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Home Literacy Environment of Rural-to-Urban Migrant Children with Different Length of Urban Residence: Disparities and the Effect of SES and Parental Expectation

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Article

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ABSTRACT

Given the textile sector's reliance on migrant labor, this study employs a sequential explanatory mixed-methods design to investigate socioeconomic disparities in the Home Literacy Environment between rural-to-urban migrant and urban resident families in China, focusing on the roles of SES, parental expectations, and urban residency duration. Quantitative data from 285 families revealed that RUM children's HLE, particularly in parent-directed activities, was significantly inferior to that of their UR peers even after controlling for SES. While a longer urban residence was associated with improvements in parent-directed activities, it did not significantly enhance child-directed activities or home literacy resources. A key finding was that PE, rather than SES, emerged as the primary predictor of both parent- and child-directed literacy activities, though both factors significantly influenced home literacy resources. Qualitative interviews with RUM parents triangulated these results, revealing that high PE can motivate parents to adopt compensatory strategies and partially offset the limitations of low SES, yet structural barriers like the Hukou system persistently hinder their efforts. The study concludes that interventions must address both resource disparities and structural inequalities to effectively support the literacy development of migrant children. The findings offer practical insights for textile enterprises to enhance corporate social responsibility (CSR) by supporting the family well-being and child development of their migrant employees.

KEYWORDS

home literacy environment, rural-to-urban migrant children, length of urban residence, parental expectation, disparities

INTRODUCTION

Bronfenbrenner's ecological systems theory (1979) postulates that children's growth is molded by a network of interconnected systems, specifically the family, school, and wider social context [1]. As the essential and formative environment for children, the family undeniably plays a critical role in their cognitive and social development. A burgeoning body of empirical investigations has revealed the significant impact of HLE on children's literacy skills, highlighting that HLE, through reading activities and materials, is a key factor to influence children's language and academic success [2]. However, the majority of prior studies primarily focus on urban populations, with a dearth of attention paid to HLE of migrant children [3].

In contrast to other countries, internal migration in China is predominantly propelled by economic incentives. This prompts families to relocate from rural to urban regions in pursuit of better employment prospects and improved social welfare [4]. Notably, the textile and garment industry, as a labor-intensive pillar of China's economy, serves as a primary destination for a vast number of rural migrant workers. The stability and quality of life for these "textile migrants" directly influence the sustainable development of the industry's human capital. Although the RUM families may not encounter language and cultural barriers commonly associated with cross-national migration, they are prone to encountering unique challenges arising from systemic disparities caused by the stringent household registration (Hukou) policy. Such disparities may lead to a scarcity of high-quality educational resources and stable employment opportunities [5,6], potentially exerting a significant impact on the quality of the HLE. In textile-industrial clusters, such disparities often manifest as high work

intensity for parents, which potentially narrows the window for family literacy involvement. Nevertheless, it remains indeterminate whether there exist any differences in the HLE between Chinese RUM and UR families, and whether such differences persist after accounting for SES. Therefore, further research efforts are necessary to investigate the potential disparities and the underlying mechanisms that affect the HLE within migrant families.

Meanwhile, it has been evidenced that length of urban residence in the destination city may influence the quality of migrants' HLE. Migrant families with a longer duration of residence exhibited better adaptation to

the local sociocultural environment, accompanied by augmented well-being and conducive language development [7-9]. Berry (1999) proposes that prolonged residence fosters cultural assimilation, potentially enhancing HLE, yet the relationship between residence length and HLE in Chinese RUM families remains underexplored [9].

Apart from the length of urban residence, PE, defined as parents' beliefs regarding children's academic potential, are also crucial to the HLE, as they impact literacy-related interactions and resources [10]. In migrant families, PE can mirror the necessity for children to adapt to a novel environment, thereby promoting increased investment in literacy [11,12]. However, research on PE within Chinese RUM families has yielded inconsistent results. Some studies have reported high educational aspirations in spite of economic hardships [13], whereas other investigations have identified lower expectations in comparison to UR parents (Guo, 2014) [14]. This inconsistency implies the necessity to figure out how PE might change over an extended period of residence and with enhanced familiarity with the local education system.

In summary, notwithstanding the fact that SES is widely acknowledged as an influential factor on HLE, the distinctive impact of migration on HLE within Chinese RUM families has remained relatively understudied. Consequently, the present study aims to employ a mixed-methods paradigm to explore the potential disparities in HLE between RUM and UR families after controlling for SES Specifically, within the context of the textile industry's transition toward high-quality development, understanding the intergenerational educational support for migrant workers' children is crucial for assessing the social well-being of the sector's workforce. Consequently, the present study aims to employ a mixed-methods paradigm to dissect the intricate interplay among SES, the length of urban residence, and PE with respect to their combined influence on the formation and configuration of the HLE within RUM families. In the present study, Bronfenbrenner's ecological systems theory is adopted as a conceptual framework to contextualise family-level home literacy practices within broader structural conditions associated with migration, rather than as a model requiring direct empirical operationalisation of all ecological layers.

