <sup>b</sup>	.12	.41***	.17*	.11	.13	.34***	-.07	-.14	-.08	–	
11. G2 Socioeconomic Need	.14	.14	-.01	-.06	.00	.01	-.10	.00	.02	-.09	–
Mean	.03	.01	4.98	4.88	5.48	4.88	.60	214.34	208.81	.81	.86
SD	.87	.89	.73	1.14	1.02	1.24	.50	525.73	457.87	.40	.90
Range	-1.65-1.20	-1.28-1.57	1.13-6.75	1.00-7.00	1.64-7.00	1.19-7.00	0-1	1-4840	1-3808	0-1	0-3

<sup>a</sup>Note. G2 gender: 0 = male, 1 = female.

<sup>b</sup>G1 marital status: 0 = divorced or separated, 1 = married.