The Impact of Socioeconomic Status and Family Environment on Language Development: The Roles of Parenting Style and Parental Stress

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Abstract. Language development, a major predictor of cognitive ability, academic performance, mental health, and employment outcomes, has been demonstrated to be correlated with socioeconomic status (SES) by increasing research. Apart from the hindered affordability in the educational environment and resources, low SES families have deficits in language outcomes through everyday interaction at home. The present study synthesizes longitudinal and observational evidence from recent research and highlights how parental styles and psychological stress influence growth in language abilities. Authoritative (responsive and demanding) parenting correlates with a stronger language trajectory due to turn-taking conversations. Caregivers' subjective appraisal of stress is a risk factor for infants' phonological abilities, leading to detrimental consequences in language development. Strategies such as stress reduction intervention, improvement in input quality, and high-quality non-parental childcare are proven to be beneficial in supporting language growth and should be prioritized to mitigate the resulting disparities in language development from the SES gap for children's lifelong outcomes and opportunities.

Keywords: Language development, socioeconomic status (SES), parental stress, parenting style.

1. Introduction

Language development, an indicator of cognitive ability since infancy, significantly influences academic performance and mental health from adolescence to adulthood. A recent study showed that non-impaired children outperform children with Developmental Language Disorder on working memory and executive tasks [1]. Further, research has increasingly investigated the long-term significance of language impairment and found a positive correlation between language assessment performance in infancy and academic achievement in elementary school [2,3]. Language impairment is shown to be linked to self-esteem, anxiety, phobias, and depression later in life, but it is also associated with employment outcomes [4-6]. Thus, factors impacting child language development are crucial to be identified and highlighted.

The US economic recessions have led to increasing investigations into socioeconomic status (SES), which was found to be a predictor of children's language outcomes. Studies have demonstrated a higher risk of developing late talkers and language-impaired children in low SES households [7]. The superior language outcomes in children from higher SES households can be directly attributed to better affordance of the educational environment and tools. However, increasing studies have shown a less visible mechanism of how SES impacts language development: parenting style and parental stress.

Given these findings, understanding how SES shapes children's language development not only through material resources but also subtler mechanisms like parenting styles and parental stress is necessary. This study examines interventions for how parents could minimize the deficiency in language development for families in low-income contexts, ultimately contributing to reducing long-term developmental gaps.

2. Key concept

2.1. SES

Socioeconomic status (SES) is a composite measure of an individual's education, income, and occupational prestige in relation to others. Wealth has been increasingly recognized as an important component of the conceptualization of this factor, which not only determines economic well-being and social status but also predicts various outcomes, from mental to physical, across the lifespan. As Bourdieu theorized, SES, as a form of economic capital, can be converted into cultural and social capital, enabling parents to purchase educational materials and provide access to higher-quality schools. Hence, children from higher-SES families have greater access to language-rich environments such as libraries and interactive learning programs [8]. Research shows that SES strongly correlates with the availability of learning resources that stimulate children's language development. For instance, books, computers, engaging toys, digital learning tools, tutors, or classes are less accessible for low-income households, which may contribute to long-term disparities in literacy skills [9]. In formal education, these disparities tend to extend. Once children entered school, school and peer composition factors became stronger predictors of reading growth than family factors. Studies have shown that the academic progress of children from low-SES families is affected negatively by school systems in their community. By attending schools with low-SES peers, those children with a weaker home literacy environment would only amplify the initial gap in literacy ability and slow reading growth. [10].

2.2. Parenting Styles & Parental Stress

Apart from material resources, SES also shapes child language development indirectly through parenting style and parental stress. Baumrind's pioneering research proposed three parenting style types: authoritarian, authoritative, and permissive [11]. Building on this, Maccoby and Martin conceptualized parenting practices along the dimensions of demandingness and responsiveness. Parents practicing authoritative styles, high on both dimensions, provide warmth and set attainable standards, and it has been linked to favorable outcomes in children's cognitive and language growth. In contrast, permissive parents (low demandingness but high responsiveness) and authoritative parents (high demandingness and high responsiveness) are considered less beneficial in supporting child development [12]. Parental stress, defined as a psychological distress when the demands of parenting exceed available emotional, financial, or social resources, is another mechanism of SES influencing child development, affecting parents' linguistic input quality [13]. Studies have found that its association with parenting practices is more than any other type of stress [14]. Together, evidence supports that SES influences child development both directly, through affordable resources and learning environments, and indirectly, through its impact on parenting style and parental stress.

