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Parental involvement in shared book reading for preschoolers in China: Patterns and risks

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Abstract

Previous studies have elucidated the positive effect of the quantity and onset age of shared book reading on children's language development. Few studies have addressed the profiles of parental involvement in terms of different key aspects of shared book reading. This study adopted a latent profile analysis to examine the patterns of parental involvement in shared book reading and associated factors; 980 Chinese parents of kindergarten children were investigated. Three profiles were identified: (1) late start and infrequent reading; (2) early start and frequent reading; (3) medium start and intensive reading. Higher socioeconomic status, more literacy resources, and older age of the children were all found to be more likely to be associated with identification with Profile 2 than Profile 1. Implications for more targeted parental intervention programmes to broaden access to home literacy resources are highlighted.

KEYWORDS

Covid-19 study, latent profile analysis, parental involvement, shared book reading, socioeconomic status

INTRODUCTION

The question of parental involvement in preschool children's shared book reading has been extensively addressed by researchers. Meta-analytic evidence shows that shared book reading has a positive effect on a child's language skills (Noble et al., 2020). Some research findings based on data from international large-scale assessments also support that shared book reading in early years relates to a child's later reading achievement (Mullis et al., 2007, 2012). Shared book reading also has consequences for academic achievement;

Context and implications

Rationale for the study

It is well-documented that shared book reading has a positive effect on children's language skills; however, less is known about the patterns of parental involvement in shared book reading. This study examines the latent profiles of Chinese parental involvement in shared book reading for preschoolers and the associated factors.

Why the new findings matter

It identifies an association between reduced availability of literacy resources and membership in a potentially at-risk subgroup of Chinese parents, allowing for more targeted language-related parental intervention programmes.

Implications for researchers and practitioners

It has implications for policy makers to focus on implementing more targeted interventions for the most prevalent subgroup of parents, whose shared book reading practice features a late start and infrequent reading, which suggests less favourable practices. Targeted intervention programmes should focus on expanding access to literacy resources in diversified ways, starting from an early age.

Key Points

Reduced availability of literacy resources is found to be associated with the profile membership in a potentially at-risk subgroup of Chinese parents. Targeted intervention programs should focus on broadening access to literacy resources for parents and children in diversified ways, starting from an early age.

for instance, it is positively associated with preschool children's academic skills (Barnes & Puccioni, 2017; Mann et al., 2021) and children's school readiness (Anthony et al., 2014). Besides the most typically reported benefits of shared book reading on the language-related development of children, the extant literature details additional favourable effects of the activity. For instance, early shared book reading is associated with less harsh parenting, which could be mediated by reduced disruptive behaviours related to shared book reading (Jimenez et al., 2019). Parent–child shared book reading also contributes to the child's social–emotional competence by providing opportunities for social–emotional conversation (Schapira & Aram, 2020). Meanwhile, research shows that children could learn multiple aspects of information from shared book reading (Breitfeld et al., 2021). Thus, as an avenue of information, shared book reading enriches the child's knowledge about diverse topics, such as science (Venkadasalam & Ganea, 2018), mathematics (Van Den Heuvel-Panhuizen et al., 2016), moral lessons (Breitfeld et al., 2021), and so on.

In the extant studies, some key aspects of shared book reading practices, such as the quantity, quality and onset age of shared book reading, are those that are most

researched and found to be positively associated with children's developmental outcomes. Most studies addressing shared book reading have used variable-centred approaches to examine its variation and associated factors. However, less is known about possible patterns such aspects of parental involvement form in combination with shared book reading. And to the best of our knowledge, very few studies have inspected the patterns of Chinese parents' shared book reading practices and associated factors. The purpose of this study is to adopt a person-centred approach to examine how different variables of parental involvement in shared book reading would form patterns within intraindividual families on the basis of a representative sample in Chongqing, China. Additionally, we also explore how the profiles of parental involvement in shared book reading relate to family factors, particularly socioeconomic status (SES) and home literacy resources.

