

SYSTEMATIC REVIEW OF THE POTENTIAL FOR INCORRECT GRANDPARENTS CARE TO REDUCE CHILD GROWTH

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ABSTRACT

The influence of grandmother care on child growth is complex and multidimensional. In many Asian countries grandmothers often serve as advisors and guardians for future generations, playing a vital role in children's health and nutrition. The aimed of this study is to synthesize current evidence on how grandparents care practices may contribute to reduced growth in children. Electronic databases including PubMed, Google Scholar, WOS, Scopus, and Sage Journal were searched for cross-sectional studies published between 2000 and 2025, the keywords "grandmothers OR ("Grandparents"[Mesh]) AND "Parenting"[Mesh] AND Child growth. "three-generation Care" AND Child Growth". (("Grandparents"[Mesh]) AND "Parenting"[Mesh]) AND "Growth Disorders"[Mesh]. The method used is systematic review. Based on the results, it is known that from 9 articles on the influence of grandmother care on children in various populations ranging from Asia, Europe, and Africa, it shows that 5 studies show that grandmother involvement has an impact on reducing children's height and malnutrition conditions. However, 4 other studies show contrasting results, namely that grandmother care and involvement can improve children's nutrition and height.

Keywords: child growth; grandparents; parenting

INTRODUCTION

Child growth is a key indicator of overall health, nutrition, and development, reflecting not only biological factors but also the quality of caregiving within the family environment (De Onis, 2017). In many cultures and countries, grandmothers play a central role in child-rearing, often serving as primary or supplementary caregivers during early childhood (Aubel, 2024). Their involvement is typically regarded as a valuable source of support, experience, and continuity in caregiving practices. However, emerging evidence suggests that some traditional childcare practices, when inconsistent with contemporary health and nutrition guidelines, may inadvertently contribute to suboptimal growth outcomes in children (Black, 2020).

The influence of grandmother care on child growth is complex and multidimensional (Sadrudin, 2019). In many Asian countries, grandmothers are considered sources of knowledge and wisdom on a variety of household topics (Aubel, 2012). Given their revered status, grandmothers often serve as advisors and guardians for future generations, playing a vital role in children's health and nutrition (Beltran, 2025). While emotional warmth and family cohesion provided by grandmothers can have positive psychosocial effects, outdated or incorrect feeding and health beliefs, such as delayed introduction of complementary foods, early cessation of breastfeeding, or inappropriate responses to illness, may negatively impact child nutrition and development (Duflos, 2022). Delayed introduction of complementary foods, early cessation of breastfeeding, or inappropriate responses to illness can negatively affect a child's nutrition and development (Purkiewicz, 2025). When complementary foods are introduced too late (after 6 months), the child does not receive enough energy and nutrients needed for growth, since breast milk alone is no

longer sufficient at that age (Walker, 2010). Early cessation of breastfeeding deprives the child of essential nutrients and antibodies that protect against infections, which can lead to poor health and undernutrition (Morrison, 2019).

Additionally, inappropriate responses to illness, such as reducing food or fluid intake when a child is sick can worsen nutrient deficiencies and slow recovery (Kreutz, 2020). These factors together increase the risk of growth faltering, stunting, weakened immunity, and delayed cognitive development, all of which can have long-term effects on the child's health and well-being (Black, 2020). Understanding these dynamics is crucial, particularly in low- and middle-income settings where multigenerational households are common and traditional knowledge transfers often shape daily childcare decisions (Aidam, 2020). This systematic review aims to synthesize current evidence on how grandparents care practices may contribute to reduced growth in children. By identifying the types of behaviors, beliefs, and caregiving patterns most associated with negative growth outcomes, this review seeks to inform future interventions and educational programs that leverage grandmothers' influential roles while promoting evidence-based childcare practices.