LITERATURE REVIEW

Home Literacy Environment

HLE is variably defined across research, with foundational models emphasizing literacy activities and resources integrated into daily family routines. Taylor (1983) described the HLE as embedding literacy activities and materials into everyday life [15], while Sénéchal and LeFevre (2002) [16] proposed a two-fold model, categorizing HLE into formal literacy activities (FLA) and informal literacy activities (IFLA) [16,17]. FLA encompass structured tasks, such as phonics and character recognition, that directly enhance literacy. In contrast, IFLA engage children through daily interactions, exemplified by shared reading. Building upon this premise, Georgiou et al. (2021) introduced reading comprehension activities (RCA) as a means to signify the targeted tasks that enhance comprehension, which constitutes a core dimension of literacy skills [18]. This dual model of IFLA and FLA has been widely adopted in cross-cultural HLE research [17,19,20]. Recent academic research proposes the expansion of this framework to incorporate child-directed literacy activities, with a particular emphasis on children's self-initiated and intrinsically motivated engagement, such as independent reading activities driven by intrinsic interest [21,22]. As a result, contemporary studies conceptualize HLE as comprising both parent-directed and child-directed activities, each contributing distinctively to literacy development. Moreover, home literacy recourses (HLR) are increasingly recognized as a critical component of HLE, encompassing books, educational games, and writing materials available within the household [17]. This study, therefore, conceptualizes HLE across three dimensions: parent-directed activities, child-directed activities, and HLR (as shown in Figure 1).

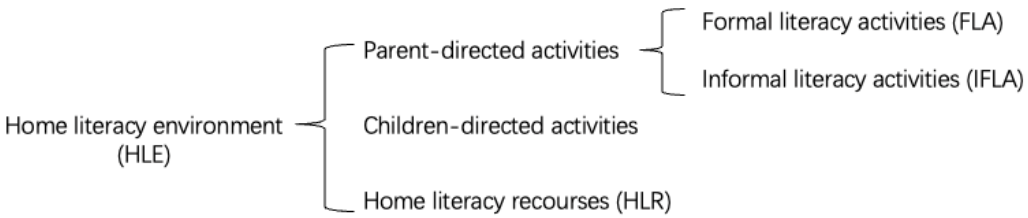

Figure 1. The Dimensions in Home Literacy Environment

The Impact of SES on HLE

It is widely documented that SES exerts a significant influence over HLE by shaping both material and emotional resources in the home settings [23,24], which can impede the development of phonological awareness, vocabulary, and oral language skills.

SES also imposes an impact on the performance of home literacy activities. The study by van Steensel (2006) found that low-SES families tend to favor child-directed activities [25], while high-SES families preferred more frequent parent-directed activities such as shared book reading , along with discussions on various topics, thereby exposing children to more advanced and enhanced cognitive and literacy contexts.

The Impact of Length of Urban Residence on Migrant Children and Their Home Literacy Environment

Existing research indicates that migrant families often confront multiple challenges when relocating to a new city or country, such as language barriers, the breakdown of previous social networks and lack of social support, housing instability [26], and unfamiliarity with legal and healthcare systems. These challenges not only negatively impact the psychological well-being and overall economic status of family members [27], but also influence the internal home environment and parenting practices. A growing body of research highlights that the length of residence in destination cities plays a pivotal role in migrant children's language skills [7,8]. Due to occupational changes and adaptation processes triggered by migration, parents in newly migrated families exhibit a propensity to engage in informal literacy activities at considerably lower frequencies in contrast to non-migrant families, thereby furnishing relatively restricted reading support to their children [3]. There has been evidence showing that as migrant families progressively assimilate into their communities, they acquire the capacity to procure more literacy resources via libraries, schools, community initiatives, or ameliorated financial circumstances. One study on Russian migrant families [11] ascertained that migrant families initially encountered difficulties in accessing books and educational resources on account of financial limitations, relying preponderantly on digital reading materials. Nevertheless, as their length of stay increased, parents became more acquainted with the local education system, prompting them to be selectively engaged in literacy-related activities for their children's development. These parents also exhibited a propensity to rely more on formal instructional modalities, with a stress laid on their children's decoding skills in lieu of oral competence.

