



Early literacy in Arabic: the role of SES, home literacy environment, mothers' early literacy beliefs and estimation of their children's literacy skills

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Abstract

The study focuses on the beliefs of Arabic-speaking mothers in Israel relating to early literacy, and the relations between their beliefs and their children's actual early literacy skills. Participants included 113 mothers and their 5–6-year-old preschool children. At the families' homes, mothers reported about the richness of the home literacy environment (HLE), their general beliefs relating to the importance of the literacy environment and their specific estimations of their child's letter knowledge, phonological awareness, word writing and reading. In preschools, we assessed children's letter knowledge, phonological awareness, word writing and reading. Results showed that mothers were aware of their children's early literacy skills yet they overestimated them. In a series of hierarchical regression analyses, we found that family socio-economic status (SES) significantly explained all of the children's early literacy skills. Beyond SES, richness of the HLE contributed to most of the assessed literacy skills. Mothers' general beliefs regarding the importance of the HLE and their estimation of their child's literacy skills explained children's skills beyond SES and HLE. The study has educational implications relating to the promotion of children's early literacy skills in Arabic within the family.

Keywords Parents' beliefs · Early literacy · SES · Literacy environment

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Introduction

According to Bronfenbrenner's (1979, 1986) ecological model, the child's environment is described as a set of systems surrounding the child (e.g., culture, school). All these systems have an effect on the child's development, yet the one closest to the child (i.e., home) has the greatest impact. In line with this theory and its application to children's literacy acquisition, children's reading and writing development occurs within a sociocultural context. The home is the closest context to the child, and it plays a significant role in children's literacy development (McBride-Chang, 2014). In the current research, we focus on this context, and within it, explore the role of the families' socio-economic status (SES), home literacy environment (HLE), mothers' beliefs about the importance of the HLE, and their estimation of their children's early literacy skills as predictors of preschool children's early literacy skills in Arabic. The study has implications for understanding the development of early literacy skills amongst Arabic-speaking children in the home context. This is particularly important given the unique characteristics of Arabic and the limited research relating to parents' understanding of the development of children's early literacy skills within families of Arabic-speaking children around the world.

The Arabic Language

The Arabic language is one of the most widespread languages in the world, spoken by more than 422 million people and it is among the seven most used languages on the Internet (Al Nab'a Informatics Network, 2018). Arabic-speaking children who begin to acquire the foundations of reading and writing face two challenges—the diglossia and the orthographic structure of Arabic.

Diglossia

Diglossia is a situation where two varieties of the same language exist side by side, the Spoken language and the Standard language (Ferguson, 1959). They are used for socially distinct functions. Spoken Arabic is the day-to-day language, and it is comprised of dialects for different countries, and even within the same country. Standard Arabic is the language for communication throughout the Arabic-speaking world for writing, speeches, religious sermons, etc. (Ferguson, 1959). There are phonological, spelling, morphological, lexical, and syntactical differences between the Spoken and the Standard languages and they affect children's literacy acquisition (Saiegh-Haddad, 2017, 2018). Arabic-speaking preschool children are exposed to the Spoken language in their home environment and to the Standard language when reading children's books, or watching television (Al-Bahiri and Mahfouzi, 2014; Kareeri, 2013). Upon entering school, the children learn to read and write in the Standard language (Amare & Mari, 2004; Ayari, 1996); while they have some familiarity with it from prayers, shared book reading or T.V., the Spoken language is their main

language (Saiegh-Haddad, 2012). The diglossia keeps affecting children's literacy development after entering first grade, because they are exposed to the Spoken language first and it impacts their language processes (Saiegh-Haddad, 2018).

The Arabic Orthography

Arabic is a consonantal writing system known as an *abjad* (Saiegh-Haddad, 2018; Share and Daniels, 2016). It has numerous unique script-specific characteristics that may challenge young readers and writers (Daniels and Share, 2018). Every letter in Arabic has three or four forms. For example the letter /ji:m/ (ج:) appears differently at the beginning of the word (↔), middle of the word (↔), unconnected at the end of the word (ج), and connected at the end of the word (ج-) (Abu-Rbia and Taha, 2006). The form of the letter changes based on its position in the word and its connection to the letters that are near it. In addition, some of the letters in Arabic have similar shapes and the difference between them is the diacritics that are positioned beneath or above them. For example: /ta:ʔ/ ت, /a:ʔ/ ا (Azazaia, 2000). Additionally, Arabic orthography is characterized by a diacritic at the end of the word, which is specific to the syntactic role of the word in the sentence.

Studies revealed that Arabic orthography can cause a delay in word recognition, which causes delays in reading due to the perceptual load, not only amongst young children, but even those in the third and sixth grades (Abdelhadi et al., 2011; Eviatar et al., 2004; Ibrahim, 2010; Ibrahim et al., 2007; Yassin et al., 2020). Arabic-speaking children cope with these challenges from a young age, when they encounter the Arabic writing system. Acknowledging these challenges, the Israeli Ministry of Education (2008) published a curriculum to help young children aged 3–6 acquire early literacy milestones in Arabic. This curriculum focuses on alphabetic skills, emergent writing and reading, oral language, communication skills, and book immersion.

