Grandparent Caregiving and Depressive Symptoms in Older Adults: A Meta-Analysis Across Eastern and Western Cultural Contexts

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Abstract

A meta-analysis of cross-sectional and case-control studies was conducted to explore the relationship between grandparenting and depression levels in older adults. Cross-sectional and case-control studies published before June 29, 2021 were searched in three English databases (Web of Science, EBSCO, and PubMed) and two Chinese databases (CNKI and Wanfang), with a total of 22 original articles included. A random-effects model was used to estimate the overall standardized mean difference (d) and 95% confidence interval; the d values were -0.05 (95%CI [-0.18, 0.08]) and 0.22 (95%CI [0.04, 0.40]) under Eastern and Western cultural backgrounds, respectively. Furthermore, under Eastern cultural backgrounds, the type of depression measurement tool, study design type, gender, and spouse status could significantly moderate this relationship; whereas under Western cultural backgrounds, only the type of depression measurement tool and study design type could significantly moderate this relationship. Under Eastern cultural backgrounds, grandparenting had no significant effect on depression levels in older adults; under Western cultural backgrounds, grandparenting had a significant negative effect on depression levels in older adults.

Full Text

The Relationship Between Grandparenting and Depression in Older Adults: A Meta-Analysis Across Eastern and Western Cultural Contexts

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Abstract

This meta-analysis examined the relationship between grandparenting and depression levels in older adults through cross-sectional and case-control studies. We searched three English databases (Web of Science, EBSCO, PubMed) and two Chinese databases (CNKI, Wanfang) for studies published before June 29, 2021, ultimately including 22 original articles. Using random-effects models, we estimated overall standardized mean differences (d) with 95% confidence intervals. The d-values were -0.05 (95%CI [-0.18, 0.08]) for Eastern cultural contexts and 0.22 (95%CI [0.04, 0.40]) for Western cultural contexts. In Eastern cultures, depression measurement type, study design, gender, and marital status significantly moderated this relationship, whereas in Western cultures, only depression measurement type and study design emerged as significant moderators. In Eastern cultural contexts, grandparenting showed no significant effect on depression levels, while in Western contexts, it exerted a significant negative effect.

Keywords: depression, grandparenting, meta-analysis

1. Introduction

Due to factors such as women' s employment, economic pressures, and increasing numbers of single-parent families, grandparenting has become increasingly prevalent (Shefaly & Esperanza, 2020). The impact of caring for grandchildren on older adults' mental health has attracted growing scholarly attention (Hayslip & Kaminski, 2005; Musil, 1998), with research on the relationship between grandparenting and depression being particularly abundant. Despite numerous studies examining this relationship, findings remain inconsistent, leaving unresolved questions about whether grandparenting truly relates to depression and what factors might influence this association.

Notably, no meta-analysis has specifically focused on the relationship between grandparenting and depression. Only one existing meta-analysis (Kelly et al., 2021) examined mental health among grandparents raising grandchildren due to parental incarceration or custody loss, finding that caregiving grandparents experienced poorer mental health than non-caregiving grandparents. However, this study excluded grandparents who were not primary caregivers—a more common scenario in grandparenting arrangements—and was limited to the U.S. context. This narrow sampling, particularly the omission of the more typical non-primary caregiver population, limits the generalizability of its conclusions.

Furthermore, that study's Western cultural focus overlooks how cultural context may substantially influence both motivations for grandparenting and its effects on depression. In Eastern cultures, grandparenting is generally viewed as an important form of downward social support that older adults willingly embrace (Peng, 2013). In contrast, within individualistic Western societies, grandparenting is not considered an elder' s responsibility but rather a forced participation under certain circumstances (Baker, 2006), potentially creating different psychological impacts. Cultural background likely represents an important source of current controversies, yet no research has deeply explored these cultural dif-

ferences.

Although narrative reviews have examined how grandparenting affects older adults' mental health (Kim et al., 2016), traditional literature reviews suffer from two key limitations: they involve subjective interpretation and lack transparency, and they require researchers to capture findings from each study—a process that becomes increasingly difficult as the literature grows, inevitably introducing bias. Meta-analysis employs explicit rules for study identification and statistical data analysis, integrating multiple research findings while effectively reducing measurement and sampling errors present in individual studies (Borenstein et al., 2009). Therefore, this study conducted a meta-analysis of cross-sectional and case-control studies to examine the effects of grandparenting on depression across Eastern and Western cultural contexts and identify moderating variables influencing this relationship.

