

Research article

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**Gail Zellman\***, Rita Karam, Michal Perlman

\*zellman@rand.org

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## **Predicting child development knowledge and engagement of Moroccan parents**

Gail Zellman,<sup>1</sup> Rita Karam,<sup>1</sup> Michal Perlman<sup>2</sup>

<sup>1</sup>RAND Education, The RAND Corporation, Pittsburgh, USA

<sup>2</sup>University of Toronto, Toronto, Canada

Email: zellman@rand.org

### **Abstract**

A growing body of empirical evidence points to a child's earliest years as a critical period for developing the foundation for later learning. Yet neither parents nor public policy in the Middle East and North Africa actively support such development. We developed, tested, and administered a survey to a small number of parents of children aged six years and under in Casablanca, Morocco in 2013 to assess parents' child development knowledge and how they view their role as teachers of their young children. We used multiple regression models to predict parental knowledge and parental engagement in learning activities with their sons and separately with their daughters. Results indicate that nearly half of parents believe that brain development does not begin until after a child's first year of life. Consistent with these beliefs, parents report engaging in learning activities with their young children less frequently than Western parents; they also relate that they would be unlikely to enroll their young children in high quality child care programs, even if cost were not a factor. Parents who indicated feeling a high level of individual control over life events were less knowledgeable about child development. Those who believe that God controls life events were both more knowledgeable and reported more engagement in learning activities. Parents who reported turning to professional sources for information on child development were likelier to engage in learning

activities. The general view that teaching and learning in the first years are unimportant may help to explain the poor academic performance of Moroccan children later in life relative to those of children from other nations with similar economic status. Education of the public regarding the importance of early-years development could help inform parents and policymakers. Services that might be offered to reinforce this message are discussed.

*Keywords:* Middle East parents; parent roles and engagement; child development knowledge; predictors of knowledge and engagement; gender differences

## **Background**

### *Early learning in Morocco*

According to a recent World Health Organization report (Young, 2009), all Arab countries face a common challenge - students' poor educational performance on international assessments at grades 4, 8, and beyond. This is especially true in Morocco: it lags behind other countries with similar levels of economic development in school performance measurements such as literacy rates (e.g., World Bank, 2007) and it scored second-lowest of all participating countries on reading achievement on the 2006 PIRLS (IEA, 2006).

One of the reasons posited for this poor academic performance is the neglect, by parents and policymakers, of children's cognitive development in the years before school entry (Young, 2009). Indeed, the development of young children is generally considered a private concern in the Middle East and North Africa (MENA) region, a view that limits public investment in children's intellectual development (Zellman, Ryan, Karam, Constant, Salem, Gonzalez, Goldman, Al-Thani, Al-Obaidli, 2009; Zellman, Martini, & Perlman, 2011). As a result, there is a very limited supply of early-childhood programs, and those that are available may not provide high-quality care (Faour, 2010; Young, 2009). Pre-K program enrollments are low (Faour, 2010); only sub-Saharan Africa posts lower preschool enrollment figures (UNESCO, 2006). This lack of investment ignores important research on brain development, which identifies the earliest years of a child's life as a critical period for developing the foundation for later learning (Fox, Levitt, & Nelson III, 2010; Heckman, 2011).

Recent qualitative work in Casablanca, Morocco found that parents often do not view the first years of a child's life as a time of learning. Of 32 parents (of children six years and under) who participated in four focus groups in Casablanca, many were uncertain about whether the

first year of life mattered to a child's later success in school. Among those parents who had an opinion, most, regardless of income level, thought that experiences during a child's first year did not matter. The most common reason offered for this belief was that children do not remember what happened to them as young infants. A few parents went further, arguing that there was a risk of overexposure; they thought it was inappropriate to expose children to too much stimulation in their first year of life because they would be unable to process that information (Zellman, Perlman, & Karam, 2014).

