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Family relationship quality and psychological and cognitive health among grandparent caregivers: The moderating role of co-residence with adult children

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Abstract

The present study explores how family relationship quality is associated with psychological and cognitive health among grandparents who had primary responsibility in raising their grandchildren and examines whether co-residence with adult children moderates this relationship. The study uses data from 589 grandparents who completed the Midlife Development in the United States (MIDUS) survey. Latent profile analysis (LPA) is used to identify grandparent-family relationship types. Ordinary Least Squares (OLS) regression models are used to estimate the association between relationship types and psychological and cognitive health (i.e., psychological distress, psychological well-being, episodic memory, and executive function). LPA identified four grandparent-family relationship types: amicable, ambivalent, neutral, and disharmonious. Compared to grandparents with amicable family relationships, those with ambivalent family relationships had significantly higher levels of psychological distress, reduced psychological well-being, and poorer episodic memory. Further, the association between ambivalent relationships and episodic memory was stronger among respondents who co-resided with their adult children. Emotional closeness with family is essential for grandparents who are raising their

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grandchildren. This study contributes to a more detailed understanding of the role of relationships with family and suggests that emotional and instrumental support from family is important for increasing grandparent caregivers' psychological and cognitive well-being.

Keywords
Grandparent caregiving, family relationships, psychological distress, psychological well-being, episodic memory

Introduction

Among the 70 million grandparents in the United States, an estimated 2.7 million are the primary caregivers for at least one of their grandchildren (US Census, 2019). In some cases, grandparents find providing childcare to be a joyful opportunity, while in other cases the stress of managing primary parenting responsibilities for a second time can yield negative psychological, physical, and social effects on grandparents and their families, especially when relationships with adult children, grandchildren, and other family members are strained or lack support (Mendoza et al., 2020; Smith, 2015). Recent studies have also found that intensive levels of grandparenting are associated with lower cognitive functioning than moderate levels of grandparenting (Arpino & Bordone, 2014; Burn et al., 2014). Grandparents serving as primary caregivers may either reside in grandfamily (i.e., a skipped generation household with no adult children present) or grandparent-headed multigenerational household (i.e., a residence where an adult child, or the parent, co-resides with grandparent(s) and their grandchildren) (Dunifon et al., 2020). Elucidating connections between family relationship quality and grandparent caregivers' psychological and cognitive health – and how these vary by household structure— could provide meaningful insights for developing interventions and resources that support the growing number of families headed by grandparents (Carlson, 2021).

Caring for children is complicated and may cause disagreements that generate conflict between family members. While family cohesion is an important component of family relations that enhances overall psychological well-being, problematic qualities of relationships are associated with poorer mental and physical health (Fingerman et al., 2020; Holt-Lunstad & Uchino, 2019; Newsom et al., 2005). In addition, multigenerational families, which can be brought together as a result of adversity and material resource restraint, such as poverty, mental health problems, or substance abuse, often experience conflicts between grandparents and adult children under these circumstances (Wagstaff & Cooper, 2019); thus, co-residing with adult children may influence grandparents' psychological and cognitive health. The current paper (1) explores the associations between family relationships and psychological and cognitive health among grandparents who

were primary caregivers for their grandchildren, and (2) tests whether co-residence with adult children moderates these associations.

Theoretical framework: Solidarity and ambivalence in family relations

Relationships with close family members are among individuals' most important social supports and are often more intense than other relationships; specifically, these bonds are often particularly strong and persist for decades or even an entire lifetime (Thomas et al., 2017; Weihs et al., 2002). However, the quality of the relationships and their effects on individual and family well-being are often dynamic throughout the lifespan and examining these relationships through conceptual frameworks for intergenerational solidarity and ambivalence provide additional insight. In recent decades, researchers have studied parents' relationships with their adult children, grandchildren, and other family members through the lens of intergenerational solidarity theory, which proposes various types of solidarity (Bengtson & Roberts, 1991; Hogerbrugge & Komter, 2012). One of these types, affectual solidarity, which refers to emotional closeness and affection between family members, has been the focus of much of this research. Based on critiques that the original model was too normative and positively biased, researchers later incorporated a dimension of conflict (Giarrusso et al., 2005).

Ferring et al. (2009) suggested that models of relationships between parents and their adult children should also consider the emotional aspects of relationship quality because an individual's emotions toward a relationship partner (e.g., admiration, love and hate) provide relevant and specific information about the quality of the relationship. Ferring et al. (2009) asserted that these emotions result from a comparison process: positive emotions (e.g., gladness and gratitude) emerge when an individual perceives that their desires are fulfilled and they feel supported, while negative emotions (e.g., anger and disappointment) occur when an individual perceives that those desires are frustrated. Among grandparents, those who can rely on family members – both those in their household and those outside—for social support and to help them cope with stressful events and situations may be less likely to experience emotional distress (Kawachi & Berkman, 2001; Thoits, 1986), while those whose relationships are characterized by conflict, strain, or demands may experience more stress (Burg & Seeman, 1994).

Focusing on patterns in the United States, Giarrusso et al. (2005) proposed a four-category pattern of relationships based on the distinct combinations of affectual (solidarity) and conflict. The extant literature on conflict and solidarity in family relationships has confirmed these four family relationship types: (1) ambivalent: high solidarity/high conflict, (2) amicable: high solidarity/low conflict, (3) neutral: low solidarity/low conflict, and (4) disharmonious: low solidarity/high conflict (Ferring et al., 2009; Jang et al., 2022; Silverstein et al., 2010).

Psychological ambivalence, or a state in which an individual simultaneously holds positive and negative emotions, is an important characteristic of family relationships (Connidis, 2014). Given that family life often encompasses a tension between the need for autonomy and the need for interdependence, it is not surprising that intergenerational relationships are among the most ambivalent social relationships in the context of families

(Fingerman et al., 2004). Although older parents often limit negative expression in an attempt to promote harmony and the perception of closeness with their adult children, they are more likely than younger adults to report "emotional poignancy," which involves mixed feelings and complex emotions about daily life (Carstensen et al., 2000). The co-existence of positive and negative feelings leads to relationships that are unpredictable and stressful, and thus may have detrimental effects on well-being (Uchino, 2004).

Because many grandparents become primary caregivers for their grandchildren as a result of a familial crisis, they may be ambivalent about their role in handling the crisis (Backhouse & Graham, 2012; Ferring et al., 2009). Indeed, prior studies have shown that in grandparent-adult children relationships, high levels of ambivalence may occur when adult children face circumstances that increase their dependence, raise concerns about possible engagement in adverse behaviors or require considerable financial assistance (Lo & Lindsay, 2022; Pillemer & Suitor, 2002).

Family relationship quality and psychological and cognitive health

In general, maintaining warm and supportive relationships with family members plays a key role in enhancing grandparents' psychological well-being. While this includes positive relationships with family members outside of one's immediate family (Lee & Szinovacz, 2016), much of the literature surrounding grandparent caregivers' family relationships centers their interactions with their adult children or the adult children's partners and the grandchildren in their care. Goodman et al. (2008) showed that both closeness and conflict with adult children are significantly correlated with grandparents' mental health. In addition, Jang et al. (2022) reported that disharmonious relationships with adult children are significantly associated with increased depressive symptoms among grandparent caregivers. For grandparents providing sole primary care, the grandparent-adult child relationship can become a major cause of stress when there is dysfunction of the adult child (Mendoza et al., 2020; Shakya et al., 2012). Further, conflictual relationships with grandchildren are strongly associated with worse psychological health among grandparent caregivers, overriding the weak protective effect of closeness (Goodman et al., 2008).