2.1 Grandparenting

Grandparenting, also known as intergenerational parenting or upbringing, refers to situations where grandparents live with grandchildren and assume partial or full responsibility for their care and education, transferring parental responsibilities to the grandparent generation. With accelerating social change, increased mobility, and growing social and economic pressures on individuals, parents increasingly struggle to care for their children. When parents cannot fulfill caregiving responsibilities for various reasons, they often entrust children to grandparents, making this arrangement a new social norm (Smith et al., 1998).

Shefaly and Esperanza (2020) categorized grandparenting into three types based on caregiving responsibility: primary caregiving with custody, primary caregiving without custody, and non-primary caregiving without full-time care. The distinction between the first two types lies in whether grandparents assume complete caregiving responsibility and legal custody. Some scholars have also classified grandparenting based on its characteristics; for example, Lu Lezhen (2004) identified four types: traditional, permissive, modeling, and democratic. The former classification based on responsibility level remains more commonly used.

Cultural context shapes distinct motivations for grandparenting. In China, discussions focus primarily on parental labor migration and traditional cultural influences (Duan Feiyan & Li Jing, 2012). Domestic scholars suggest that under traditional culture, grandparents possess a psychology of contributing to their children and view caring for grandchildren as their responsibility. Additionally, due to economic development and intensified social competition, middle-generation parents must devote themselves fully to work, leaving them without time or energy for childcare (Jiang Chuan, 2005; Shen Weihua, 2001). Peng (2013) summarized motivations as stemming from Confucian culture and filial piety norms, multi-generational co-residence patterns, family structural changes, intergenerational relationships, women' s employment, and grandparents' sense

of responsibility.

In Western contexts, recent increases in single-parent employment, rising childcare costs, and reduced government assistance have led to more multi-generational households and grandparent-provided childcare (Casper et al., 2016). Researchers also attribute grandparenting to social environmental factors including child abuse from medical neglect and lack of supervision. Other contributing factors include sexual abuse, drug and alcohol addiction, adolescent pregnancy, parental divorce, parental incarceration (especially mothers), and the AIDS epidemic (Minkler & Roe, 1996).

2.2 The Relationship Between Grandparenting and Depression

Two competing perspectives—role strain and role enhancement—serve as primary theoretical frameworks for understanding how grandparenting relates to older adults' mental health.

Role strain is defined as difficulty fulfilling role obligations due to multiple competing responsibilities (Goode, 1960). This theory proposes that individuals with multiple roles experience greater stress, leading to health declines (Goode, 1960). From this perspective, grandparenting negatively affects older adults, with increased caregiving responsibilities bringing substantial stress, adverse health effects, and mounting psychological problems (Hayslip et al., 2017). Most U.S. studies find that becoming a grandparent caregiver leads to poorer physical health, role overload, and role confusion (Baker & Silverstein, 2008). Stearns and Nadorff (2020) compared caregiving and non-caregiving grandparents, finding higher depression levels and poorer sleep quality among those providing care.

Conversely, role enhancement theory posits that individuals with multiple roles experience increased power, prestige, resources, and emotional fulfillment, resulting in higher well-being and mental health (Moen et al., 1995). Tsai (2016) found that grandparents co-residing with grandchildren showed lower depression than those in other living arrangements. Research also indicates positive effects of grandchild care on grandparents'cognitive function (Arpino & Bordone, 2014). Wang et al. (2020), using the China Health and Retirement Longitudinal Study (CHARLS), found lower depression among caregiving grandparents.

Current contradictory findings may reflect cultural influences. While grandparenting is common in both Eastern and Western countries (Kim et al., 2017), its meaning for older adults depends on specific societal contexts and cultural characteristics. Thus, examining this relationship requires situating it within relevant cultural and social backgrounds. For instance, Taiwanese older adults view child-rearing as their moral responsibility (Sun, 2008; Sandel et al., 2006), whereas European and American grandparents more often see themselves as grandchildren' s companions rather than caregivers. Older adults in societies with strong traditional family norms may be better equipped for their caregiving

roles (Goodman & Silverstein, 2002). We therefore hypothesize that in Eastern cultural contexts, where grandparents internalize caregiving as a responsibility, role enhancement theory applies, reducing depression. In Western contexts, role strain theory better applies, increasing depression.