Early Literacy Skills in Arabic

Children express interest in the building blocks of literacy (e.g., letters, written words, books) from an early age (e.g., Robins et al., 2014). In this study, we focused on alphabetic skills in Arabic (letter knowledge, phonological awareness, early writing and reading), which are central predictors of reading and writing achievement (Chambré et al., 2017; Treiman, 2017).

Letter Knowledge

Arabic has two systems of letter names, Standard letter names and Spoken letter names. The name in the Standard language starts with the phonemic sound that the letter represents (B-Baa), whereas the Spoken name ends with the phonemic sound that the letter represents (B-Eb) (Hassunah Arafat, et al., 2021). Some studies show that children name the letters using the Standard names more than the Spoken ones (Abu Ahmad, 2015; Hindi, 2012), while others found that children name the Spoken and the Standard letters to the same degree (Levin, et al., 2018; Sarsour, 2013). It

seems the children learn specifically what they are being taught. If they are consistently exposed to the Standard names, they learn them (Sarsour, 2013). Learning the Standard letter names is in the curriculum and preschoolers recognize letter names better than their phonemic sounds (Abu Ahmad, 2015; Hassunah-Arafat, 2010; Hindi, 2012).

Phonological Awareness

Few studies have evaluated phonological awareness in Arabic among preschoolers; most have focused on elementary school children (Eviatar & Ibrahim, 2000; Saiegh-Haddad, 2007; Taibah & Haynes, 2011; Tibi, 2010). Studies amongst Arabic-speaking preschoolers in Israel found that children's ability to identify the closing sound of a word was better than their ability to identify the opening sound, in words that are pronounced the same in Spoken and Standard Arabic (Eviatar & Ibrahim, 2000; Hindi, 2012; Sarsour, 2013). According to Tibi (2010), Arabic has a simple syllabic structure, where words are comprised of open and closed syllables. It is therefore easier for children to identify sub-syllables than phonemes. She recommends encouraging children to first be aware of the suffixes of words, which often represent a single phoneme (e.g., 'house' *ba-yi-t*/بيت/ends with /t/). It is important to note that learning the names of Arabic letters, both Spoken and Standard, promotes the ability to isolate the opening and closing phonemic sounds (Sarsour, 2013). Kardosh (2016) revealed that as in other languages, phonological awareness amongst Arabic-speaking preschoolers develops from larger units (syllables) to smaller units (phonemes).

Early Writing Skills

There is minimal research on early writing skills among Arabic-speaking preschoolers. In Arabic, each written letter represents a phoneme (e.g., b) or sub-syllable (e.g., ba). The writing level of 5–6-year-old Arabic-speaking preschoolers is generally low and expressed in writing letter-like symbols or random letters—i.e., Arabic letters not related to the word (Aram, et al., 2013; Jamallah-Nasser, 2008). From studies around the world, it seems that early writing skills are one of the important predictors of reading and writing in school (National Early Literacy Panel, 2008). Indeed, in a longitudinal study in Israel, Author et al. (2017) found that early writing skills predicted literacy achievement (word reading and writing) in school amongst Arabic-speaking children.

Word Recognition

The complex orthography of Arabic makes it hard for young children to acquire reading. For example, Ibrahim et al. (2007) found that Arabic speakers were more successful than Hebrew monolinguals, and Russian–Hebrew bilinguals on phonological awareness, but were less successful on reading tasks. Similarly, Bentin and Ibrahim (1996) assessed word identification amongst skilled Hebrew and Arabic-speaking children and found that the reaction time for identifying words in Arabic was longer than for identifying words in Hebrew. The authors attribute

these findings to the complexity of Arabic and the numerous letter shapes. Reinforcing these findings, a study by Abdelhadi et al. (2011) showed that the effect of the orthographic visual load continues to affecting Arabic-speaking readers, even in the sixth grade. Teaching preschoolers letters' shapes and names in Arabic benefited their word identification skills (Sarsour, 2013).

The recognition that reading and spelling do not emerge in children by virtue of growing up among literate people (Ehri et al., 2001), and the evidence of continuity from early literacy to reading and writing achievements across orthographies including Arabic (Hassunah Arafat et al., 2017), encourage research of the socio-cultural factors that predict early literacy.

Predictors of Early Literacy Skills in the Home Context

Children's development is embedded in their cultural and social life (Bronfenbrenner (1979, 1986). Embracing Bronfenbrenner's ideas, we focused on the closest layer to the child -his/her home and teased apart four aspects relating to early literacy development within it. These measures, from the farthest to the child to the nearest are: socio-economic status (SES)—this impacts all aspects of family life, home literacy environment (HLE)—the physical surroundings and activities to which the child and any siblings are exposed, mothers' pedagogical beliefs regarding the HLE—these relate to all children in the household, and mothers' specific estimation of their child's early literacy skills—these related specifically to a particular child. Using this model, we teased apart the relative relations between each of these measures and the child's early literacy skills.