In addition, previous research has found that in general, providing a greater amount of emotional support is related to a smaller decline in cognitive functioning, although a higher level of caregiving can be detrimental to cognition (Burn et al., 2014). Li et al. (2021) also found that grandparents who received more emotional support from adult children tended to report better cognitive function. Taken together, there is strong evidence suggesting that greater relationship quality, especially with their adult children and grandchildren they are raising, is related to higher psychological and cognitive well-being in grandparents providing primary care to their grandchildren.

The moderating effect of co-residence with adult children on the association between family relationship quality and psychological and cognitive health

Prior studies suggest that research on grandparent caregiving and caregivers' well-being should consider family factors, such as living arrangements and family relationships (Chan et al., 2023). Specifically, living arrangements are significantly associated with family relationships, as they often reflect situations of dependence that arise (Postigo & Honrubia, 2010). The physical closeness involved in co-residing with adult children does not necessarily lead to intimacy (affectual solidarity) among family members. Although living with more family members increases the number of opportunities to give and receive support, co-residence may also involve additional stress due to increased social demands (Keene & Batson, 2010). Because the grandparent caregiving role usually involves helping an adult child with their problems as well (e.g., financial issues, marital difficulties, substance abuse), if the adult child's presence is disruptive to family routines, it may be emotionally upsetting, and in this case, grandparents may encounter feelings of loss, anger, and guilt, which contribute to psychological distress (Conway et al., 2011; Doley et al., 2015; Mendoza et al., 2020).

Unlike multigenerational living situations resulting from decreased functional abilities of older family members or cultural norms, co-residence of grandparent caregivers and adult children most often involves the provision of support from grandparents to adult children (Kahn et al., 2013; Lee & Painter, 2013). In particular, when an adult child is unable to raise their own children, grandparent caregivers report more intrafamily strain. Guo et al. (2016) found that generally living with adult children was associated with poorer relationships between parents and adult children. This leads to increased conflict with children, problems that do not get resolved, and a low level of family cohesion (Musil et al., 2009), which contribute to poor mental health and increased psychological distress (Wang & Szinovacz, 2015). In turn, increased psychological distress is strongly associated with an increased risk of cognitive decline (Wilson et al., 2003). A recent study among older Chinese adults demonstrated that co-residence with adult children was associated with a higher risk of cognitive impairment than living alone (Zhou et al., 2018).

Despite these negative impacts, co-residence with adult children also has positive effects on families. For example, living with adult children can help grandparents successfully adapt to being a caregiver and contribute to the support of grandchildren (Mills et al., 2005). However, until now, little research on co-residence with adult children, family relationships, and cognitive health has used nationally representative data from the United States to explore the influence of various types of relationships (i.e., ambivalent) with family members. First, most research has investigated the effects of positive or negative emotional relationships on well-being. Second, additional research is needed on grandparents who co-reside their adult children in the context of grandparent caregiving in the United States because most studies have focused on Asian countries, where multigenerational families are more common, rather than Western ones, and the number of families with co-residential, multigenerational structure is projected to

continue climbing in the United States in the coming decades (He & Jia, 2024; Pilkauskas et al., 2020).

The current study seeks to shed light on the complex set of associations between the quality of family relationships, co-residence with adult children, and the psychological and cognitive health of grandparent caregivers. The results will provide a deeper understanding of family relationships among grandparents raising their grandchildren as well as the impact of these relationships on psychological and cognitive health. Specifically, this study tests the following hypotheses about grandparents who have primary responsibility for their grandchildren:

Hypothesis 1. Poor-quality relationships (i.e., ambivalent, neutral, disharmonious) with family are negatively associated with psychological and cognitive health among grandparent caregivers.

Hypothesis 2. For grandparent caregivers who co-reside with adult children, poor-quality relationships with family are negatively associated with psychological and cognitive health.

Methods

Data and sample

The focal analyses used data from the Midlife in the United States (MIDUS) study, an interdisciplinary, national study with multiple waves of data collection. MIDUS I was conducted in 1995–1996 and collected data on the physical, psychological, and social well-being of 7,108 adults aged 25 to 74. Follow-up surveys were conducted in 2004–2006 (MIDUS II) and 2013-2014 (MIDUS III) with high retention rates (e.g., 70% and 77% of living respondents, respectively). In addition, in 2005–2006 MIDUS added 592 African American adults from Milwaukee to the sample to enable analyses of the psychosocial determinants of health among this underrepresented group. In 2016, the survey team conducted follow-up surveys among the Milwaukee sample participants who completed the Computer Assisted Personal Interview in 2005. Finally, from 2011-2014, the team conducted the MIDUS Refresher study to replenish the original sample of MIDUS participants and added data from a national probability sample of 3,577 adults.

The current study analyzed data from 589 grandparents who had primary responsibility for any of their grandchildren for a period of six months or longer. The study sample was selected from the combined MIDUS datasets, including MIDUS II ($n = 86$), MIDUS III ($n = 234$), MIDUS III Milwaukee ($n = 93$), and the MIDUS Refresher ($n = 176$). Because the cognitive functioning items were first fielded in wave 2 of MIDUS, we did not include MIDUS I. As noted above, not all participants from MIDUS II were retained at MIDUS III. To generate the largest and most generalizable sample size for the current analyses, we used data from MIDUS II for individuals who were not retained at MIDUS III. For individuals who participated in both MIDUS II and MIDUS III collections, we only used data from MIDUS III for these participants.

Measures

Emotional types of grandparent-family relationships. The criterion variables comprised responses to seven emotional relationship questions based on the extant literature (Bengtson et al., 1996; Jang et al., 2022). MIDUS asks about participants' social relationships in three categories: a) spouse/partner, b) family members (except spouse/partner), and c) friends. To explore family relationships, we utilized the "family members (except spouse/partner)" variable. Participants rated positive and negative emotional aspects of their relationships with family members on a 4-point scale ranging from never (not at all) to often (a lot). Three of the focal items asked about positive emotions in these relationships: "Thinking about the members of your family, can you talk to family about worries/ do they understand the way you feel about things/ can you rely on them for help if you have a serious problem?" Four items asked about negative emotions in these relationships: "How often do they make too many demands on you/ criticize you/ let you down when you are counting on them/get on your nerves?" Latent profile analysis (LPA) was used to identify homogeneous groups in the study sample after iterative updating.

Psychological distress. Psychological distress was measured via the K6 scale (Kessler et al., 2003), which is a measure of non-specific psychological distress that is utilized as a screening tool for serious mental illness in community-based samples. The six items are: "During the past 30 days, how much of the time did you feel 1) so sad nothing could cheer you up, 2) nervous, 3) restless or fidgety, 4) hopeless, 5) that everything was an effort, and 6) worthless?" Respondents rated each item on a 5-point scale from 1 (none of the time) to 5 (all of the time). Respondents' scores on the six items were summed and averaged (Cronbach's alpha = .89).

Psychological well-being. Psychological well-being is a positive psychological judgment toward one's own self and life (Cook Maher et al., 2017). This variable was measured via the Ryff Scale of Psychological Well-being (Ryff & Keyes, 1995). We used 18 items from six core dimensions (self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, and personal growth; range 7.83–21). A scaled score was calculated by summing the 18 items (Cronbach's alpha = .80).

Cognitive functioning. Cognitive functioning was measured on the Brief Test of Adult Cognition by Telephone (BTACT) (Tun & Lachman, 2006). We created two summary cognitive scores: episodic memory and executive function. Episodic memory scores were calculated by averaging standardized scores for immediate and delayed recall. Executive function scores were calculated by averaging the standardized scores for five sublets: backward digit span, categorical fluency, number series, backward-counting task, and Stop and Go Switch Task (SGST). The final scores were averaged and re-standardized ($M = 0$, $SD = 1$) to produce a composite z-score.