3. Parenting Styles

Research has consistently shown that SES predicts differences in parenting styles, with authoritarian parenting more prevalent in low-income families. A study in Mali, conducted through a questionnaire, revealed parental income to be positively correlated with the level of emotional warmth and protection provided, where low-SES families tend to be more punitive and less responsive, as financial strains deplete parents' emotional resources [15]. In order to preserve economic stability, families with financial struggles may employ stricter rules, limiting children's opportunities for cognitive exploration and language interaction. In contrast, higher SES correlates with more family companionship, supporting growth in language through interpersonal experience [16]. These findings in turn suggest SES's association with parenting style: families with limited income tend to adopt authoritarian practices, whereas higher-income families may engage in an authoritative parenting style.

Hoping to assist parents in striving for better language development in their children, a cross-sectional study was conducted by Sadip, Farooq, Mansoor, and Saqulain at the Riphah International University in Pakistan. Based on data collected from 384 parents of children aged 0-36 months, the researchers examined how parenting style influences children's language development, employing the Parenting Style Questionnaire alongside the third edition of the Receptive–Expressive Emergent Language (REEL) scale. Results indicate that authoritative parenting was not only the most common (58.60%) but also the most beneficial in terms of language development. The results indicated that authoritative parenting was significantly positively correlated with receptive (r = .362) as well as expressive (r = .369) language skills. Authoritarian parenting, reported as the second most prevalent style (38.30%), negatively correlates with (r = –.211) and expressive (r = –.088) language [17]. The result demonstrates that children's language develops the most when parents set rules while being supportive, resulting in conversations that are more elaborate between parents and children. Contrarily, children may be highly mannered and obedient under authoritarian parenting but could lack opportunities to make decisions and engage in creative dialogues. Interestingly, although permissive parenting resulted to be the least common out of all typologies (3.10%), it also significantly correlates positively with both expressive (r = .677) and receptive (r = .896) language outcomes, possibly explained by the allowance of expression, although being less structured. However, this result is unusual compared to Western research: the prevalence of permissive parenting is estimated to be higher in prior study [18]. This discrepancy is explained by cultural differences in parental expectations and child-rearing norms. In addition, this study also found an association between household income and parenting style (Cramer's V = .724), supporting the impact of SES on parenting style. To summarize, this study provides evidence for a positive language outcome from an authoritative parenting style.

This study by Sadip, Farooq, Mansoor, and Saqulain is consistent with findings across cultures. An analytic observational study conducted in Indonesia with 200 preschoolers across 25 schools in Surakarta tested the extent to which children's speech and language development can be predicted by parenting styles. Democratic (authoritative) parenting, referred to as "good parenting style" in this study, was significantly associated with stronger speech-language development compared with permissive and authoritarian ("poor") styles [19]. The authors explain that democratic parenting leads to active learning opportunities and suits children's developmental needs at their current stage. Another study by Bingham et al. from the United States highlights how democratic engagement and dialogue are important for academic success, just as language development [20]. These results support generalization across cultures for the link between authoritative parenting and better language development.

Another component in parenting affecting children's language development is play belief, defined as parents' attitude and perception toward play. Park and Lee surveyed 243 mothers of infants from 6-24 months. To examine the influence of maternal parenting behavior and play beliefs on children's language development, parenting behavior was measured through the Parental Style Questionnaire, play beliefs through the Parent Play Beliefs, and language through the Sequenced Language Scale for Infants. Results showed that parenting behaviors were positively correlated with receptive (r=.35), expressive (r=.35), and overall language development (r=.34). Importantly, play-supportive beliefs, independent from parent behaviors, also correlated positively with receptive (r=.27), expressive (r=.29), and overall language development (r=.28). Additionally, play support belief's mitigating effect was found to be significant, meaning that mother's play support belief amplifies child language development further in the presence of parenting behavior [21]. Mechanistically, mothers who value play as meaningful may encourage more enjoyable interactions, expanding vocabulary and syntax through talk. Notably, this interaction resembles authoritative parenting in fostering structured yet supportive communication. Even though play support belief has a smaller influence on language development compared to parenting behavior, since it only affects during parent-child interaction, it is the only play belief identified to have a positive impact on language development in the study. To

summarize, infants' receptive and expressive language are enhanced with more parenting behavior, with play support belief further functioning as an additional factor.

A study by Rahmah found that an authoritarian parenting style negatively affected adolescents' confidence in speaking English. However, there is no significant influence shown from both authoritative and permissive parenting styles in adolescence, suggesting that parenting style plays a crucial role only during the early development periods, particularly infancy and childhood, when language acquisition is the most active [22]. By adolescence, influences such as peers and the school context play a stronger role in shaping language use and confidence, thereby overpowering parental style.