Such views contradict a large body of research that finds that parents play a critical role in shaping their children's capabilities in the earliest years; parents influence the development of both cognitive and non-cognitive skills including perseverance, self-control, and self-esteem that may affect academic success and adult achievement (Duckworth & Quinn, 2009; Heckman, 2011; Peterson & Seligman, 2004). Research on brain development identifies the earliest years of a child's life as a critical period for developing the foundation for later learning (Fox et al., 2010; Melhuish, 2010; Sylva, Melhuish, Sammons, Siraj-Blatchford, & Taggart, 2010). Studies have consistently shown that children's literacy skills are enhanced when parents engage them in direct literacy and language-enriching activities like joint book reading, playing rhyming games, and singing songs (Burgess, Hecht, & Lonigan, 2002; Foster, Lambert, Abbott-Shim, McCarty, & Franze, 2005; Senechal, LeFevre, Thomas, & Daley, 1998; Weigel, Martin, & Bennett, 2010; Bus, van IJzendoorn, & Pellegrini, 1995). Coming from a home with more books also predicts better literacy outcomes for children (e.g., Totsika & Sylva, 2004). Limited research in Morocco supports these findings. A longitudinal study of parental involvement and child achievement in Morocco (Wagner & Spratt, 1988) found that parents who had more positive attitudes about their

involvement as teachers of their children had children who were better readers at ages 6 and 7, independent of their own level of literacy.

### *Characteristics associated with parental engagement and children's literacy skills*

Given the importance of parental involvement in learning activities with their young children, it is useful to examine the factors that are likely to promote and impede such engagement. In this study we developed, refined and administered a survey to a small sample of parents in Casablanca, Morocco which enabled us to examine the roles in predicting parent engagement in learning and other activities played by:

- parent education and family income
- parent and child gender
- perceptions of how life events are determined
- parents' child development knowledge (and its sources),
- views surrounding the importance of early-years play.

Below, we present research on each of these characteristics.

**Parent education and family income.** A large body of Western research consistently finds that family characteristics influence the level of parents' involvement with their children and their children's literacy skills. Children from families with both higher education and income have better literacy and numeracy skills (Barbarin, Bryant, McCandies, Burchinal, Early, Clifford, Pianta, & Howes, 2006; LeFevre, Skwarchuk, Smith-Chant, Fast, & Kamawar, 2009). This effect is likely to be due to the greater inclination of parents from communities with higher socioeconomic status in engagement of literacy practices such as joint parent-child reading, literacy excursions, book ownership, and other literacy-related activities. More recent research suggests that the children of parents who engage in literacy-promoting activities (e.g., taking

their child to the library) exhibit better outcomes and that this “home learning environment” is a stronger predictor of child outcomes than socio-demographic determinants including parent education (Meluish et al., 2008).

**Parent gender.** Until recently researchers have focused almost exclusively on mother-child dyads (e.g., Conner, Knight, & Cross, 1997) thereby limiting possible comparisons of parenting approaches by mothers and fathers. Work that has compared the behaviors of mothers and fathers with their children in laboratory settings finds few differences in their interactions with their children (Gauvain, Fagot, & Cupp, 1993).

In general, mothers spend more time with their children and talk to them more than do fathers (Fagot, 1995; Leaper, Anderson, & Sanders, 1998). Such differences are likely to be greater in more traditional cultures such as Morocco’s. While Moroccan fathers are typically the better-educated parent, mothers do not usually work outside the home, spending more time with their children and are expected to oversee and support the children’s education (e.g., Zellman et al., 2014). The greater role that mothers may play in children’s development is supported by evidence that maternal characteristics are better predictors of children’s social and cognitive outcomes (e.g., Fagot, 1995).

**Child gender.** A limited number of studies have examined the child’s gender as a factor in the level and type of parental involvement. In general, these studies find few effects of child gender; gender effects are particularly unlikely among young children (Fagot, 1995; Gauvain et al., 1993). Moon and Hoffman (2008) found that mothers reported engaging with their daughters significantly more often than did fathers; fathers reported significantly more engagement with sons. Ahmed (2010) observes that child gender effects are common among older children in more traditional Arab communities. These effects may reflect the increasingly differentiated

task expectations that boys and girls face as they mature (e.g. cooking for girls and agricultural tasks for boys), a point that is consistent with Leaper et al.'s (1998) suggestion that with older children, mothers may distinguish between sons and daughters more in terms of the *type* of verbal interaction than in the quantity of talk directed at sons and daughters.