Covariates. Demographic variables included age, gender (1 = male; 2 = female), race (0 = non-white; 1 = white), education (1 = no school/some grade school to 12 = PhD-level

degree), working for pay (0 = no; 1 = yes), household income (US$, log-transformed), and marital status (0 = non-married; 1 = married). Measures of health and functional status were also included in the analysis. Participants rated their physical health (poor/fair/good/very good/excellent, range:1–5). In addition, participants were asked if they had difficulty with activities of daily living (ADL) and instrumental activities of daily living (IADL). Two dichotomous variables indicated whether participants had any difficulty with ADLs and IADLs, respectively (0 = no; 1 = yes). The analyses also included a count of chronic conditions (e.g., thyroid disease, urinary or bladder problems, gall bladder trouble, high blood pressure; range: 0–17). Additionally, we included family structure factors (number of household members; range: 1-15, and unpaid hours per month of assisting child (ren) or grandchild (ren); range: 0–744).

Analytic strategy

Data analysis proceeded in two phases. First, LPA models were conducted to identify distinct types of family relationships based on the seven indicators described in the "emotional types of grandparent-family relationships" section. LPA uses a person-centered approach based on the generation of posterior probabilities to classify individuals into latent classes (Asparouhov & Muthén, 2014). In addition, we examined probabilities of group classification based on the most likely profile membership (posterior classification probabilities) for the best-fit model. Posterior classification probabilities range from zero to 1, with higher diagonal values (in a matrix of the most likely latent profile membership by latent profile) indicating greater confidence in the model (Gu et al., 2020).

In the second phase, we used ordinary least squares (OLS) regression analyses to examine how relationship types and other relationship characteristics are associated with psychological distress, psychological well-being, episodic memory, and executive function. In models of episodic memory and executive function, psychological distress was included as a covariate. For all regression models, multiple imputation was used to impute missing data via the chained equations procedure, generating 20 imputed datasets. The measure of psychological well-being had the highest rate of missingness (n = 89, 15%) (see Table 3). In addition, we tested the robustness of the regression results by adding other covariates to the models including grandparent caregiving characteristics (i.e., co-residence with grandchildren, years of caregiving) and characteristics of family relationships (i.e., frequency of contact with family, received support from family); the results were similar to those from the final models (see Supplemental material Table A). Data analyses were conducted using Mplus 8.8 for LPA and Stata 15 for regression analyses.

Results

Using LPA, we compared solutions ranging from a two-group model to a six-group model to identify the optimal number of clusters. The optimal group selection is based on a low BIC and a high entropy value (Lanza et al., 2003). The four-group solution was optimal and

Table 1. Fit statistics for latent profile analysis (LPA) solutions with 2–6 groups.

Model	AIC	BIC	LMR-LRT (*p*-value)	BLRT *p*-value	Entropy
Two-group	6771.357	6951.979	671.18 (.00)	.000	.788
Three-group	6525.029	6898.062	288.22 (.06)	.000	.807
Four-group	6464.735	6830.180	103.53 (.02)	.000	.852
Five-group	6409.499	6867.355	97.52 (.76)	.000	.819
Six-group	6398.697	6948.963	58.13 (.78)	.000	.836

Note. AIC = Akaike's Information Criterion (lower values indicate better fit); BIC = Bayesian Information Criterion (lower values indicate better fit); LMR-LRT = Lo-Mendell-Rubin adjusted LRT test; BLRT = Bootstrapped likelihood ratio test.

parsimonious, providing a logical substantive interpretation in alignment with the theoretical framework proposed by Bengtson et al. (1996). LMR-LRT also indicated that four-group solution improved over the three-group model ($p < .05$). Additionally, posterior classification probabilities were greater for the four-group model (.89 and above) than for the five-group (. 68 and above) or other group models. As shown in Table 1, we labeled the relationship types in the four-group solutions as follows – amicable, ambivalent, neutral, and disharmonious relationships – based on the prior literature (Jang et al., 2024; Silverstein et al., 2010; Zhaoyang et al., 2021).

As shown in Table 2, amicable relationships (29%) had a high level of emotional closeness and a low level of conflict. Disharmonious relationships (28%) were characterized by a low level of emotional closeness and a high level of conflict. Ambivalent relationships (30%) had a high level of emotional closeness and a high level of conflict. Lastly, neutral relationships (13%) had low levels of both emotional closeness and conflict.

Table 3 summarizes the descriptive characteristics of key variables. The average age of sample members was 63.01 ($SD = 9.35$); more than two-thirds of respondents were female ($n = 398$) and a similar proportion was White ($n = 410$). More than half of the respondents were married or had a partner ($n = 361$) and the average reported health score was 3.09 out of 5 ($SD = 1.12$). Approximately half of the respondents had at least one ADL and 89 percent of respondents reported they had at least one IADL. The mean score for psychological distress was 1.68 ($SD = .75$) and the mean score for psychological well-being was 16.32 ($SD = 2.48$). The mean z-scores for episodic memory and executive function were −.06 ($SD = 1.03$) and −.21 ($SD = .77$), respectively.

The amicable relationship type, the most cohesive family relationship type, was used as the reference group in regression analyses modeling psychological distress, psychological well-being, episodic memory, and executive function. Table 4 presents the regression results for the associations between grandparent-family relationship types and these four outcome variables. Compared to grandparents in amicable relationships with family members, those in ambivalent relationships had significantly greater psychological distress ($b = .16, p < .05$), and significantly lower psychological well-being ($b = -.68, p < .01$) and episodic memory ($b = -.24$, $p < .05$). In addition, those in neutral and

Table 2. Profiles of relationship types.

		Relationship types with family				
Indicator	Total	Group 1: Amicable mean	Group 2: Ambivalent mean	Group 3: Neutral mean	Group 4: Disharmonious mean	Statistics
Family understands the way you feel	3.73	3.98	3.86	3.59	2.94	F = 91.23***
You can rely on family for help	3.23	3.70	3.20	2.92	2.38	F = 64.22***
You can talk to family about worries	3.57	4	4	3	1.99	F = 982.64***
Family makes too many demands on you	2.30	1.71	2.63	2.24	2.77	F = 54.98***
Family criticizes you	2.06	1.56	2.40	2.12	2.78	F = 85.27***
Family lets you down	2.08	1.38	2.35	2.00	3.02	F = 114.61***
Family gets on your nerves	2.21	1.54	2.55	2.11	2.83	F = 89.29***
Frequency (%)		29.37%	29.88%	12.73%	28.01%	

Note. All indicators are rated on the following scale: 1 = never (not at all), 2 = rarely (a little), 3 = sometimes (some), 4 = often (a lot). Significance levels are denoted as ***$p < .001$.

disharmonious relationships with family had significantly lower psychological well-being than those in amicable relationships ($b = -1.43$, $p < .001$; $b = -1.59$, $p < .001$, respectively).

Table 4 also displays the moderation effects of co-residence with adult children on the association between family relationship quality types and outcome variables. The results show that for those who resided with their adult children, ambivalent relationships with family were negatively associated with episodic memory ($b = -.56$, $p < .05$). Specifically, as shown in Figure 1, for grandparents co-residing with children, those with amicable relationships showed stronger memory performance, while those with ambivalent relationships showed weaker memory performance. Additionally, we conducted a sensitivity analysis to compare results before and after multiple imputation; the results were similar to those presented in the text (see Supplemental material Table B). We also tested to check the robustness by controlling datasets (MIDUS III, Milwaukee, Refresher) to

Table 3. Descriptive statistics.