To better understand how grandparenting affects depression across cultural contexts and prevent variable confounding, this study conducted separate meta-analyses for Eastern and Western cultural backgrounds.

2.3 Moderating Variables in the Grandparenting-Depression Relationship

Beyond cultural context, other factors may moderate the relationship between grandparenting and depression.

First, gender and marital status (co-residing spouse presence) may influence this relationship. Female gender and lack of spousal co-residence are recognized risk factors for depression (Li Jiasen & Ma Wenjun, 2017). Childcare and domestic work are traditionally considered women' s responsibilities, with women bearing greater family and caregiving burdens (Peng, 2013), potentially creating different depression effects than for men. For example, Kolomer and McCallion (2005) found significantly lower depression among grandfathers than grandmothers in a U.S. sample. Grandparents' mental health is closely related to caregiving burden, social support, and physical health (Bachman & Chase-Lansdale, 2005; Hayslip et al., 2014). Spouses represent an important source of social support that may protect caregiving grandparents, with research demonstrating correlations between caregivers' marital status and depression levels (Provenzano et al., 2021).

Additionally, depression measurement tools may affect observed relationships. Different instruments vary in structure. For example, the CES-D scale comprises four factors: lack of positive affect, negative affect, somatic symptoms, and interpersonal problems (Meng Chen & Xiang Manjun, 1997), whereas the Beck Depression Inventory includes three factors: negative attitudes/suicidality, somatic symptoms, and difficulty functioning (Wang Xiangdong et al., 1999). Different emphases on depression components across scales may produce subtle variations in quantified relationships between grandparenting and depression.

3.1 Literature Search Strategy

We first searched Chinese databases (CNKI, Wanfang) using the search string: ((Theme: 隔代抚养) OR (Theme: 隔代抚育) OR (Theme: 隔代教养) OR (Theme: 隔代教育)) AND ((Theme: 抑郁) OR (Theme: 心理健康)). We then searched Web of Science, EBSCO, and PubMed using: (grandparenting [Title/Abstract] OR childcare [Title/Abstract] OR "caring for grandchildren" [Title/Abstract] OR "grandparents raising" [Title/Abstract] OR "reared by grandparents" [Title/Abstract] OR "care for grandchildren" [Title/Abstract] OR "grandparent

caregivers" [Title/Abstract] OR "old caregivers" [Title/Abstract] OR "grandparents caregiving" [Title/Abstract] OR "grandparents caring" [Title/Abstract]) AND (depression [Title/Abstract] OR depressive [Title/Abstract] OR "mental health" [Title/Abstract] OR "psychological health" [Title/Abstract]). The search cutoff date was June 29, 2021, yielding 2,344 total articles.

3.2 Inclusion Criteria

Studies were included based on the following criteria: (1) The grandparenting group comprised older adults who had cared for grandchildren within one year of assessment, with at least one comparison group of non-caregiving grandparents within the past year; (2) Depression was measured using standardized instruments; (3) When data were duplicated across publications, only the most recent was included; (4) Sufficient data were provided to calculate effect sizes (sample size, means, variances, or odds ratios).

Applying these criteria, we identified 22 eligible articles (0 Chinese, 22 English). The screening process is illustrated in [Figure 1: see original paper]. During full-text screening, two researchers independently reviewed articles and resolved disagreements through discussion. One article was excluded due to unavailability of the full text after contacting authors.

3.3 Literature Coding and Quality Assessment

We coded included studies for: author and year; sample size; gender and marital status proportions; nationality; cultural context; depression measurement; study design; and effect size. Two researchers independently extracted data and cross-checked for accuracy, resolving discrepancies through discussion. A total of 22 effect sizes were extracted (see).

**** presents basic information from included studies, showing nationality, cultural background, measurement instruments, and study design.