The reviewed studies consistently highlight parenting style as a mediating factor linking SES and language development. While authoritarian parenting limits children's opportunity in language experience, authoritative (or democratic) parenting is evident to result in superior outcomes with richer vocabulary and dialogue. Parenting style represents a significant factor associated with SES and language development in children, especially during infancy and childhood.

4. Parental Stress

The association between poverty and stress is well-established in the literature and has been a longstanding research focus. Studies show that low SES households are more prone to stressors, which arise from inadequate economic resources to chaotic or violent neighborhoods. A cross-sectional study, for instance, demonstrated that compared to socioeconomically advantaged households, deprived neighborhoods had higher health-risk behaviors, such as excessive alcohol and smoking [23].

As child development is shaped by poverty-induced stress, studies have narrowed their focus to how language specifically is impaired. In a large-scale longitudinal design, Troller-Renfree et al. address the potential inconsistency between environmental stressors and cognitive appraisal stressors [24]. From 548 pairs of mothers and infants enrolled in the Baby's First Years study, measures of stressors are separated into maternal psychological appraisals and environmental stressors, including household chaos, neighborhood safety, parenting stress, and economic stress. The result showed that only maternal appraisal of stress anticipates fewer language milestones at 1 year old [25]. While both appraisals and environmental stressors predicted socioemotional difficulties, only mothers' subjective appraisal predicted language outcomes. This result emphasizes the critical role of perception of stress, instead of objective environmental stressors, on language development.

This echoes a previous emotional health study by Brookman et al. , who examined home everyday interaction of 42 mother-infant dyads (half with anxiety or depression) through home-language recordings. Despite similar adult word counts, infants of mothers with mental conditions produce fewer vocalizations, leading to a smaller vocabulary size at 18 months [26]. This outcome is explained by a lower conversational turn count (CTC), showing how the subjective emotional state of the mother is detrimental to the quality of interaction. Together, Troller-Renfree et al. and Brookman et al. illustrate how mothers' appraisal experience and respond to stress could outweigh the objective circumstances of SES in shaping child language development. Unlike studies from the last decades that broadly indicate that poverty-related early adversity associates with poorer language outcomes, these findings suggest that subjective feelings of stress could mitigate or worsen infants' language acquisition, even more than material deprivation.

A recent study provides an explanatory model and identifies a mediator. Acha et al. Receptive vocabulary, phonological short-term memory, and quality of family context are measured from 104 kindergarteners at five. Using structural equation models (SEM), they found that parental stress at age 5 is associated with poorer phonological short-term memory and phonological awareness, which in turn predicted later vocabulary and decoding skills at grade 1 [27]. Two points are especially important from this study. First, this study emphasizes the specific mediator of phonological subskills. It measured parental stress separated from the home literacy environment, which was shown to have

no effect on these outcomes. Second, the pathway is staged. In infancy, stress first decreases the quality of language input (as Brookman showed) and later manifests as weaker phonological skills.

Despite the flexible neuroplasticity of humans in early years, studies have shown that parental stress can lead to long-term and potentially irreversible deficits in language outcomes in children. Borstein et al. reported that children with clinically depressive mothers, even after remissions, perform worse in comprehension and expression at 15-24 months [28]. This lasting deficit despite recovery implies a potential sensitive period in language development and proves prior concepts in long-lasting effects of early maternal depression [29]. Early Experience Effect, as Borstein coined it, highlights the timing piece in this staged pathway. Early maternal clinical depression leaves an effect by 24 months, which falls between Brookman's window of 6-12 months, where quality input is crucial, and Acha's later stage of manifestation of phonological skills and language outcome.

However, current research that considers newborn stress yields an additional perspective. An fNIR study demonstrated that infants' left hemisphere brain areas are innately sensitive to communication [30]. Elaborating on this, Bruce et al. examine how stress may interfere with these systems by measuring newborn stress (via Neonatal Intensive Care Unit Network Neurobehavioral Scales (NNNS)), toddler language outcomes, and maternal stress among 202 mother–child pairs at 24 hours, 7 months, and 18 months postpartum. Results showed that, regardless of parenting stress, infants with more neonatal stress signs at birth were found to be directly tied with fewer social-communicative gestures at 18 months [31]. Stress observed on the day of birth predicts later social-communicative behavior. This result reinforces Bornstein et al.'s highlight in "Early Experience Effect," especially emphasizing the newborn's own vulnerabilities. Next, although expressive vocabulary size was not significantly related, higher newborn stress predicts smaller receptive vocabularies even when maternal parenting stress is low. These results indicate that infants' own physiology and stress may limit how much they can benefit from quality input when maternal stress is low.