Quantity of shared book reading

The frequency of shared book reading, duration of shared book reading, and number of books read are used as indicators for measuring the quantity of shared book reading in the extant studies. Daily reading and reading a few times per week in infancy are both positively related to the child's later vocabulary and socio-emotional competence, and daily reading shows a strong effect (O'Farrelly et al., 2018). The frequency of shared book reading is significantly associated with children's reading interests, narrative retelling skills, early reading skills, and print concepts before school entry (Anderson et al., 2019). According to Paris (2005), such skills are unconstrained skills that would be more likely to be acquired in the longer term, even across one's lifespan. A positive and robust association has been found between the frequency of early home-based shared book reading and children's later language development, especially later vocabulary, reading motivation (Sénéchal, 2006; Sénéchal et al., 2008), and later morphological knowledge and comprehension of syntax of the child at school entry (Anderson et al., 2019) and in primary school (Sénéchal et al., 2008). The number of books shared by parents with their children could cumulatively aggregate to a word exposure gap of up to a million words for children and constitute a language gap before school entry (Logan et al., 2019; Mol & Bus, 2011). The duration of shared book reading, that is, the amount of time spent each day on shared book reading, has also been used to measure the quantity of shared book reading (Barnes & Puccioni, 2017; Farrant & Zubrick, 2012; O'Fallon et al., 2022), which is positively associated with children's early vocabulary growth.

Onset age of shared book reading

The onset age of shared book reading impacts the child's later development. O'Farrelly et al. (2018) adopted a quasi-experimental research design and revealed that shared book reading in infancy as early as under 6 months of age could predict a child's higher vocabulary and cognitive and socioeconomic skills at 12 months. The onset age of shared book reading has been found to be significantly associated with children's later emergent literacy skills, including grammatical knowledge and receptive and expressive vocabulary (Lenhart et al., 2022). Early shared book reading, even starting in infancy, contributes to later language acquisition, such as expressive vocabulary and receptive and pragmatic language skills (Barnes & Puccioni, 2017; Karrass & Braungart-Rieker, 2005; Leech et al., 2022; Muhinyi & Rowe, 2019).

Factors associated with parental involvement in shared book reading

Family and child characteristics have been found to be associated with parent–child shared book reading practices; the most frequently examined factors include socioeconomic status, race or ethnicity, the availability of literacy resources, and so on. Children in higher-SES families are more likely to be read to at home more than their less well-off peers (Cui et al., 2023; Barnes & Puccioni, 2017; Hayes & Berthelsen, 2020). Variations of parental involvement in shared book reading are found across race or ethnicities, according to findings in the United States, with a lower quantity of shared book reading for Black and Hispanic children than White children (Barnes & Puccioni, 2017; Raikes et al., 2006). Birth order and gender are also associated with parental involvement; for instance, firstborns are found to be read to more than non-firstborns, and girls are read to more frequently than boys as early as the age of 14 months (Højen et al., 2022; Raikes et al., 2006; Westerlund & Lagerberg, 2008). An increase in the availability of literacy resources at home, such as book gifting programmes, especially with a larger number of books provided, could enhance parental involvement in shared book reading in early childhood by promoting reading frequency (O'Farrelly et al., 2018).

Profiles of parental involvement in shared book reading

Though most studies examine parental involvement in shared book reading with a variable-centred approach, a few studies have also investigated different patterns of shared book reading and associated factors. A few studies have examined the latent profiles of the home literacy environment, in which shared book reading is a core element. Tambyraja et al. (2017) examined the profiles of the home literacy environment of children with language impairments on the basis of the frequency of four types of literacy activities, including shared book reading. Their study revealed three profiles of the home literacy environment—at-risk, average and rich home literacy environments—engaging in a low, average and high frequency of shared book reading, respectively. Caregivers' reading habits and the child's age and language abilities are related to association with the three profiles. Phillips and Lonigan (2009) found three profiles concerning the frequency of shared reading and literacy teaching activities by using cluster analysis and found higher SES to be associated with identification with a profile that features a high frequency of both shared reading and literacy teaching activities. Meanwhile, this group is characterised by the earliest onset age of shared reading. Hayes and Berthelsen (2020) adopted latent class growth curve models to capture the patterns of longitudinal stability and changes in the frequency of shared book reading. They identified three longitudinal profiles, including high-stable, medium-stable and low-increasing subgroups. Membership of the high-stable group is more likely to be associated with higher academic achievement, and SES is associated with class memberships (Hayes & Berthelsen, 2020). Thus, the heterogeneity of parental involvement in shared book reading revealed in previous studies suggests the necessity to examine it more thoroughly with a person-centred approach.