**Perceptions about the determinants of life events.** A large body of psychological literature has attempted to assess and explore the ways in which people view how the world works. One early characterization divided people into those who were primarily external (i.e., believing that key aspects of their lives were beyond their control), and those who were internal (i.e., believing that their own actions could largely direct the course of their lives); their views were considered to be an enduring individual trait (Rotter, 1966). Locus of control research has shown that it affects many aspects of people's lives, including motivation to succeed, coping skills, and approach to raising children. For example, Mondell and Tyler (1981) found that parents who believe that success in life is largely under the control of individuals were likelier to display warmth, acceptance and helpfulness in interacting with their preschool-aged children on a learning task. Since Rotter's (1966) first work on locus of control, other researchers have expanded and refined its characterization. Jackson and Coursey (1988) employed a concept put forth by Kopplin (1976) which assesses the degree to which people accord power to God, which he called God control. They found that in a strongly traditional U.S. faith community, most people believe that both individuals *and* God are active in the world. Interestingly, those who scored high on God control generally scored high on internal of locus of control as well. Welton, Adkins, Ingle, and Dixon (1996) note that individuals who score high on God control generally take an active rather than a passive approach to life. This association between God control and action may be important in understanding the beliefs of Casablancon parents and their reports of

how often they engage with their children since, despite its urban location, traditional religious values dominate there (e.g., Zellman et al., 2014).

**Child development knowledge and sources.** Parents who want to support their young children's learning and literacy may not actively engage with their children in literacy activities if they do not believe that the early years matter. In many cultures, infancy is considered a passive period in which little learning occurs; consequently, parents' role is limited to feeding and bathing their infants (Goodnow, 2013; Bornstein & Cheah, 2013; Bornstein & Cote, 2004). For example, in a random sample of Turkish mothers of children aged 36 months or younger, 68% of the sample did not know that brain development begins in the early months of life (Ertem et al., 2007).

Views of the importance of the earliest years may be influenced by the amount and sources of information about child development to which a parent has access and on which he or she relies. While the nature of these sources (e.g. family members or books on child development) may reflect a parent's education and social status, it is possible that the type of information on which parents rely may have an independent effect on their views and on their parenting behavior, particularly their level of engagement with their very young children.

Our conceptual model (shown in Figure 1) includes these factors - factors that also drove the development of the parent survey which we report on in this paper, described in detail below. The model posits that successful parental involvement in learning activities with their young children depends on a number of factors, including parents' socioeconomic status and gender, the child's gender, parents' views about how life events are determined, their reliance on different sources of information on childrearing and their accurate understanding of child development.

This paper describes findings from a first administration of the survey. It is driven by three research questions:

1. To what extent do parents report that they engage in activities with their young children that support cognitive development and literacy? What types of activities do parents engage in with their young children? To what degree does this involvement vary by parent and child gender?
2. How accurate is parents' knowledge about child development?
3. What parental characteristics and other factors influence parental knowledge and engagement?

## **Methods**

To answer our research questions, we developed and fielded an Arabic-language survey of parenting knowledge and involvement in Casablanca, Morocco in October, 2013. Seventy-eight parents of children aged from birth to six years were recruited by our Moroccan partner to complete the survey. Forty percent of these parents also had children older than six.

All surveys were completed in the offices of our Moroccan partner. Fifty-three parents completed the survey online; 25 parents completed a hard-copy version. Parents were randomly assigned to administration type.

### *Survey Development*

Survey development relied on two main sources of information: 1) previous surveys of childrearing knowledge and involvement and 2) four parent focus groups conducted by the authors (Zellman et al., 2014). Survey development was an iterative process. Our Moroccan partner conducted ten individual cognitive interviews with mothers and fathers of young children

of various economic and educational background to determine if potential survey items were easily understood, seemed relevant, and were culturally appropriate.

**Previous surveys.** A number of the questions that assess parent knowledge of child development appeared on an earlier survey of parents conducted in the US entitled What Grownups Know (DYG, 2000); these items were used with the permission of Zero to Three, a US organization concerned with early development, which commissioned the US survey. Additional questions were drawn from US government surveys, including the National Household Education Survey (National Center for Education Statistics, 2012). A number of questions were modified from the Home Learning Environment (HLE) scale that was developed as a series of interview questions in the UK (Melhuish, Phan, Sylva, Sammons, Siraj-Blatchford, & Taggart, 2008). A series of questions that examine beliefs about fatalism and personal control were drawn from a validated fatalism scale (Esperanza, 2008).