Although most prior research has centered on mothers, fathers' roles are increasingly recognized as equally important increasing number of women in the workforce and men in the family [32]. Harewood, Vallotton, and Mastergeorge showed that paternal parenting stress observed at 24 months was associated with reduced cognitive performance in children by 36 months. Specifically, boys' language growth was found to be more susceptible compared to girls [33]. Other studies also illustrate the unique effect of fathers' contributions. Father's reasoning-based language and wh-questions are linked to verbal reasoning and expressive language outcomes, while mothers' language often predicts receptive vocabulary [34]. These findings highlight that fathers' stress and input independently shape language and cognitive development outcomes.

5. Discussion and Suggestion

The findings, together, highlight the central role of the home environment in influencing children's language outcomes. Research shows that the home provides more influential linguistic support than childcare or other contexts [35]. This emphasizes the importance of considering both parental stress and parenting styles when designing interventions aimed at improving children's language outcomes, especially in the context of poverty.

One key area for intervention is enhancing the quality of parental linguistic input, for instance, through parent training programs that encourage richer vocabulary and interactive conversational practices. Rowe controlled for SES and input quantity and demonstrated that different aspects of input quality matter at different stages. Quantity at 18 months, lexical diversity and sophistication at 30 months, and the use of decontextualized talk at 42 months predicted vocabulary ability [36]. This suggests that future interventions should promote a wider range of vocabulary usage and focus more on the quality, rather than the quantity, of input. Moreover, the intervention would be more beneficial if it were tailored to language developmental timing. For instance, prioritizing quantity of input at 18 months before emphasizing vocabulary diversity would be a more effective approach.

Another preventive strategy is addressing parental stress, which was briefly mentioned in the recent study of Acha et al., who illustrate an association between parental stress, weaker development of phonological skills, and poorer vocabulary and decoding abilities. Findings further indicated that parental stress negatively affected phonological short-term memory and awareness in children, even when the home literacy environment was controlled [27]. Therefore, treating parental stress should be a primary prevention target, ideally combined with phonological awareness support programs that train parents in stress management and language-rich caregiving strategies. In that way, both the environmental and the cognitive mechanisms shaping language growth are addressed.

A high-quality childcare environment can also support language development. Research showed a positive effect on language development through the high-quality child care experience of the preschool environment [37]. However, a more recent study claims that the benefit depends on parenting stress. Through measuring variables such as parenting stress and economic hardship, Dore et al. found that non-parental care was negatively associated with children's language outcomes when parenting stress is low [38]. However, for high-stress families, high-quality non-parental care is proven to be advantageous in supporting early language development in low-income settings. This suggests that policies should expand childcare access only to high-stress families.

Finally, media exposure is not only a hot topic contemporarily but also increasingly influences low-income households. More total screen time predicted poorer expressive language [39]. As back-and-forth interaction drives children's ability to use language, screens hinder conversational opportunity. Instead of merely urging families to limit screen time, upgrading content and design may be more realistic. For example, digital tools that are language-rich and ask wh-questions could preserve interaction moments.

6. Conclusion

Children's language development is strongly shaped by family background, with SES playing a particularly influential role. Children from high SES households typically achieve stronger language outcomes not only due to the benefit of better access to educational resources but also to everyday interactions with caregivers. Authoritative parenting styles are associated with richer vocabulary through responsive interactions, while appraisal of parental stress deficits the quality of linguistic input. Together, these mechanisms explain the persistent disparities of children from low and high-SES households in language development.

Several interventions could be considered. Parents should prioritize improvements in input quality, specifically vocabulary quantity and diversity, at sensitive periods. As parental appraisal of stress undermines children's phonological skills, stress-reduction programs for parents are equally crucial as phonological improvement programs for children. Further, ensuring a high-quality non-parental childcare compensates for parent-child interactions and is particularly beneficial for households under high stress. Finally, limiting screen time and designing digital content that improves language are strategies to enhance language development in the present time.

Language is not merely part of child development, but it is a foundation that predicts life outcomes academically, mentally, and even in employment prospects. Thus, parents, as the most likely first person to form attachment with their child, should recognize the sensitive timing of early experience and reflect on both their parental style and state of mentality that significantly impact developmental outcomes. A warm and responsive reciprocal parent-child relationship serves as a complement to the resources that low-SES families cannot provide. Investing in early childhood language development should be regarded as both scientific and a societal priority, as it carries significant weight in shaping future outcomes.

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