Study quality was assessed using the Effective Public Health Practice Project' s (EPHPP) Quality Assessment Tool for Quantitative Studies. Two researchers independently evaluated studies and cross-checked results, resolving disagreements through discussion. Most studies received "Strong" ratings, indicating high quality and supporting the reliability of our meta-analytic findings (see).

**** shows quality assessment results across domains including selection bias, study design, confounders, blinding, data collection methods, withdrawals/dropouts, and overall quality (S=Strong, M=Moderate, W=Weak, NA=Not Applicable).

3.4.1 Effect Size Calculation

We used standardized mean difference (d) as the effect size, analyzing data with Comprehensive Meta-Analysis 3.0 (CMA 3.0) software. When studies reported

odds ratios (OR), we converted them to d-values. Experimental groups with different caregiving frequencies or living arrangements were combined into a single grandparenting group. Conversion and merging procedures followed Borenstein et al. (2009).

3.4.2 Heterogeneity Testing

Heterogeneity testing examines whether effect sizes vary across studies, using both conceptual and statistical approaches. We employed Cochrane' s Q test to assess heterogeneity, calculating Q-values. $I^2 \geq 75\%$ indicates substantial heterogeneity (Huedo-Medina et al., 2006).

3.4.3 Model Selection

Meta-analyses typically use either fixed-effect or random-effects models. Random-effects models are appropriate when study characteristics likely influence results and heterogeneity tests are significant; otherwise, fixed-effect models are preferred. Random-effects models adjust study weights to account for between-study variance.

3.4.4 Publication Bias Analysis

Publication bias occurs when published literature does not systematically represent all completed research, with significant results being more likely to be published than null findings (Borenstein et al., 2009). This can seriously affect meta-analytic results. We assessed publication bias using funnel plots, Classic Fail-safe N tests, and trim-and-fill methods.

4.1 Heterogeneity Test Results

We classified cultural contexts based on whether countries/regions were significantly influenced by traditional Chinese culture and their individualism-collectivism orientation. Chile (Grundy et al., 2012), being less influenced by traditional Chinese culture and scoring lower on individualism indices, was classified as Western. Sensitivity analyses excluding Chile or reclassifying it as Eastern did not change our main findings regarding effect sizes, heterogeneity, publication bias, or moderation effects.

In Eastern cultural contexts, $Q = 5065.62$ ($p < 0.001$), $I^2 = 99.82\%$; in Western contexts, $Q = 164.61$ ($p < 0.001$), $I^2 = 93.32\%$. Both exceeded 75%, indicating substantial heterogeneity. This suggests that 99.82% of variance in the grandparenting-depression relationship in Eastern cultures and 93.32% in Western cultures reflects true effect size differences rather than sampling error. Therefore, we selected random-effects models. Significant Q statistics also indicated that effect size variations may be influenced by study characteristics, necessitating examination of moderating variables (see).

**** presents heterogeneity test results including Tau-squared values.

4.2 Publication Bias Analysis

We assessed publication bias using Classic Fail-safe N, Begg' s test, and Egger' s regression (see). In Eastern cultural contexts, the fail-safe N was 1,741; in Western contexts, it was 94. Following Rothstein et al.' s (2005) recommendation that fail-safe N > 5k + 10 (where k = number of studies) indicates adequate control of publication bias, our results suggest representative samples with minimal bias. Additionally, Begg' s test p-values were 0.85 and 0.54 (both $p > 0.05$), and Egger' s test p-values were 0.14 and 0.10 (both $p > 0.05$), indicating no significant publication bias. Overall, the grandparenting-depression relationship showed minimal publication bias.

4.2 Main Effect Analysis

Using random-effects models, we examined the grandparenting-depression relationship (see). In Eastern cultural contexts, the standardized mean difference was negative (d = -2.44, 95%CI [-3.22, -1.67]), excluding zero ($p < 0.001$). In Western contexts, it was positive (d = 0.22, 95%CI [0.04, 0.40]), also excluding zero ($p < 0.05$). These results suggest that in Eastern cultures, grandparenting may improve depression, whereas in Western cultures, it increases depression.

