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Parental Expectations and Home Literacy Environment: A Questionnaire Study of Chinese-Norwegian Dual Language Learners

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ABSTRACT

This study examined how parental expectations were associated with Chinese-Norwegian dual language learners' Chinese language skills. A total of 118 Chinese parents in Norway completed a questionnaire in which they reported their expectations for their children's Chinese language development, characteristics of the home literacy environment (resources and practices), and children's Chinese language skills. The children were ages 1;6–14;0 (M = 6;2, SD = 2;6) and spoke Chinese at home while learning Norwegian in preschool and school. We found that parental expectations positively linked to parent-reported Chinese language skills. Moreover, this link was partially a factor of children's Chinese home literacy environment. The results suggest that parents who manifested their expectations by facilitating a rich home literacy environment (i.e., children's books and activities like shared reading, storytelling, listening to songs, online chatting with Chinese relatives, and playing with Chinese friends) supported their children's Chinese language skills. By documenting parents' efforts and their association with improved language outcomes, this study adds nuance to our understanding of the high expectations set by Chinese immigrant parents, and provides implications for parents, teachers, and researchers.

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KEYWORDS
Chinese; dual language learners; home literacy environment; parental expectations; questionnaire study

Over 10 million Chinese citizens live overseas, and the number is many millions more if counting all who have Chinese cultural heritage. Consequently, considerable numbers of young dual language learners (DLLs) are learning a majority language at school while developing their Chinese skills at home. Regarding the development of Chinese children, previous studies attach great importance to parental expectations (for a review, see, R. Luo et al., 2013). However, despite a few qualitative studies that identified parental expectations of DLLs' language development (Curdt-Christiansen, 2009; Li, 2006), it is unknown how parental expectations connect with DLLs' Chinese language skills. Further, most bilingual studies were conducted in English-speaking countries with large Chinese immigrant populations, such as the United States (Williams et al., 2019), Canada (Li, 2006), and Australia (Y. C. Luo et al., 2018; Mu & Dooley, 2015); little is known about Chinese communities in other countries. Thus, this study explores the relationships between parental expectations and DLLs' language skills in a sample of Chinese families living in a non-English-speaking country with a small Chinese population. Theoretically, the study aligns with the ecological systems theory (Bronfenbrenner, 1979), emphasizing that children live in nested systems that interconnect and shape their development. The home environment (i.e., "microsystem") is the most salient and immediate influence for children. In addition, parental expectations reflect the cultural values of the social group (i.e., "macrosystem"), interacting with children's home environment and affecting children's development.

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Parental expectations and DLLs' Chinese language skills

A study conducted by the Chinese Academy of Social Science indicated that the top motivation for Chinese people in life is their expectations for children's achievement (Chen, 2011). Similarly, Ng et al. (2014) found that Chinese mothers associate their self-worth with children's performance. All these values lead to Chinese parents' high expectations for children's achievement. Moreover, review studies conclude that parental expectations, among all parental involvement, play a key contributor to children's academic achievement (for reviews, see, Fan & Chen, 2001; Wilder, 2014). Correspondingly, positive relationships between parental expectations and students' academic achievement were asserted in Chinese families (Fang et al., 2018; Long & Pang, 2016; Ren & Edwards, 2017). Since the 20th century, Chinese Americans have been widely reported to outperform other ethnic minority peers in school (Papademetriou et al., 2009). Researchers attributed the outperformance to Chinese parents' high expectations (Goyette & Xie, 1999) and reported that not only did Chinese parents have high expectations, they also committed to their expectations and dedicated themselves to children's education (Chao, 1994, 1996; Curdt-Christiansen, 2009).

In line with children's academic achievement, overseas Chinese parents demonstrate high expectations for DLLs' Chinese language development (Hu et al., 2014; Riches & Curdt-Christiansen, 2010). For example, Lao (2004) surveyed 86 Chinese parents in the United States, where 60% identified themselves as Chinese-dominant and 40% as English-dominant. Regardless of language dominance, 70% of the parents expected their children to have a certain level of literacy skills besides comprehending and speaking. Li (2006) conducted an ethnographic study of three Chinese-Canadian children, and all parents expected their children to have language and literacy skills in both Chinese and English. These expectations originated from parents' wishes for children to retain the Chinese culture and self-identity (Riches & Curdt-Christiansen, 2010; Yang, 2007), to communicate with family members (Hu et al., 2014; Li, 2006), and to benefit from the future economic opportunity of being bilinguals (Curdt-Christiansen, 2009; Liang, 2018).