However, the aforementioned studies predominantly depend on either quantitative or qualitative data, lacking comprehensive and in-depth analysis from both research modalities. Moreover, most of these studies center on cross-national migration, wherein language proficiency in the host country frequently emerges as a salient concern for migrant families. In contrast, internal migration within China is primarily driven by economic factors and occurs domestically. As of 2021, approximately 385 million individuals migrated from economically underdeveloped regions to more developed areas [28]. Unlike Western migrants, Chinese RUM families face fewer challenges related to language and cultural barriers. Instead, China's unique Hukou system and the significant disparity between rural and urban social environments may erect obstacles for migrant children in acclimating to new surroundings [29]. Consequently, in comparison with the extensive body of research on the HLE of cross-national migrant children, there exists a dearth of knowledge concerning the HLE within Chinese migrant families. Particularly, the role of the length of residence in shaping the HLE remains largely unexplored.

The Effect of Parental Expectations on the Home Literacy Environment of Migrant Children

Parental expectations are determinant of parents' beliefs, attitudes, and behaviors, thereby exerting a direct influence on the quality and quantity of literacy interactions and resources furnished within the home environment [10,20,29]. Parents harboring high expectations generally allocate more time, energy, and resources for the construction of a conducive HLE [10,20,29]. Under Chinese social and cultural context, parental attitudes and expectations bear particular significance, given that they constitute one of the principal driving forces underlying children's academic progress [30]. Leung and Shek (2011) pointed out that parental expectations could mirror a unique Chinese perspective on child development [31], which perceives children's growth from a family and societal vantage point rather than an individualistic perspective. Even though high expectations and persistent parental involvement are regarded as hallmarks of "competent" parenting, overly excessive or unrealistic expectations can inflict pressure and anxiety upon children, thus leading to a negative repercussion on their academic outcomes. Migrant families, which are confronted with a multitude of challenges, frequently display complex educational expectations for their children. Prior research on migrant populations has yielded mixed results in this regard. Several investigations propose that, notwithstanding the greater challenges they encounter, migrant families generally possess higher educational aspirations in comparison to local families. Despite a lack of confidence in their children's

academic capabilities, migrant parents nonetheless maintain the hope that their children can achieve academic excellence so as to avert the arduous labor that they themselves have to endure. A recent study demonstrated that Chinese migrant parents manifested higher levels of family participation and educational investment, thereby cultivating a home environment favorable for academic outcomes of their children [32]. Nevertheless, other studies have ascertained that migrant parents possess lower educational expectations for their children in contrast to their local counterparts [14]. Notwithstanding the fact that parental expectations can exert an influence on the degree of parental involvement in home literacy activities, the role of PE within HLE of Chinese migrant families, especially the manner in which PE correlates with SES and the length of urban residence in shaping the HLE of RUM children, remains as an area warranting further investigation.

The Present Study

In summary, while previous research has extensively documented the importance of HLE in children's literacy acquisition, it has largely overlooked rural-to-urban migrant households in China. These distinctive families encounter systemic disparities, which are likely to impact the quality of their HLE. Moreover, migration-specific factors, such as the length of urban residence, remain underexplored despite evidence suggesting their potential role in fostering adaptation and enhancing HLE quality. Furthermore, while PE is a critical determinant of HLE, existing findings on its role in RUM families are inconsistent, hence underscoring the need to explore how PE evolves alongside SES and length of urban residence so as to jointly influence HLE. Finally, the lack of mixed-methods research has restricted a comprehensive understanding of the nuanced interplay among these variables.

To address these gaps, the sequential explanatory design was utilized to investigate the potential disparity in HLE between RUM and UR families and further probe into the dynamic interplay among SES, PE, length of urban residence and HLE under Chinese social context. As depicted in Figure 2, the research is divided into two consecutive phases: a quantitative phase followed by a qualitative one, aiming to yield robust and credible findings [33,34].

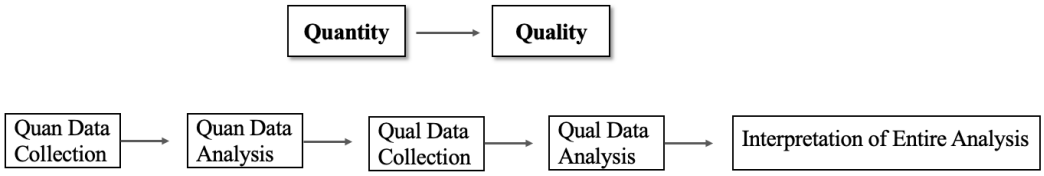

Figure 2. Explanatory Sequence Design Framework

QUANTITATIVE PHASE

In the quantitative phase, between-subjects design along with MANCOVA and ANCOVA was employed to explore the potential disparity in HLE between RUM and UR children across different length of urban residence. Next, multivariate regression was adopted to explore the effect of SES and PE on HLE of RUM children. Specifically, two research questions are addressed as follows:

RQ1: Are there any differences in HLE between RUM and UR families with different length of urban residence after controlling for SES?

