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How Caregivers Use Singing to Support Emotional Regulation in Children Ages 0–5, and How These Practices are Shaped by Caregivers' Beliefs, Values, Cultural Backgrounds, and Caregiving Experiences

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ABSTRACT

Around the world, caregivers use music in interactions with infants and young children. Although musical practices may appear similar, these practices vary widely across cultural settings. Lullabies, infant-directed speech, and humming, amongst other forms of vocal interaction, may contribute to emotional co-regulation during early childhood. Current developmental research shows that caregiver singing may reduce distress, maintain attention, and support attunement between caregivers and children. However, much of this research focuses on Western populations, mothers, or infants under age two, and has paid little attention to how music in caregiving affects children throughout the first five years of life. Cross-cultural and ethnographic research may also challenge the idea that infant-directed singing or culturally recognized lullabies are entirely universal. This thematic literature review examines how existing research describes caregivers' use and understanding of vocal soothing practices for emotional regulation among children ages 0–5, and how cultural beliefs, values, family traditions, caregiving experiences, and children's responses shape these practices. Current case studies and literature suggest that music in caregiving is not purely universal, nor is it an arbitrary cultural practice, but it in fact emerges from differing styles of communication, culturally transmitted models of caregiving, children's responses, as well as the child's social environment.

INTRODUCTION

Before young children can consistently identify, verbalize, and independently manage their emotions, they generally depend on their caregivers for emotional co-regulation. Caregivers respond to a wide range of intense emotions through strategies including touch and movement, distractions, and vocal practices. Through repeated interactions, children experience patterns that organize their emotions, gradually increasing their emotional independence. Among these practices, the human voice holds great significance because it operates as both a social signal and a cultural form of communication. Singing and vocalizing combine familiarity with technical musical elements, which can help during periods of distress, including bedtime, transitions, or extreme excitement, allowing caregivers to adjust these qualities in response to a child's emotional state.

Developmental psychology and music research provide evidence that infant-directed singing may influence children's emotional state and affective engagement. A 21-study systematic review on live parental infant-directed singing found evidence of effects involving infant emotional regulation, caregivers' experiences, and affective attunement within relationships between caregivers and infants (Sharman et al., 2023). Research comparing singing and speech suggests that singing can prolong regulated states while also delaying visible infant distress (Corbeil et al., 2016; Trehub et al., 2015). However, singing's influence on infant regulation does not explain why caregivers choose to sing, why particular songs or vocal styles are preferred, or why singing holds great importance in some caregiving systems yet comparatively minor importance in others. These questions require attention to developmental outcomes as well as culture, relationships, and caregiver interpretation.

Once an anthropological perspective is in place, the effectiveness of a behavior alone may shift to meaning, transmission, and social context. For example, a lullaby may calm an infant while simultaneously communicating cultural identity, kinship, social status, or gender expectations (Aubinet 2024, Doja 2014). Similarly, a caregiver who reports not routinely using singing in their caregiving practices may still use humming, chanting, religious songs, or other rhythmic vocalizations that they do not classify as singing (Aubinet, 2024; Ramirez et al., 2023).

Additionally, caregiver singing methods are not necessarily the same across different families and cultures. The songs, meanings, and situations in which caregivers sing may reflect the caregiver's beliefs about child development, emotional expression, and parenting. Caregivers' own differing childhood experiences and family traditions may shape the vocal practices that they reproduce, modify, or regard as appropriate when caring for their own children (Doja, 2014).

This thematic literature review examines how caregivers of children ages 0–5 use and understand vocal soothing practices for emotional regulation, and how cultural beliefs, family traditions, caregiving experiences, and children's responses shape these practices. It approaches vocal soothing as neither a purely universal biological behavior nor an arbitrary cultural tradition, but as a form of emotional co-regulation shaped by shared capacities for vocal communication, culturally transmitted caregiving knowledge, and social relationships.

METHODOLOGY

Inclusion Criteria	Exclusion Criteria
Studies discussing infants, toddlers, or preschool aged children	Studies addressing teens or older children (such as upper elementary children)
Studies discussing lullabies and parental ethnotheories	Studies published or conducted before the year 2000
Studies discussing whether cultural singing affected emotional regulation	Studies that focused solely on the neuroscience behind emotional regulation

Table 1: Inclusion and exclusion criteria for studies in the thematic review.

