Research Article

Custodial grandparents and modern education dilemma: Insights from qualitative research

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ABSTRACT

Custodial grandparents experience a lot of pressures and challenges when they are raising their grandchildren. However, little is known about the educational dilemmas they face because of the rapid advancement of modern technology. This study investigates the modern educational challenges of custodial grandparents in rural China. Data were gathered using a qualitative approach, with in-depth interviews and field notes. Thematic saturation was achieved after 15 participants. The results showed that the technological weakness and social isolation challenges greatly impact custodial grandparents' parenting roles and psychological health. These findings provided valuable insights for policymakers and social service providers to develop targeted support for rural custodial grandparents in China. The study emphasizes the importance of improving custodial grandparents' technological capacities and adapting to modern parenting styles.

Keywords: modern parenting; custodial grandparents; technological barrier; emotional connection; China

1. Introduction

The number of grandparents raising their grandchildren is increasing. It reflects the profound shifts in modern family dynamics Clark[1]. In the United States, an estimated 2.7 million grandparents have taken on the role of primary caregivers or guardians for their grandchildren Generations United[2]. Custodial grandparents often assume this role when adult children are unable to fulfill their responsibilities because of working outside the home, divorce, death, addiction, incarceration, illness, or other circumstances[3,4]. Traditional family structures have been disrupted during the shift, altering relationships. Despite that custodial grandparents are crucial in maintaining family stability, they face significant challenges.

Research shows that custodial grandparents face various challenges, including financial instability, health problems, poor living conditions, and emotional stress[5]. Authors of this paper[6], identified common stresses for custodial grandparents: health issues, financial struggles, social isolation, and weak support

networks. Mendoza[7] explained that these families often struggle financially, relying on welfare and pensions while living below the poverty line Hansen[8]. This study describe that illness or aging limits many custodial grandparents' ability to work, adding financial stress.

While research has increasingly focused on custodial grandparents' stress, few studies address their challenges in modern parenting. Social and technological advances have transformed family education. These changes have placed higher demands on caregivers, especially custodial grandparents[9,10]. With modern education gradually relying on digital technology and online teaching, caregivers need to master mobile devices and help children obtain educational resources (Lupton and Kurt)[11,12]. However, the caregiving ability of custodial grandparents has been severely limited because of the digital divide, exacerbating their challenges in providing adequate educational support[13,14].

The essential role of the family in emotional support and psychological nurturing has gradually been emphasized in recent years. However, in cultures like China, caregivers often prioritize meeting children's basic needs—food, clothing, housing, and behavior guidance—while often neglecting emotional nurturing [15]. This cultural tendency creates a modern educational challenge for custodial grandparents.

In addition, educational modernization has raised demands for family involvement, such as active homework support and increased school communication. However, limited education and resources hinder custodial grandparents from meeting these demands (Anderson ; Norman)[16,17]. This issue is worse in rural areas with scarce educational and technological resources Razak[18], intensifying their struggles Pandey[19]. More research and interventions are crucial to support custodial grandparents in adapting to modern education systems.

Despite the growing attention to custodial grandparents' families, research on their educational challenges is limited. This study aims to address the dilemmas in modern education in rural China to fill this gap. It emphasizes custodial grandparents' experiences with the digital divide and modern parenting. Ultimately, this study seeks to provide theoretical and practical guidance for developing targeted policies and social intervention measures. In the context of China, the increasing trend of custodial grandparents is closely linked to economic migration and the left-behind children phenomenon. Moreover, the implementation of the Family Education Promotion Law of the People's Republic of China in 2022 has further emphasized the legal responsibilities of all guardians, including grandparents, in children's education. This policy background highlights the importance of studying intergenerational parenting within Chinese rural communities. Relevant literature such as 'China's Family Education Promotion Law: Family Governance, the Responsible Parent and the Moral Child' offers a comprehensive understanding of the evolving roles and governance in Chinese family education.

2. Literature review

2.1. The role and challenges of custodial grandparents

Custodial grandparents are those who take care of their grandchildren full-time in the absence of the children's parents Bailey[20]. The main reason for their custodial role is often the inability or unwillingness of adult children to fulfill their parental duties[21]. In Western cultures, custodial grandparents usually assume guardianship as a last resort due to adverse experiences such as addiction, illness, death, or neglect and abuse of their adult children of their adult children. They have to take on the caregiving responsibilities to prevent their grandchildren from being placed in foster care.

In Asian culture, especially in China, grandparents' involvement in childcare is a cultural tradition. The reason for raising grandchildren is generally the families' best choice because of their adult children's

working outside[22]. In this process, the role of grandparents shifts from traditional grandparenthood to what is often described as "taking on parental responsibilities for a second time" Bailey[23]. This role shift, which frequently comes with a lot of strain and difficulties, alters their family role orientation. Custodial grandparents often struggle with childcare due to insufficient finances and support (Teerawichitchainan & Low)[24].