Despite parents' high expectations for children's Chinese language development, researchers documented Chinese DLLs' language attrition and unsuccessful experience at becoming bilinguals in adulthood (Jia, 2008; Li & Wen, 2015; Mu & Dooley, 2015; Pan et al., 2005; J. Zhang, 2009; D. Zhang, 2010). For example, Jia (2008) surveyed 85 young Chinese adults who had immigrated to the United States for over five years, and asked them to self-rate their speaking, reading, and writing skills in Chinese in the past years. The result revealed continuous attrition in their Chinese language skills over the years. Similarly, in a review study, Li and Wen (2015) reported that compared to Hispanic Americans, east Asian (including Chinese) Americans had low proportions in maintaining the home language.

As we reviewed, on the one hand, parental expectations were associated with children's academic achievement. On the other hand, Chinese parents have high expectations for DLLs' Chinese language development, yet Chinese DLLs were not successful at home language maintenance. The discrepancy across studies calls for investigation on whether there is a relationship between parental expectations and DLLs' Chinese language skills. Further, we know parental expectations influence children's academic achievement through parental effort and home support (Froiland et al., 2013; Ng & Wei, 2020). Accordingly, this study examines the link between parental expectations and DLLs' Chinese language skills, and the possible role of the home literacy environment.

Home literacy environment

Children acquire language through social interactions (Grøver et al., 2019; Vygotsky, 1978). For DLLs whose schooling is through societal language, home support is even more essential for home language acquisition (Dixon et al., 2012). Home literacy environment (HLE) is an umbrella term that includes all the resources and practices of language and literacy that children experience at home (Hamilton et al., 2016). Some studies adopt the Home Literacy Model (Sénéchal, 2006; Sénéchal & LeFevre, 2002) and

differentiate the formal and informal ways in which parents and children interact with print. Others consider the local context when they generate their models (Brown et al., 2012; Friedlander, 2020). Generally, studies on the HLE include indicators such as literacy resources (e.g., children's books at home, library visits) and literacy practices (e.g., parent-child shared reading, storytelling). Regardless of the variation of HLE models, positive relationships appear to exist between HLE and children's language skills in both monolingual and bilingual contexts (Burgess et al., 2002; Quiroz et al., 2010).

Recent HLE studies address parental expectations concerning HLE and children's literacy (Liu et al., 2018; Martini & Sénéchal, 2012; Sénéchal & LeFevre, 2014; Zhang et al., 2020). For example, Martini and Sénéchal (2012) found that parental expectations are indirectly linked to children's knowledge of the alphabet and emergent reading through HLE. Therefore, they added parental expectations in the Home Literacy Model and concluded that its explanatory power increased. Likewise, Liu et al. (2018) regarded parental expectations as an antecedent for HLE. They studied the emergent literacy skills of Chinese kindergarten children and discovered that parents who had higher expectations were inclined to create a richer HLE, resulting in improved children's reading skills. Nevertheless, these studies were conducted in monolingual settings. We have no knowledge of the relationship among parental expectations, HLE, and DLLs' home language skills. This study particularly explored DLLs' home literacy resources and practices in Chinese – namely, their Chinese home literacy environment (CHLE).

Chinese in Norway and the Norwegian context

According to Statistics Norway (2022), there are over 13,000 Chinese people in Norway. For a country with 5.3 million people, 18.2% of whom are immigrants, the Chinese population is not a big immigrant group but it is growing steadily (Statistics Norway, 2022). In the 1960s, the first group of Chinese, mostly seamen who worked for Norwegian shipping companies, settled in Norway (Kwan, 2013). Many reunited with families and, together, they started the restaurant business. In the 1970s, Chinese restaurants were booming, and many cooks began immigrating to Norway as skilled workers. In the 1980s, China launched its economic reform, opening the door for Chinese students to study and, later, work in Norway. This pattern remains today. As stated in a report (Statistics Norway, 2008), Chinese immigrants come for professional reasons: either to study or work. It is worth mentioning that even though few Chinese settle in Norway because they have married a Norwegian, a considerable number of Chinese immigrants marry Norwegian locals and form transnational families (Statistics Norway, 2006). Overall, the Chinese immigrant population has a lower unemployment rate and fewer people who receive disability benefits than the average immigrant group in Norway. Compared to other immigrant groups, a larger proportion of Chinese immigrants are engaged in higher education (Kirkeberg et al., 2019), making them a resourceful immigrant group.