Socio-Economic Status

Aside from being a measure of a person's education and income, SES reflects the types of experiences and opportunities available to an individual (e.g., Fernald et al., 2013). Within the realm of literacy, the Organization for Economic Cooperation and Development study (OECD, 2010) determined that the gaps on a reading comprehension test between student from an advantaged SES and his/her peer from a low SES equals two grade levels. The discrepancy in literacy achievements between children from lower and higher SES is already evident in preschool (e.g., Korat, 2007; Elimelech, et al., 2019).

Studies conducted in Arab societies in the world show that SES is positively related to children's literacy achievements (Al-Bahiri & Mahfouzi, 2014). In Arab families in Israel, children from middle-SES families showed higher achievements than children from low-SES families in early literacy skills (Hassunah Arafat et al., 2017; Ibrahim, 2010), reading and reading comprehension in early elementary school (Aram et al., 2013), as well as reading motivation and reading comprehension in grades four and six (Midraj & Midraj, 2011).

Home Literacy Environment

In the present study, the HLE relates to the richness of literacy tools, such as written materials, books, and games, available for the child at home. Studies across different languages and cultures show that the HLE predicts children's early literacy skills (Altun et al., 2018; Aram & Levin, 2001; Korat & Levin, 2001; Burgess et al., 2002; Carroll et al., 2019; Guo et al., 2020; Davoodi et al., 2017; Sonnenschein & Munsterman, 2002), and later achievements in reading and reading comprehension (Carretti et al., 2009; Catts, 2009; Cunningham & Zilbulsky, 2010; Rodriguez et al., 2009). In a study among Arab families in Israel, HLE predicted children's literacy skills in preschool (Hassunah Arafat, 2010) and first grade (Korat, et al., 2012), beyond the family's SES. These findings may have positive educational implications, showing that literacy tools at home make a more significant contribution to children's literacy level than the family's SES.

Parents' Beliefs Regarding Children's Early Literacy

Research on parental beliefs derives mainly from the assumption that these beliefs guide parents' behaviors with children (Goodnow, 2002). Indeed, parents' beliefs relating to children's literacy development and how to promote it are related to the type and nature of their literacy interactions with their children (Barnyak, 2011; Curenton and Justice, 2008; DeBaryshe et al., 2000; Vasilyeva et al., 2018). In the current study, we studied mothers' general beliefs relating to the HLE and their more specific beliefs regarding their own children's early literacy achievements. To the best of our knowledge, no study has explored these measures and their relations with children's literacy skills among young Arabic-speaking children.

Beliefs Regarding the Literacy Environment The literacy activities that parents engage in with their children are influenced by their beliefs relating to reading and writing, and how these skills can be promoted in their children (Korat & Haglili, 2007; Curenton & Justice, 2008; Meagher et al., 2008; Puccioni, 2018; Sawyer et al., 2018; Vasilyeva et al., 2018). Few studies relate specifically to the nature of the literacy environment. Davis et al. (2016) found that parents of preschoolers who value the literacy environment less tend to report few literacy activities at home. Also, Anderson et al. (2006) found that parents who believe that the environment in which the child grows up contributes to children's early literacy development taught their children letters (letter learning, writing their name, etc.) and exposed them to a variety of literacy activities (reading books, joint writing, letter games, etc.

Parental Estimation of their Children's Literacy Skills In addition to their global beliefs regarding HLE, parents hold specific estimations of their own children literacy skills. Parents usually have a good sense of their children's abilities (e.g.,

Sonnenschein et al., 2014) and are familiar with their children's literacy development (Korat, 2011, Aram & Levin, 2016). For example, there is evidence that parents of young precocious readers are aware of their children's high literacy skills as well as to their vulnerability and emotional competence as preschoolers (Hassunah Arafat et al., 2017). Familiarity with the child's skills can lead to greater adaptation of literacy interactions. Indeed, Korat and Haglili (2007) found that mothers of preschool-age fraternal twins guided the word writing of the more advanced twin on a higher level. Additionally, Aram and Levin (2016) found that mothers' estimations of their children's literacy level predicted the children's early literacy skills, beyond the contribution of mothers' general pedagogical beliefs.

From the literature review that we conducted, we did not find any studies that examined parents' pedagogical beliefs and estimation of their children's early literacy in the Arab community. Estimating children's literacy early skills can be challenging to parents because of the abovementioned uniqueness of the Arabic language, yet important for effective literacy interactions with their children.

Current Study

When studying literacy development, it is important to understand the context surrounding the child. Beyond the SES and HLE, development of early literacy skills can be related to the language's characteristics, parents' general beliefs regarding HLE, and their specific beliefs regarding their familiarity with their children's early literacy skills. The goal of the current study is to examine, within Arab families in Israel, the contribution of SES, HLE, and maternal beliefs (general and specific) to children's early literacy skills.