This thematic literature review examines caregiver vocal soothing practices amongst children between infancy and age five. Rather than evaluating solely singing as a behavior intervention, the review combines research from developmental psychology, music studies, and anthropology in order to examine the regulatory effects of vocal practices as well as the cultural meanings caregivers assign to them. Singing, lullabies, infant-directed speech, as well as other forms of rhythmic or melodic vocal interaction used within caregiving relationships are given special attention.

Literature was identified through searches of PubMed, JSTOR, and Google Scholar conducted between June 2026 and August 2026. Search terms included combinations of: infant-directed singing, caregiver singing, caregiver culture + singing, emotional regulation + singing, emotional regulation + culture, cross-cultural lullabies, parental ethnotheories, cultural transmission, culture + singing, children ages 0-5. Searches focused on research addressing caregiver singing, infant-directed vocalization, emotional regulation, cross-cultural variation, and culturally informed caregiving practices. As detailed in Table 1, the search was restricted to studies after the year 2000, and relevant studies were selected based on their relationship to the question of whether caregiver cultural singing affects emotional regulation in children ages 0-5. Most studies discussing older children, such as teens or upper elementary kids, were not included, while a few were included in the study as background information.

Sources were selected due to their relevance to recurring areas of inquiry: emotional regulation and co-regulation in early childhood, infant- and child-directed singing, cross-cultural variation, caregiver beliefs, caregiving roles, cultural transmission, and children's participation. Priority was given to the studies between birth and age five, although research focusing solely on infancy was also included due to the fact that much of the existing literature on caregiver singing is focused on the first two years of life. Both experimental and observational developmental studies and cross-cultural or ethnographic research were considered in order to compare measurable regulatory effects with culturally specific interpretations of caregiving practices. The literature was analyzed thematically and organized around recurring patterns, including developmental evidence for emotional regulation, cultural variation and universality, caregiver beliefs, and kinship. Particular attention was given to differences between researcher-defined categories and participants' own understandings of their practices. Findings supported by a single study were

distinguished from those supported by multiple sources, and conclusions were interpreted in light of the methodological and cultural limitations of the available evidence.

The review also discussed limitations within the existing literature when interpreting findings. A large portion of the developmental research has a focus on mothers, infants, and Western or relatively affluent populations. However, a smaller number of studies examine broader caregiving networks or children throughout the full birth-to-five developmental period. Because of this, findings concerning the effectiveness of caregiver singing were interpreted alongside ethnographic and cross-cultural evidence, allowing vocal soothing to be examined as both a potential mechanism of emotional co-regulation and a practice shaped from family history, caregiver beliefs, and children's responses.

DEVELOPMENTAL EVIDENCE

Developmental research demonstrates that singing may delay visible infant distress, familiar songs may reduce distress, and live singing may allow contingent adjustment between caregiver and child (Cirelli & Trehub, 2020; Corbeil et al., 2016; Sharman et al., 2023; Trehub et al., 2015). These findings establish vocal soothing as a possible form of interpersonal regulation.

From an anthropological perspective, however, current evidence that singing can regulate emotion does not explain why singing becomes meaningful in certain caregiving systems while having less meaning in others. Even while similar acoustic features produce similar effects, the social meaning of the practice may differ substantially (Bainbridge et al., 2021). For example, Bainbridge et al. (2021) found that infants in the United States relaxed in response to foreign lullabies. Although this finding suggests that low-arousal acoustic qualities may be perceptible across cultural boundaries, it represents evidence from a single study and should not be considered as proof that lullabies produce equivalent regulatory effects across all cultural contexts. However, a song's social purpose, setting, and relationship to the performer remain culturally specific (Bainbridge et al., 2021; Doja, 2014). This distinction is essential to understand due to the fact that not only is vocal soothing effectiveness being questioned, but so is caregivers' interpretation of what they are doing. A behavior a researcher classifies as music may be considered prayer, storytelling, or ordinary conversation by others, among other things. The regulatory effect of a practice, as well as its cultural meaning, therefore are related but are also analytically distinct entities (Doja, 2014; Ramirez et al., 2023).