METHOD

This systematic review followed the key guidelines developed by the AMSTAR 2 and PRISMA checklist items (Moher et al., 2009; Shea et al., 2017). We established a formal review protocol before beginning our literature search. We identified the research question, and developed relevant search terms and inclusion/exclusion criteria. To define the review parameters, we used elements captured by the acronym PICO (Johnson and Hennessy, 2019): we specified that health and height development outcomes (O) should be relevant to grandchildren; global coverage for the population of interest (P); and inclusion of intervention studies involving caregiving by grandparents (I). A comprehensive search strategy was formulated and implemented across electronic databases, including PubMed, Google Scholar, WOS, Scopus, and Sage Journal. The search aimed to identify relevant studies published up from 2000 to 2025, employing a combination of keywords and controlled vocabulary terms related to "grandmothers OR ("Grandparents"[Mesh]) AND "Parenting"[Mesh] AND Child growth. "three-generation Care" AND Child Growth". (("Grandparents"[Mesh]) AND "Parenting"[Mesh]) AND "Growth Disorders"[Mesh].

Screening in this study uses End Note software from the database was updated accordingly. Screening is carried out to exclude titles and abstracts that are not related to the research focus, as well as full-text research, cohort retrospective, repeated cross sectional, Cross sectional, English or Indonesian language. All papers that met the inclusion criteria were obtained in their entirety after a screening of titles and abstracts. The excel table was used to extract the data from select full articles. Publication information was included in the data collected from (author, title, year, journal, abstract by the author. Methodological and outcome variables from each of the included studies were collected using a standardized data extraction form. The data set contained the following variables: the last name and publication year of the first author, the region, the study design, effect of weather on human health. This scope review includes relevant studies based on the Joanna Briggs Institute (JBI) protocol (Institute, 2015) with a critical assessment score of at least 60%. The inclusion and exclusion criteria are presented in Table 1. Search strategies using keywords and queries can be seen in Table 2. All authors will screen, review, and compile research titles and abstracts according to the selection criteria.

RESULT AND DISCUSSION

Based on the results of the systematic review in table 1, it is known that from 9 articles on the influence of grandmother care on children in various populations ranging from Asia, Europe, and Africa, it shows

that 5 studies show that grandmother involvement has an impact on reducing children's height and malnutrition conditions (Ntshebe O, 2019) (Sheppard, 2016) (Li, 2024) (Lawson, 2017) and (Gurupdes Kaur, 2013). However, 4 other studies show contrasting results, namely that grandmother care and involvement can improve children's nutrition and height (Crookston BT, 2010) (Schrijner S, 2018) (Ko, 2019) dan (Gibson, 2005).