Present study

In the current study, we adopt a person-centred approach to address the heterogeneity of parental involvement in shared book reading within the population of parents in the city of Chongqing, China. We mainly aim to answer the following questions.

1. How many subgroups of parents are there with regard to shared book reading practices? How are the shared book reading practices of these subgroups characterised?
2. Are SES, home literacy resources, and the characteristics of children associated with the different profiles of parents' shared book reading practices?

For the first research question, we did not formulate a specific hypothesis concerning the enumeration of profiles and characteristics of profiles as this study is more exploratory than confirmatory. For the second research question, our hypothesis is that higher SES and more home literacy resources are related to profiles with a higher quantity of shared book reading and a younger onset age of shared book reading.

METHOD

Participants

The current study was conducted in the city of Chongqing, China, one of the four municipalities (together with Beijing, Shanghai and Tianjin) directly under the Chinese central government. In the present study, data was collected from parents from March 2021 to May 2022. Data collection started in March 2021 and continued with intermittent interruptions caused by repeated closures of kindergartens during Covid-19 until May 2022. Thus, the data collected in this study may reflect a context specific to Covid-19 and the restrictions enacted in the municipality. We drew up our representative sample by employing two-stage random sampling in one community in Chongqing. We randomly selected 10 kindergartens, 5 urban and 5 rural. In the second stage, we selected all the parents in the 10 kindergartens and administered 1500 online questionnaires and pen-and-pencil questionnaires to the parents; 1197 were returned, out of which 102 were excluded for invalidity, leaving 1095 questionnaires for analysis (with a response rate was 73%). After excluding 217 questionnaires in which parents reported having never read to their child, we used the remaining 980 as the analytical sample for examining their shared book reading practices. Detailed characteristics of the final sample of parents are provided in Table 1. They show that the sample is representative of various groups on the SES spectrum.

Measures

Onset age of shared book reading

The onset age of shared book reading is measured by the question 'When did you start to read to your child?' It was scaled from 1 to 5, representing below 6 months old, 6–12 months, 13–24 months, 25–36 months, and above 3 years old, respectively.

Quantity of shared book reading

The quantity of shared book reading is measured by two questions about the numbers of books read by parents to their child in each week and the frequency of reading. Parents were asked how many books they had read to their child in each week in the past year on a scale from 1 to 6, corresponding to less than 1, 1–2, 3–4, 5–6, 7–14, and more than 15 books. Additionally, parents were asked how often they had read to their child in the past year, again on a scale from 1 to 6, 1 (once in 3 months), 2 (once in 2 months), 3 (once a month), 4 (once or twice a week), 5 (three to six times a week), and 6 (every day). Furthermore, parents also

TABLE 1 Demographic characteristics of participants.

	Parents ($N = 980$), % or M (SD)
Location of kindergarten	
Urban	59.2%
Rural	40.8%
Age of child (months)	
Lower kindergarten (36–47)	25%
Middle kindergarten (48–59)	34%
Upper kindergarten (60–72)	41%
Age of main caregiver	
25 and below	3.7%
25–35	59.5%
35 and above	36.8%
Parents' highest level of education	
Secondary school and below	14.8%
High school	25%
Junior college	21.3%
Undergraduate	32.7%
Master's	6.2%
Parents' occupation	
Unemployed	9.1%
Small business owners	50.1%
Professionals (teachers, doctors, lawyers)	27.3%
Managers	13.5%
Household monthly income	
Less than 4000 RMB ($605)	13.1%
4000–5000 RMB ($605–757)	12.3%
5001–7000 RMB ($758–1059)	12.1%
7001–8000 RMB ($1060–1210)	14.6%
More than 8000 RMB ($1210)	47.9%
Family SES	5.82 (1.67)

reported the number of books they read to their child in each shared book reading session, ranging from 1 (one book each time) to 5 (five books or more each time).

Duration of shared book reading in each session

Parents were asked about the duration of each shared book reading session, measured from 1 to 4, representing less than 15 min, 15–30 min, 31–60 min, and more than 60 min, respectively.