Study Hypotheses

1. Positive relations will be found between family SES, HLE, mothers' beliefs regarding the importance of the HLE and estimation of their children's literacy ability and children's actual early literacy skills.
2. In line with Bronfenbrenner's (1986) ideas, the measures reflecting the closer context—mothers' general beliefs on the importance of the HLE, and their specific estimation of children's literacy skills, will predict children's early literacy skills beyond the measures reflecting the further contexts—SES and HLE.

Method

Participants

Participants included 113 mothers and their preschool-age children. The families were recruited from an Arab village (18%), Arab city (43%), and a mixed Arab–Jewish city (39%). About 83% of the Arab people in Israel are Muslims

(Hadad Haj-Yahya & Cohen, 2019). In our study, most of the families were Muslim (79%) and the rest were Christian (21%). The children's average age was 68.82 months ($SD=5.08$). Mothers' age ranged from 25 to 37.50 years ($M=30.80$; $SD=3.54$). Fathers' age ranged from 25 to 42.50 years ($M=32.20$; $SD=4.17$).

All the children attended preschools, which in Israel are free and compulsory from age three. They are physically and pedagogically detached from elementary schools. Formal reading and writing instruction begins in first grade. Although the Arabic early literacy curriculum refers to alphabetic skills, emergent writing-reading, oral language, communication skills, and book immersion, teachers focus mainly on communication skills, letter knowledge, and phonological awareness (Taieh, 2016).

Measures

Early Literacy Skills

The early literacy measures were converted to percentages, with the exception of writing words, for which the scale was ten levels.

Letter Names Fourteen letters were randomly selected and presented to the child, with the first letter being the first in their name. The selected letters were presented on cards in their most basic form (final form of the letter). Children's responses were ranked according to a 3-level scale: 0 = incorrect, 1 = saying the Spoken letter name, 2 = saying the Standard letter name. The average score across letters served as the measure's score. Inter-item reliability was Cronbach's $\alpha=0.90$.

Letter Sounds Fourteen letters were randomly selected and presented to the child, with the first letter being the first in their name. The letters were presented on cards. The researcher said the name of the letter and asked the child to say the sound of the respective letter. Children's answers were ranked on a three-level scale: 1 = incorrect, 2 = letter name or sub-syllable, 3 = correct phoneme. The average score across the 14 letters served as the measure's score. Inter-item reliability was Cronbach's $\alpha=0.93$.

Writing Letters Fourteen letters were randomly selected. The researcher named each letter and asked the child to write it. The first letter from their first name was the first letter that the child was asked to write. The child wrote each letter with a pencil on a separate page. The children's writings were ranked on a three-level scale: 0 = incorrect/unrecognized writing; 2 = writing a letter from the same family with incorrect diacritics (e.g., ت ث ن = correct letter. The average score across the 14 letters served as the measure's score. Inter-item reliability was Cronbach's $\alpha=0.84$.

Word Writing The child was presented with six illustrations of animals (elephant - فيل, turtle - سلحفاة, bear - دب, butterfly - فراشة, ox - ثور, giraffe - زرافة) and asked to write what was depicted in the picture. These words were familiar to the children from daily life, and they comprise the majority of Arabic letters. Each written word

was scored on a 10-point word writing scale (Aram, et al., 2013) ranging from pseudo letters (1) through random letters (3), basic consonantal spellings (4), partial consonantal spellings (7), to formal writing (10). The average score across words served as the measure's score, with higher mean scores indicating a more formal level of word writing. Inter-item reliability was Cronbach's $\alpha=0.92$.

Word Recognition The child was presented with the same six illustrations of animals that he was asked to write. For each two illustrations, the child was given two printed words presented on cards. The child was asked to match each of the printed words to its illustration. The researcher said to the child: "Here is a picture of an elephant and a turtle. I am giving you two cards, one with the word 'elephant' on it and the other with the word 'turtle'. Please put the word 'elephant' under the picture of the elephant and the word 'turtle' under the illustrations for the turtle." The number of words that the child identified correctly served as the measure's score. Inter-item reliability was Cronbach's $\alpha=0.62$.

Phonological Awareness (Opening/Closing Sound) We evaluated the child's ability to identify the opening and closing phoneme of single-syllable nouns that include a large number of the Arabic letters, such as 'button' /*zer*/ زر (Korat et al., 2012). These words are pronounced the same in Spoken and Standard Arabic. To evaluate the opening sound, children were presented with 17 words and asked to say the smallest sound that they could hear at the beginning of the word. To evaluate the closing sound, children were presented with 17 different single-syllable words and were asked to say the smallest sound that they hear at the end of the word. The first words in each assessment were examples and were not included in the coding. The percent of correct answers served as the phonological awareness score. Inter-item reliability was Cronbach's $\alpha=0.81$.