	Full sample (N = 589)		
Variables	M (SD)/n (%)	Range	Missing (n)
Age	63.01 (9.35)	39–90	0
Female	398 (67.57%)	—	0
White	410 (69.97%)	—	3
Married	361 (61.29%)	—	0
Household income (US$)	39,317 (50,436.3)	0–300,000	35
Working for pay	215 (39.59%)	—	43
Education (years)	6.39 (2.31)	1–12	3
Health	3.09 (1.12)	1–5	0
Any ADL	269 (52.75%)	—	79
Any IADL	453 (88.9%)	—	79
Number of chronic conditions	4.03 (3.71)	0–17	78
Number of household members	2.60 (1.52)	1–15	0
Hours of unpaid assistance (per week)	38.84 (85.92)	0–744	102
Co-residence with adult children	169 (28.69%)	—	0
Psychological distress	1.68 (.75)	1–5	84
Psychological well-being	16.32 (2.48)	7.83–21	89
Episodic memory	−.06 (1.03)	−2.93–3.37	10
Executive function	−.21 (.77)	−2.46–2.08	11
Relationship quality			
Amicable	173 (29.37%)	—	—
Ambivalent	176 (29.88%)	—	—
Neutral	75 (12.73%)	—	—
Disharmonious	165 (28.01%)	—	—
MIDUS data sets			
MIDUS II	86 (14.6%)	—	—
MIDUS III	234 (39.7%)	—	—
MIDUS III Milwaukee	93 (15.8%)	—	—
MIDUS refresher	176 (29.9%)	—	—

Notes. ADL = activities of daily living, IADL = instrumental of daily living. Results are reported prior to multiple imputation.

account for potential cohort differences between participant groups, and the results remained consistent, showing the robustness of the findings.

Discussion

The current study examined how family relationship type was associated with psychological and cognitive health among grandparents who had primary responsibility for

Table 4. Regression models for the associations between grandparent-family relationships and four outcome variables.

	Psychological distress		Psychological Well-being		Episodic Memory		Executive function	
	b (SE)	*b (SE)*	*b (SE)*	*b (SE)*	*b (SE)*	*b (SE)*	*b (SE)*	*b (SE)*
Relationship types (ref: Amicable)								
Ambivalent	.16 (.07)*	.20 (.09)*	−.68 (.25)**	−.91 (.30)**	−.24 (.12)*	−.07 (.14)	−.02 (.09)	.02 (.10)
Neutral	.16 (.09)	.25 (.12)±	−1.43 (.32)***	−1.68 (.39)***	−.07 (.15)	.04 (.18)	.02 (.11)	−.11 (.14)
Disharmonious	.24 (.10)*	.32 (.13)*	−1.59 (.32)***	−1.62 (.38)***	−.15 (.13)	−.02 (.15)	−.14 (.10)	−.19 (.11)
Co-residence with adult children (CC)	.00 (.07)	.16 (.12)	−.40 (.22)±	−.84 (.41)*	.11 (.10)	.47 (.19)*	−.01 (.08)	−.05 (.14)
Interaction (ref: Amicable)								
Ambivalent × CC		−.17 (.16)		.77 (.54)		−.56 (.25)*		−.11 (.19)
Neutral × CC		−.29 (.20)		.78 (.68)		−.40 (.31)		.38 (.23)
Disharmonious × CC		−.28 (.20)		.18 (.64)		−.48 (.28)±		.13 (.21)
Background characteristics								
Age	−.01 (.00)***	−.01 (.00)***	.00 (.01)	.00 (.01)	.00 (.01)	.00 (.01)	.01 (.00)	.01 (.00)
Female	.06 (.07)	.07 (.07)	.02 (.22)	.02 (.22)	−.11 (.10)	−.10 (.10)	.06 (.08)	.05 (.08)
White	.06 (.07)	.06 (.07)	−.41 (.23)±	−.43 (.23)±	.18 (.10)±	.18 (.10)±	.12 (.07)	.12 (.07)
Married	−.07 (.07)	−.07 (.07)	.27 (.23)	.27 (.23)	−.03 (.10)	−.03 (.10)	−.09 (.07)	−.09 (.07)
Household income (US$logged)	.00 (.01)	.00 (.01)	−.00 (.02)	−.00 (.02)	.00 (.01)	.00 (.01)	−.02 (.01)**	−.02 (.01)**
Working for pay	−.09 (.07)	−.09 (.07)	−.37 (.25)	−.37 (.25)	−.01 (.10)	−.01 (.10)	.06 (.07)	.05 (.07)
Education (years)	−.02 (.01)	−.02 (.01)	.14 (.04)**	.15 (.04)**	.02 (.02)	.01 (.02)	.00 (.01)	−.00 (.01)
Health	−.15 (.03)***	−.15 (.03)***	.40 (.12)**	.40 (.11)**	−.00 (.04)	−.00 (.04)	−.00 (.01)	−.01 (.03)
Any ADL	.24 (.07)**	.23 (.07)**	−.46 (.25)	−.42 (.25)	−.01 (.11)	−.04 (.11)	−.00 (.08)	−.00 (.08)
Any IADL	.13 (.12)	.16 (.12)	−.75 (.35)	−.73 (.36)	−.06 (.13)	−.03 (.14)	−.05 (.10)	−.07 (.10)
Number of chronic conditions	.07 (.01)***	.07 (.01)***	−.07 (.03)*	−.08 (.03)*	−.03 (.04)	−.02 (.04)	−.02 (.03)	−.02 (.03)

(continued)

Table 4. (continued)

	Psychological distress		Psychological Well-being		Episodic Memory		Executive function	
	b (SE)	*b (SE)*	*b (SE)*	*b (SE)*	*b (SE)*	*b (SE)*	*b (SE)*	*b (SE)*
Total household size (logged)	−.04 (.09)	−.03 (.09)	.50 (.30)	.51 (.30)	.09 (.13)	.08 (.13)	−.05 (.09)	−.07 (.09)
Hours of unpaid assistance (logged)	−.02 (.02)	−.02 (.02)	−.01 (.06)	−.01 (.06)	.02 (.03)	.02 (.03)	.02 (.02)	.01 (.02)
Psychological distress					−.00 (.07)	−.01 (.07)	−.02 (.05)	−.02 (.05)

Note. Significance levels are denoted as ± $p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$.

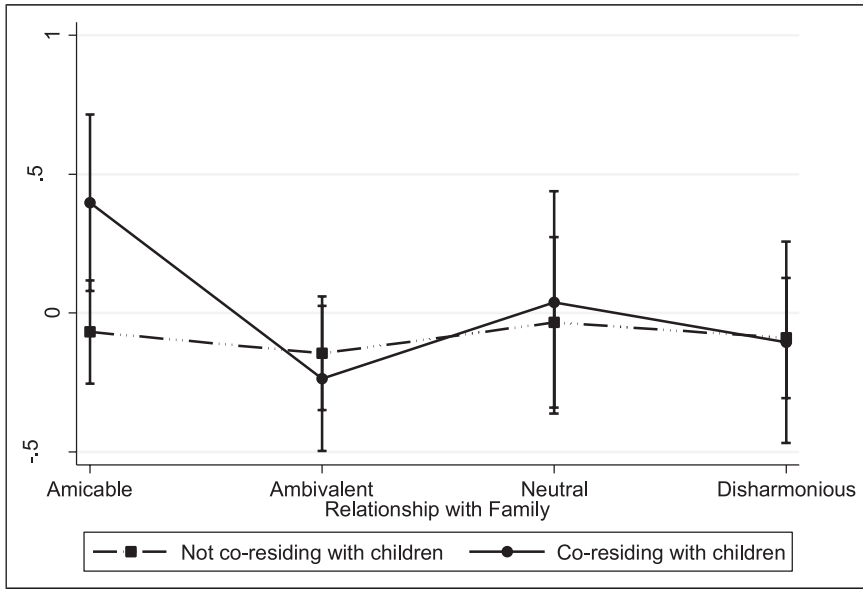

Figure 1. Interacting effect of family relationships and co-residence with children on episodic memory.

raising grandchildren. In addition, the analyses examined whether co-residence with adult children moderated this relationship.