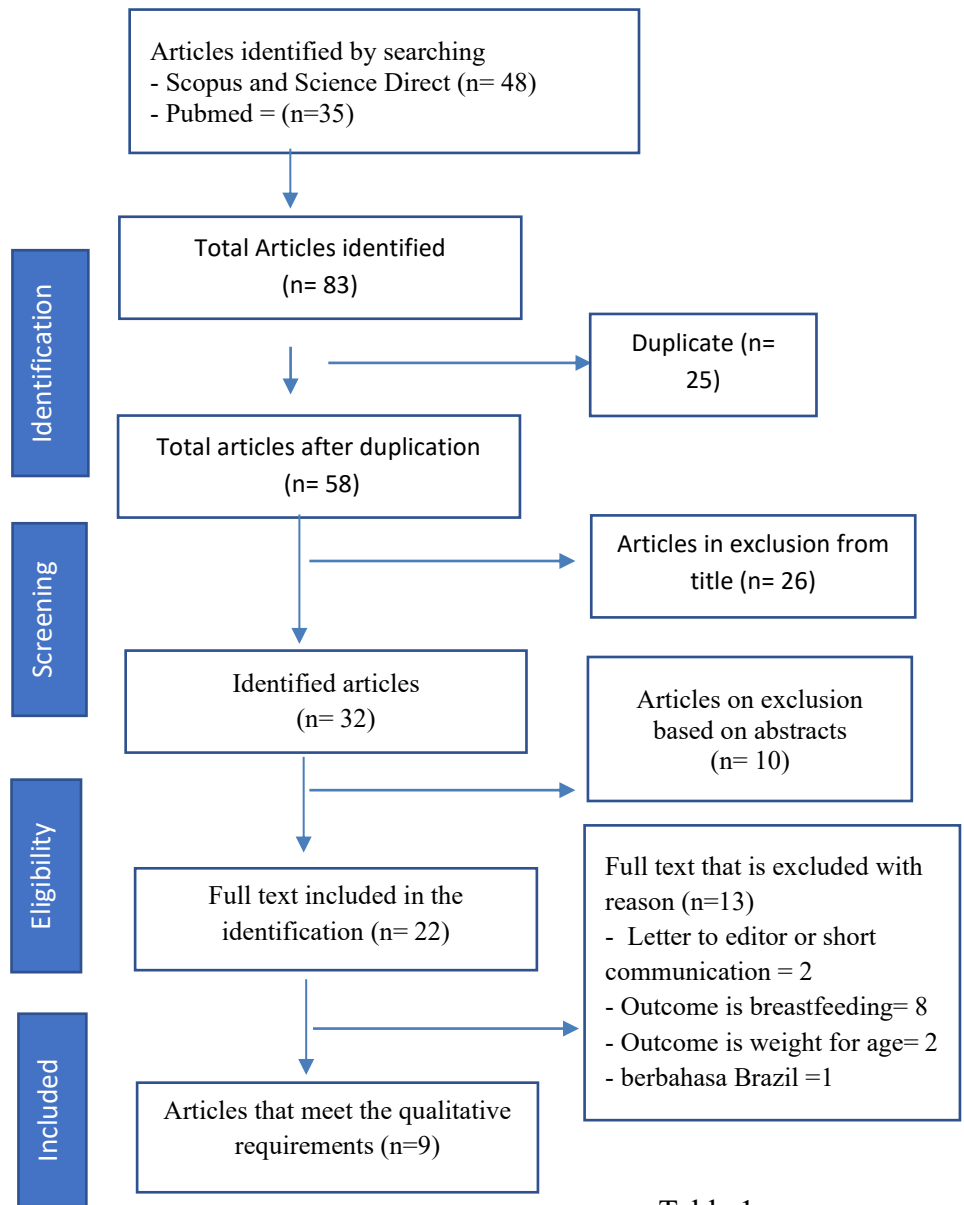


Table 1.
 Summary source

Author	Sample and location	Study design	Comparison	Results
(Gibson, 2005)	58 women and 200 children aged 0–15 years in Ethiopia	Repeated cross sectional (1999 and 2003)	Parenting between maternal grandmother and paternal grandmother	Anthropometric data shows that maternal grandmother's parenting can increase a child's height, but paternal grandmother's parenting can increase the child's height.

Author	Sample and location	Study design	Comparison	Results
(Gurupdesh Kaur, 2013)	920 children from below poverty line in India	Cross sectional	Parenting by grandmothers for boys and girls	- 29.19 % boys who were cared by grandparents were in Grade II of malnutrition (height for age) - Out of the girl children who were cared by grandparents, about 50 % were suffering from Grade II malnutrition
(Ko, 2019)	more than 14000 individuals from 7072 households in 2006, 2009, and 2012 in South Korea	Repeated cross sectional (2006, 2009, and 2012)	Grandmother's care compared to grandfather's care for granddaughters	In the period 2006 and 2009, grandmother's care was able to provide a more significant contribution to increasing height than grandfather's care.
(Lawson, 2017)	3136 children under 5 years in Tanzania	Cross sectional between 2009 and 2011	Parenting by grandmother because the child lost his father	There is suggestive evidence (P = 0.083) that children living with grandparents is correlated with lower HAZ scores compared to children from intact families (with both father and mother).
(Li, 2024)	1028 children from the China Family Panel Studies (CFPS)	Cross-Sectional	Grandparent care divided into full-day, daytime or nighttime care	The model showed a significant positive association between all forms of grandparenthood (OR 1.323; 95% CI 1.008, 1.735) and child malnutrition.
(Sheppard, 2016)	2892 mothers with 3370 children aged from birth to 5 years. Data for the Guatemalan Survey of Family Health (Encuesta Guatemalteca de Salud Familiar—EGSF) between May and October 1995	Cross-Sectional	Parenting by maternal grandparents compared to parenting by paternal grandparents	Living paternal grandmothers tend to be negatively associated with child height. In contrast, contact with maternal relatives appears to be broadly beneficial for child height, although this association is weaker.
(Schrijner S, 2018)	344,748 children aged 6-60 months living in 31 SSA (Sub-Saharan Africa) countries	Cross-Sectional	Shared care between parents, grandparents, and children due to socio-economic conditions	Children who live with their grandmothers are much less likely to experience stunting, provided the grandmother is between the ages of 50 and 75. When the grandmother is very young or very old, the likelihood of experiencing stunting is higher.
(Crookston BT, 2010)	1674 children in Peru were analyzed when they were 6-18 months old and again when they were 4.5 – 6 years old.	Observational	Shared care between parents, grandparents, and children due to socio-economic conditions	Children who have grandparents at home experience less severe stunting as infants (aOR: 1.08; 95%CI 1.05 - 3.40; p value 0.04)
(Ntshebe O, 2019)	2531 children are nested within 1804 households in Bostwana	Cross-Sectional	Care provided by various family members including grandparents and relatives.	children in households with a mother-only and with a grandparent present, have a higher level of stunting compared to those living with both parents