Demographic characteristics

Parents reported the age of their child in months, which were classified into lower kindergarten, middle kindergarten and upper kindergarten, corresponding to 36–47, 48–59 and 60–72 months, respectively. Parents also reported the age of the caregivers, and the

urbanicity of the kindergarten their child attended, that is, whether it was in a rural or urban location.

Home literacy resources

To measure children's access to literacy resources in the household, we asked parents about the frequency of purchasing books for their child; the scale ranged from seldom (0), occasionally (1), to very often (2).

Socioeconomic status

Socioeconomic status (SES) was measured by parental education, household income, and the prestige of the parental occupation. A composite score was created as an index of SES by principal component analysis. The highest level of parental education was measured from 1 (primary school and below) to 6 (master's and above). Monthly household income was measured by a five-point scale, where 1 was less than $605 (4000 RMB) and 5 was more than $1210 (8000 RMB). Parental occupation was measured from 1 (unemployed) to 4 (managers) according to the prestige of their occupation (ISCO-08—International Labour Organization, 2012).

ANALYTICAL APPROACH

Latent profile analysis (LPA) is employed in the current study to identify subgroups of parents with heterogeneous shared book reading practices. Latent profile analysis is a categorical latent variable approach that focuses on identifying latent subpopulations within a population based on a certain set of variables. It is categorised as a person-oriented analysis, alongside cluster analysis, with which it shares several similarities. However, latent profile analysis uses different assumptions about the data and different statistical procedures. Whereas in cluster analyses each case is assigned to a single specific group, LPA produces overlapping clusters and each case is given a probabilistic class membership. Five indicators of parents' shared book reading practices were used simultaneously to create the profiles, which distinguish from each other in terms of different configurations of these variables. For instance, the five variables might show different patterns and levels across profiles. Based on the local independence assumption of latent profile analysis, namely, that the observed indicator variables are uncorrelated within each latent profile, as well as the assumption of homoscedasticity across profiles (Spurk et al., 2020), we specified the LPA models by holding the variances across profiles constant and by fixing the covariances among indicator variables to zero (Muthén & Muthén, 2017). Furthermore, a three-step approach was taken to assess the effects of the covariates associated with the profiles of parents' shared book reading practices. The first step was to fit the latent profile analysis models to identify subgroups of parents based on the indicator variables of shared book reading practices. Then all cases were assigned to classes based on posterior probabilities with the lowest rate of classification error. In the third step, the assigned class was used for estimating the coefficients of covariates predicting the latent profile membership in the multinomial regression, with errors in class assignment corrected. The inclusion of covariates in Step 3 did not influence the profile membership identification in Step 1 (Asparouhov & Muthén, 2014; Vermunt, 2010). Mplus version 8.6 was used for the data analysis.

RESULTS

What are the profiles of parental involvement in shared book reading?

To identify the subgroups of parents within the current sample on the basis of their shared book reading practices, we conducted latent profile analysis and compared two-profile to four-profile solutions, as shown in Table 2. We relied on the fit indices, mainly Akaike Information Criterion (AIC), Bayesian Information Criterion (BIC), and Sample Size-Adjusted Bayesian Information Criterion (aBIC), class sizes, entropy values and likelihood ratio tests, as well as the interpretability of profiles, to decide the optimal solution. A lower AIC, BIC and aBIC suggests a better fit (Geiser, 2013), as the three indices decrease progressively from the two-profile solution to the four-profile solution, indicating that the four-profile solution fits better than the three-profile one, and the three-profile solution fits better than the two-profile one. However, the results turn out to be unstable, as the log-likelihood could not be replicated for the four-profile solution and one of the four profiles only includes 1% of the overall sample and less than the minimum of 25 cases, indicating that this solution should be rejected (Lubke & Neale, 2006). Thus, the three-profile solution fits significantly better than the two-profile solution. The entropy of the three-profile solution is 0.89, suggesting an accurate classification. Consequently, based on the fit indices and profile sample sizes, as well as the practical interpretation of the profiles, we concluded that the three-profile solution is the optimal one. The classification probabilities for the most likely latent class membership of the three-profile solution are 0.97, 0.87 and 0.96, respectively, for the three profiles.