Parental duties place significant stress on custodial grandparents. Fokakis[25] noted that many face stress from providing social, emotional, and financial support for grandchildren. These grandparents are usually older, less educated Li[26], and suffer from poor physical and mental health (Adams, Woods)[27,28]. Furthermore, most custodial grandparents live in poverty,Hayslip[29], and the costs of caregiving worsen their financial stress. Custodial grandparents also have to face insufficient formal and informal resources[30,31]. Some custodial grandparents have to care for disabled grandchildren. This requires custodial grandparents to pay more attention Zailani[32], take on greater responsibilities, and experience more psychological stress Tang[33].

In summary, custodial grandparents encounter multiple stressors in fulfilling their parenting responsibilities. However, as society advances, technology develops, and family structures change, custodial grandparents will likely face even more significant challenges in the modern educational environment, especially in technology adaptation, emotional support, and educational involvement.

2.2. The complexity of the modern childcare environment

The rapid development of information technology has integrated digital devices and online learning platforms into modern education, particularly during the pandemic. This spread of digital technology has shaped new social norms in education. However, despite its many benefits, the digital divide has continued to prevent certain groups from fully benefiting from its advantages. The digital divide refers to older adults being limited in accessing and utilizing the internet, which restricts their capacity to enjoy the internet and its benefits[34,35]. This phenomenon has been identified as a critical social justice issue of the twenty-first century Rogers[36].

The digital divide is especially evident in rural areas, driven by poor internet access, low education levels, weak socio-economic status, and inadequate technical support (Townsend & Newman)[37,38]. Hill[39] identified older adults as particularly vulnerable to digital exclusion, as they often struggle with technologies like smartphones and tablets[40,41]. Additionally, age-related cognitive decline poses significant barriers to older adults' adaptation to technology (Jiang, 2021; Hodge, 2017)[42]. The digital divide's impact on custodial grandparents' roles and well-being in rural areas is understudied, requiring further research.

In addition, the growing focus on mental health and emotional support has increased caregivers' responsibilities. However, the increasing use of the Internet has weakened face-to-face connections Cohn-Schwartz[43]. Nguyen[44] emphasized that while face-to-face interactions better reflect human connection, they are increasingly diminished by digital technology. Nevertheless, this phenomenon poses challenges to intergenerational relationships, requiring further exploration to understand its full implications.

Furthermore, Modern education increasingly values active family involvement. Rogoff[45] noted that parents play a central role in informal education, fostering children's holistic development through tutoring and school participation Costache[46]. However, academic success largely depends on family status, structure, and behavior Waters[47]. Custodial grandparents often struggle to meet these needs due to limited education and other constraints. Despite the increasing emphasis on family involvement in education, research on custodial grandparents' roles remains scarce, highlighting the need for further investigation.

3. Materials and methods

This study used the case study method to collect and analyze data. A case study examines complex phenomena systematically, exploring specific instances in real-life contexts. It incorporates multiple perspectives to provide comprehensive insights (Creswe)[48]. Therefore, this method enables an in-depth study of custodial grandparents' challenges in modern education. It offers valuable insights into this group's real-life dilemmas.

3.1. Sampling

This study used purposive sampling to select relevant cases and ensure data collection aligned with the objectives Patton,[49]. The local civil affairs department and four social workers facilitated sampling. Social workers screened participants, contacted eligible custodial grandparents, explained the study, and invited them to interviews. Participants met these criteria: (1) custodial grandparents lived with grandchildren for over six months; (2) grandchildren were under 18; (3) they had no income; (4) formal custody attribution wasn't required. A final participant list was compiled.

Interviews took place from May to June 2024, after receiving ethics approval (JEP-2024-370). All participants' information was anonymized to ensure privacy and confidentiality throughout the study. The researcher explained the study's purpose, interview content and duration, potential benefits and risks, and the participants' rights to withdraw at any time. Participants who agreed to the interviews provided written informed consent. The study reached saturation at the 15th interview as no new themes or information emerged.

An interview guide was designed, and in-depth interviews were conducted to collect data. The research team, consisting of three researchers and two doctoral students, reviewed the interview guide several times to ensure clarity and alignment with the study objectives. Interviews were arranged with consenting custodial grandparents, assisted by the social workers. A researcher conducted face-to-face interviews at their homes.

Social workers familiar with the family were present during interviews to ensure ethics and comfort. Interviews, lasting 1-2 hours, were audio-recorded with consent. The interviews employed open-ended questions about the parenting pressures in modern education. The data collected included custodial grandparents' health, economic conditions, relationships, grandchildren's academics, and family resources.

Field notes supplemented interviews, capturing observations and contextual details for analysis (Ritchie & Lewis)[50]. They documented interview settings, participant behaviors, atmosphere, and the researcher's thoughts, adding details absent from interviews. Field notes were labeled with pseudonyms (e.g., FN-Wei-20240524) to protect the privacy and organize data. Field notes were vital for coding, identifying patterns and themes, and deepening data understanding during analysis. Data from interviews and field notes formed a solid foundation for thematic analysis.

3.2. Data analysis

The researcher transcribed the audio recordings into Chinese using software before analysis. To minimize the influence of dialect on the data, the researcher proofread the audio recordings word by word several times to ensure accuracy. The proofread Chinese text was subsequently translated into English and imported into NVivo software for analysis.