- H1: RUM families will exhibit significantly lower levels of parent-directed activities, child-directed activities, and HLR compared to UR families.

- H2: RUM families with greater length of urban residence will demonstrate significantly better outcomes in parent-directed activities, child-directed activities, and HLR compared to those with shorter length.

RQ2: What is the effect of PE and SES on HLE of RUM children?

- H3: PE and SES will significantly influence child-directed activities, parent-directed activities, and HLR.

Qualitative Phase

In the qualitative phase, a semi-structured interview was implemented to obtain an in-depth understanding of the factors contributing to the disparities in HLE between RUM and UR families, as well as the rationales underlying the joint influence of PE and SES on HLE. Therefore, this phase intends to triangulate the quantitative outcomes.

METHODS

Quantitative Analysis

Sample

285 Chinese 7–8-year-old children in the second grade and their parents were randomly selected as the participants of this study, among whom 137 were RUM children and 148 were UR children, all of whom were of normal intelligence, and had no speech or hearing impairments. The basic information of the participants is shown in Table 1. The study yielded a 96% participation rate among eligible parents who self-identified as a primary caregiver.

Table 1. Demographics of participants

	RUM		UR	
Children's gender	N	%	N	%
Female	78	56.93	77	52.03
male	59	43.07	71	47.97
Parental education background				
Middle school degree or below	57	41.60	29	19.28
High school degree	75	54.74	72	48.65
Graduate degree or post-graduate degree	5	3.65	47	31.76
Parental occupation background				
Labor class	47	34.31	21	14.19
Self-employed and skilled workers	47	34.31	63	42.57
General management and workers	24	17.52	27	18.24
Senior managers	22	16.06	32	21.62
Senior professionals or technicians	0	0	5	3.38

Note. N = 285 (RUM = 137, UR = 148). RUM children were on average 98.8 months old (SD = 7.5), UR children were on average 95.7 months old (SD = 14.3).

Measurements

Demographic information and families' SES. Firstly, parents were required to provide information about their children's age, gender, date of birth, and family status (1=resident status, 0=migrant status). Then, they were asked to report the exact years for the length of urban residence when selecting the migrant status. Secondly, SES was documented using two items: prenatal occupation and education level. Referring to the assessment criteria of Shi and Shen (2007) [35], parental occupation level was assessed using a 5-point scale: 1=labor class; 2=self-employed and skilled workers; 3=general management and workers; 4= senior managers; 5=senior professionals or technicians. The educational level was measured on a 6-point scale: 1=illiteracy; 2=primary school; 3=middle school; 4=high school; 5=graduate school; 6= postgraduate. A composite score for family SES was calculated by averaging z-scores of parents' education level and occupational level, which has been widely used in previous studies [35,36].

Home literacy environment. The home literacy environment questionnaire was adapted and finalized by referring to the instruments [18,22,37]. The questionnaire consists of four dimensions: formal literacy activities, informal literacy activities, independent literacy activities, and reading resources.

Using a 5-point Likert scale (0= less than 5 min a day to 4= 2h or more), formal literacy activities were assessed with the two items below: 1) frequency of teaching children to read Chinese characters; 2) frequency of teaching children to read Pinyin. The FLA score is the sum of the scores of the two items, ranging from 0-8. The Cronbach's alpha reliability was 0.84.

The frequency of Informal Literacy Activities was measured by summing scores from two components: informal shared reading and reading comprehension activities, assessed via 5-point Likert scales. The total score ranges from 0 to 8 (Cronbach's α=0.88).

Independent Literacy Activities were evaluated based on the frequency of children reading aloud and reading independently, also using a 5-point Likert scale. The total score ranges from 0 to 8 (α=0.68).

Home Literacy Resources were measured by the number of adults' and children's books at home, each rated on a 5-point scale. The summed score ranges from 2 to 10 (α=0.81).

Parental Expectations were assessed using five items (e.g., pinyin learning, reading comprehension) adapted from Liu and Hoa Chung (2022) [21], rated on a 5-point Likert scale (α=0.92).

Length of Urban Residence was categorized into three groups based on parental reports and China's Hukou policy: short (0–7 years), medium (8–15 years), and long residence (≥16 years).