Table 3 shows the means for the three latent profiles of shared book reading practices, and Figure 1 visualises the means of the indicator variables of the three profiles. We defined the three profiles on the basis of the means of the indicator variables of parental involvement in shared book reading. Three profiles are identified: Profile 1: *Late start and infrequent reading*; Profile 2: *Early start and frequent reading*; Profile 3: *Medium start and intensive reading*. As shown in Figure 1, the three profiles reveal heterogeneity regarding parental involvement

TABLE 2 Fit indices for latent profile analysis of parental involvement in shared book reading.

Model and profile	Count	Proportion	Entropy	AIC	BIC	aBIC	LM-RLRT	BLRT
Two-profile	719	73	0.84	13,922	13,999	13,949	627.83	627.83
	261	27						
Three-profile	696	71	0.89	13,560	13,668	13,598	373.457	373.457
	229	23						
	55	6						
Four-profile	607	62	0.98	13,318	13,454	13,365	10.02	10.02
	222	23						
	143	15						
	8	1						

Note: We express our gratitude to the reviewers and editors for providing constructive feedback on this paper. Among several recommendations to improve this paper, they also highlighted issues related to missing data and emphasised that the model comparison is not solely due to randomisation. Furthermore, they suggested refraining from reporting any *p*-values, standard errors (SEs), and confidence intervals (CIs) in both this and further tables. While the authors acknowledge this perspective, they believe that reporting these values might be beneficial. Their decisions about the models were guided by theoretical considerations, and the interpretation of the data is based on effect sizes. Nonetheless, reporting these values is deemed useful for further replication and meta-analytic purposes. For transparency, we have included these values in the preprint, which is available to interested readers here: [https://www.researchgate.net/publication/375828492_Parental_involvement_in_shared_book_reading_for_preschoolers_in_China_patterns_and_risks].

Abbreviations: aBIC, sample size-adjusted BIC; AIC, Akaike information criteria; BIC, Bayesian information criteria.

TABLE 3 Means for three latent profiles of shared book reading patterns.

Variables	Overall sample, *M*	Profile 1: Late start, infrequent reading (71%), *M*	Profile 2: Early start, frequent reading (23%), *M*	Profile 3: Medium start, intensive reading (6%), *M*
Onset age of SBR	3.82	4.00	3.34	3.58
Numbers of books read each week	3.04	2.24	5.13	4.38
Numbers of books read in each session	1.62	1.29	1.93	4.58
Duration of each session	1.95	1.83	2.19	2.47
Reading frequency each week	4.2	3.94	5.09	4.78

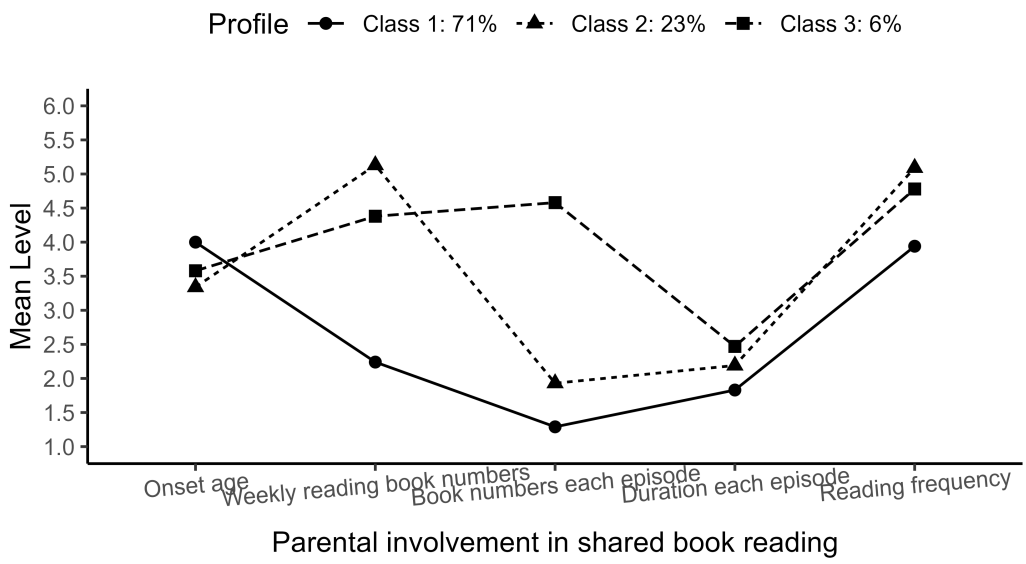

FIGURE 1 Means of latent profiles of parental involvement in shared book reading.