The coding process was led by two researchers, with the remaining team members reviewing and refining the coding results to ensure accuracy and consistency. Weekly discussion meetings were held to review and validate the emergence of new themes. Ultimately, four core themes were identified, offering valuable insight into the dilemmas of custodial grandparents in modern parenting.

4. Results

The study included 15 custodial grandparents, with an average age of 67. The majority were female, had low levels of formal education, and lived in rural areas. **Table 1** summarizes the demographic characteristics of the interviewed households.

Table 1. Demographic information of participant

Demographic information	N	Percentage
Sex		
Female	10	66.6%
Male	5	33.4%
Age		
50-59	3	20%
60-69	8	53.3%
70-79	3	20%
Above 80	1	6.7%
Education level		
Never school	5	33.3%
Primary school	9	60%
Above primary school	1	6.7%
Spouse		
Alive	7	46.7%
Dead	8	53.3%
Grandchildren Number		
one	9	60%
Two and above	6	40%
Grandchildren age		
0-6	4	19%
7-12	7	33.3%
13-18	10	47.6%

Note: The participants were all rural custodial grandparents from villages in Pingyin County, Shandong Province, China, where educational and technological resources remain limited.

Exploring the modern education dilemma among custodial grandparents revealed four main themes and eight subthemes from the interview data (refer to **Table 2**). These main themes are (1) Challenges in managing grandchildren's screen time, (2) Inability to respond to grandchildren's emotional needs, (3) Difficulties in providing academic guidance, and (4) Isolation caused by the digital divide. The following sections provide an in-depth analysis of each theme and its associated subthemes, highlighting custodial grandparents' unique challenges in modern parenting.

Table 2. The themes and subthemes of the study

Themes		Subthemes
Challenges in Managing Grandchildren's Screen Time	1.	Children's Dependence on Screens
	2.	Powerlessness of Custodial Grandparents
Inability to Respond to Grandchildren's Emotional Needs	3.	Barriers to Effective Emotional Communication
	4.	Emotional Struggles in Grandparent-Grandchild Relationships
Difficulties in Providing Academic Guidance	5.	Illiteracy among custodial grandparents
	6.	Lack of education and financial resources
Isolation Caused by the Digital Divide	7.	Limited Technological Skills for Educational Support
	8.	Limited Access to Modern Parenting Resources

4.1. Theme 1—Challenges in managing grandchildren's screen time

Managing grandchildren's screen time is a major challenge for custodial grandparents. The rise of digital devices like TVs, computers, and smartphones exposes children to mobile game and video addiction. Although aware of the risks, many struggle to enforce limits, feeling helpless and anxious in balancing traditional caregiving with modern technology demands.

4.1.1. Subtheme 1：Children's dependence on screens

Screens are central to grandchildren's lives, used for entertainment, education, and socialization. Lan observed that his grandson spends almost all day on his phone, even during meals, watching short videos, playing games, and chatting with others during games. King noted his grandson uses his phone 7-8 hours on weekends, often staying up past midnight, highlighting their digital dependence.

This over-reliance on devices causes insufficient sleep, reduced learning efficiency, and poor well-being. Additionally, prolonged online activity weakens family interactions and increases emotional distance.

4.1.2. Subtheme 2：Powerlessness of custodial grandparents

Custodial grandparents often feel helpless and frustrated by their grandchildren's screen dependency, as shown in Wei and Chong's experiences. Wei shared,

I feel anxious when my grandson plays with his cell phone, and I do not know how to make him stop. Before the final exam last year, he played games until midnight and spent money on equipment. Later, I could not help but hit him once. Since then, he has been moderated, but I am still worried.

Similarly, Chong described a tense moment:

I never hit her, but one night at 10 pm, I asked her to turn off her phone, and she threw it at me. I twisted her arm in anger. She cried and later said it hurt. I regret it and realize my anxiety caused it.

Factors like age, limited tech knowledge, and reliance on direct communication fuel custodial grandparents' powerlessness, straining relationships, and increasing caregiving stress.

4.2. Theme 2：Emotional struggles in grandparent-Grandchild relationships

Custodial grandparents often feel overwhelmed by their grandchildren's emotional problems. They wish to understand them and offer support. However, their lack of strategies leaves them powerless, causing them to question their parenting ability and further increase their anxiety.

4.2.1. Subtheme 1: Barriers to effective emotional communication

The inability to meet grandchildren's emotional needs hinders effective emotional communication in modern families. Wei's shared:

My grandson hides and cries when bullied by classmates, leaving me anxious. I don't know how to comfort him or ease his burden.

Ling also struggles:

My grandson jokes and laughs while gaming or chatting online but becomes silent at dinner. I don't know how to meet his emotional needs or connect with him.

Field notes (FN-Ling-20240610) described Ling's slumped posture and, tense demeanor. Her posture reflected a deep sense of being overwhelmed and lost. Her unease comes from her inability to connect emotionally with her grandson, leaving her feeling inadequate.