Socioeconomic Status (SES)

The mean Z score across the mothers' and fathers' education, profession, occupation, and income level served as the family SES measure (Cronbach's $\alpha=0.92$). Parental education was measured on the following 4-point scale: did not graduate from high school (1); vocational high school diploma (2); academic high school diploma (3); post high school academic education (4). Profession and occupation (job at the moment) were assessed on a 5-point scale: unemployment and non-skilled professions (housewife, housemaid, industrial laborer) (1); through skilled professions (carpenter, locksmith, crane driver) (3); to academically certified professions (teacher, engineer, bookkeeper) (5). Both profession and occupation were assessed because of the labor market in Israel. The occupation score is sometimes lower than the profession score. Family income was scored on a 5-point scale: way below average Israeli salary (1); through average (3); to way above average (5). The researcher told the mother that the average income for a family in Israel is X, and asked her to rate her family on this scale.

Home Literacy Environment (HLE)

Mothers were asked about the quantity of literacy materials found in the house. They were asked to count the number of educational games relating to reading, writing, and math, and technological aids (software) that can contribute to the child's literacy development as well as children's and adults' books. They rated the quantity on a 5-point scale (0, 1–5, 6–10, 11–20, 21 and up). Inter-item reliability was Cronbach's $\alpha = 0.76$.

Mothers' General Beliefs: Importance of Home Literacy Environment (Fitzgerald et al., 1991)

Using a questionnaire, we evaluated mothers' views regarding the importance of literacy materials in the house. The questionnaire included 10 literacy items (coloring book, ABC letters, workbook preparing for school, paper for writing, etc.) and the mother was asked to mark the extent to which each item is important to have in the house. Mothers responded on a 4-point scale (1 = not important at all to 4 = very important). The average score across items served as the measure's score. Inter-item reliability was Cronbach's $\alpha = 0.78$.

Mothers' Specific Beliefs: Estimation of Children's Literacy Skills (Aram, 2008)

We evaluated the extent to which mothers know their child's literacy ability. We randomly selected four items from each of the six early literacy assessment tools (letter names, letter-sound connection, letters writing, words' writing and recognition, phonological awareness). The mothers were asked to answer the four items for each literacy skill as if they were their children. They received all the directions and examples that their children received. The researcher said: "How do you think your child would answer, please answer the way he/she would answer". The scores for mothers' estimations of their children's literacy skills were calculated according to the above scoring for the children's literacy scales.

Procedure

Four graduate students in education participated in the data collection. After receiving ethical approval from the education office, they met with the preschool teachers in person to explain the goal of the study and its procedure. The teachers sent letters to parents that described the goal of the study and the measures. After receiving parents' consent to participate, data collection was initiated. Assessment of children's literacy skills took place in the preschool during two meetings (approximately 30 min each) in the same week. In the first meeting, letter names, writing letters, and phonological awareness for opening sound measures were administered. In the second meeting, letter-sound connection, word writing, word recognition, and phonological awareness for closing sound measures

were administered. The family's SES, HLE, and mothers' general and specific beliefs (beliefs regarding the importance HLE and their estimation of child's literacy level respectively) were evaluated in a meeting that took place in the family's home.

Results

First, we describe the results of the study's measures. To learn about mothers' accuracy in estimating their children's literacy skills we present *t* test comparisons between mothers' estimations of their children's early literacy and the children's actual scores. Next, we present the correlations between the predicting measures (SES, HLE, mothers' beliefs regarding HLE, and mothers' estimation of children's literacy) and the children's literacy skills (letter names, letter sounds, letters writing, words writing and recognition, phonological awareness). Last, we introduce a series of four-step hierarchical regression analyses, explaining the variance in each of the children's literacy skills according to our model from the furthest (SES), through HLE and maternal general beliefs, to the closest (maternal estimation) contextual measures.

Descriptive Statistics

The families' SES ranged from 1 to 4.71 ($M=2.64$, $SD=1.08$) on a 5-point scale. It revealed that the sample was varied yet represented more families from medium to low SES. The scores of the families' HLE ranged (on a 5-points scale) from 0.29 (less than 5 tools) to 3.43 (between 11 and 20 tools) with an average of 1.5 ($SD=0.69$), indicating around 6 to 10 literacy tools. Mothers' beliefs regarding the importance of the HLE ranged (on a 4-point scale) from 2.80 to 4 ($M=3.60$, $SD=0.33$), showing that they highly value the importance of the literacy environment.