UNIVERSALITY AND VARIATION

This literature addresses whether infant-directed singing or lullabies should be described as universal. In a cross-cultural study of 21 societies, recurring acoustic differences between infant-directed and adult-directed speech and song were identified (Hilton et al., 2022). Although this study provides evidence of cross cultural similarities in infant-directed vocal communication, its findings should not be interpreted as establishing that these patterns occur universally across all societies. However, these recurring features do not demonstrate that all societies organize infant care around similar genres, meanings, or interactional expectations (Hilton et al., 2022). Additionally, an ethnographic review

clarifies this issue, explaining that whether lullabies appear universal partially depends on how a lullaby is defined (Aubinet, 2024). If the term refers to a culturally recognized category of song specifically for soothing infants, such a category cannot be treated as universal; however, if it is broadened to include multiple kinds of singing used to soothe children, then it appears to be more widespread or universal. This shows how researcher-defined categories can make culturally distinct practices appear more similar than participants themselves may recognize.

The Northern Aché of Paraguay provides a critical case that complicates claims about the universality of infant-directed singing. In a single ethnographic investigation, an absence of infant-directed song among the Northern Aché was reported, despite extensive behavioral observation and the presence of adult singing in other contexts (Singh & Hill, 2025). Although this finding challenges the assumption that infant-directed singing is present in every society, it represents evidence from one specific cultural setting and should not be generalized to other communities without additional research. This case suggests that responsive caregiving may occur through culturally different practices and that singing should not automatically be treated as a required component of caregiving.

The evidence therefore suggests shared human capacities alongside culturally patterned variation in how these capacities organize caregiving practices. Shared perceptual and social capacities may make rhythm, repetition, and familiar voices useful for regulation; however, communities differ in the method that these capacities are organized into recognizable practices (Aubinet, 2024; Bainbridge et al., 2021; Hilton et al., 2022; Singh & Hill, 2025).

EMIC MEANING AND CAREGIVER BELIEFS

A distinction between emic and etic interpretation is central to studying vocal caregiving. An etic category is produced for the purposes of analytical comparison; however, an emic category reflects how participants are able to understand and identify their own practices. When researchers ask caregivers specific questions about their caregiving techniques, this matters because caregivers may not classify their behavior in those terms (Ramirez et al., 2023). In one study, it was found that maternal beliefs about infant-directed speech did not fully align with observed communicative behavior (Ramirez et al., 2023). Although this finding demonstrates a potential difference between caregivers' reported beliefs and their actual practices, the study examined infant-directed speech rather than singing. Its relevance to vocal soothing practices involving music should therefore be understood as a possible implication rather than a directly established finding. A caregiver may deny singing while humming, chanting, or melodically speaking, and treating only self-identified songs as evidence therefore may miss practices that are acoustically similar to the researcher's ideas but socially classified differently.

Cultural models of childhood also shape when soothing is considered necessary and what counts as sensitive care. One cross-cultural study identified variation in parental ethnotheories of caregiver sensitivity and child emotional regulation across five countries (Song et al., 2023). While these findings suggest that cultural beliefs may influence how caregivers interpret and respond to children's emotional needs, the study does not directly establish how such beliefs shape singing practices. This connection

therefore remains an area for further investigation. Caregivers may differ on whether good care means responding quickly to visible distress, anticipating it and encouraging restraint, or promoting independence, and these beliefs can shape whether vocal soothing is used reactively, proactively, or only in particular social circumstances. Therefore, the meaning of singing cannot be separated from ideas about caregiving, children, and emotion within the community being observed. Anthropological analysis is strongest when preserving the participant interpretations rather than simply assuming that researcher's labels capture the full social act (Doja, 2014; Ramirez et al., 2023; Song et al., 2023).

KINSHIP AND DISTRIBUTED CARE

An added limitation in developmental research is the tendency to center a single mother-infant dyad. Evidence on live parental infant-directed singing is heavily organized around parents and infants, while much broader literature disproportionately represents mothers (Sharman et al., 2023). This raises the question of who can perform care within a household or community. Therefore, questions must be asked, including whether vocal care is performed by fathers, grandparents, siblings, extended kin, teachers, or other caregivers, and whether different caregivers use different repertoires. These questions make the caregiving network, rather than only the mother-child dyad, a potentially important unit of analysis.