As society prioritizes children's mental health, custodial grandparents often feel unprepared. Many are uncertain about how to respond to their grandchildren's emotional challenges, leading to helplessness. This disconnect hinders communication, exacerbates emotional gaps, and complicates their caregiving roles.

4.2.2. Suntheme 2- Digital engagement weakening emotional bonding

The wide use of digital devices has deepened the generational gap, weakening emotional bonds and communication. As grandchildren increasingly rely on smartphones for entertainment and socializing, grandparents struggle to adapt, often leading to disrupted interactions. Zhou illustrated this issue:

Children now communicate online. They share topics while gaming, but we can't join their conversations.

Wei echoed this frustration:

When my child plays games, he chats with others, but I can't understand a word. At this rate, we'll never understand their world!

These technological divides limit grandparents' ability to connect with their grandchildren and weaken their relationship's emotional depth. This leaves grandparents feeling increasingly excluded from their grandchildren's lives and further amplifies the challenges of modern caregiving.

4.3. Theme 3—Difficulties in providing academic guidance

Providing academic guidance is another major challenge for custodial grandparents. For many Chinese families, especially those who view education as a pathway to upward mobility, grandchildren's academic performance is a critical concern. However, due to various barriers, most custodial grandparents in this study expressed difficulties in effectively guiding their grandchildren in their academic endeavors.

4.3.1. Subtheme 1-Illiteracy among custodial grandparents

Illiteracy is a significant obstacle for many custodial grandparents. Respondents frequently reported low levels of education, with some completely illiterate. For example, Zhou shared,

Unfortunately, I cannot read or write, and I do not know whether the questions my grandchildren ask are right or wrong. I cannot help my children with their studies, making me anxious." Similarly, Yin said, "I did not go to school, so I cannot read the notices from my grandson's school and have to ask the teachers to pass them on verbally. Sometimes, I feel so frustrated that I cannot help my grandchildren with their studies.

This lack of literacy limits custodial grandparents' ability to participate in learning tasks, such as assisting grandchildren with schoolwork, and diminishes their confidence and sense of caring competence.

4.3.2. Sunthemes 2-Lack of education and financial resources

Educational and financial constraints further exacerbate custodial grandparents' struggles with academic guidance. Many find it difficult to adapt to the demands of modern education, while others attempt to make up for their own shortcomings by sacrificing their limited financial resources. Another participant, Wen, explained:

My wife and I do not have a high level of education and cannot help our grandchildren much with their studies, but we are willing to use all our resources to support them. We utilized the government's financial assistance to send them to private schools. Despite the high cost, we hope these investments will maximize their academic success.

Overall, custodial grandparents generally face anxiety and a sense of powerlessness when tutoring their grandchildren. Although some grandchildren alleviate their grandparents' concerns through independent

study. This ongoing burden significantly impacts family relationships and the emotional well-being of custodial grandparents, underscoring the complex challenges of modern caregiving.

4.4. Theme 4：Isolation caused by the digital divide

The digital divide is a significant challenge for custodial grandparents in modern parenting, contributing to a profound sense of isolation.

4.4.1. Subtheme 1: Limited technological skills for educational support

Custodial grandparents often lack the skills needed to operate smart devices, limiting their ability to meet the technological demands of modern parenting. Many struggle to assist their grandchildren with learning tasks or access learning resources. Wei and Hua explained that many school assignments are increasingly digital, requiring tasks such as transferring money online, chatting, or adding contacts on platforms like WeChat—activities that they find overwhelming. Chong described his experience,

My granddaughter's homework the other day required video recording, but I could not operate my cell phone. Both of our grandchildren were very anxious and rushed around. Ultimately, I had to ask her classmates' parents for help to complete the assignment. This made me feel helpless and embarrassed.

Chong's experience highlights the challenges that custodial grandparents face in mastering modern technology. His limited technological knowledge left him feeling helpless when helping his granddaughter with homework. Field notes (FN-Chong-20240526) documented his furrowed brow, hesitant speech, and downcast eyes, reflecting the frustration and emotional strain of adapting to an increasingly digital world, which exacerbated their feelings of isolation due to the digital divide.

This inability to operate smart devices significantly limits custodial grandparents' capacity to provide educational support, leaving them feeling inadequate and frustrated.

4.4.2. Subtheme 2: Limited access to modern parenting resources

The lack of technology also restricts custodial grandparents' access to modern parenting resources, thus affecting parenting effectiveness. Many grandparents cannot effectively use the Internet to access parenting information, methods, or tools, exacerbating their helplessness. King highlighted this limitation:

I have never been to school, and I cannot read, so I cannot help my grandchildren with their studies. Nowadays, people use cell phones to buy school supplies for their children, which is cheap and convenient, but I cannot operate a cell phone. I cannot do anything on my cell phone. Teachers assign homework via phone, and I do not know how to help with it.

Technological limitations challenge custodial grandparents, restricting academic support and access to parenting resources. The digital divide widens the generational gap, reducing interactions and isolating grandparents, worsening modern caregiving struggles.

4.5. Discussion

This study highlights that limited technological skills as a key barrier for custodial grandparents, increasing their isolation and sense of powerlessness.