Table 1 Mothers' estimation and children's actual early literacy skills: description and comparisons (N=113)

	Mother's estimation of her child's literacy skills		Children's early literacy skills		<i>t</i> test
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Letter names	58.26	32.23	46.21	32.25	3.93***
Letter sounds	58.76	36.98	32.96	33.31	7.77***
Letter writing	81.70	31.26	54.61	32.04	9.00***
Word writing	4.81	3.74	3.76	2.37	3.80***
Word recognition	85.27	35.28	66.07	35.06	4.30***
Phonological awareness	44.42	37.02	35.25	33.60	2.61*

* $p < 0.05$; *** $p < 0.001$

Table 1 presents children's scores on each of the literacy measures (letter names, letter-sound connection, writing letters, words' writing, words' recognition, and phonological awareness). Children tended to name letters in the Spoken language, but not in the Standard language. They correctly wrote about half of the letters. They had difficulty saying the phonemic sound of the letters presented to them, and they tended to say the sound of the letter with a long or short vowel as a sub-syllable. The low average score on phonological awareness reveals that children had difficulty isolating phonemes of the words that were presented to them, both at the beginning and at the end of the words. Children's word writing ranged between writing random letters to writing a few consonants. The children correctly identified slightly more than half of the written words that were presented to them.

Table 1 also shows mothers' estimation of their children's literacy skills and a series of t-tests that assessed the differences between mothers' estimations and children's actual achievements on each literacy measure. The t-tests revealed that mothers significantly over-estimated their children's literacy knowledge on all the measures. That is, they thought that their children know more than they actually knew in letter knowledge, phonological awareness, word writing, and word recognition.

Predicting Children's Early Literacy Skills

To learn about the relations between the predicting variables (SES, HLE, mothers' general beliefs regarding the importance of HLE, and their specific beliefs (i.e., estimations of their child's early literacy skills) and the explained variables (letter names, letter-sound connection, writing letters, words' writing, words' recognition, and phonological awareness), we first calculated the Pearson correlations between them (see Table 2). We found significant medium to high correlations between all the predicting variables and the children's early literacy skills (except for mothers' general beliefs and children's phonological awareness). Children from a higher SES and a richer HLE showed higher literacy skills. Additionally, the higher mothers evaluated the importance of their children's literacy environment the higher their children scored on the literacy measures. In spite of mothers' tendency to overestimate their children's literacy skills, mothers were familiar their children's early literacy skills (with the exception of word recognition). Table 2 seems to indicate that the measures reflecting the context further from the child, like SES or HLE, are less related to children's scores than the measures reflecting the context closer to the child—mothers' specific beliefs regarding her child's skills.

To study the separate contribution of each independent variable to each literacy skill, in line with our hypotheses, we conducted a series of 4-step hierarchical regression analyses. In the first stage, we entered SES, in the second HLE, in the third stage mothers' mothers' specific beliefs—her estimation of her child's literacy (in relation to the dependent variable). Table 3 presents these results.

The results show that SES significantly predicts all the children's literacy measures. The percentage of explained variance by SES ranges from 5 to 12%, with its contribution to writing letters particularly apparent (12%). Beyond SES, HLE significantly predicted letter names, letter sounds, words writing, and

Table 2 Correlations between SES, home literacy environment, mothers' evaluation of the importance of literacy environment and their estimation of children's literacy skills, and children's actual early literacy skills (N = 113)

	Children's literacy skills					
	Letter names	Letter sounds	Letter writing	Word writing	Word recognition	Phonological awareness
SES	0.25**	0.27**	0.35**	0.26**	0.21*	0.26**
Home literacy environment	0.28*	0.38**	0.32**	0.30**	0.21*	0.34**
General beliefs ^a	0.30**	0.22*	0.27**	0.21*	0.21*	0.11
<i>Specific beliefs: estimation of children's literacy skills</i>						
Letter names	0.52**					
Letter sounds		0.51**				
Letter writing			0.50**			
Word writing				0.64**		
Word recognition					0.10	
Phonological awareness						0.48**

* $p < 0.05$; ** $p < 0.01$

^aImportance of the literacy environment

Table 3 Four-step hierarchical regression analyses predicting children’s early literacy skills ($N = 113$)

	Letter names (β)	Letter sounds (β)	Letter writing (β)	Word writing (β)	Word recog- nition (β)	Phonological awareness (β)
1st step						
SES	0.25**	0.27**	0.35***	0.26***	0.21*	0.26**
2nd step						
SES	0.11	0.04	0.23*	0.11	0.13	0.06
HLE	0.23 [^]	0.37**	0.19	0.24*	0.13	0.32**
3rd step						
SES	0.11	0.05	0.24*	0.11	0.14	0.06
HLE	0.19	0.35**	0.16	0.22	0.11	0.31**
General beliefs ^a	0.27**	0.18*	0.24**	0.18*	0.20*	0.07
4th step						
SES	0.09	-0.02	0.15	0.05	0.14	0.06
HLE	0.04	0.26*	0.14	0.07	0.11	0.22*
General beliefs ^a	0.25**	0.09	0.08	0.04	0.20*	0.08
Specific beliefs ^b	0.47***	0.41***	0.40***	0.59***	-0.019	0.43***
	ΔR^2	ΔR^2	ΔR^2	ΔR^2	ΔR^2	ΔR^2
1st step	0.06**	0.07**	0.12***	0.07	0.05*	0.07
2nd step	0.03 [^]	0.09	0.02	0.04*	0.01	0.06**
3rd step	0.07**	0.17	0.06**	0.03*	0.04*	0.13
4th step	0.19***	0.35	0.12***	0.29***	0.00	0.18***