In Norway, children can enroll in a preschool when they are around one year old, and enter school the calendar year when they turn six. The language of communication in preschool and school is Norwegian. Norwegian preschools value linguistic diversity, and bilingual children are encouraged to use their mother tongue while developing Norwegian (Norwegian Ministry of Education and Research, 2017). In schools, children with a mother tongue other than Norwegian have the right to adapted instruction in the Norwegian language until they are sufficiently proficient in it to follow regular instruction ("Education Act," 1998). Norwegian and Chinese are two starkly different languages. Norwegian is an Indo-European language with alphabetic orthography (Haugen & Markey, 1972), whereas Chinese belongs to the Sino-Tibetan language family, which has morpheme-syllabic characters (Erbaugh, 1992). Given the vast difference between the two languages and the complex orthography of Chinese, DLLs' Chinese language skills demand more home support.

The present study

This study targeted Chinese-Norwegian DLLs' Chinese language skills. Due to the limited number of Chinese families in Norway, we accepted an extended age range and children from both Chinese-Chinese families (both parents were Chinese) and transnational families (one parent was Chinese). All children spoke Chinese with at least one parent at home. We investigated their Chinese language skills in relation to parental expectations and CHLE. Previous studies found that Chinese parents have high expectations, which connect with children's academic achievement (Chao, 1994, 1996; Goyette & Xie, 1999). Thus, we aimed to test if this connection also exists in children's language skills. Further, monolingual studies suggest an indirect link from parental expectations to children's language skills through home resources and practices (Liu et al., 2018; Martini & Sénéchal, 2012). Correspondingly, we expected that children's home literacy environment in Chinese would serve as a path between parental expectations and children's Chinese language skills. Our research questions were:

(1) Do parental expectations correlate with children's Chinese language skills?
(2) If so, does CHLE serve as an indirect link between parental expectations and children's Chinese language skills?

Method

Participants

One hundred eighteen Chinese parents (96 mothers and 22 fathers) in Norway participated in the study. Table 1 shows the demographic information. Most of the parents had lived in Norway for more than five years (87%) and planned to live in Norway permanently (81%). They were scattered across Norway, with more than half living in the larger Oslo area. Most of the participants were highly educated: 87% had obtained a higher education degree and 19% held a Ph.D. Their professions varied, with a sizable proportion of skilled workers, such as engineers, software developers, accountants, and researchers.

In the sample, two-thirds (n = 74) represented Chinese-Chinese families, and one-third (n = 44) were transnational families in which one parent was non-Chinese. Most of these non-Chinese were Norwegian, with a few exceptions (two were English speakers, another three were respectively Russian,

Table 1. Descriptive of participants' demographics.

Demographics	Whole sample (N = 118)	Chinese-Chinese families (n = 74)	Transnational families (n = 44)
Child characteristics			
Age (Mean, SD)	6;2 (2;6)	6;1 (2;3)	6;5 (2;9)
Boy (%)	50.00	51.39	47.73
Born in Norway (%)	84.34	81.08	90.24
Parent characteristics			
Mother (%)	81.36	75.68	90.91
Education (%)			
High school	1.69	2.70	0.00
College	11.02	9.46	13.64
University-Bachelor	35.59	32.43	40.91
University-Master	33.06	31.09	36.36
University-Ph.D.	18.64	24.32	9.09
Time in Norway (%)			
Less than 5 years	12.71	14.86	9.09
5–9 years	31.36	29.73	34.09
10–19 years	45.76	48.65	40.91
20 years and above	10.17	6.76	15.91
Future plan (%)			
Uncertain	11.86	14.86	6.82
Temporarily resided	7.63	8.11	6.82
Permanently resided	80.51	77.03	86.36

Vietnamese, and Greek speakers). All the participating parents lived with their children. Forty-one percent of families had a single child, 53% had two children, and 6% had three children. For families with more than one child, we asked the parent to consider their youngest child when answering the questions. As such, the targeted children's age ranged from 1;6 to 14;0 (M = 6;2, SD = 2;6). The gender distribution was equal (58 boys and 58 girls, two were not indicated). Eighty-four percent of the children were born in Norway. For those born outside of Norway, the average age of immigration was under three years old (M = 2;7, SD = 2;0).