While Tsai[57] found older adults' isolation was less severe than assumed, post-pandemic shifts to online education have significantly increased the burdens of rural custodial grandparents in China. Rural custodial grandparents in China face limited access to digital tools and training as well as lower education and tech literacy [53-54,58]. Such challenges hinder their screen time management, resource access, and learning support, as noted by[59]. Poor families face significant barriers to accessing quality education due to limited

digital opportunities. The digital gap further exacerbates caregiving challenges and weakens intergenerational ties. Livingstone and Blum-Ross[52, 56] noted that the shift to tech-based education has increased the disconnect between grandparents and their grandchildren's digital lives. This disconnect not only heightens social isolation but also challenges their caregiving roles and sense of identity.

Comprehensive interventions are urgently needed. Policymakers should prioritize the development of targeted policies, including subsidies, education, and training for rural custodial grandparents to reduce the digital divide. Social organizations and social workers can play a critical role by implementing technology programs for custodial grandparents, such as training on screen time management and online learning support. Bridging technological gaps through training and support enables custodial grandparents to better adapt to modern parenting, rebuild family bonds, and strengthen their social networks.

This study further highlights how the technology gap worsens custodial grandparents' challenges in meeting grandchildren's emotional needs. The advancement of technology has caused grandchildren to increasingly rely on social media for comfort and belonging, leading to a "social cocoon effect" Zheng & Gao[60]. However, many grandparents, rooted in traditional caregiving models, lack the digital literacy to meet these evolving needs (Hayslip & Kaminski,Zhao & Zheng, 2024)[55, 59]. Moreover, excessive screen time and harmful online content such as online addiction, further intensify emotional and educational challenges[61-63].

Digital socialization has been shown to weaken family communication, creating barriers to effective intergenerational interactions. Programs should focus on enhancing grandparents' communication skills to foster stronger intergenerational relationships. Digital skills training is essential, with an emphasis on screen time management and online learning strategies, to help grandparents adapt to the demands of digital parenting.

4.6. Implications for practice

Based on the results, there should be measures taken in practice to address the struggles faced by custodial grandparents. In rural areas of China, given the limited resources, closed information and cultural inheritance, the proposed program to address the plight of custodial grandparents should be more targeted and localized.

Firstly, grass-roots organizations such as village schools, cultural compounds and village committees should organize customized training courses for custodial grandparents. Such courses should cover skills in managing grandchildren's screen use, emotional support, educational counseling and digital literacy training to help them better understand and use modern technology. In order to implement these programs, county specialists or social service agencies may be invited to provide teaching support.

Secondly, a mutual assistance network should be set up with the village committee as the link to help grandparents learn from each other and solve problems together through regular exchanges, talks and online resource sharing. Mutual-aid groups help custodial grandparents work together to address the parenting challenges through experience sharing and emotional support. At the same time, the linkage between schools and families is also crucial, and village schools can organize parent-child activities and family education seminars to promote grandparent-grandchild interaction and communication.

In addition, local governments should provide special support policies, such as economic subsidies, psychological counselling and skills training, and integrate the resources of public welfare organizations and social welfare institutions to ensure the implementation of policies.

5. Conclusion

This study shows that technological deficits and social isolation significantly weaken custodial grandparents' parenting capabilities and mental health. Limited access to information and socialization exacerbates psychological stress and hinders caregiving effectiveness. Bridging the digital divide is crucial to enhancing custodial grandparents' well-being. The study clearly identified four major themes impacting custodial grandparents in rural China: difficulty managing grandchildren's screen time, inability to meet emotional needs, challenges in academic support, and social isolation caused by the digital divide. These findings provide a grounded understanding of the modern parenting dilemmas faced by this group and should be the basis for tailored intervention programs.

In the context of "Digital China", interventions like technical training and the development of user-friendly platforms are critical to addressing urban-rural and intergenerational digital divides. Policies-backed community initiatives can play a pivotal role by offering digital literacy workshops, accessible resources, and mentorship programs for custodial grandparents. Such initiatives not only reduce isolation but also improve custodial grandparents' caregiving skills and confidence in navigating modern parenting demands. Strengthening these initiatives further fosters intergenerational engagement, equipping custodial grandparents with the skills needed to meet parenting demands while simultaneously strengthening family bonds Tang[51].

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Ethical Approval and Informed Consent Statements:

The study was approved by the UKM Research Ethics Committee, Approval Number JEP-2024-370. Informed consent was obtained from all participants through their signatures.

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Conceptualization, Lina Yu, Nur Saadah Mohamad Aun; methodology, data collection, data analysis, Lina Yu, Nur Saadah Mohamad Aun; writing – original draft, Lina Yu; writing – review and editing, Nor Jana Saim, Norulhuda Sarnon @ Kusenin.

Conflict of interest

The authors declare no conflict of interest.