[^] $p < 0.06$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

^aImportance of the literacy environment

^bEstimation of the child’s early literacy skills

phonological awareness. The additional explained variance of the HLE beyond SES ranged from 3 to 8%. HLE did not contribute beyond SES to writing letters or word recognition. Beyond SES and HLE, mothers' general beliefs regarding the importance of the HLE contributed significantly to all the early literacy skills, with the exception of phonological awareness. Additional variance explained by maternal beliefs ranged from 3 to 7%. In the fourth stage, beyond the preceding variables, mothers' estimation of children's literacy skills contributed significantly to all the children's early literacy skills, except for word identification. The additional explained variance ranged from 12 to 29%. In total, all the variables entered into the model explained between 31 and 42% of the variance between participants' early literacy skills except word identification (9%).

Discussion

In line with Bronfenbrenner's model (1986), viewing the home as the contextual layer closest to the child, the goal of the current study was to tease apart and evaluate the specific contribution of measures within the home to the child's early literacy skills in the Arab community in Israel. We aimed to assess the relations between mothers' general (importance of the home literacy environment) and specific beliefs (estimation of her child's literacy skills) and their children's actual early literacy skills, beyond the family SES and the richness of the HLE. The study broadens the understanding of the context of the literacy environment within Arab families in Israel. The results show that mothers in Arab society in Israel see the importance of a rich literacy environment for their children's early literacy development. They are aware of their child's early literacy skills, yet they tend to overestimate them. The hierarchical regression analyses revealed that family SES predicted all the assessed early literacy skills and HLE contributes beyond SES to most of the children's skills. Mothers' beliefs regarding HLE and their estimation of their children's abilities predicted the children's early literacy skills beyond SES and HLE. This section will focus on these findings in accordance with the study's hypotheses.

Socio-Economic Status and Home Literacy Environment

The positive correlations between SES and all the children's early literacy skills support previous studies conducted in Israel (e.g., Aram, et al., 2001; Korat, 2005) and other countries around the world showing that children's socio-economic background relates to their literacy skills (e.g., Neuman et al., 2018; Segal and Martin-Chang, 2018). These results also strengthen the studies that were conducted in Arab countries (Al-Bahiri and Mahfouzi, 2014). For example, Gaffen (2011) found that in grades one through three in Yemen, achievements of children from a middle SES were higher than those from a low SES in terms of letter-recognition, concepts of print, reading comprehension, and word reading.

Similarly, Ibrahim (2010) found that readiness for reading and writing in preschool is related to family SES among Egyptian preschoolers.

As to HLE, the current study demonstrates positive relations between the HLE and children's early literacy skills in Arab families in Israel. This finding supports the literature that shows that a richer and more varied HLE is associated with higher children's literacy achievements (e.g., Sénéchal and LeFevre, 2002; Weigel et al., 2006). In Middle Eastern countries, Sartawi et al. (2006) found that the frequency of parent-child activities (e.g., visit the library, buy books) predict children's reading and writing achievements. There is limited research on this issue in the Arab world (Ahmeida, 2009), and our study adds important information that highlights the role of the HLE in children's early literacy development.

Maternal General Beliefs: Importance of the Home Literacy Environment

Mothers' beliefs regarding the importance of the HLE were high, like in other Western countries (e.g., Skibbe et al., 2008; Weigel et al., 2006). These general beliefs correlated significantly with children's early literacy skills and predicted children's literacy achievements beyond family SES and richness of the HLE (except phonological awareness). This finding amongst the Arab population in Israel supports other studies that show relationships between parents' beliefs relating to literacy's importance, the literacy environment they create for their children and children's achievements. For example, Bingham (2007) found that American mothers' ideas about the quality of the HLE related to the nature of mothers' shared book reading, and to 4-year-old children's early literacy. In Russia, Vasilyeva et al. (2018) found that the beliefs about the importance of developing literacy skills prior to school linked to child's outcomes beyond SES.

We did not find studies that assessed parents' beliefs regarding the richness of their HLE in Arab countries. Yet, Sartawi et al. (2006) studied beliefs of Arab parents from the United Arab Emirates regarding literacy activities at home and found that parents with low education (high-school level) were aware of the importance of sharing literacy activities with their children but did not translate this knowledge to practical implementation. Our findings reinforce the importance of strengthening parents' awareness and understanding that a rich HLE can contribute to their children's literacy development, beyond SES.