**Focus groups.** In July, 2012, our Moroccan partner conducted four focus groups with parents of children aged from birth to six years in Casablanca, Morocco. A total of 32 parents (16 fathers and 16 mothers) participated in the single-gender focus groups. Parents ranged in age from 25-45. Each focus group explored the topics we hoped to include in a closed-ended survey: 1) perceived childrearing obligations and challenges; 2) parenting role and how it is shared with their children's other parent; 3) knowledge of child development; and 4) contributions to their children's education. Transcripts provided us with nuanced understanding of these topics, and contributed to the development of additional survey questions. (See Zellman et al., 2014, for further details.)

Survey development was an iterative process that included four waves of piloting during which a total of ten parents were interviewed; most were of low income and education as we

wanted to ensure that our questions were comprehensible across demographic groups. An initial survey was administered individually to four parents while a researcher asked each parent to talk about each question and the available response alternatives as he or she completed the survey.

The survey was modified based on feedback from three rounds of such cognitive interviews.

The final survey included 12 fatalism items, ten factual items about child development, a set of questions that explored parents' educational (and other) aspirations for their sons (and separately for their daughters), and their level of involvement with their sons and daughters. These latter questions included queries about eating together as a family, parents' direct teaching of letters or words, and other types of involvement such as playing games outside with them, time spent watching TV, and playing video games. Four of the child development knowledge items focused on specific behaviors that parents might do with a two-year-old to support brain development and help the child become a better learner. These included playing with the child, providing a healthy diet, reading to the child, and talking with the child; five additional questions asked about educational TV (which was mentioned repeatedly as an important learning activity in the focus groups), physical activity, music, a sense of security, music and quality of day care. Response options included "not at all important", "not very important", "somewhat important" and "extremely important". Parents were also asked about the likelihood of enrolling their child in a high-quality childcare center or nursery school at five different ages, ranging from under one year to 4-5 years old. Parents were asked to assume that their family could afford to do so in answering this question. Four response options were available, from "very unlikely" (scored as 1), "somewhat unlikely" (scored as 2), "somewhat likely" (scored as 3) and "very likely" (scored as 4). The survey ended with a set of questions about family composition and demographics

### *Choice of Morocco and Casablanca*

With limited funds, we had to conduct our preliminary work in one location. We chose Morocco because it is similar to other countries in the MENA region in terms of education outcomes, youth unemployment rates, and the quality of the public education system (Masood, 2012; Tessler, 2000). We limited the work to Casablanca because of its diversity and its location. Although we attempted to capture this diversity in the parents who participated in the cognitive interviews and completed the survey, participating parents cannot be considered to be representative of the general Moroccan or MENA population. Small numbers also limit the power of our findings. Nevertheless, survey results provide important insights into parental views in the region and the characteristics associated with them.

### *Parent Recruitment Procedures*

To find a diverse group of parents with at least one child aged from birth to six years, we combined convenience and purposive recruitment techniques. Our data collectors recruited participants through word of mouth and used their ‘database’ of individuals who had participated in previous focus groups and surveys for our partner agency to acquire names of parents who might be willing to complete a survey. Prospective participants were asked a series of questions that enabled our data collectors to classify them by socioeconomic status (SES), as we wanted survey respondents to represent a wide range of backgrounds. These questions included profession, level of education, housing type, and other indicators. Each parent was randomly assigned to complete the survey either online in our partner’s offices or in hard copy, using paper and pencil. Parents were offered a voucher worth approximately \$25 for their participation.

In the course of recruiting parents, potential participants were told only that they would be asked to express their opinions on a range of topics. Consequently, there is no reason to

assume that participating parents were particularly interested in parenting topics or that they differ from other parents in this dimension.

### *Survey administration*

Parents who were assigned to complete the survey online were directed to a computer where the survey was accessible. Those parents who were assigned to paper and pencil administration were shown to a desk. Staff made themselves available only to answer questions about survey administration, not the content of items. The survey began with a description of the study and an informed consent ethics protocol approved by the Human Subjects Review Committee at the first author's institution.