This broader view also complicates attempts to use the frequency of infant-directed singing as a straightforward measure of caregiving quality. Cross-cultural similarities in infant-directed vocalization are recognized; however, cross-cultural variation remains in how much infants are directly addressed, by whom, and under what circumstances (Hilton et al., 2022). A relatively low frequency of one-to-one vocalization does not necessarily imply low social involvement if children are embedded in dense networks of bodily proximity, shared activity, sibling care, and group interaction. The distribution of vocal soothing may reveal the distribution of social roles, including who is permitted, expected, or available to soothe a child, which reflects kinship, gender, age hierarchy, and local expectations about responsibility. Studying vocal practices without examining the broader social organization of care risks reducing a relational and culturally embedded practice to an isolated behavioral variable (Mesman et al., 2018).

FAMILY, TRADITION, RELIGION, MIGRATION, AND CULTURAL TRANSMISSION

Vocal caregiving may also function as a form of cultural transmission. Drawing on a socio-anthropological analysis, infant-directed singing is shown to participate in socialization by communicating ideas about family, identity, morality, and social expectations (Doja, 2014). Because much of the cultural interpretation discussed in this section draws from this single source, these claims should be understood as an interpretive perspective rather than a conclusion independently established across multiple studies. Songs often used for soothing may carry meaning beyond emotional regulation, possibly

connecting children to religious tradition, ethnic identities, or family histories. One possible pathway of cultural transmission is through caregivers' own childhood experiences, as songs and vocal practices may be learned informally within families and reproduced in later caregiving relationships (Doja, 2014). In this sense, singing may function as cultural memory, along with emotional regulation, because the caregiver reenacts a pattern of care previously experienced in another relationship. This repetition may link current caregiving to remembered experiences of being cared for, while also transmitting language and identity to the next generation (Doja, 2014).

Religion further complicates the category of vocal soothing. Different religious practices, such as prayer and devotional song, may all include repetition, predictable rhythm, familiar phrasing, and lowered vocal intensity. These features may contribute to emotional regulation; however, participants may understand the practice as mainly sacred communication, moral instruction, or protection. Reducing such practices to music or soothing techniques could therefore erase the meanings that make them socially important to specific cultures (Doja, 2014).

Migration, bilingualism, and diaspora are especially relevant questions for future research, but the sources reviewed here provide limited direct evidence. The strongest supported claim is that infant-directed songs can carry social and cultural meaning beyond regulation; more targeted research is needed to determine how migration, language change, and religious practice reshape vocal soothing across generations (Doja, 2014).

CHILDREN AS PARTICIPANTS IN CULTURAL REPRODUCTION CHANGE

Children respond to and reproduce vocal practices, making them participants in the continuation or alteration of family repertoires. Developmental research on live singing shows the contingency of caregiver vocalization, demonstrating how adults alter rhythm, timing, intensity, repetition, and affect in responses to infants' behavior (Sharman et al., 2023). This reciprocity connects cultural transmission with typical interactions. A caregiver may inherit a song from a parent or grandparent, but whether the song is essential to pass down through generations may depend on a particular child's responses. For example, a child who consistently relaxes in response to a particular melody might encourage a caregiver to repeat it, while a negative response might lead the caregiver to modify or abandon the song. Although plausible, this process requires further direct investigation. Children's responses may therefore influence which vocal practices caregivers continue, modify, or abandon within a relationship. Although developmental research supports the importance of caregiver-child responsiveness, more direct longitudinal and ethnographic evidence is needed to establish how these interactions influence the transmission of particular singing traditions across generations.

The developmental period from birth through age five makes this especially important. During infancy, caregivers primarily lead vocal regulation. As language, memory, mobility, and intentional control increase, children can become more active participants by requesting songs, singing along, changing words, inserting songs into play, or using familiar vocal routines themselves. Research on home musical environments and spontaneous singing suggests that music becomes part of children's own everyday

behavioral repertoires rather than remaining exclusively an adult-provided stimulus (Dean, 2021; Politimou et al., 2018).

This creates a more dynamic model of cultural transmission. Caregivers provide practices drawn from family, religion, media, and prior experience, but children selectively reinforce, modify, or reject them. Culture is therefore reproduced through interaction rather than copied intact from one generation to the next. To study vocal soothing, the child should be treated not only as the recipient of regulation but also as an actor whose responses help shape the practice's future form.