Maternal Estimation of Children's Literacy Level and Children's Actual Literacy Skills

Mothers in the study were familiar with their children's early literacy skills. Indeed, parents are generally familiar with their children's health and general development (Glascoe, 1999; Koch et al., 2011) as well as their school performance (Korat, 2004, 2009). Nonetheless, the mothers over-estimated their children's skills across all the measures, sometimes quite vastly (e.g., letter writing

or letter sounds). Parents' tendency to overestimate their children's abilities is documented across various areas like intelligence (Chamorro-Premuzic et al., 2009; Furnham and Valgeirsson, 2007), emotion comprehension (Kårstad et al., 2014), and language and literacy skills (Aram, et al., 2009; Korat, 2016). Our results support these studies and show that this awareness of children's skills along with overestimation also is prevalent among Arab mothers in Israel regarding their children' early literacy skill levels. We think that the overestimation may relate to mothers' assumptions that their children focus on early literacy skills in the preschool framework, and therefore they have greater knowledge. On one hand, somewhat over-estimating children's skills allows the parent and child to engage in a positive interaction and encourages the child to learn. On the other hand, over-estimation that is significantly higher than the child's actual ability can interfere with parents' literacy support and lead to frustration and ineffective learning situations. Our study strengthens the importance of effective communication between preschool teachers' and parents regarding children's literacy knowledge and activities.

Our analyses showed the unique predictive ability of each of the measures, from the family SES and the physical literacy environment at home (HLE) through maternal beliefs regarding the importance of the HLE and mothers' estimations of their children' literacy skills. A small number of studies related specifically to maternal assessment of children's early literacy. The current study strengthens these studies that show that mothers' assessment predicts the child's literacy (Aram, et al., 2016; Aram, 2008; Sonnenschein et al., 2014). This finding is encouraging because it shows that despite the complexity of the Arabic writing system, and mothers' general over-estimation, nonetheless these mothers are aware of their children's early literacy knowledge.

Mothers' specific estimations of their children's literacy skills are especially important as they explained 14% to 29% of the variance in children's skills beyond SES, HLE and mothers' general beliefs regarding the importance of HLE. There is evidence that mothers who evaluated their young children's literacy levels as higher provided them with higher levels of cognitive support during writing activities (Aram, et al., 2006). Interestingly, in the past, Ayari (1996) suggested that parental awareness of the gap between Spoken and Standard Arabic did not encourage them to expose their children to the Standard language before entering first grade. In 2013, Al-Alimat recommended developing intervention programs to raise parental awareness about the importance of children's readiness for reading and writing before entering school. We presume that mothers today are more aware of their children, recognize the importance of alphabetic skills prior to entering school, and are therefore more involved. A number of reasons may explain this change. The first is updated preschool language curricula, which removes the uncertainty that existed amongst both preschoolers and mothers about early childhood language learning. The second is the socio-cultural change occurring in the Arab community in Israel, where there are more educated mothers and more mothers in the workforce (Fuchs & Friedman-Wilson, 2018), which expands their views and involvement in formal learning in school.

Mothers were not aware of their child's level of word recognition and they highly overestimated it. In all, our measures explained only 9% of the variance in word recognition. One possible reason for this result relates to the complex skills required for reading in Arabic. Reading requires knowledge of the Spoken language and matching it with the Standard language (Ravid, 2002). The simple view of reading (e.g., Gough et al., 1996) attributes a great deal of importance to the role of spoken language skills, particularly for the development of reading. These apply less to a diglossic language like Arabic, where the acquisition of reading is not based on fluency in the Standard language. Additionally, the assumption that children recognize the phonological structure of the Standard language is not correct, because this language is not acquired as a mother tongue (e.g., Saiegh-Haddad, 2008).

Limitations and Future Research

The study has a number of limitations that can direct future research. First, the mothers completed the questionnaires while the researcher was present in the room. It may be that mothers would have given less socially desirable answers without the researcher's presence. We suggest that in-depth interviews can be used to assess beliefs that will allow parents to discuss their attitudes and the reasoning behind them. Another limitation is the use of questionnaires that were translated from English to Hebrew and Arabic. Instead, there may be a need to construct questionnaires adapted to Arab society and culture and the Arabic language. Additionally, fathers in Arab families are important and their beliefs should be examined as well as the contribution of these beliefs to preschoolers' literacy. An additional limitation is the nature of the diglossia of Arabic, and the gap between the Standard and Spoken languages, with the latter including different dialects. This gap influences phonological awareness, word decoding, orthographic skills (speed of converting letters to sounds), and word reading fluency (Saiegh-Haddad, 2008). In the current study, we did not examine whether the children's dialects impacted the literacy skills we assessed. Future studies should examine this issue in greater depth.

Conclusions

The study's findings reveal that the present variable set succeeded in explaining variance in children's letter knowledge, word writing, and phonological awareness. The study stresses the role of SES and the HLE in predicting children's early literacy skills. It elaborates on mothers' pedagogical beliefs on the HLE and shows their ability to estimate their children's early literacy skills. In light of the characteristics of the Arabic language, it is important to consider constructing intervention programs, adapted to the society's values and culture, to help parents promote children's early literacy at home prior to entering formal schooling.

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