in shared book reading, with both level differences and shape differences. Profile 1 is the subgroup with the largest size, constituting 71% of the overall sample, and features a late starting age of shared book reading, the fewest books shared in each week and episode, and the lowest frequency of reading. Profile 2 constitutes the second largest subgroup (23%); the main features are an early starting age of shared book reading, the highest quantity of reading each week with a medium number of books in each episode, and the highest frequency of reading. Profile 3 constitutes the smallest subgroup (6%), characterised by a medium starting age, a medium quantity of reading each week with the greatest number of books in each episode for the longest time, and a high frequency of reading.

Specifically, the means of the three profiles across the indicator variables in Table 3 show more nuanced features of the three profiles. Those in Profile 1, *the late start and infrequent reading* subgroup, start shared book reading when their child is about 2–3 years old, read about one to two books each week, and about one book each episode of a short duration somewhere between 'less than 15 min' to '15–30 min'. They read aloud to their child about once or twice each week. Profile 2, the *early start and frequent reading* subgroup, begins to share at their child's age of around 1–2 years old, reading about 7–14

books each week, and about two books in each session for about 15–30 min. Their overall frequency of reading in each week is between 'three to six times each week' and 'every day'. Profile 3, the *medium start and intensive reading* subgroup, in which the onset age of shared book reading is older than in Profile 2, though also around 1–2 years old, read three to four books each week and episode for a longer time between '15–30 min' and '31–60 min'. They read to their child with a frequency between 'once or twice each week' and 'three to six times each week'.

Profile 1 differs from the other two both in the level of means and in the pattern. Profile 1 is characterised by a low quantity of engagement in shared book reading across all the indicator variables, regarding the number of books, the duration of each episode, and the frequency. And the onset age is the oldest across the three profiles. Profile 2 and Profile 3 share some commonalities in terms of the height of the frequency of shared book reading; however, the patterns between the two classes differ. Firstly, the subgroup of parents in Profile 2 starts at an earlier age than that in Profile 3. Additionally, the subgroup of parents in Profile 2 engages in more shared book reading regarding the overall number of books and a higher frequency of reading aloud; however, they read far fewer books for a shorter time in each reading session. The subgroup of Profile 3, however, focuses more on reading more books for a longer time in each reading session and a lower overall number of books each week.

Are SES, home literacy resources, and child characteristics associated with the profiles of parental involvement in shared book reading?

Three-step approaches are used to examine the effects of SES, home literacy resources and the child's characteristics on profile memberships. As Table 4 shows, the most numerous subgroup, the late start and infrequent reading group, is used as the reference group.

TABLE 4 Effects of covariates on profile membership.

Profile	Covariate	Coefficient	Odds ratio
Profile 2 vs. Profile 1	SES	0.22	1.25
	Home literacy resources	1.25	3.48
	Urban	0.38	1.46
	Public	−0.20	0.82 (1.22)
	Middle kindergarten	−0.21	0.81 (1.23)
	Upper kindergarten	−0.70	0.50 (2)
	Age of caregiver	0.69	2.00
	Age of caregiver	0.29	1.33
Profile 3 vs. Profile 1	SES	0.11	1.12
	Home literacy resources	1.10	3.00
	Urban	0.09	1.09
	Public	0.29	1.34
	Middle kindergarten	−0.26	0.78
	Upper kindergarten	−0.01	0.99
	Age of caregiver	−0.11	0.89
	Age of caregiver	−0.03	0.97

Note: Reference group = *late and infrequent reading group* (Profile 1). The reference group of kindergarten class level is the lower kindergarten class.