### *Analysis of Survey Data*

**Data quality.** Survey data were examined for completeness. We also checked for errors and assessed whether items appeared to be completed in a nonrandom manner.

**Variable and index development.** We developed several variables and indices to include in the descriptive and multivariate analyses. These are described briefly below.

Because of our small sample size monthly family income was dichotomized by collapsing the six categories in the original survey question to a high and low income category. Forty-four percent of respondents fell into the higher income category and 56 percent into the lower one.<sup>1</sup>

We developed an index of parents' knowledge and understanding about how children grow and what influences development during their early years. This index was derived from ten items that asked parents about their views on when a child's brain first develops, when parents

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<sup>1</sup> The lower category included respondents with reported monthly family income that ranged from "less than 2000 dirhams" to 7000 dirhams (approximately \$242-847 based on an exchange rate of .12099.) The higher income category included respondents whose reported monthly family income ranged from 7001 to more than 10,001 dirhams (approximately \$847-1210 based on the same exchange rate).

can impact a child's brain development, and how important various activities are in helping a two-year old child to become a good learner. The knowledge index was created by adding the number of queries that parents answered correctly. The mean score on this index was 7.9, with standard deviation of 2.1.

The extent to which parents obtain information from professionals regarding child development is also included in our model as a predictor of parent learning engagement with their sons and daughters. This index is made up of the average of five items that measure how often parents turn to doctors, books, news reports, parenting magazines and psychologists for information and advice about children and parenting. The mean score on this index was 2.0 with standard deviation of .5, indicating that parents tend to occasionally turn to professional resources for information on child development and parenting.

Finally, two indices 1) God's control and 2) parents' sense of individual control were constructed from a set of 12 questions asking parents about the extent to which they agree with statements about fatalism. We averaged the items for each index. The mean scores for God's control and individual control indices are 3.5 and 3.0 respectively, with standard deviation of 0.5 and 0.7, respectively. Alphas for the God's control and individual control indices were 0.81 and 0.86 respectively. Table 1 presents the items included under each index with corresponding index reliability coefficient.

Our two dependent variables (parents' engagement in activities with their sons and parents' engagement in activities with their daughters) are two composites derived from a larger set of 11 items asking parents to indicate how often in the past year they engaged in various activities with their sons and daughters. For each set of activities related to sons and daughters we conceptually grouped them into two different categories: learning activities (e.g., activities

designed to promote child's literacy skills such as reading with their children) and recreational activities that are more social in nature and primarily designed to entertain the child (e.g., parents taking the child to visit friends or relatives or playing outside with the child). We then performed confirmatory factor analysis for the items across these two categories using a maximum likelihood extraction method with two factors and varimax rotation with Kaiser normalization. The rotated factor matrix provided clear evidence of two separate factors for activities pertaining to sons, while for activities pertaining to daughters the rotated factor matrix identified three factors instead of two. The items loading on the factor measuring learning activities for sons and daughters were the same. For daughters, however, items pertaining to recreational activities were the same as for sons with the exception of two items that loaded on another non-learning activity factor. This factor has a low reliability coefficient and was therefore excluded from our analyses (see Table 2). Items that loaded highly on each factor were averaged to establish the indices. Items that loaded equally on multiple factors were excluded from the index formation. Alphas for these indices were high, ranging from 0.82 to 0.94. The mean scores for parent engagement in learning activities for sons and daughters are 4.9 and 5.9 respectively, with standard deviation of 1.8 for both. The mean scores for parent engagement in recreational activities are 3.8 and 3.4 with standard deviation of 1.5 and 1.4, respectively. Table 2 shows the items under each factor for sons and daughters and their corresponding reliability coefficient.

**Analysis.** To answer questions 1 and 2 we conducted descriptive analyses and ran t-tests of the survey responses with key demographic variables, e.g., parent gender, family income level, and education. In our descriptive analyses, we compare learning activities to recreational activities when a comparison helps to clarify parental behavior. The multivariate models,

discussed next, do not include the recreational activities. To answer question 3, we tested three multivariate regression models. One model predicted the level of parents' knowledge about child development. Two models (one for sons and a separate one for daughters) predicted parents' involvement in learning activities with their young children. Predictor variables for the three models included parent gender, the two fatalism subscales, parent access to information on child development, and income. For the two parental engagement models we also added parental knowledge as a predictor.