Procedure

Before the survey, all the participating children and parents were invited to complete the Informed Consent Forms. The questionnaires were completed at home by one of the parents, who were informed that the questionnaires were anonymous, with no right or wrong answers.

Qualitative Analysis

Semi-Structured Interview

The maximum variation sampling technique was employed to recruit participants with a broad range of variation across the dimensions of interest [33]. A total of six Chinese RUM parents (primary caregivers) participated in the qualitative interviews, including four mothers and two fathers. Participants were purposively selected to represent short-, medium-, and long-term urban residence, with two caregivers drawn from each migration-duration category. Their length of urban residence ranged from 1 to 25 years. This sampling strategy was adopted to capture variation in home literacy practices associated with differing lengths of urban residence and to contextualise quantitative patterns identified in the first phase of the study. Among them, 1 held a primary school degree, 2 obtained middle school degrees, and 4 had high school degrees. 3 belong to labor class, 2 were self-employed, and 1 had no job.

Procedure

Before the interview started, we documented the home literacy materials (e.g. children's and adult's books) available at home. The parents were interviewed face-to-face on an individual basis in a quiet room. Each interview lasted approximately 60-90 minutes. The interview questions covered various topics including background information, PE and HLA. All interviews were audio-recorded and subsequently transcribed into textual form. In order to protect the privacy of the participants, a de-identification methodology was implemented, whereby each participant was assigned a unique code in relation to his/her interview.

Coding

A semi-structured interview guide was applied throughout the interview process, with open-ended questions focusing on RUM families' HLA, HLR, PE as well as the relationship between the length of urban residence

and HLE. Directed content analysis was adopted to distill text information into latent categories and overarching constructs through specific coding procedures [38,39], which enables deeper interpretation of a phenomenon [40]. An initial coding scheme was formulated and deliberated upon by two experimenters to ensure consensus regarding comprehensiveness, validity, and clarity, based on the quantitative analytical framework and case analysis [41]. Illustrative examples of these initial codes encompassed teaching and learning of pinyin, character recognition and relevant explanations, etc. The text of each case was carefully examined in relation to the initial codes, and a constant comparison was carried out among these cases. Subsequently, the initial codes were consolidated into nine themes: informal literacy activities, formal literacy activities, home literacy resources, children independent literacy activities, parental expectations on pinyin learning, character recognition, character writing, reading comprehension, and school/academic performance in general. As a final step, the categories were grouped into two overarching themes: parental expectations and home literacy environment (HLA, HLR).

RESULTS

Descriptive Analysis of Demographic Data

As shown in Table 1, RUM parents had significantly lower educational attainment and occupational levels than UR parents. Only 3.65% of RUM parents held a bachelor's degree or higher, compared to 31.76% of UR parents, and the majority (68.62%) of RUM parents were laborers, self-employed, or skilled workers.

Figure 3 reveals that mothers were the primary reading companions in both groups (UR: 68.92%; RUM: 69.34%). Father participation was lower overall, though slightly higher in RUM families (21.90%) than in UR families (27.03%). A notable finding was the relatively high involvement of non-parental individuals (primarily grandparents) in reading within migrant families (8.76%).

Figure 3. Parent-Child Companion Reading for RUM and UR Children

Comparative Analysis of HLE between RUM and UR Family

Given that rural-to-urban migrant families are often disproportionately represented in lower socioeconomic groups, socioeconomic status was included as a control variable to disentangle the independent effect of migration status on the home literacy environment beyond socioeconomic differences. In hence, MANCOVAs was conducted to further explore the disparity in HLE between UR and RUM children, with group (long/medium/short-residence vs UR) as independent variable, SES as a covariant variable, parent-directed activities and child-directed activities as dependent variables. The results indicate that the main effect of group was significant after controlling for SES, Wilks' lambda=0.833, $F(9,676.73)=5.87$, $p<0.001$. As presented in Table 2, UR families exhibited significantly higher scores in parent-directed activities than the three RUM groups with long, medium and low residence length ($p<0.05$). Nevertheless, no significant group differences were identified in children-directed activities and HLR ($p>0.05$).

Table 2. Descriptive and Comparative Analysis of RUM and UR's HLE

Group	Low length of urban residence		Medium length of urban residence		High length of urban residence		UR		F	p
	M	SD	M	SD	M	SD	M	SD		
Parent-directed activities	2.73	0.82	2.87	1.10	2.90	1.03	4.05	1.48	18.43	<0.001

Child-directed activities	1.16	0.57	1.16	0.57	1.23	0.53	1.48	0.81	2.56	>0.05
HLR	1.23	0.98	1.30	1.01	1.33	1.16	1.93	1.22	2.02	>0.05

Multivariate Regression Analysis Regarding the Effect of PE and SES on HLE

Multivariate regression analyses examined the impact of urban residence length, PE, SES, gender, and age on three literacy dimensions.