References

1. Clark, K. C., Kelley, S. J., Clark, P. C., & Lane, K. (2024). Needs of grandparents raising grandchildren: A qualitative study. The Journal of School Nursing, 40(4), 421–430. https://doi.org/10.1177/10598405221115700
2. Generations United. (2017). Grandfamilies: First responders for children: Public policy. https://www.gu.org/what-we-do/public-policy/
3. Dolbin-MacNab, M. L., & Yancura, L. A. (2018). International perspectives on grandparents raising grandchildren: Contextual considerations for advancing global discourse. The International Journal of Aging and Human Development, 86(1), 3–33. https://doi.org/10.1177/0091415016689565
4. Smith, G. C., & Lee, J. (2021). Appraisals of self in the caregiver role as made by married custodial grandparents. Family Relations, 70(1), 179–194. https://doi.org/10.1111/fare.12451
5. Lee, Y., Blitz, L. V., & Srnka, M. (2015). Trauma and resiliency in grandparent-headed multigenerational families. Family and Society, 96, 116–124. https://doi.org/10.1606/1044-3894.2015.96.13
6. Xu, Y., Wu, Q., Levkoff, S. E., & Jedwab, M. (2020). Material hardship and parenting stress among grandparent kinship providers during the COVID-19 pandemic: The mediating role of grandparents' mental health. Child Abuse & Neglect, 110. https://doi.org/10.1016/j.chiabu.2020.104700
7. 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
8. Hansen, A. C., Brown, R., Keller, P., & Schoenberg, N. (2022). Sources of stress and strength: Contextualizing the experience of grandparents rearing grandchildren in Appalachia. Journal of Intergenerational Relationships, 20(1), 39–59. https://doi.org/10.1080/15350770.2020.1774461
9. Hayslip, B., Fruhauf, C., & Dolbin-MacNab, M. (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
10. Smith, G. C., Hayslip, B., Hancock, G., Strieder, F., & Montoro-Rodriguez, J. (2018). A randomized clinical trial of interventions for improving well-being in custodial grandfamilies. Journal of Family Psychology, 32(6), 816–827. https://doi.org/10.1037/fam0000457
11. Lupton, D., & Pedersen, S. (2016). Parenting and digital media: From the early web to contemporary digital society. Sociology Compass, 10(8), 730–743. https://doi.org/10.1111/soc4.12398
12. Kurt, I. (2023). Comprehensive review on parenting and technology: Opportunities and challenges in the 21st century. European Journal of Social Science Education and Research, 10(2), 1–14. https://doi.org/10.26417/610cpd97
13. Hodge, H., Carson, D., Carson, D., Newman, L., & Garrett, J. (2017). Using internet technologies in rural communities to access services: The views of older people and service providers. Journal of Rural Studies, 54, 469–478. https://doi.org/10.1016/j.jrurstud.2017.06.016
14. Tang, Y., Li, Q., & Wu, Y. (2024). The impact of the digital divide on rural older people's mental quality of life: A conditional process analysis. Heliyon, 10(17). https://doi.org/10.1016/j.heliyon.2024.e37109
15. Wang, C. D., Hayslip, B., Sun, Q., & Zhu, W. (2019). Grandparents as the primary care providers for their grandchildren: A cross-cultural comparison of Chinese and U.S. samples. The International Journal of Aging and Human Development, 89(4), 331–355. https://doi.org/10.1177/0091415018824722
16. Anderson, L., Sheppard, P., & Monden, C. (2018). Grandparent effects on educational outcomes: A systematic review. Sociological Science, 5, 114–142. https://doi.org/10.15195/V5.A6
17. Norman, H., Adnan, N. H., Nordin, N., Ally, M., & Tsinakos, A. (2022). The educational digital divide for vulnerable students in the pandemic: Towards the new Agenda 2030. Sustainability, 14(16), 10332. https://doi.org/10.3390/su141610332
18. Razak, N. A., Nor, N. F. M., Abdullah, M. Y., Malek, J. A., Salman, A., & Wai, Y. S. (2010). A technology towards bridging the digital divide: Applications and acceptance. Selected Topics in Education and Educational Technology, 118–122.

19. Pandey, A., Littlewood, K., Cooper, L., McCrae, J., Rosenthal, M., Day, A., & Hernandez, L. (2019). Connecting older grandmothers raising grandchildren with community resources improves family resiliency, social support, and caregiver self-efficacy. Journal of Women & Aging, 31(3), 269–283. https://doi.org/10.1080/08952841.2018.1444940

20. Bailey, S. J., Letiecq, B. L., Visconti, K., & et al. (2019). Rural Native and European American custodial grandparents: Stressors, resources, and resilience. Journal of Cross-Cultural Gerontology, 34(2), 131–148. https://doi.org/10.1007/s10823-019-09372-w

21. Hayslip, B., Fruhauf, C. A., & Fish, J. (2021). Should I do this?: Factors influencing the decision to raise grandchildren among custodial grandparents. The Gerontologist, 61(5), 735–745. https://doi.org/10.1093/geront/gnaa202

22. Aziz, R. A. (2007). Grandparenting: Issues and challenges. Akademika, 70, 103–116.

23. Bailey, S. J., Letiecq, B. L., & Porterfield, F. (2009). Family coping and adaptation among grandparents rearing grandchildren. Journal of Intergenerational Relationships, 7(2–3), 144–158. https://doi.org/10.1080/15350770902851072