Measures

We generated the questionnaire based on previous studies (Hansen et al., 2019; Pan, 1989; Paradis, 2011; Paradis et al., 2010) and interviews with local parents. It was further piloted among a few parents of Chinese dual language learners, where items such as the options of expectations and the number and range of books at home were modified. The final questionnaire contained four sections: family demographics, parental expectations, CHLE items, and parent-reported Chinese language skills.

Parental expectations

We measured parental expectations by the level of Chinese proficiency they expected their child to achieve. We referred to the Common European Framework of Reference for Languages (CEFR; Council of Europe, 2001) and used the can-do statement. Considering characters are the building blocks of print in Chinese (McBride, 2016), we included skills concerning Chinese characters. The response alternatives included: no expectation (0), can comprehend Chinese (1), can speak Chinese (2), can read and type[1] Chinese characters (3), can write Chinese characters (4), and can compose texts in Chinese (5). Based on the distribution of parents' answers,[2] we further categorized parental expectations from comprehending and speaking Chinese (response alternatives 1 and 2), to character-level literacy (response alternatives 3 and 4), to text-level literacy (response alternatives 5).

Chinese home literacy environment (CHLE)

Parents reported the Chinese literacy resources and practices children had access to at home. For resources, they answered the number of Chinese-language children's books they had at home (0 = less than 5; 1 = 6–10; 2 = 11–20; 3 = 21–50; 4 = more than 50) and the frequency of the children's visits to the library (0 = almost never; 1 = one to three times a month; 2 = once a week or more). For practices, they reported the weekly frequency with which children undertook Chinese-language literacy activities such as shared reading, storytelling, watching videos, and listening to songs (0 = never; 1 = once or twice; 2 = three or four times; 3 = every day). Additionally, they reported the weekly frequency with which children chatted online with Chinese relatives (0 = almost never; 1 = once to three times a month; 2 = once a week or more); and the number of Chinese playmates or friends they met weekly (0 = none; 1 = 1–5; 2 = more than 6).

Parent-reported Chinese language skills

We adopted the Alberta Language and Development Questionnaire (ALDeQ; Paradis et al., 2010) to assess children's Chinese language skills. The reason was threefold. First, parent report is a convenient yet valid alternative to lab-based language measures such as observation and standardized assessment (Anderson et al., 2021; Bornstein & Haynes, 1998). Second, the instrument ALDeQ has been used in various studies and found to be credible (Hansen et al., 2019; Sorenson Duncan & Paradis, 2020). For example, Hansen et al. (2019) compared a questionnaire-based parental report on children's overall language skills with a vocabulary assessment tool in Polish immigrant children

in Norway and the U.K. and found that the result of the two tools correlated ($r = .44$, $p < .001$). Third, in ALDeQ, parents use same-age children as a benchmark, which allows for the extended age range and accounts for the child's age in their rating.

To fit for the extended age range of the sample, the questions mapped children's oral language skills. Parents referred to same-age Chinese children in Norway and rated their children's skills on speaking, listening comprehension, vocabulary, and storytelling (1 = not very well; 2 = a bit less well; 3 = similar; 4 = better than other DLLs). We also included one question to tag children's pragmatic skills: "Does your child feel frustrated that he/she cannot communicate in Chinese?" (1 = always; 2 = sometimes; 3 = occasionally; 4 = never). Cronbach's alpha reliability of ALDeQ items was 0.88.

Procedure

We collected data with an online survey written in Chinese, ensuring that participating parents were proficient in Chinese. We adopted snowball sampling and approached the target population through personal contacts, social media (i.e., WeChat, Facebook), a local Chinese magazine (see, Yang, 2019), and posters at public libraries in Oslo and major cities in Norway. Data were collected from mid-November to late-December 2019.

Analyses

We used Stata 16 (StataCorp, 2019) for descriptive, factor, and correlative analyses. Given that the data were ordinal, we used the Mann-Whitney U test to compare CHLE and parent-reported Chinese language skills across family types. To identify the factor loadings under the latent construct CHLE and parental report on children's language skills, we applied the principal component analysis with oblique rotation (correlation method) and set the number of factors as one. We kept items with a factor loading above .40 for further analyses.

For the first research question, we applied the Spearman correlation matrix to explore the relationship between parental expectations and parent-reported Chinese language skills, as well as to identify covariates. For the second research question, we used PROCESS macro for SPSS (Hayes, 2018) to test the indirect link. This program follows a regression-based path analysis and uses bootstrapping methods, guaranteeing more accurate confidence intervals for the indirect link.