For parent-directed activities (model R^2 = 12.68%), PE was the sole significant predictor (β = 0.3826, p < .001). For child-directed activities (R^2 = 18.81%), PE was again the only significant predictor (β = 0.2359, p < .001). For home literacy resources, HLR (R^2 = 27.02%), both PE (β = 0.3442, p < .001) and SES (β = 0.2043, p < .001) were significant positive predictors. No other significant effects were detected within the models. Multivariate regression of HLE is shown in table 3.

Table 3. Multivariate regression of HLE

Predictor	B	SE	t	p	95% CI
Parent-directed activities					
Length of urban residence	0.00	0.01	0.02	0.987	[-0.03, 0.03]
PE	0.38	0.09	4.22	< .001	[0.20, 0.56]
SES	-0.02	0.04	-0.56	0.575	[-0.10, 0.06]
Gender	-0.19	0.17	-1.14	0.255	[-0.53, 0.14]
Age	-0.00	0.01	-0.11	0.909	[-0.02, 0.02]
Constant	2.47	1.12	2.21	0.029	[0.25, 4.68]
Children-directed activities					
Length of urban residence	0.00	0.01	0.11	0.914	[-0.01, 0.02]
PE	0.39	0.08	4.93	< .001	[0.24, 0.53]
SES	0.09	0.07	1.39	0.163	[-0.01, 0.07]
Gender	-0.05	0.09	-0.60	0.551	[-0.23, 0.12]

Age	-0.01	0.01	-1.29	0.2	[-0.02, 0.01]
Constant	-0.16	0.59	-0.28	0.782	[-1.33, 1.01]
HLR					
Length of urban residence	0.01	0.01	0.67	0.507	[-0.02, 0.04]
PE	0.34	0.09	4.02	< .001	[0.17, 0.51]
SES	0.01	0.04	0.13	0.897	[-0.08, 0.09]
Gender	0.25	0.16	1.53	0.128	[-0.07, 0.56]
Age	-0.01	0.01	-0.76	0.447	[-0.02, 0.02]
Constant	-0.38	1.06	-0.36	0.719	[-2.47, 1.71]

Note. CI = confidence interval.

For parent-directed activities model, R2=0.13, F=3.80, P=0.003; For children-directed activities model, R2=0.19, F=6.07, P=0.000; For HLR model, R2=0.27, F=9.70, P=0.000

What Accounts for the Relatively Low Level of HLE among RUM Children - Lack of Time and Literacy Resources Caused by Struggles for Survival

Quantitative results showed a generally lower-quality HLE among RUM families, even after controlling for SES. Interviews revealed the primary reason: upon urban migration, unfamiliarity with the local environment and weak social networks commonly hindered RUM families' access to reading materials and literacy training, regardless of their SES or duration of residence. This lack of access poses a significant obstacle to providing sufficient home literacy resources, potentially impeding children's literacy development.

Additionally, RUM parents usually encounter substantial survival pressures, particularly in obtaining stable jobs and handling daily affairs. This often prioritizes basic needs over guiding their children’s literacy activities, resulting in reduced parental oversight. Coupled with the relatively weaker educational backgrounds of their children, this leads to a prolonged adjustment period to the urban educational framework, which further impedes child-centered literacy activities. The complex and multifarious consequences of survival pressures make the HLE endeavors more arduous and intricate.

Why Does Length of Urban Residence Influence HLE Setup? - Insights into Enhanced Adaptation to Urban Environment and Increased Engagement in Literacy Activities

Quantitative results showed that among RUM families, a longer urban residence was linked to higher levels of parent-directed activities and parental expectations. Although not statistically significant, child-directed activities and home literacy resources also showed increasing trends over time. Qualitative interviews revealed that initial low parental involvement, due to adaptation pressures and unfamiliarity with the local education system, gradually increased as families stabilized and gained knowledge.

Secondly, the amount of reading resources also builds up as the length of urban residence increases. Initially, parents have limited knowledge of available resources and encounter significant survival pressures, making it difficult to provide diverse reading materials for their children. Over time, with the alleviation of survival pressures and the establishment of local connections, through school or community referrals, parents gain a better understanding of their environment, leading to an increased availability of resources and more reading opportunities for their children.

Why PE, Rather than SES, Serves as a Significant Predictor of Literacy Activities within RUM Families - The Counterbalancing Effect of High Parental Expectations on Adverse HLE Induced by Low SES

During the interviews, it was ascertained that migrant parents manifested ambivalent emotions regarding the educational expectations for their children. On the one hand, the pursuit of better educational conditions and opportunities constitutes the principal impetus underlying their decision to relocate to a more developed urban area.