The Joanna Briggs Institute (JBI) is an international, membership based research and development organization within the Faculty of Health Sciences at the University of Adelaide. Table 3 provides an overview of the Checklist for Analytical Cross Sectional Studies. Domain 1 The authors should provide clear inclusion and exclusion criteria that they developed prior to recruitment of the study participants. The inclusion/exclusion criteria should be specified (e.g., risk, stage of disease progression) with sufficient detail and all the necessary information critical to the study. Domain 2 The study sample should be described in sufficient detail so that other researchers can determine if it is comparable to the population of interest to them. Domain 3 The study should clearly describe the method of measurement of exposure. Assessing validity requires that a 'gold standard' is available to which the measure can be compared. The validity of exposure measurement usually relates to whether a current measure is

appropriate or whether a measure of past exposure is needed. Reliability refers to the processes included in an epidemiological study to check repeatability of measurements of the exposures.

Table 2.
 Assessment of methodological quality for Cross Sectional

Author	CriteriaCritical Appraisal							
	Inclusion criteria clearly defined	study subjects and setting clearly defined	exposure measured in a valid and reliable	Using standard criteria for measurement	confounding factors identified	strategies to deal with confounding factors	Outcome measured in a valid and reliable	appropriate statistical analysis
(Gibson, 2005)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
(Gurupdesh Kaur, 2013)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No (without multivariate)
(Ko, 2019)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No (without multivariate)
(Lawson, 2017)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
(Li, 2024)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
(Schrijner S, 2018)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
(Sheppard, 2016)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
(Crookston BT, 2010)	Yes	Yes	Yes	Yes	Yes	Unclear	Yes	Yes
(Ntshebe O, 2019)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Domain 4 It is useful to determine if patients were included in the study based on either a specified diagnosis or definition. This is more likely to decrease the risk of bias. Characteristics are another useful approach to matching groups, and studies that did not use specified diagnostic methods or definitions should provide evidence on matching by key characteristics. Domain 5 Confounding has occurred where the estimated intervention exposure effect is biased by the presence of some difference between the comparison groups (apart from the exposure investigated/of interest). Typical confounders include baseline characteristics, prognostic factors, or concomitant exposures. Domain 6 Strategies to deal with effects of confounding factors may be dealt within the study design or in data analysis. By matching or stratifying sampling of participants, effects of confounding factors can be adjusted for. When dealing with adjustment in data analysis, assess the statistics used in the study.

Domain 7 If there was more than one data collector, were they similar in terms of level of education, clinical or research experience, or level of responsibility in the piece of research being appraised?. Domain 8 As with any consideration of statistical analysis, consideration should be given to whether there was a more appropriate alternate statistical method that could have been used. The methods section should be detailed enough for reviewers to identify which analytical techniques were used (in particular, regression or stratification) and how specific confounders were measured for studies utilizing regression analysis, it is useful to identify if the study identified which variables were included and how they related to the outcome. If stratification was the analytical approach used, were the strata of analysis defined by the specified variables?. There is some evidence suggesting that the role of grandmothers (or grandparenting) in child-care can influence child growth (i.e., stunting, low height for age), but the mechanism is not straightforward, and the evidence goes both ways. Below is a discussion, based on scientific (or quasi-scientific) evidence, about how grandmother parenting might affect child height and stunting including potential pathways, risks, and nuances.