Sensitivity analysis revealed that after excluding one highly heterogeneous study (Yalcin et al., 2018; Tervisan et al., 2018), the overall effect in Eastern cultures became non-significant though the direction remained unchanged, while Western results showed no substantial change. Specifically, after excluding Yalcin et al. (2018), the Eastern cultural context d-value was -0.05 ($p = 0.474$). This study' s effect size far exceeded others, representing an outlier. Its depression data were highly concentrated (caregiving and non-caregiving group means = 19.37 and 19.47; SDs = 0.3 and 0.2), likely due to sampling from local health service centers, limiting representativeness. To prevent compromising meta-analytic reliability, we excluded this study in subsequent analyses. Post-exclusion heterogeneity decreased substantially ($Q = 124.17$, $p < 0.001$, $I^2 = 93.56$), while publication bias results remained unchanged. Forest plots after outlier exclusion are shown in [Figure 2: see original paper] (Eastern) and [Figure 3: see original paper] (Western).

**** presents main effect tests under random-effects models for each cultural context.

4.3 Moderating Effect Analysis

Among included studies, CES-D was most frequently used, followed by GDS, with other scales used less often. Therefore, subgroup analyses compared CES-D, GDS, and other scales. Results were significant: Q-between = 56.64 and

129.75 ($p < 0.001$), indicating that measurement tools significantly moderated the grandparenting-depression relationship in both cultural contexts (see).

We also conducted subgroup analyses by study design (cross-sectional vs. longitudinal), which yielded significant results: Q-between = 4.20 and 8.81 ($p < 0.05$). Study design significantly moderated the relationship in both cultural contexts (see).

**** shows moderating effects of measurement tools with heterogeneity tests and effect sizes.

**** shows moderating effects of study design with heterogeneity tests and effect sizes.

**** presents moderating effects of gender and marital status. Using meta-regression with continuous variables for female proportion and spousal co-residence proportion, we found that in Eastern cultural contexts, gender marginally moderated the relationship ($b = -0.01$, $p < 0.05$), suggesting that higher female proportions were associated with lower depression levels, holding other factors constant. Marital status showed a significant moderating effect ($b = -0.02$, $p < 0.05$), indicating that higher proportions of co-residing spouses significantly reduced depression. In Western cultural contexts, neither gender nor marital status showed significant moderating effects.

5.1 Main Effects of Grandparenting on Depression

This meta-analysis examined the relationship between grandparenting and depression in older adults. In Eastern cultural contexts, grandparenting showed a non-significant positive effect on depression levels, whereas in Western contexts, it demonstrated a significant negative effect. These findings align with multiple studies (Wang et al., 2020; Yalcin et al., 2018; Strutton, 2010; Zhou et al., 2017).

Although role expectations for older adults in Asian countries may be diverse, commonalities exist. Many Asian nations are deeply influenced by Confucianism, a Chinese-origin culture embraced across East Asia—including China, Hong Kong, Taiwan, Singapore, South Korea, and Japan—that serves as an ethical foundation and moral guideline for daily life (Peng, 2013). Under this cultural influence, older adults typically view grandchild care as a responsibility and obligation. This caregiving provides rewarding emotional, moral, and economic support. As hypothesized, Eastern cultural contexts align with role enhancement theory: multiple roles increase power, prestige, resources, and emotional satisfaction, enhancing well-being and mental health while reducing depression. However, the non-significant effect may reflect weakening traditional values and awakening self-awareness among older adults, who increasingly prioritize their own late-life happiness, creating ambivalence about grandparenting (Zhang Tian & Fu Hong, 2017). Research shows that while older adults' willingness to provide care is high, grandparenting actually creates many negative impacts on their quality of life (Li Feifei, 2019).

In Western cultural contexts, older adults typically anticipate pursuing their own interests, enjoying retirement privileges they have worked and planned for, and relishing freedom from parental responsibilities (Gebeke, 1996). For them, grandparenting represents an additional burden. When compelled to care for grandchildren, their envisioned ideal and enjoyable later life disappears, replaced by sudden caregiving responsibilities and extra financial pressures that reduce life satisfaction (Bowers & Meyers, 1999). This aligns with role strain theory, where multiple role obligations create difficulties fulfilling role duties, leading to increased depression.