Family relationship quality types and psychological and cognitive health

Results show that compared to grandparents who had amicable relationships with family members, those who had ambivalent relationships reported worse psychological and cognitive health. Specifically, ambivalent relationships with family were significantly associated with greater psychological distress and diminished psychological well-being. These results are consistent with two veins of previous work: studies showing that emotionally mixed (i.e., ambivalent) relationships have a stronger association with poor psychological well-being than aversive relationships (Uchino et al., 2004), and research showing that intergenerational ambivalence (i.e., mixed emotions towards relationships with adult children or grandchildren) is associated with greater psychological distress (Fingerman et al., 2008; Herrera et al., 2022). Importantly, ambivalence calls for a resolution in one of two directions: the formation of a mutually supportive tie or drifting apart (i.e., a shift toward either an amicable or a neutral relationship) (Schenk & Dykstra, 2012).

In grandfamilies, the relationship between grandparents and their adult children emerged in the context of the broader family dynamics. While parents' solidarity with and attachment to adult children can lead to a desire to help their children, it is

beneficial for children to attain adult status in a timely manner, establish independent lives, and ultimately become a potential source of support for their parents while consistently offering support to their own children (Pillemer & Suitor, 2002). When this does not occur, parents may feel obligated to assist their adult children and grandchildren, which brings up mixed emotions: a desire to protect and assist the child stemming from solidarity, as well as disappointment, guilt, or sadness at the child's situation and self-doubt regarding parenting (Pillemer & Suitor, 2002). Because grandparent caregiving involves adult children's continued dependence on parents, which in turn may engender ambivalence, this relationship can greatly impact grandparents' psychological distress and well-being.

The results were based on collective relationship qualities because the data did not contain information on interactions with specific children. These collective appraisals may reflect support and strain in relationships with other family. Providing primary care to grandchildren can make other family relationships challenging, as the time and effort one is able to put into them is largely dependent on the intensity of their caregiving responsibilities. It is important to establish whether relationships with one specific child affect psychological well-being or whether it is the balance of positive and negative interactions with all family member that is most influential for psychological well-being (Lee & Szinovacz, 2016).

The current results also show that neutral and disharmonious relationships were associated with poorer psychological well-being. Grandparents who are responsible for caregiving may experience more conflict with adult children about parenting issues; adult children occupy a pivotal role when grandparents are not as close to their grandchildren, which may increase distance or cause tension (Goodman, 2003). When an adult child's behavior negatively affects grandparents, grandparents might find it important to remain neutral from the ongoing emotional pull associated with their child's struggles so that they can establish limits more easily (Bundy-Fazioli et al., 2013). The decision to set limits and create boundaries with an adult child may be a significant predictor of grandparent caregivers' psychological well-being.

In addition, the results show that ambivalent relationships with family may affect an individual's cognitive ability, in particular, episodic memory. One study indicated that pre-loss marital relationship quality influences an individual's post-loss cognition—ambivalent marital relationships were strongly related to poor episodic memory (Min & Song, 2022). Individuals in ambivalent relationships have both positive and negative experiences and sentiments, creating an environment full of contradictory messages (Momeni et al., 2022), which may hinder the creation of strong episodic memory. Further, grandparent caregivers may have ambivalent relationships with their other family members, including other children and grandchildren because they are focusing their attention and resources on the adult child in need and their offspring. Because episodic memory is a highly sensitive indicator of later-life cognitive decline and thus one of the strongest predictors of Alzheimer's disease (Boraxbekk et al., 2015; Daselaar et al., 2013), future research should determine how ambivalence is experienced by various family members over time in the context of grandparent caregiving.

The results did not show a significant association between family relationship quality and executive function. Of the few studies that consider the relation between grandparent caregiving and executive function, past research is mixed, with results showing that those who provide care exhibit higher executive function (e.g., Burn & Szoeke, 2015), though there may be a critical threshold at which point the caregiving burden has a negative effect on cognitive performance (Burn et al., 2014). It may be case that, regardless of relationship quality, grandparents taking on a caregiving role draw on their executive function abilities in similar ways and at similar rates.

Due to the nature of the cross-sectional analysis, we could not verify the temporal order of relationship quality with family and psychological and cognitive health. It is possible that psychological and cognitive well-being influences the quality of relationships with family members among grandparent caregivers. In particular, a decline in cognitive functioning may make it difficult for older adults to recognize the social cues necessary for smooth interactions and conversations, leading to a withdrawal from socializing (Zhaoyang et al., 2021). Additionally, diminished cognitive functioning could make it challenging to engage in and enjoy social interactions, as it may reduce a person's confidence in their ability to participate in successful exchanges (Zhaoyang et al., 2021); as a result, those with decreased cognitive functioning may experience increased negativity or indifference in their relationships with others. However, little is known about the opposite causal relation; thus, this study aimed to explore how family relationships influence cognitive functioning for grandparent caregivers.

Ambivalent relationships with family, co-residence with adult children, and episodic memory

Although we did not find statistically significant moderating effects of co-residence with adult children on the associations between family relationship quality type and psychological health and executive function, the results showed that co-residence with adult children moderated the association between ambivalent family relationships and grandparents' episodic memory scores. Because grandparent caregiving itself is strongly related to psychological distress, there may not be a significant difference in psychological health by co-residence status; however, the results revealed that there is a significant difference related to cognitive health. Notably, for those in ambivalent relationships with family members, episodic memory scores were lower among grandparents who co-resided with their adult children than among grandparents who did not. Previous work has suggested that mother-child interactions have an enduring effect on episodic memory; early-life social interactions with mothers are associated with cognitive functioning not only in childhood but also across the lifespan (Sharifian et al., 2019). The current study emphasizes that interactions with significant family members in mid-life and later life in the context of caregiving may affect cognition. Specifically, when living with an adult child in need, grandparents take on a large share of parental responsibility despite their children's parental presence in the household, and possibly leading their relationships with the adult child to become more ambivalent (Mutchler & Baker, 2004).

The opportunity to step into a caregiving role, which often involves providing substantial physical and emotional support to grandchildren, can reignite tensions and ambivalence originating from earlier points in the relationship. If grandparents step in at a time of crisis (i.e., divorce, substance abuse challenges, etc.), they may be more likely to experience ambivalence toward their adult children. According to Fingerman et al. (2008), there is little ambivalence in intergenerational relationships when the adult child is in a marriage in which they are highly invested and they report that their relationship with their parents is very important. Because marital status is an important predictor of better episodic memory (Mousavi-Nasab, Kormi-Nouri, Sundström, & Nilsson, 2012) and also influences family relationships, future research should further consider the effects of marital status among family members.

Limitations

The current study highlights the importance of family relationships for psychological and cognitive health in the context of grandparent caregiving, however, the analysis has several limitations. First, caregiving status was defined as the respondent's having had primary responsibility for caring for grandchildren for six months or longer. Thus, respondents may not have been caregivers at the time of the survey. Of the 448 sample members who answered the relevant question, 184 reported that they currently resided with their grandchildren. Based on prior studies that defined grandparent caregiving status (Stearns & Nadorff, 2020), it is likely that many of these respondents were still caring for their grandchildren.