The odds ratios indicate the probability of changes of covariates associated with the likelihood of changes in the membership of a specific profile, compared to the reference group. The odds ratios shown in Table 4 show the relative probability of being a member of Profiles 3 and 2, compared with Profile 1. As Table 4 reveals, parents with higher SES are more likely to engage in early and frequent reading (Profile 2) than late and infrequent reading (Profile 1). An increase of one unit of SES is associated with a 0.25 times increase in the odds of being in the early and frequent reading profile, in comparison with the late and infrequent reading profile. However, SES is not significantly associated with membership of the medium start and intensive reading class (Profile 3), in comparison with the late and infrequent reading class (Profile 1).

After SES and other covariates have been controlled for, home literacy resources are still consistently associated with the profile memberships. Families with more literacy resources are more likely to engage in early and frequent reading (Profile 2), in comparison with late and infrequent reading (Profile 1). An increase of one unit of home literacy resources is associated with a 2.48 times increase in the odds of being in the early and frequent reading profile, in comparison with the late and infrequent reading profile. Likewise, more literacy resources are associated with an increased likelihood of being in the medium start and intensive reading profile (Profile 3), compared to the late and infrequent reading profile (Profile 1). An increase of one unit in home literacy resources is related to a twofold increase in the odds of being in the medium start and intensive reading class, compared to the late and infrequent reading profile. Additionally, the child's age is significantly associated with the profile memberships. Children in an upper kindergarten class, in comparison with a lower kindergarten class, are two times less likely to be in the early and frequent reading group (Profile 2), in comparison with the late and infrequent group (Profile 1).

DISCUSSION

Patterns of parental involvement in shared book reading

This study examined the latent profiles of parental involvement in shared book reading on the basis of a representative sample from Chongqing, China. Three profiles that best captured the heterogeneity of shared book reading practices at home for young Chinese children in Chongqing were identified. The most prevalent subgroup (71%) of parents started reading to their children at an older age and with low frequency, 23% of parents engaged in shared book reading activities featuring an early onset and high frequency, and the least numerous subgroup of parents (6%) began to read to their child at a medium age and intensively, with a longer duration of each session. It should be noted that our analysis excluded parents who reported never reading to their child; these parents constituted 8.5% of our whole sample and could implicitly form a fourth profile of parents who never engage in shared book reading.

Overall, the findings of this study converge with previous person-centred research, especially in terms of the enumeration of profiles and differences in the level of frequency of shared book reading among the three profiles (Tambyraja et al., 2017). Additionally, our findings are consistent with the patterns found by Phillips and Lonigan (2009), where parents engaging in a high frequency of shared book reading started to read to their children at the earliest age. Given the well-established positive associations of onset age and frequency of shared book reading with children's language development (Leech et al., 2022; Sénéchal et al., 2008), the three profiles identified in this study are critical for targeted parental interventions for early literacy. Among the three profiles, the most disadvantaged would be the *late start and infrequent reading* subgroup, as it is at risk in terms of both these important

protective factors for early literacy. And what is more striking is that this subgroup constitutes the majority of the target population.

Additionally, as evidenced by a recent study, the quantity of shared book reading is positively associated with the quality of shared book reading. In particular, parents who reported a higher frequency of shared book reading practices are more likely to use more print references, indicating a higher quality of interaction in joint reading, while the time devoted to shared book reading is not significantly associated with parents' print references (O'Fallon et al., 2022). Thus, the *late start and infrequent reading* subgroup could be even more disadvantaged because the low frequency of shared book reading could be associated with a lower quality of interaction.

In comparison with previous person-centred studies, the present study included more variables to delineate parental involvement in shared book reading in a more nuanced way. We included the number of books read each week and in each session and the duration of each shared book reading session as three more indicators, which all differentiated among the profiles. For the *early start and frequent reading* profile (Profile 2), other features are the greatest number of books read each week and a less intensive way of reading, while Profile 3, the *medium start and intensive reading* group of parents, read a smaller number of books each week but included more books in each session for a longer time. Presumably, as more books read each week would lead to more exposure to complex language (Logan et al., 2019) and children's attention span and duration are limited, the *early start and frequent reading* subgroup could be characterised as having more appropriate practices. However, whether the differences between *the early start and frequent reading* and *medium start and intensive reading* group would lead to some distal outcomes of children still needs further examination.