Results

Descriptive statistics

Table 2 displays the descriptive statistics for parental expectations, CHLE items, and parent-report Chinese language skills across families. To indicate the difference between Chinese-Chinese families and transnational families, we reported the Mann-Whitney U score. For CHLE items and parent-report Chinese language skills, we included the factor loadings.

Parental expectations

Fifteen percent of parents only expected their children to comprehend and speak Chinese, 49% expected their children to have character-level literacy, and 36% expected text-level literacy. Hence, on average, parents expected their child to have some character-level literacy skills ($M = 2.21$, $SD = 0.69$). These expectations differed across family types: parents from Chinese-Chinese families expected their children to at least have character level literacy skills ($M = 2.38$, $SD = 0.59$) while the average expectations of parents from transnational families was comprehending and speaking Chinese ($M = 1.93$, $SD = 0.76$; $U = 3.20$, $p < .01$).

Table 2. Descriptive statistics for parental expectations, CHLE, parent-reported Chinese language skills, and their respective factor loadings.

	N	Range	Mean	SD	Mann-Whitney U/z[a]	Factor loadings
Parental expectations	118	1–3	2.21	0.69	3.20**	-
Factor: CHLE						
Children's books in Chinese at home	117	0–4	2.25	1.51	3.48***	**0.68**
Shared reading in Chinese	118	0–3	1.57	1.08	1.75	**0.74**
Storytelling in Chinese	118	0–3	1.62	1.29	3.69***	**0.64**
Listening to songs in Chinese	118	0–3	1.08	1.02	0.02	**0.47**
Watching videos in Chinese	118	0–3	1.07	0.94	−0.04	0.35
Playing with Chinese friends	118	0–2	0.69	0.68	4.81***	**0.43**
Online chatting with Chinese relatives	118	0–2	0.99	0.78	2.60**	**0.54**
Library visits	118	0–2	0.76	0.58	−1.24	0.04
Factor: Parent-reported Chinese language skills						
Expressing oneself	117	1–4	2.69	0.93	3.55***	**0.92**
Understanding sentences	117	1–4	2.88	0.79	2.13*	**0.83**
Vocabulary breadth	117	1–4	2.56	0.95	3.88***	**0.87**
Telling stories	117	1–4	2.29	0.97	3.81***	**0.87**
Pragmatic skills	117	1–4	2.59	1.12	2.82**	0.35

CHLE = Chinese Home Literacy Environment. [a]Difference between Chinese-Chinese families and transnational families (standardized). * $p < .05$. ** $p < .01$. *** $p < .001$. Factor loadings larger than 0.4 are marked in bold.

Chinese home literacy environment (CHLE)

The average of children's books was more than 10 copies in the family, while differences remained between family types ($U = 3.48$, $p < .001$). In terms of literacy practices, we can see the children undertook storytelling, shared reading, listening to songs, and watching videos in Chinese at least once a week, while differences across families manifested in the frequency of storytelling ($U = 3.69$, $p < .001$). On average, children met less than one Chinese playmate per week, and chatted with Chinese relatives online around once a month. These social interactions happened more often in Chinese-Chinese families than in transnational families ($U = 4.81$, $p < .001$ and 2.60, $p < .01$). Children in the sample visited the library less than once a month. The principal component analysis with oblique rotation (correlation method) revealed that most CHLE items loaded together (see the last column), while factor loadings of watching videos and library visits were below .40; thus, we deleted them for further analyses.

Parent-reported Chinese language skills

On average, parents rated their children as "similar to others" in all skills. Overall, children had better receptive skills (i.e., understanding sentences, $M = 2.88$, $SD = 0.79$) than productive skills (i.e., expressing oneself and telling stories, $M = 2.69$ and 2.29, SD = 0.93 and 0.97; $U = 3.68$ and 7.13, $ps < .001$). The Mann-Whitney U test showed that children in Chinese-Chinese families had better parent-reported Chinese language skills than children in transnational families had (see the second to last column). Specifically, the difference was most distinctive in their vocabulary and storytelling skills ($U = 3.88$ and 3.81, $p < .001$), but less in listening comprehension ($U = 2.13$, $p < .05$). The last column shows that parental rating on children's speaking, listening comprehension, vocabulary, and storytelling loaded well in the principal component analysis. Pragmatic skills, however, had a factor loading less than .40. We figured the reason might be due to the way we issued the question: it addressed children's reactions in a certain context, while the other four questions focused on children's language abilities with comparison to other children. Hence, the factor *Parent-reported Chinese language skills* included parent rate on children's speaking, listening comprehension, vocabulary, and storytelling.