24. Teerawichitchainan, B., & Low, T. Q. Y. (2021). The situation and well-being of custodial grandparents in Myanmar: Impacts of adult children's cross-border and internal migration. Social Science & Medicine, 277, 113914. https://doi.org/10.1016/j.socscimed.2021.113914

25. Fokakis, Z. N., Nadorff, D. K., & McKay, I. T. (2020). Is raising your grandchild bad for your health? International Journal of Environmental Research and Public Health, 17(5), 1753. https://doi.org/10.3390/ijerph17051753

26. Li, K., Tang, F., Rauktis, M. E., & Jin, G. (2024). Factor structure and predictors of resilience among custodial grandparents. Journal of Family Issues. https://doi.org/10.1177/0192513X231204946

27. Adams, B. L. (2018). Paternal incarceration and the family: Fifteen years in review. Sociology Compass, 12(3), e12567. https://doi.org/10.1111/soc4.12567

28. Woods, T. (2020). Rural grandparenting through a family development lens: Implications for social work practice. Journal of Social Work Practice, 35(3), 1–14. https://doi.org/10.1080/02650533.2020.1737515

29. Hayslip, B. Jr., Davis, S. R., Neumann, C. S., Goodman, C., Smith, G. C., Maiden, R. J., & Carr, G. F. (2012). The role of resilience in mediating stressor-outcome relationships among grandparents raising their grandchildren. In B. Hayslip Jr & G. C. Smith (Eds.), Resilient grandparent caregivers: A strengths-based perspective (pp. 48–69). Taylor & Francis Group.

30. Hilton, C., Jones, S., Akers, N., Panagaki, K., & Sellwood, W. (2022). Self-report measures assessing aspects of personal recovery in relatives and other informal carers of those with psychosis: A systematic review. Frontiers in Psychology, 13, 926981. https://doi.org/10.3389/fpsyg.2022.926981

31. Whitley, D. M., & Fuller-Thomson, E. (2018). Latino solo grandparents raising grandchildren: Health risks and behaviors. Hispanic Health Care International, 16(1), 11–19. https://doi.org/10.1177/1540415318757219

32. Zailani, S.M., Aun, N.S.M., & Kasim, A.C. (2022). Exploring social support needs amongst caregivers of learning disabilities. Sciences, 12, 1445–1453. http://dx.doi.org/10.6007/IJARBSS/v12-i1/12177

33. Tang, F., Li, K., Rauktis, M.E., Farmer, E.M.Z., & McDaniel, S. (2022). Stress, coping, and quality of life among custodial grandparents. Journal of Gerontological Social Work, 66(3), 354–367. https://doi.org/10.1080/01634372.2022.2103764

34. Ma, J., Fang, G., & Guo, K. (2023). Bridging the digital divide: The influence of digital feedback on the digital capabilities of the rural elderly. Information Development. https://doi.org/10.1177/02666669231222208

35. Mubarak, F., & Suomi, R. (2022). Elderly forgotten? Digital exclusion in the information age and the rising grey digital divide. INQUIRY: The Journal of Health Care Organization, Provision, and Financing, 59. https://doi.org/10.1177/00469580221096272

36. Rogers, S.E. (2016). Bridging the 21st century digital divide. TechTrends, 60(2), 197–199. https://doi.org/10.1007/s11528-016-0057-0

37. Townsend, L., Sathiaseelan, A., Fairhurst, G., & Wallace, C. (2013). Enhanced broadband access as a solution to the social and economic problems of the rural digital divide. Local Economy, 28(6), 580–595. https://doi.org/10.1177/0269094213496974

38. Newman, L., Biedrzycki, K., & Baum, F. (2010). Digital technology access and use among socially and economically disadvantaged groups in South Australia. Journal of Community Informatics, 6(2), 1–31. https://doi.org/10.15353/joci.v6i2.2554

39. Hill, R., Betts, L.R., & Gardner, S.E. (2015). Older adults' experiences and perceptions of digital technology: (Dis)empowerment, wellbeing, and inclusion. Computers in Human Behavior, 48, 415–423. https://doi.org/10.1016/j.chb.2015.01.062

40. Yao, Y., Zhang, H., Liu, X., Liu, X., Chu, T., & Zeng, Y. (2021). Bridging the digital divide between old and young people in China: Challenges and opportunities. The Lancet Healthy Longevity, 2(3), e125–e126. https://doi.org/10.1016/S2666-7568(21)00032-5

41. Md Fadzil, N.H., Shahar, S., Singh, D.K.A., Rajikan, R., Vanoh, D., Mohamad Ali, N., & Mohd Noah, S.A. (2023). Digital technology usage among older adults with cognitive frailty: A survey during COVID-19 pandemic. Digital Health, 9. https://doi.org/10.1177/20552076231207594

42. Jiang, Q.L., & Chen, Z.H. (2021). Positive aging of the silver surfing group: The mechanism by which internet use enhances subjective well-being of the elderly. Modern Communication (Journal of Communication University of China), 43(12), 41–48. https://doi.org/10.19997/j.cnki.xdcb.2021.12.007