5.2 Moderating Effects on the Grandparenting-Depression Relationship

Meta-analysis revealed significant moderating effects of measurement tools across cultural contexts. In both Eastern and Western cultures, CES-D yielded significant results, possibly for two reasons: first, CES-D demonstrates good reliability and validity, comprehensively measuring depression and having been validated in grandparent populations (Merchant et al., 2017); second, within-group heterogeneity decreased substantially after subgroup analysis, indicating smaller between-study differences. While CES-D results suggest a possible negative relationship between grandparenting and depression in Eastern cultures, our non-significant main effect suggests that older adults' awakening self-awareness may nullify this relationship. Therefore, subgroup results should not be overemphasized; more accurate conclusions await future meta-analyses with richer study samples.

Study design type also significantly moderated the relationship across cultural contexts. Specifically, longitudinal studies yielded larger effect sizes than cross-sectional studies, indicating stronger relationships. Longitudinal designs better examine causal relationships between variables, and the effects of grandparenting on depression may become more apparent over time.

In Eastern cultural contexts, gender and marital status significantly moderated the grandparenting-depression relationship, with grandmothers and those with co-residing spouses showing lower depression. In Eastern families, grandmothers often serve as primary caregivers, fulfilling roles that include transmitting traditions, teaching social values and norms, playing with grandchildren, and assisting with housework. Grandmothers are also considered important social agents for grandchildren (Maehara & Takemura, 2007). Under these social expectations and responsibilities, grandmothers willingly provide care, achieving self-actualization and reducing depression. Older adults with co-residing spouses receive support and assistance from their partners while caregiving, which protects them from caregiving stress and reduces depression.

In Western cultural contexts, marital status did not significantly moderate the relationship. While grandparenting represents an additional burden for Western older adults and spousal support could help manage caregiving stress, our results

showed no significant moderating effect. This may reflect sample confounding: our spousal proportion variable represented co-residing spouses across both caregiving and non-caregiving groups, whereas Western research has found spousal effects only among caregiving grandparents, not non-caregivers (Provenzano et al., 2021; Park, 2009). Future research should further explore this discrepancy. Additionally, gender showed no significant moderating effect in Western contexts, possibly because the grandparenting-depression relationship depends on whether older adults perceive caregiving as a burden (Xu et al., 2017). Unlike Eastern contexts where grandchildren are viewed as essential to late-life satisfaction, Western older adults often become caregivers only when parents are incapable. Despite different caregiving divisions between grandfathers and grandmothers, the stress experience may be similar. Grandmothers typically provide most direct care, especially early on, consuming substantial time and energy, causing physical fatigue and reducing social connections and support (Minkler & Roe, 1993). Grandfathers, while providing less direct care, may face greater financial pressure from both caregiving expenses and reduced paid work time (Szinovacz et al., 1999). These pressures lead both grandmothers and grandfathers to view grandparenting as a "burden" rather than "responsibility," with no additional gender-specific caregiving expectations from society.

5.3 Limitations and Future Directions

First, meta-analysis requires comprehensive inclusion of existing research. Although we utilized extensive search tools, unpublished and forthcoming literature was difficult to locate, inevitably missing some data. Additionally, some studies lacked reported statistics, reducing our sample size.

Second, this study only examined whether grandparents participated in caregiving, not exploring how frequency or type of grandparenting affected depression due to limited eligible studies.

Third, because of insufficient information in original studies, we used d-values rather than corrected g-values, which may introduce some bias.

Our findings indicate that grandparenting is an important factor influencing older adults' depression. Future research should examine how grandparenting frequency and type affect depression across cultural contexts. This study did not analyze other potential moderators (e.g., education level, family income), which should be explored further. Additionally, broad East-West categorizations cannot fully capture cultural variations; future research should employ more nuanced cultural classifications and coding schemes.

Conclusion

This meta-analysis found that: (1) In Eastern cultural contexts, grandparenting shows no significant relationship with older adults' depression, whereas in Western contexts, it has a significant negative effect; (2) The relationship varies sig-

nificantly by measurement tool and study design—future research should select appropriately comprehensive measures and suitable designs; (3) In Eastern contexts, gender and marital status significantly moderate the relationship, while in Western contexts, they do not.

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Note: Figure translations are in progress. See original paper for figures.