Table 3. Zero-order Spearman correlations among demographics, parental expectations, CHLE, and parent-reported Chinese language skills.

Variables		1	2	3	4	5	6	7	8
1	Age	-							
2	Gender[a]	.11	-						
3	Family type[b]	.07	.01	-					
4	Parent education	−.02	−.03	−.16	-				
5	Time in Norway	.23*	.16	.08	.11	-			
6	Future plan	.22*	.05	.11	.05	.22*	-		
7	Parental expectations	−.11	.01	−.27**	−.13	−.12	−.23*	-	
8	Factor: CHLE	−.23*	−.07	−.36***	.21*	−.22*	−.15	.40***	-
9	Factor: Parent-reported Chinese language skills	−.04	−.14	−.41***	.13	−.13	−.12	.44***	.65***

CHLE = Chinese Home Literacy Environment. [a]Boy coded as 1 in gender. [b]Transnational family coded as 1 in family type. * $p < .05$. ** $p < .01$. *** $p < .001$.

RQ1. Do parental expectations correlate with children's Chinese language skills?

To answer the first research question, we consulted Spearman's correlation matrix (see, Table 3). The matrix showed that parental expectations correlated significantly with parent-reported Chinese language skills (r =.44, $p < .001$). Children whose parents had higher expectations for their Chinese language development also had better parent-reported Chinese language skills. It is worth noting from the matrix that family type correlated significantly with parental expectations ($r = -.27$, $p < .01$), CHLE ($r = -.36$, $p < .001$), and parent-reported Chinese language skills ($r = -.41$, $p < .001$) – all three variables in the second research question. Thus, we included family type as a control variable in the following analysis.

RQ2. If so, does CHLE serve as an indirect link between parental expectations and children's Chinese language skills?

We applied model 4 in PROCESS to test the indirect link. Because the sample had an extended age range, in addition to family type, we also included child age as a control variable. As Figure 1 and Table 4 indicate, parental expectations were indirectly linked to children's Chinese language skills through their Chinese home literacy environment. Parents who had more expectations for children's Chinese language development reported a more rich home literacy environment in Chinese (B = .41, $p < .001$). Parents whose children had a rich home literacy environment in Chinese also rated their children with better Chinese language skills (B = .57, $p < .001$). A bootstrap resampling with 5,000 replications showed that the confidence interval for the indirect link (B = .23) was above zero (.10, .38); hence, the indirect link was statistically significant. Additionally, when controlling for the CHLE, parental expectations still correlated significantly with parent-reported Chinese language skills (direct link = .26, $p < .05$), so the indirect link was partial. In a word, parental expectations were related to children's Chinese language skills both directly and indirectly through CHLE.

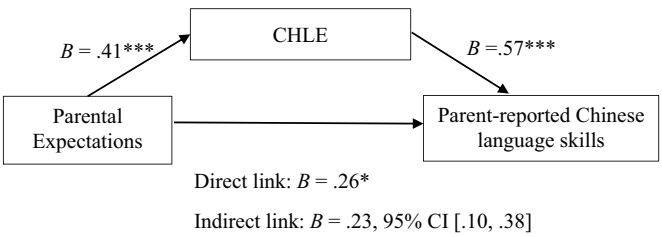

Figure 1. The relationship among parental expectations, CHLE, and parent-reported Chinese language skills (controlling for family type and child age). *Note*. CHLE = Chinese Home Literacy Environment. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 4. Multiple linear regression analyses testing the relationship among parental expectations, CHLE, and parent-reported Chinese language skills by bootstrap replications (5000).

	CHLE			Parent-reported Chinese language skills		
	Coefficient (B)	SE	p	Coefficient (B)	SE	p
Age	−.005	.002	.051	.004	.002	.080
Family type[a]	−.469	.156	.003	−.308	.152	.045
Parental expectations	.405	.111	< .001	.263	.109	.018
CHLE	-	-	-	.566	.089	<.001
Constant	−.346	.337	.306	−.767	.316	.017
		R^2 = .258			R^2 = .465	
		$F(3, 109) = 12.610, p < .001$			$F(4, 108) = 23.449, p < .001$	

CHLE = Chinese Home Literacy Environment. [a]Transnational family coded as 1 in family type.