Second, the results are based on relationship qualities for not only the adult child in need and their offspring but also other non-partner/spouse family members (e.g., other adult children, grandparents' siblings, etc.). It is important for future research to establish whether relationships with one specific family member affect grandparents' psychological and cognitive health. If data sources allow, researchers should also consider the type of problem the adult child is experiencing, which may determine both relationship quality (i.e., amicable, ambivalent, neutral, disharmonious) and the decision to co-reside; unfortunately, data limitations prevented us from exploring this factor in the current study. Future studies should include more detailed data on the circumstances that limit adult children from raising their children independently. Further, ongoing co-residence with adult children and grandchildren has been associated with greater psychological well-being among grandmothers, especially retired women (Wang & Szinovacz, 2015). Future research should examine whether the effects of family relationships on psychological and cognitive health differ by gender.

Additionally, although this study focused on the relationship strain and ambivalence driven by helping adult children, the parent-adult child relationships themselves have roots in family history and early childhood relationships (Lüscher & Pillemer, 1998). Further, a grandparent who experiences many life challenges, such as poor health and fewer financial resources, may be more likely to both have stressful relationships and move in with their child (Ellis & Simmons, 2014). Thus, future studies should explore a

wider variety of circumstances, possibly using a qualitative approach to provide greater context for these findings.

Finally, the literature shows that both macrosystemic and microsystemic factors influenced grandparent caregiving (Dolbin-MacNab & O'Connell, 2021). Macrosystemic factors include aspects of the broader social system and culture, such as race/ethnicity, economic instability, access to affordable day care, and child welfare policies mandating the placement of children with relatives, while microsystemic factors are the barriers faced by parents (Hayslip et al., 2019). While this study primarily focuses on family relationships, future research should extend this analysis by considering broader societal and cultural dynamics. A preliminary analysis of the focal data indicates that non-white respondents were more likely to be in detached and disharmonious family relationships than white respondents. Researchers should further investigate this racial difference as well as other societal and cultural influences on grandparent caregiving.

Conclusion

Despite these limitations, this study provides valuable information about family relationship types and grandparent caregivers' psychological and cognitive health. Ambivalent family relationships were strongly associated with poorer psychological and cognitive health. It is important for practitioners to remain mindful of how family relationships affect grandparent caregivers' health. Grandparent caregivers would benefit from developing their personal and family resilience with appropriate and needed interventions to improve their self-efficacy, achieve healthy relationships, and promote health outcomes. This study improves our understanding of the roles of family relationship quality among grandparent caregivers and suggests that emotional and instrumental support from family is essential to increasing grandparents' psychological and cognitive well-being.

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Open research statement

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Supplemental Material

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References

Arpino, B., & Bordone, V. (2014). Does grandparenting pay off? The effect of childcare on grandparents' cognitive functioning. *Journal of Marriage and Family*, *76*(2), 337–351. https://doi.org/10.1111/jomf.12096

Asparouhov, T., & Muthén, B. (2014). Auxiliary variables in mixture modeling: Three-step approaches using M*plus*. *Plus. Structural Equation Modeling: A Multidisciplinary Journal*, *21*(3), 329–341. https://doi.org/10.1080/10705511.2014.915181

Backhouse, J., & Graham, A. (2012). Grandparents raising grandchildren: Negotiating the complexities of role-identity conflict. *Child & Family Social Work*, *17*(3), 306–315. https://doi.org/10.1111/j.1365-2206.2011.00781.x

Bengtson, V. L., & Roberts, R. E. (1991). Intergenerational solidarity in aging families: An example of formal theory construction. *Journal of Marriage and Family*, *53*(4), 856–870. https://doi.org/10.2307/352993

Bengtson, V. L., Rosenthal, C., & Burton, L. (1996). Paradoxes of families and aging. In R. H. Binstock, & L. K. George (Eds.), *Handbook of aging and the social sciences* (pp. 253–282). Academic Press.

Boraxbekk, C. J., Lundquist, A., Nordin, A., Nyberg, L., Nilsson, L. G., & Adolfsson, R. (2015). Free recall episodic memory performance predicts dementia ten years prior to clinical diagnosis: Findings from the betula longitudinal study. *Dementia and Geriatric Cognitive Disorders Extra*, *5*(2), 191–202. https://doi.org/10.1159/000381535

Bundy-Fazioli, K., Fruhauf, C. A., & Miller, J. L. (2013). Grandparents caregivers' perceptions of emotional distress and well-being. *Journal of Family Social Work*, *16*(5), 447–462. https://doi.org/10.1080/10522158.2013.832461

Burg, M. M., & Seeman, T. E. (1994). Families and health: The negative side of social ties. *Annals of Behavioral Medicine*, *16*(2), 109–115. https://doi.org/10.1093/abm/16.2.109

Burn, K., Henderson, V., Ames, D., Dennerstein, L., & Szoeke, C. (2014). Role of grandparenting in postmenopausal women's cognitive health: Results from the women's healthy aging project. *Menopause*, *21*(10), 1069–1074. https://doi.org/10.1097/GME.0000000000000236

Burn, K., & Szoeke, C. (2015). Is grandparenting a form of social engagement that benefits cognition in ageing? *Maturitas*, *80*(2), 122–125. https://doi.org/10.1016/j.maturitas.2014.10.017

Carlson, L. (2021). *Grandchildren living in grandparent-headed households, 2019. Family profiles, FP-21-07*. National Center for Family & Marriage Research. https://doi.org/10.25035/ncfmr/fp-21-07

Carstensen, L. L., Pasupathi, M., Mayr, U., & Nesselroade, J. R. (2000). Emotional experience in everyday life across the adult life span. *Journal of Personality and Social Psychology*, *79*(4), 644–655. https://doi.org/10.1037/0022-3514.79.4.644

Chan, A. C., Lee, S. K., Zhang, J., Banegas, J., Marsalis, S., & Gewirtz, A. H. (2023). Intensity of grandparent caregiving, health, and well-being in cultural context: A systematic review. *The Gerontologist*, *63*(5), 851–873. https://doi.org/10.1093/geront/gnac026

Connidis, I. A. (2014). Age relations and family ties over the life course: Spanning the macro– micro divide. *Research in Human Development*, *11*(4), 291–308. https://doi.org/10.1080/15427609.2014.967050

Conway, F., Jones, S., & Speakes-Lewis, A. (2011). Emotional strain in caregiving among African American grandmothers raising their grandchildren. *Journal of Women & Aging*, *23*(2), 113–128. https://doi.org/10.1080/08952841.2011.561142

Cook Maher, A., Kielb, S., Loyer, E., Connelley, M., Rademaker, A., Mesulam, M. M., Weintraub, S., McAdams, D., Logan, R., Rogalski, E., & Rogalski, E. (2017). Psychological well-being in elderly adults with extraordinary episodic memory. *PLoS One*, *12*(10), Article e0186413. https://doi.org/10.1371/journal.pone.0186413

Daselaar, S., Cabeza, R., Ochsne, K., & Kosslyn, S. (2013). Age-related decline in working memory and episodic memory: Contributions of the prefrontal cortex and medial temporal lobes. *The Oxford handbook of cognitive neuroscience*, *1*(1), 456–472.

Dolbin-MacNab, M. L., & O'Connell, L. M. (2021). Grandfamilies and the opioid epidemic: A systemic perspective and future priorities. *Clinical Child and Family Psychology Review*, *24*(2), 207–223. https://doi.org/10.1007/s10567-021-00343-7

Doley, R., Bell, R., Watt, B., & Simpson, H. (2015). Grandparents raising grandchildren: Investigating factors associated with distress among custodial grandparent. *Journal of Family Studies*, *21*(2), 101–119. https://doi.org/10.1080/13229400.2015.1015215

Dunifon, R., Musick, K., & Near, C. (2020). Time with grandchildren: Subjective well-being among grandparents living with their grandchildren. *Social Indicators Research*, *148*, 681–702. https://doi.org/10.1007/s11205-019-02206-9

Ellis, R., & Simmons, T. (2014). *Coresident grandparents and their grandchildren: 2012—population characteristics (report No. P20–576)*. US Census Bureau.