43. Cohn-Schwartz, E., Vitman-Schorr, A., & Khalaila, R. (2022). Physical distancing is related to fewer electronic and in-person contacts and to increased loneliness during the COVID-19 pandemic among older Europeans. Quality of Life Research, 31(6), 1033–1042. https://doi.org/10.1007/s11136-021-02949-4

44. Nguyen, M.H., Gruber, J., Marler, W., Hunsaker, A., Fuchs, J., & Hargittai, E. (2022). Staying connected while physically apart: Digital communication when face-to-face interactions are limited. New Media & Society, 24(9), 2046–2067. https://doi.org/10.1177/1461444820985442

45. Rogoff, B., Callanan, M., Gutiérrez, K.D., & Erickson, F. (2016). The organization of informal learning. Review of Research in Education, 40(1), 356–401. https://doi.org/10.3102/0091732X1668099

46. Costache, L., Cojocaru, Ș., Cojocaru, D., & Bunea, O. (2023). Benefits of parental education in the school system: The influence of parental education on school culture and student participation. Quality in Education, 23(1). https://doi.org/10.33788/qie.23.01

47. Waters, N.E., Ahmed, S.F., Tang, S., Morrison, F.J., & Davis-Kean, P.E. (2021). Pathways from socioeconomic status to early academic achievement: The role of specific executive functions. Early Childhood Research Quarterly, 54, 321–331. https://doi.org/10.1016/j.ecresq.2020.09.008

48. Creswell, J.W., & Poth, C.N. (2016). Qualitative inquiry and research design: Choosing among five approaches (4th ed.). SAGE Publications.

49. Patton, M.Q. (2015). Qualitative research and evaluation methods (4th ed.). SAGE Publications.

50. Ritchie, J., & Lewis, J. (2003). Qualitative research practice: A guide for social science students and researchers. London: SAGE Publications.

51. Tang, Y., Li, Q., & Wu, Y. (2024). The impact of the digital divide on rural older people's mental quality of life: A conditional process analysis. Heliyon, 10(17). https://doi.org/10.1016/j.heliyon.2024.e37109

52. Livingstone, S.M., & Blum-Ross, A. (2020). Parenting for a digital future: How hopes and fears about technology shape children's lives. Oxford University Press.

53. Bayham, J., & Fenichel, E.P. (2020). Impact of school closures for COVID-19 on the US health-care workforce and net mortality: A modelling study. The Lancet Public Health, 5(5), e271–e278. https://doi.org/10.1016/S2468-2667(20)30082-7

54. O'Connell, M.E., Scerbe, A., Wiley, K., Gould, B., Carter, J., Bourassa, C., & Warry, W. (2018). Anticipated needs and worries about maintaining independence of rural/remote older adults: Opportunities for technology development in the context of the double digital divide. Gerontechnology, 17(3), 131–140. https://doi.org/10.4017/gt.2018.17.3.001.00

55. Hayslip, B., & Kaminski, P.L. (2005). Grandparents raising their grandchildren: A review of the literature and suggestions for practice. The Gerontologist, 45(2), 262–269. https://doi.org/10.1093/geront/45.2.262

56. Ružić-Baf, M., Kadum, S., & Damić, M. (2020). The family and ICT. The Journal of Education, Culture, and Society, 11(2), 239–251. https://doi.org/10.15503/jecs2020.2.239.251

57. Tsai, T.H., Chang, H.T., & Ho, Y.L. (2016). Perceptions of a specific family communication application among grandparents and grandchildren: An extension of the technology acceptance model. PLOS ONE, 11(6), e0156680. https://doi.org/10.1371/journal.pone.0156680

58. Kekeh, M., Tonn, C., Dial, K., & Yancura, L. (2024). Grandparent caregivers' lived experiences and resource needs/use during the COVID-19 pandemic. Journal of Gerontological Social Work, 67(4), 407–425. https://doi.org/10.1080/01634372.2024.2339988

59. Zhao, C.C., & Zheng, X. (2024). Digital capital and power struggles in intergenerational caregiving: A study on smartphone use in rural left-behind children's families. Jiangxi Normal University Journal (Philosophy and Social Science Edition), 57(3), 75–86.

60. Zheng, X., & Gao, Q. (2021). Social cocoon: Smartphones and left-behind children's social interaction. Jiangxi Normal University Journal (Philosophy and Social Science Edition), 54(6), 75–86.

61. Burnett, C. (2016). The digital age and its implications for learning and teaching in the primary school. Cambridge Primary Review Trust.

62. Taylor, M.F., Marquis, R., Coall, D.A., Batten, R., & Werner, J. (2017). The physical health dilemmas facing custodial grandparent caregivers: Policy considerations. Cogent Medicine, 4(1), 1292594. https://doi.org/10.1080/2331205X.2017.1292594

63. Way, N., Okazaki, S., Zhao, J., Kim, J.J., Chen, X., Yoshikawa, H., Jia, Y., & Deng, H. (2013). Social and emotional parenting: Mothering in a changing Chinese society. Asian American Journal of Psychology, 4(1), 61–70. https://doi.org/10.1037/a0031204.