Discussion

The purpose of this study was to explore the relationships among parental expectations, Chinese-Norwegian DLLs' Chinese language skills, and their Chinese home literacy environment. The questionnaire data confirmed that parental expectations were associated with children's Chinese language skills. Parents who had high expectations for children's Chinese language development were inclined to provide more literacy resources and practices, which, in turn, supported their children's Chinese language skills. These findings are consistent with studies of Chinese parents and children's academic achievement (for a review, see, Ng & Wei, 2020): Chinese parents have high expectations about children's schooling, which manifest into learning-related practices, contributing to children's academic performance.

The findings indicated that CHLE partially explains the relationship between parental expectations and DLLs' Chinese language skills. This partial indirect link corresponds to the existing monolingual studies (Liu et al., 2018; Martini & Sénéchal, 2012). In our finding, CHLE accounted for 47% (= indirect link/ (direct link + indirect link) = .23/(.26 + .23)) of the relationships between parental expectations and parent-reported Chinese language skills. As we calculated, this percentage is comparable to Martini and Sénéchal's (2012) monolingual study but distinct from Liu et al.'s (2018). In Martini and Sénéchal's (2012) study, teaching the ABCs and reading explained 40% of the relationship between parental expectations and children's alphabet knowledge, closer to the results we obtained. While, in Liu et al.'s (2018) study, formal HLE and literacy resources together accounted for 25% of the relationship between parental expectations and children's word reading. A possible explanation for these differences could be the way we conceptualized and measured HLE. Liu et al. (2018) used the observed variable (e.g., the sum score of the frequency of teaching pinyin and Chinese characters for formal HLE, and the number of books at home for literacy resources), whereas we used a weighted latent variable. According to Cole and Preacher (2014), latent variables can minimize the measurement error, which likely results in more accurate analysis. Regardless, the comparatively large proportion of indirect link accented the essential role of HLE.

We concentrated on a specific HLE in this study: Chinese-Norwegian DLLs' CHLE. The exploratory factor analysis identified six indicators in the CHLE, whereas the frequency of library visits and watching videos in Chinese failed to load on CHLE construct. Given that Chinese books are limited in Norwegian public libraries, library visits can hardly reflect children's Chinese literacy resources, a situation distinct from many studies undertaken in monolingual settings where library visits cluster in the HLE construct (e.g., Lau & Richards, 2021; Niklas et al., 2020; Zhang et al., 2020). As for watching videos, previous studies have identified that as a potential negative indicator of HLE, as spending more time watching videos might result in less time reading (Burgess et al., 2002; Schmiedeler et al., 2014). Consequently, it is not entirely surprising that watching videos in Chinese was not part of the CHLE construct. The CHLE comprised four common HLE indicators – children's books, frequency of shared book reading, storytelling, listening to songs – and two less-reported-but-

of-interest indicators – the number of Chinese playmates and the frequency of online chatting with Chinese relatives. Theoretically, these two indicators underline the role of social interactions, which is in accordance with social interactionist theory in children's language development (Vygotsky, 1978).

The Chinese population in Norway is small, so we included an extended age range of children in our data collection to ensure an adequate sample size. In the end, we needed every child who contributed data and are grateful to all the families who participated. We focused on their oral language skills and our findings correspond to previous work. For instance, the parental rating suggested that the children had more developed receptive than expressive Chinese language skills, consistent with what has been reported for young DLLs' home language (Chen & Ren, 2019; Ribot et al., 2018). Further, according to Sénéchal and colleagues, in Home Literacy Model, informal HLE better connects to children's oral language skills (e.g., Sénéchal, 2006; Sénéchal et al., 2017). In this study, CHLE mapped indicators such as shared book reading, which belongs to informal HLE, so its relation to children's oral language skills was in line with Home Literacy Model. We included child age as a covariate in the mediation model to control the possible impact of the extended age range. Nevertheless, given the essential role of child age in HLE (Burgess et al., 2002) and DDLs' language skills (Paradis, 2011), we believe it will be important to explore how this mediation model varies across ages in future studies.