Ferring, D., Michels, T., Boll, T., & Filipp, S. H. (2009). Emotional relationship quality of adult children with ageing parents: On solidarity, conflict and ambivalence. *European Journal of Ageing*, *6*(4), 253–265. https://doi.org/10.1007/s10433-009-0133-9

Fingerman, K. L., Hay, E. L., & Birditt, K. S. (2004). The best of ties, the worst of ties: Close, problematic, and ambivalent social relationships. *Journal of Marriage and Family*, *66*(3), 792–808. https://doi.org/10.1111/j.0022-2445.2004.00053.x

Fingerman, K. L., Huo, M., & Birditt, K. S. (2020). A decade of research on intergenerational ties: Technological, economic, political, and demographic changes. *Journal of Marriage and Family*, *82*(1), 383–403. https://doi.org/10.1111/jomf.12604

Fingerman, K. L., Pitzer, L., Lefkowitz, E. S., Birditt, K. S., & Mroczek, D. (2008). Ambivalent relationship qualities between adults and their parents: Implications for the well-being of both parties. *Journal of Gerontology: Psychological Sciences*, *63*(6), 362–371. https://doi.org/10.1093/geronb/63.6.P362

Giarrusso, R., Silverstein, M., Gans, D., & Bengtson, V. L. (2005). Ageing parents and adult children: New perspectives on intergenerational relationships. In M. L. Johnson, V. L. Bengtson, P. G. Coleman, & T. B. L. Kirkwood (Eds.), *The Cambridge handbook of age and ageing* (pp. 413–421). Cambridge University Press.

Goodman, C. C. (2003). Intergenerational triads in grandparent-headed families. *Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, *58*(5), S281–S289. https://doi.org/10.1093/geronb/58.5.S281

Goodman, C. C., Tan, P. P., Ernandes, P., & Silverstein, M. (2008). The health of grandmothers raising grandchildren: Does the quality of family relationships matter? *Families, Systems & Health*, *26*(4), 417–430. https://doi.org/10.1037/a0013963

Gu, J., Karl, A., Baer, R., Strauss, C., Barnhofer, T., & Crane, C. (2020). Latent profile analysis of the five facet mindfulness questionnaire in a sample with a history of recurrent depression. *Assessment*, *27*(1), 149–163. https://doi.org/10.1177/1073191117715114

Guo, M., Xu, L., Liu, J., Mao, W., & Chi, I. (2016). Parent–child relationships among older Chinese immigrants: The influence of co-residence, frequent contact, intergenerational support and sense of children's deference. *Ageing and Society*, *36*(7), 1459–1482. https://doi.org/10.1017/S0144686X15000446

Hayslip, B. Jr., Fruhauf, C. A., & Dolbin-MacNab, M. L. (2019). Grandparents raising grandchildren: What have we learned over the past decade? *The Gerontologist*, *59*(3), e152–e163. https://doi.org/10.1093/geront/gnx106

He, W., & Jia, S. (2024). Exploring multigenerational co-residence in the United States. *International Journal of Housing Markets and Analysis*, *17*(2), 517–538. https://doi.org/10.1108/ijhma-06-2022-0089

Herrera, M. S., Galkuté, M., Fernández, M. B., & Elgueta, R. (2022). Grandparent-grandchild relationships, generativity, subjective well-being and self-rated health of older people in Chile. *Social Science & Medicine*, *296*(1), Article 114786. https://doi.org/10.1016/j.socscimed.2022.114786

Hogerbrugge, M. J., & Komter, A. E. (2012). Solidarity and ambivalence: Comparing two perspectives on intergenerational relations using longitudinal panel data. *Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, *67*(3), 372–383. https://doi.org/10.1093/geronb/gbr157

Holt-Lunstad, J., & Uchino, B. N. (2019). Social ambivalence and disease (sad): A theoretical model aimed at understanding the health implications of ambivalent relationships. *Perspectives on Psychological Science*, *14*(6), 941–966. https://doi.org/10.1177/1745691619861392

Jang, H., Hill, N. L., Turner, J. R., Bratlee-Whitaker, E., Jeong, M., & Mogle, J. (2024). Poor-quality daily social encounters, daily stress, and subjective cognitive decline among older adults. *Innovation in Aging*, *8*(6), igae038. https://doi.org/10.1093/geroni/igae038

Jang, H., Rauktis, M. E., & Tang, F. (2022). The quality of relationships with adult children and depressive symptoms among grandparents. *Aging & Mental Health*, *26*(12), 2381–2389. https://doi.org/10.1080/13607863.2021.1998349

Kahn, J. R., Goldscheider, F., & García-Manglano, J. (2013). Growing parental economic power in parent–adult child households: Coresidence and financial dependency in the United States, 1960–2010. *Demography*, *50*(4), 1449–1475. https://doi.org/10.1007/s13524-013-0196-2

Kawachi, I., & Berkman, L. F. (2001). Social ties and mental health. *Journal of Urban Health*, *78*(3), 458–467. https://doi.org/10.1093/jurban/78.3.458

Keene, J. R., & Batson, C. D. (2010). Under one roof: A review of research on intergenerational coresidence and multigenerational households in the United States. *Sociology Compass*, *4*(8), 642–657. https://doi.org/10.1111/j.1751-9020.2010.00306.x

Kessler, R., Barker, P., Colpe, L., Epstein, J., Gfroerer, J., Hiripi, E., et al. (2003). Screening for serious mental illness in the general population. *Arch Gen Psychiatry*, *60*(2), 184–189. https://doi.org/10.1001/archpsyc.60.2.184

Lanza, S. T., Flaherty, B. P., & Collins, L. M. (2003). Latent class and latent transition analysis. In J. A. Schinka, & W. E. Velicer (Eds.), *Handbook of psychology: Research methods in psychology* (pp. 663–685): Wiley.

Lee, H. J., & Szinovacz, M. E. (2016). Positive, negative, and ambivalent interactions with family and friends: Associations with well-being. *Journal of Marriage and Family*, *78*(3), 660–679. https://doi.org/10.1111/jomf.12302

Lee, K. O., & Painter, G. (2013). What happens to household formation in a recession? *Journal of Urban Economics*, *76*(1), 93–109. https://doi.org/10.1016/j.jue.2013.03.004

Li, M., Guo, M., Stensland, M., & Dong, X. (2021). Family relationships and cognitive function among community-dwelling US Chinese older adults. *Research on Aging*, *43*(1), 37–46. https://doi.org/10.1177/0164027520939250

Lo, S. K. W., & Lindsay, J. (2022). "My children,""my grandchildren": Navigating intergenerational ambivalence in grandparent childcare arrangements in Hong Kong. *Family Relations*, *71*(4), 1834–1851. https://doi.org/10.1111/fare.12678

Lüscher, K., & Pillemer, K. (1998). Intergenerational ambivalence: A new approach to the study of parent-child relations in later life. *Journal of Marriage and Family*, 413–425.