SES, literacy resources, children's age and patterns of parental involvement in shared book reading

Our findings reinforce the well-documented findings in variable-centred research that higher SES is associated with a higher frequency of shared book reading as socioeconomic status is found to be associated with the profile memberships in the present study. Parents with a higher-SES background are more likely to belong to the *early start and frequent reading* subgroup than the *late start and infrequent reading* profile. However, in person-centred studies, the association between SES and profile memberships of the home literacy environment is mixed. Tambyraja et al. (2017) reported no association of SES with home literacy environment profiles; however, Phillips and Lonigan (2009) found that lower SES is significantly related to a low frequency of shared book reading and a high frequency of teaching activities. Given that Tambyraja et al. (2017) investigated children with language impairments in their study, our findings could be divergent as a result of sample characteristics.

What is noteworthy is that more literacy resources are associated with increasing probabilities of being classified in the *early start and frequent reading* and *medium start and intensive reading* subgroups, which could, as discussed above, be more advantaged groups than the *late start and infrequent reading* profile. Such a finding echoes the positive effect of intervention programmes focusing on book gifting to promote early literacy (O'Farrelly et al., 2018) and the positive association between the availability of literacy resources at home and the frequency of shared book reading (Cui et al., 2023).

Children's age is found to be associated with the profile membership in this study, which is similar to prior findings (Tambyraja et al., 2017). Children in an upper kindergarten class are less likely to be in the *early start and frequent reading* profile than the *late*

start and infrequent reading one when compared with children from a lower kindergarten class. It could be mainly due to some tendency towards a decreased frequency of shared book reading as children grow older (Hayes & Berthelsen, 2020), when they become more proficient in reading on their own. Another explanation could be the approach to school entry would lead to more parental involvement in formal teaching activities at home than shared book reading. However, further studies should be conducted to investigate the underlying rationales.

Implications

As the most prevalent pattern of parental involvement in shared book reading identified in this study features *late start and infrequent reading*, suggesting less favourable practices, more targeted interventions should be implemented in a comprehensive way. As reported by Hayes and Berthelsen (2020) in their study, the children of parents in the profile with a low level of parental involvement in shared book reading are more likely to show poorer academic achievement over time. Such interventions are beneficial for enhancing school readiness through parental involvement (Cui, 2023; Puccioni, 2018). Furthermore, given that such a pattern of parental involvement in shared book reading is associated with lower SES and fewer literacy resources, parental interventions should focus on such at-risk groups and offer access to literacy resources in diversified ways to improve educational equity, starting from an early age. Programmes such as Raising a Reader (Anthony et al., 2014) and Preparing for Life (O'Farrelly et al., 2018) in the United States show positive effects on improving parental involvement in shared book reading. However, appropriate ways of matching the culture-specific contexts in Chongqing, China need to be explored.

Limitations and future directions

This study contributes to the existing literature by examining the latent profiles of parental involvement in shared book reading on the basis of a large sample of parents in Chongqing, China. To the best of our knowledge, very little was known before about the patterns of Chinese parents' shared book reading practices. The powerful person-centred approach used in this study enables us to obtain convincing results about the covariates associated with profile memberships. The potential at-risk subgroup identified in this study could be informative for targeted intervention programmes.

However, this research has some limitations. We drew on a large and representative sample of parents in one community in Chongqing; however, because of the specific sociocultural and economic context, the results should be generalised with caution. Future research should examine whether the three patterns identified in the current study are validated in other samples. Meanwhile, based on prior findings about the effect of indicators on children's language development, we assumed that there would be certain distal outcomes related to the three profiles of shared reading practices, but further study is needed to examine this assumption. Lastly, the quality of shared book reading should also be considered as an indicator for latent profile analyses of parents' practices in future studies.

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CONFLICT OF INTEREST STATEMENT

We declare that there is no conflict of interest regarding the publication of this paper. I, corresponding author on behalf of all contributing authors, hereby declare that the information given in this disclosure is true and complete to the best of my knowledge and belief.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author.

ETHICS STATEMENT

We declare that the subjects were treated in accordance with established ethical standards as stated in the Declaration of Helsinki, and all the respondents participated in the study freely and with consent and were fully informed about the purposes of this research and how their responses would be used and stored.

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