In presenting the descriptive results, it is important to note that with just 78 parents in the sample, and with many analyses comparing father and mother responses to sons and daughters, the subgroup numbers are quite small. Consequently, we expected that few of the differences between mothers and fathers and between sons and daughters would be statistically significant. We highlight mean differences in the text that are substantial (even if they are not always statistically significant) that we believe are worth examining in future work with a larger sample.

## **Results**

### *Descriptive Analyses*

#### *Parent demographic characteristics*

All 78 parents resided in Casablanca. As shown in Table 3, fathers were much better educated than mothers, with 60 percent reporting at least some college exposure; the comparable figure for mothers was 34.2 percent. The percentage of mothers with less than a high school education was more than twice as high as the comparable figure for fathers. Moreover, among mothers, five reported no education at all; the comparable number for fathers was one.

In other respects, the parents were quite similar. The distribution of reported monthly family income was nearly identical, with just over forty percent of parents falling into the higher

income category. Reported age at the birth of the first child was also the same, and quite high: over 28 years. Parents in the sample reported that they had 1.8 children on average, with the average number higher for mothers (2.0) than fathers (1.6).

#### *God Control and Individual Control*

A series of 12 questions that examine beliefs about the locus of control in one's life were asked of parents. As discussed above, the control scale produced two clear factors: an internality factor that reflects beliefs that an individual's own actions are the primary contributor to what happens to them. A second factor is conceptually similar to Kopplin's (1976) measure of God control, to which we attached the same label. This factor, which reflects views that God is the major factor in how things turn out in people's lives, was uncorrelated with the internality items.

As shown in Table 4, parents in our sample scored high on both the individual control and God control items, although average endorsements for the God control items were higher. There were no significant gender differences in response to these items.

#### *Parent involvement in learning activities*

Parents were asked a series of questions that examined their level of involvement with their sons and (separately) their daughters. There were a total of 11 involvement items. Six captured numeracy and literacy activities such as reading to the child or teaching numbers, while the remaining five asked about recreational activities such as visiting friends with their children and playing games outside. Since the focus of this paper is education, the recreation activities are discussed only in the descriptive sections and only in comparison to the learning activities.

In general, parents report engaging in learning activities with their children fairly often, although the frequency of these activities is considerably lower than has been found in studies of

western parents (e.g., DYG, 2000). On average, parents reported that they engaged in most of the literacy/numeracy activities about once a week, as shown in Figure 2. On average, parents reported slightly more involvement in literacy/numeracy activities than in recreational activities; an exception is taking children on visits to friends, which might arguably be viewed as less of a child-focused activity than the other recreational activities. Overall, there were few differences between mothers and fathers, or between sons and daughters, and most differences were not statistically significant. (See Appendix Table A1 for these data by child gender.). There was a slight tendency for fathers to report engaging more often in most learning activities than mothers, consistent with their higher level of education. Fathers reported more frequent engagement with their daughters than their sons on two of the learning activities, reading a story and teaching numbers or counting; mothers reported slightly higher levels of teaching letters or words with daughters than with sons. Fathers reported visiting a library or bookstore more often with their sons than with their daughters.

**Letters and words.** On average, parents reported teaching letters or words to their young children about once a week; the mean for daughters and sons was the same. Differences across mothers and fathers were small, although mothers indicated less teaching of their sons than their daughters, and slightly less involvement in this activity than fathers for children of both genders.

**Story reading.** Parents reported reading to their young children on average once a week. The mean for sons and daughters was nearly the same. Fathers reported reading to both their sons and their daughters more often than did mothers. This is likely to reflect the higher level of education among fathers in our sample.

**Numbers or counting.** Parents reported that they taught their young children numbers or counting almost once a week on average, about as often as they reported reading them a story. There were no differences by parent gender or child gender.

**Watched educational TV programs together.** Parents reported watching educational TV programs with their children almost once a week. There were no differences by parent or child gender.

**Visits to a library or bookstore.** Parents reported that they took their young children to libraries and bookstores about once a month, although sons were taken slightly more often than daughters. While mothers reported taking sons and daughters equally often, fathers were less likely to take daughters than sons.