Grandparents Could Increase Risk of Stunting

A literature review in an Indonesian context (“Grand Parent of Parenting Style and Incidence of Stunting Among Toddlers in Indonesia: A Literature Review”) concluded that certain grandparenting styles are associated with higher stunting risk: specifically, authoritarian or permissive grandparent feeding styles were linked to poorer nutritional outcomes in toddlers, while an authoritative (more balanced) style was more favorable (Ramadhani, 2023). For example, permissive grandparents may overfeed or feed low-quality (but energy-dense) foods just to satisfy or “make the child full,” which may not support adequate linear growth (Schrijner S, 2018).

Cultural beliefs and practices guided by elders (grandmothers) may lead to sub-optimal feeding timing or food choices: In some cultures, grandmothers may delay the introduction of animal-source complementary foods due to beliefs (e.g., “wait until the child has teeth”), which can reduce essential nutrients needed for growth. This kind of mismatch between local beliefs and optimal feeding practice was noted in the Nepal study. A classic study in rural India (Vadodara) showed that the presence of grandmothers was associated with certain “deleterious” feeding beliefs: e.g., use of prelacteal feeds or delayed initiation of complementary feeding (Sharma, 2006). In some contexts, elder authority may conflict with modern nutritional recommendations: grandmothers may resist or undervalue health promotion messages or new practices introduced by health workers or their children (parents of the babies) (Houghtaling, 2018).

We also found cultural context when grandmothers are highly respected and have decision-making power over feeding practices; in others, their role is more peripheral. Cultural feeding norms (e.g., beliefs about “soft foods,” age for introduction of certain foods) mediate their influence (Karmacharya, 2017). If grandmothers are well-informed (through formal education or programs), they can support optimal feeding. But if not, their entrenched traditional beliefs may lead to harmful practices. Programs like “kelas nenek” (grandmother classes) have shown promise: by educating grandmothers, their caregiving aligns more with best practices. Whether grandmothers are co-caregivers (alongside mothers) or primary caregivers matters. A study differentiated types of caregiving (maternal only, co-caregiving, and grandmaternal primary) and found different child-development associations. Also, whether grandparents co-reside in the same household influences their capacity to intervene in feeding, monitoring, and caregiving (Song, 2025).

The Role of Grandparents Care in Improving Child Growth

Grandparents often provide instrumental caregiving, such as feeding, caring when the mother is busy or unwell, and general supervision (Gupta, 2025). This can reduce the burden on mothers and ensure more consistent care. In low-resource settings, grandmother involvement may help buffer against care gaps, especially when mothers are working, ill, or otherwise constrained. Through play, emotional support, and interaction, grandparents can contribute to a nurturing environment. This can benefit not just physical growth, but also cognitive, motor, and socioemotional development (Li W. E., 2022). Some studies examine “sensitivity” (how responsive and attuned grandparents are), which is linked to child developmental outcomes (Ko, 2019).

Grandparents’ presence may reduce household stress (mothers have help), which can indirectly support better caregiving and resource allocation. In some contexts, grandparents co-reside and contribute to household labor or income, enhancing food security. Evidence from China suggests coresidence with grandparents is associated with better nutritional health under certain conditions. Grandparents’ involvement (play, interaction) supports cognitive and socioemotional development, which in turn can

support healthy growth by promoting better feeding, routines, and responsive care (Schrijner S, 2018). In multigenerational households, grandparents can contribute to food procurement or caregiving, helping optimize the use of household resources for child nutrition. In rural or low-income settings, their presence may be especially valuable when maternal education is limited (Yu, 2021). Some grandmothers who have better knowledge often have caregiving experience and traditional knowledge that, when aligned with proper nutrition education, can enhance feeding practices. They can also reinforce growth monitoring behaviors (e.g., bringing the child to health services, encouraging regular meals) (Ko, 2019).

CONCLUSION

The effect of grandmother parenting on stunting is highly context-dependent, mediated by their knowledge, caregiving role, cultural norms, and whether interventions engage them. Following the research findings, several recommendations are made such as (1) Design behavior change communication (BCC) that targets not just mothers, but all caregivers, including grandmothers. (2) Establish grandmother “classes” to use culturally sensitive education: leverage grandmothers’ authority positively rather than ignoring it. (3) In growth monitoring and child health services, collect data on who is the primary caregiver (mother, grandmother, both), to better understand which caregiving arrangements might need more support.

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