This study has several palpable limitations. First, the questionnaire data drew correlational rather than causal results. Even though previous longitudinal studies suggested the unidirectional relationship from parental expectations to home practices (Englund et al., 2004), from parental expectations to children's later academic performance (Froiland et al., 2013; Räty & Kasanen, 2010), and from preschoolers' HLE to their language outcome (Niklas & Schneider, 2013; Silinskas et al., 2020), we cannot preclude the bi-directionality in the model. Parents may alter their expectations to fit in DLLs' actual HLE (Curdt-Christiansen & Morgia, 2018), compromise their expectations based on children's current performance (Yamamoto & Holloway, 2010), or change HLE in accordance with children's school performance (Deng et al., 2015). In-depth interviews with parents and interventional studies could be useful to clarify the direction among parental expectations, CHLE, and DLLs' Chinese language skills.

Second, all the data came from an online survey with self-report questions for parents. Although anonymity might tune down the social desirability bias, we cannot rule out other potential biases. For example, children's Chinese language skills were measured by parental report, which solely relied on parents' subjective rating of child language. While the measure we referred to (i.e., ALDeQ) showed correlation with test-based vocabulary assessment in a previous study (Hansen et al., 2019) and high internal reliability in this study, a direct assessment of the children's Chinese language skills would eliminate the method biases from the same source data. In addition, parental expectations were measured with a single Likert scale question. Even though many studies on parental expectations have used single-item measures (for a review, see, Yamamoto & Holloway, 2010), using average item measures or latent constructs and carrying out a test-retest could better reduce the measurement error and improve the validity and reliability of the study.

Third, our model only explained a moderate portion of variance for CHLE (26%) and parent-reported Chinese language skills (47%). The rather small R-square might result from the aforementioned limitation of the questionnaire measures. Alternatively, variables not included in the study could account for the variance. For instance, in addition to parental expectations, factors such as family SES (Liu et al., 2018; Niklas & Schneider, 2013), and child interest (Martini & Sénéchal, 2012) play roles in children's home literacy environment. Similarly, there are undoubtedly other important ways that parental expectations can influence children's language skills, including maternal lexical input (Pan et al., 2005), parenting and shared reading quality (Dexter & Stacks, 2014), and the quality of parent teaching (Sénéchal et al., 2017).

Additionally, as previously noted, the sample of the study mainly had a high educational background. Although this homogeneous group was in accord with a national report on the Chinese community in Norway (Statistics Norway, 2008), and our findings are consistent with previous research, we need to be careful when generalizing the findings from one immigrant sample to another. Historical patterns of immigration are such that immigrant communities have their own linguistic, societal, and socio-economic contexts. We need to be cautious when interpreting findings from one group or generalizing to other groups with unique histories, values, and cultural circumstances. Even within this sample, we observed strong group differences in parental expectations, CHLE, and child language between Chinese-Chinese and transnational families. We do not have a large enough sample to draw strong conclusions about these differences, but we believe this is an important area for future research.

The current study echoed the ecological systems theory (Bronfenbrenner, 1979) by confirming that parental expectations (i.e., "macrosystem") were associated with children's Chinese language skills, and this association can be explained by children's Chinese home literacy resources and practices (i.e., "micro-system"). In many countries, there are representations of Chinese families having high expectations for their children. Our findings suggest that a commitment to family support often accompanies their expectations and that these two factors together are associated with child language skills. The study provides implications for parents, educators, and researchers. Parental expectations seem to be related to the HLE they provide in terms of children's books and support for activities like shared book reading, storytelling, listening to songs, online chatting with relatives, and playing with friends. Educators who serve DLLs can better support students for home language skills by considering both HLE, parental expectations, and the relationships between them. In future studies, researchers may consider leveraging parental expectations in order to engage and support home literacy interventions.

Notes

1. Different from alphabetic languages, Chinese has a rather complex orthography. Thus, a phonological coding system (Pinyin in mainland China and Zhu-Yin-Fu-Hao in Taiwan) is utilized to assist the pronunciation and learning of Chinese (McBride, 2016). "Can read and type" required that the child masters the coding system and recognizes Chinese characters.
2. No parent chose "no expectation" or "can comprehend Chinese," so all parents selected from one of four Likert scale options (1 = can comprehend and speak; 2 = can read and type characters; 3= can write characters; 4 = can compose texts). We tested the tenuous distinction between "can read and type characters" and "can write characters" by coding them as separate and combined alternatives and then testing the effect of alternative coding schemes. The estimates of the indirect link in our analysis were similar regardless of the coding scheme we used. The analysis presented here combines "can read and type characters" and "can write characters" as character-level literacy for parental expectations since combining these options is sensible and results in a more normally distributed distribution of parental expectations and does not change the results.

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