Mendoza, A. N., Fruhauf, C. A., & MacPhee, D. (2020). Grandparent caregivers' resilience: Stress, support, and coping predict life satisfaction. *The International Journal of Aging and Human Development*, *91*(1), 3–20. https://doi.org/10.1177/0091415019843459

Mills, T. L., Gomez-Smith, Z., & De Leon, J. M. (2005). Skipped generation families: Sources of psychological distress among grandmothers of grandchildren who live in homes where neither parent is present. *Marriage & Family Review*, *37*(1-2), 191–212. https://doi.org/10.1300/J002v37n01_12

Min, J., & Song, J. (2022). Spousal loss and cognitive function: The importance of gender and multiple dimensions of marital quality. *Aging & Mental Health*, *27*(4), 755–764. https://doi.org/10.1080/13607863.2022.2084715

Momeni, K., Amani, R., Janjani, P., Majzoobi, M. R., Forstmeier, S., & Nosrati, P. (2022). Attachment styles and happiness in the elderly: The mediating role of reminiscence styles. *BMC Geriatrics*, *22*(1), 349. https://doi.org/10.1186/s12877-022-03053-z

Mousavi-Nasab, S. M. H., Kormi-Nouri, R., Sundström, A., & Nilsson, L. G. (2012). The effects of marital status on episodic and semantic memory in healthy middle-aged and old individuals. *Scandinavian Journal of Psychology*, *53*, 1–8. https://doi.org/10.1111/j.1467-9450.2011.00926.x

Musil, C., Warner, C., Zauszniewski, J., Wykle, M., & Standing, T. (2009). Grandmother caregiving, family stress and strain, and depressive symptoms. *Western Journal of Nursing Research*, *31*(3), 389–408. https://doi.org/10.1177/0193945908328262

Mutchler, J. E., & Baker, L. A. (2004). A demographic examination of grandparent caregivers in the Census 2000 Supplementary Survey. *Population Research and Policy Review*, *23*(4), 359–377. https://doi.org/10.1023/B:POPU.0000040018.85009.c1

Newsom, J. T., Rook, K. S., Nishishiba, M., Sorkin, D. H., & Mahan, T. L. (2005). Understanding the relative importance of positive and negative social exchanges: Examining specific domains and appraisals. *Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, *60*(6), P304–P312. https://doi.org/10.1093/geronb/60.6.P304

Pilkauskas, N. V., Amorim, M., & Dunifon, R. E. (2020). Historical trends in children living in multigenerational households in the United States: 1870–2018. *Demography*, *57*(6), 2269–2296. https://doi.org/10.1007/s13524-020-00920-5

Pillemer, K., & Suitor, J. J. (2002). Explaining mothers' ambivalence toward their adult children. *Journal of Marriage and Family*, *64*(3), 602–613. https://doi.org/10.1111/j.1741-3737.2002.00602.x

Postigo, J. M. L., & Honrubia, R. L. (2010). The co-residence of elderly people with their children and grandchildren. *Educational Gerontology*, *36*(4), 330–349. https://doi.org/10.1080/03601270903212351

Ryff, C. D., & Keyes, C. L. M. (1995). The structure of psychological well-being revisited. *Journal of Personality and Social Psychology*, *69*(4), 719–727. https://doi.org/10.1037/0022-3514.69.4.719

Schenk, N., & Dykstra, P. A. (2012). Continuity and change in intergenerational family relationships: An examination of shifts in relationship type over a three-year period. *Advances in Life Course Research*, *17*(3), 121–132. https://doi.org/10.1016/j.alcr.2012.01.004

Shakya, H. B., Usita, P. M., Eisenberg, C., Weston, J., & Liles, S. (2012). Family well-being concerns of grandparents in skipped generation families. *Journal of Gerontological Social Work*, *55*(1), 39–54. https://doi.org/10.1080/01634372.2011.620072

Sharifian, N., Kraal, A. Z., Zaheed, A. B., Sol, K., & Zahodne, L. B. (2019). Longitudinal socioemotional pathways between retrospective early life maternal relationship quality and episodic memory in older adulthood. *Developmental Psychology*, *55*(11), 2464–2473. https://doi.org/10.1037/dev0000805

Silverstein, M., Gans, D., Lowenstein, A., Giarrusso, R., & Bengtson, V. L. (2010). Older parent–child relationships in six developed nations: Comparisons at the intersection of affection and conflict. *Journal of Marriage and Family*, *72*(4), 1006–1021. https://doi.org/10.1111/j.1741-3737.2010.00745.x

Smith, G. C. (2015). Grandparents raising grandchildren. *The Encyclopedia of Adulthood and Aging*, 1–6. https://doi.org/10.1002/9781118521373.wbeaa048

Stearns, M. A., & Nadorff, D. K. (2020). The moderation of raising one's grandchildren on the relation between sleep and depressive symptoms. *Nature and Science of Sleep*, *12*(1), 615–626. https://doi.org/10.2147/NSS.S247568

Thoits, P. A. (1986). Social support as coping assistance. *Journal of Consulting and Clinical Psychology*, *54*(4), 416–423. https://doi.org/10.1037/0022-006X.54.4.416

Thomas, P. A., Liu, H., & Umberson, D. (2017). Family relationships and well-being. *Innovation in aging*, *1*(3), igx025. https://doi.org/10.1093/geroni/igx025

Tun, P. A., & Lachman, M. E. (2006). Telephone assessment of cognitive function in adulthood: The Brief test of adult cognition by telephone. *Age and Ageing*, *35*(6), 629–632. https://doi.org/10.1093/ageing/afl095

Uchino, B. N. (2004). *Social support and physical health: Understanding the health consequences of relationships*. Yale University Press.

Uchino, B. N., Holt-Lunstad, J., Smith, T. W., & Bloor, L. (2004). Heterogeneity in social networks: A comparison of different models linking relationships to psychological outcomes. *Journal of Social and Clinical Psychology*, *23*(2), 123–139. https://doi.org/10.1521/jscp.23.2.123.31014

U.S. Census Bureau. (2019). Grandparents. 2018 American community survey 1-year estimates. Retrieved from. https://data.census.gov/cedsci/table?q=S10&d=ACS_1-Year_Estimates_Subject_Tables&tid=ACSST1Y2018.S1002&vintage=2018

Wagstaff, J., & Cooper, L. B. (2019). Grandparents caring for grandchildren. Retrieved from. https://www.ebscohost.com/assets-sample-content/Social-Work-Reference-Center-Grandparents-Caring-Grandchildren-Quick-Lesson.pdf

Wang, S., & Szinovacz, M. E. (2015). Grandchild care, spousal involvement, and grandparents' marital quality. *The Gerontologist*, *55*(Suppl_2), 444–445. https://doi.org/10.1093/geront/gnv191.06

Weihs, K., Fisher, L., & Baird, M. (2002). Families, health, and behavior: A section of the commissioned report by the committee on health and behavior: Research, practice, and policy division of neuroscience and behavioral health and division of health promotion and disease prevention Institute of medicine, national academy of sciences. *Families, Systems & Health*, *20*(1), 7–46. https://doi.org/10.1037/h0089481

Wilson, R. S., Evans, D. A., Bienias, J. L., Mendes de Leon, C. F., Schneider, J. A., & Bennett, D. A. (2003). Proneness to psychological distress is associated with risk of Alzheimer's disease. *Neurology*, *61*(11), 1479–1485. https://doi.org/10.1212/01.WNL.0000096167.56734.59

Zhaoyang, R., Scott, S. B., Martire, L. M., & Sliwinski, M. J. (2021). Daily social interactions related to daily performance on mobile cognitive tests among older adults. *PLoS One*, *16*(8), Article e0256583. https://doi.org/10.1371/journal.pone.0256583

Zhou, Z., Mao, F., Ma, J., Hao, S., Qian, Z., Elder, K., Turner, J., & Fang, Y. (2018). A longitudinal analysis of the association between living arrangements and health among older adults in China. *Research on Aging*, *40*(1), 72–97. https://doi.org/10.1177/0164027516680854