On the other hand, when faced with real obstacles, parents frequently exhibit a lack of confidence in their children's education. One such obstacle pertains to the issue of enrolling their children in schools under the local household registration system.

Even in the context of a low SES, parents with high PE actively pursue strategies aimed at compensating for the scarcity of resources and constructing a conducive HLE. These parents are inclined to utilize cost-effective methods, such as availing themselves of free access to libraries or museums, along with digital resources, for the purpose of enriching their children's literacy experiences.

In contrast, RUM parents with low SES tended not to adopt any compensatory strategies if their PE was low.

Overall, a higher level of parental expectation motivates parents to facilitate their child's literacy development via creative and cost-effective means. In contrast, a lower level of PE is inclined to correlate with a sole dependence on school learning, devoid of any supplementary support.

DISCUSSION

Existing research underscores the crucial role played by PE and SES in shaping the HLE [10,23]. However, the majority of prior studies have concentrated on general or urban child populations, leaving a notable gap regarding migrant children, specifically RUM children in China. This study addresses this gap by examining HLE in the context of SES, length of urban residence, and PE through a mixed-methods approach, for the purpose of providing a nuanced understanding of the intra-group diversity among RUM families and exploring HLE dynamics through a comparative analysis between RUM and UR Children within the distinctive socio-cultural framework of China.

Disparities in HLE between UR and RUM Children

Our findings reveal that RUM families, which are frequently circumscribed by a relatively lower SES, possess a considerably disadvantaged HLE compared to UR families. Precisely, merely 3.65% of RUM parents hold a bachelor's degree or higher, in sharp contrast to 31.76% in UR families. This finding corroborates the previous research that has established a connection between SES and HLE. However, the present study expands upon this existing knowledge by demonstrating that even after controlling for SES, RUM families still exhibited lower HLE scores in the domains of parent-directed activities, child-directed activities, and HLR. The qualitative data suggest that existential pressures and adaptation difficulties, distinct to RUM families, substantially impede their engagement in HLE despite similar SES profiles. It should be noted that due to restricted social networks, RUM families frequently allocate substantial time and energy on economic sustenance, thereby diminishing their capacity to engage in literacy-related activities within the household. These results align with the observations put forward by Lei et al. (2018) [42], indicating that the restricted awareness and limited access to local educational resources, exemplified by libraries and community centers, impose further constraints on the development of favorable HLE with RUM families.

Another significant finding pertains to the deficiency of efficacious guidance regarding educational resources within RUM families. This paucity attenuates migrant parents' capacity to furnish diverse literacy resources

and sustain a vigorous HLE. Such a cognitive impediment circumscribes their knowledge of accessible resources like reading centers and pertinent educational programs, thereby echoing the established notion that access to educational resources exerts a profound influence on HLE. Notably, our study ascertained that despite the positive influence of urban residence length on parent-directed activities, its impact on child-directed activities and HLR was not statistically significant. Nevertheless, mean comparisons imply that over an extended period, RUM families may progressively enhance their HLE. This finding is corroborated by qualitative data, which suggests that RUM parents have acquired a more profound comprehension of the local education system, especially its test-oriented characteristics, and have augmented their engagement in their children's educational pursuits as the length of residence increases.

Overall, RUM families typically undergo a prolonged and complex process of adaptation and integration, entailing not merely the passage of time but also the accommodation to a novel environment and the construction of social capital. These findings validate ecological framework [1], highlighting the significance of individual-environment interactions within urban contexts. Therefore, policies and interventions should prioritize early-stage support for RUM families to enhance their integration into local educational networks, ultimately narrowing the HLE gap between RUM and UR families.

The Association between HLE, SES, and PE

Consistent with family investment theory, our findings manifest that both SES and PE are significant predictors of HLE . Apparently, economic resources enable families to provide material support, whereas PE may exert an influence on parental motivation and engagement in literacy activities. However, a key departure from previous research [25] is that in RUM families, PE, instead of SES, emerged as the primary driver of both child-oriented and parent-oriented literacy activities. During the interviews, it was observed that many RUM families migrated with a strong intention of enhancing educational conditions and opportunities for their children. Despite lower SES and greater economic strain, parents with high PE were more committed to enhancing HLE by actively participating in parent-oriented activities and leveraging public resources, such as libraries and museums, to foster their children's literacy development. Further analysis showed that SES and PE may jointly influence HLR. High-SES families tend to provide a richer array of resources, yet even in the context of a restricted SES, RUM parents with high PE employed proactive strategies, such as utilizing free public resources, to compensate for their constraints This implies that a high