DISCUSSION

Current literature demonstrates that caregiver vocal interaction can influence infant regulation, but explanations of how these practices acquire meaning within specific social contexts remain limited. Much of the experimental evidence focuses on Western, educated, and affluent populations, as well as mothers and infants, making it difficult to generalize across diverse caregiving systems or across the entire birth-to-age-five period (Sharman et al., 2023). Cross-cultural and ethnographic work shows why these limits matter (Aubinet, 2024; Hilton et al., 2022; Singh & Hill, 2025; Song et al., 2023). The experimental studies reviewed suggest that singing may reduce or delay infant distress. Individual studies also indicate that familiar songs may reduce distress and that live singing may support emotional engagement and caregiver-infant attunement (Cirelli & Trehub, 2020; Corbeil et al., 2016; Sharman et al., 2023). However, recurring acoustic features do not imply identical social practices or universally recognized lullaby genres.

The Northern Aché case offers a valuable, though culturally specific, example that challenges assumptions about the necessity of infant-directed singing in responsive caregiving (Singh & Hill, 2025). As this conclusion draws on a single ethnographic investigation, further comparative research is needed before extending it to other caregiving contexts. Voice is only one resource among many, including touch and body proximity, as well as other vocal resources such as speech, silence, and prayer. However, the literature reviewed provides limited direct evidence about how particular vocal practices become socially recognized, maintained, and understood as effective within specific families or communities. Future anthropological research may prioritize how caregivers categorize and interpret singing and other forms of vocalization, how these practices are distributed across kin and across history, religion, migration, and media, and how children's responses shape the practices that persist and their evolution from birth to age five. Taken together, the literature points toward several priorities for future anthropological research. By addressing social organization, reciprocity, and transmission rather than only measurable intervention, future research can clarify cross-cultural differences in beliefs and enable deeper cultural analysis. To address these questions, researchers should examine both observable patterns of distress or relaxation and the cultural meanings participants assign to vocal caregiving practices, reducing the risk of assuming researcher-defined categories match participants' own understandings (Ramirez et al., 2023).

As a thematic rather than systematic review, this review does not provide an exhaustive assessment of all available research. Several cultural interpretations draw primarily from individual ethnographic studies or

theoretical analyses, limiting the extent to which these findings can be generalized across caregiving contexts. Furthermore, although the review focuses on children ages 0–5, much of the developmental evidence concerns infancy, leaving older children within this age range less thoroughly examined. These limitations highlight the need for additional cross-cultural and longitudinal research.

A song can regulate emotion while transmitting identity, a prayer can soothe without being categorized as music, and a family tradition can persist because a child repeatedly responds to it. Overall, shared human capacities create possibilities for vocal co-regulation, but culture shapes the exact forms those possibilities take. Vocal practices are culturally learned, socially distributed, interpreted through local models of childhood, and continuously modified through interaction (Doja, 2014; Song et al., 2023).

CONCLUSION

Caregiver vocal soothing offers a way to examine how developmental processes and cultural practices intertwine. Singing may affect distress and arousal in infants; however, the effects fail to establish that singing is culturally universal (Cirelli & Trehub, 2020; Corbeil et al., 2016; Hilton et al., 2022). Instead, evidence points to patterned diversity. Many acoustic features of infant-directed communication recur across societies; however, beliefs about care and the identification of song categories, as well as the distribution of caregiving roles, differ among communities (Aubinet, 2024; Hilton et al., 2022; Song et al., 2023). The Northern Aché provides one documented example that challenges claims about the universality of infant-directed singing, although additional research across diverse cultural settings is needed to determine how broadly this finding applies (Singh & Hill, 2025).

Therefore, vocal soothing should be understood as a form of relationship that carries family memory, religion, identity, and moral expectations, while also participating in emotional co-regulation (Doja, 2014). These practices may be transmitted across generations while also being modified by family experiences, children's responses, and broader social influences. However, the specific effects of migration, media, and intergenerational change on vocal soothing remain insufficiently examined in the literature reviewed here. The child is not only regulated through these practices but also helps determine which practices are repeated, modified, or abandoned.

Future research should move beyond asking only whether singing calms children. A more anthropological approach asks what caregivers believe they are doing, who performs vocal care, what cultural meanings these practices carry, and how children participate in their continuity or change. Those questions place vocal soothing within the larger social worlds that give it significance.

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