level of PE can partially mitigate the limitations imposed by low SES, thus underscoring the importance of parental commitment to literacy activities. However, while high-PE parents adopt positive strategies at the micro level, macro-level institutional barriers, such as the household registration system and the points-based enrollment policy, are posing substantial obstacles at the same time. These structural inequalities restrict educational access for RUM children and erode some parents' confidence in their children's educational trajectories. Data from the interview unveiled a sentiment of helplessness among certain parents when confronting these institutional impediments. This sense of helplessness attenuated their educational aspirations and, in turn, exerted an impact on the quality and sustainability of their endeavors within the HLE. In contrast, low-SES families with low parental expectations frequently acquiesce to the existing circumstances, forgoing compensatory strategies and accessible public resources, thereby exacerbating the educational resource deprivation for their children.

CONCLUSION

This study yields several key findings. Firstly, even after controlling for SES, RUM families exhibit significantly lower magnitudes of parent-directed activities in contrast to UR families. Due to limited local social networks, RUM families often invest substantial time and energy into attaining livelihoods equivalent to those of local residents. This high commitment of time and energy reduces their capacity to engage in HLA. Secondly, with increased length of post-migration residence, RUM families may gradually gain access to educational resources and exhibit enhancements in literacy activities and HLR. Thirdly, PE, rather than SES, emerged as a significant predictor of both parent-directed and child-directed activities, while both PE and SES significantly predict HLR, signifying that high PE can somewhat mitigate the adverse effects of low SES on HLE, compensating for the literacy resource limitations with RUM families. Last but not least, RUM families encounter structural impediments, with the household registration system and enrollment policies being particularly prominent. These factors give rise to inequalities that curtail the continuous investment of RUM parents in their children's education and thereby exert a negative impact on the HLE. For migrant workers in the textile industry, who often face rigid production schedules and limited leisure time, these structural barriers are exacerbated by the professional constraints of their vocational environment, making the construction of a high-quality HLE even more challenging.

In order to promote and sustain equitable educational opportunities for RUM children, it is imperative that policies be formulated and implemented to address both structural and resource-based discrepancies. Policymakers, in conjunction with educational institutions, ought to contemplate the implementation of precisely targeted support initiatives that prioritise RUM families with shorter lengths of urban residence, scarcer home literacy resources, and lower parental educational expectations, particularly during the early stages of migration. Such initiatives may include facilitating access to fundamental educational resources such as libraries, reading centres, and community-based educational programmes, as well as parent-focused workshops and parent–child literacy programmes designed to strengthen parental awareness and engagement in children's literacy development. Alleviating these resource disparities could substantially enhance and fortify the HLE for RUM families and consequently diminish the literacy disparity between RUM and UR children. Additionally, reforms to reduce the impact of structural inequalities, such as modifying the household registration system or adjusting enrollment policies, could help mitigate barriers that hinder parental engagement in literacy activities.

Future research ought to embrace a longitudinal research paradigm to further investigate the influence exerted by these structural inequalities on the HLE and literacy achievements of RUM children. In parallel, future research should extend beyond traditional print materials to examine a broader range of reading resources and literacy materials available to children in contemporary learning environments. Moreover, a great number of intervention studies are needed to focus on literacy support tailored to RUM families in order to identify efficacious strategies for augmenting HLE. Finally, by addressing both the micro-level needs of RUM families and the macro-level structural challenges, future policy initiatives and research endeavors can collaboratively foster a more inclusive educational ecosystem. In the textile sector, enterprises should also integrate "family literacy support" into their Corporate Social Responsibility (CSR) frameworks, providing workers with flexible schedules or community. This, in turn, ensures that all children are endowed with equitable resources requisite for accomplishing successful literacy development.

Author Contributions

Conceptualization – Song, Y. and Yan, R.; methodology – Song, Y. and De Pascalis, L.; formal analysis – Song, Y. and Shen, J.; investigation – Song, Y. and Shen, J.; resources – Yan, R. and Shen, J.; writing—original draft

preparation – Song, Y.; writing—review and editing – Song, Y., Yan, R. and De Pascalis, L.; visualization – Song, Y.; supervision – Yan, R. and De Pascalis, L.

Conflicts of Interest

The authors declare no conflict of interest.

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Human Research Subjects

This study was conducted in accordance with the ethical standards and relevant guidelines for research involving human subjects, and received approval from the Ethics Committee of Xi'an Jiaotong-Liverpool University (protocol number: ER-UEC-001000008862022080509315 3). Informed consent was obtained from all participants or their legal guardians prior to participation.

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