#### *Likelihood of Enrollment in High Quality Child Care*

On average, parents reported being unlikely to enroll their young children in high quality child care although, as expected, the inclination to do so increased linearly across children's age, as shown in Figure 3. (See Table A2 for data by parent gender.) More than half of both mothers and fathers said it was very unlikely that they would enroll their child in a formal setting during the first year of life ( $x=1.67$ ). As children aged, the likelihood of enrollment increased, but even among 4-5 year olds, parents were only "somewhat likely" to do so ( $x=3.30$ ). Mothers and fathers did not differ in their responses for the youngest children, but mothers expressed slightly more reluctance to enroll their older children than fathers did.

#### *Knowledge of Child Development*

To examine parent knowledge, we created a 10-item knowledge index described above. By awarding one point for each correct response, parents could score up to ten on this index. The mean score was 7.9, with mothers scoring higher (8.2); father mean was 7.6. Given our

particular interest in views about early learning, we analyzed several of the knowledge items separately. As shown in Table 5, most parents (68 percent) correctly believe that experiences in the first year of a child's life have a major impact on later school performance. Less than 1 in 5 parents (15.5 percent) correctly believes that brain development and learning begin during the prenatal period. Nearly one third believes that brain development and learning begin during the first year of life (32.0 percent), approximately the same percentage that believes that such development and learning does not begin until a child is one year or more (32.6 percent). Importantly, nearly one in five parents (17.9 percent) believes that such development and learning does not begin until the child is four years old or older. While a few mothers believe that parents have no impact at all, in general most parents believe that their impact begins to be felt in the first few years of life. Just under one in three parents (32.0 percent) believes that parental influence begins in the first year of life, with no differences between mothers and fathers. A third of parents assert that their influence does not begin until after the first year of a child's life (35.9 percent). There were few differences in these responses between mothers and fathers, although mothers are slightly more likely to put brain development earlier than fathers.

Four knowledge questions focused on specific ways that a parent might help support a two-year-old's intellectual development. All of these items are considered to be extremely important to brain development by developmental psychologists. As shown in Table 6, the majority of parents also viewed all of these activities as extremely important in helping a two-year-old learn, although a healthy diet received the strongest endorsement, consistent with parental views expressed in focus groups about the importance of basic care in the early years (Zellman et al., 2014). Fathers were slightly more likely than mothers to endorse the strong

importance of play and a healthy diet, while mothers were likelier than fathers to endorse the value of talking with the child.

### *Multivariate Analyses*

In this section, we examine determinants of parents' knowledge and understanding about how children grow, as well as their engagement with activities that support their children's cognitive growth. We relied on the conceptual framework discussed earlier in the paper to identify the factors that may be associated with parental knowledge and engagement.

Table 7 presents the parent factors (effect sizes) that have sizeable and statistically significant associations with parental knowledge and engagement. Neither parent characteristics nor the extent to which parents have access to professional information about parenting were found to be associated with parental knowledge and engagement. The only variable that was significantly associated with parental knowledge was the extent to which parents believed they had individual control over life events. This relationship was negative but small; parents who claimed high levels of individual control over their lives tended to be less knowledgeable about child development (effect size of .06). Parents' belief in God's control over life events was positively associated with their engagement in learning activities with their sons; the effect was even stronger for daughters [effect sizes of .12 and .28, respectively].

Another predictor of parental engagement in learning activities with their sons and daughters was whether or not the mother or father sought information from professionals about children's cognitive growth (effect sizes of .09 and .34, respectively). Parents who reported obtaining child development information from parenting books and magazines, physicians, and psychologists tended to be more frequently involved with their children in learning activities

(e.g., reading them books, teaching them words and numbers) that promote their literacy and numeracy.

## **Discussion**

Our survey provides researchers with a tool that enables exploration of the ways in which Arabic-speaking parents interact with their children, understand child development, and view their role as parents. Results from our small sample shed light on how parents think about these issues and illuminate some of the factors that incline parents toward engagement with their children in activities that support their cognitive development. We discuss these findings below.

### *Knowledge and beliefs about early development*

Parents' knowledge and understanding about how children grow and what influences their development during their early years have often been assessed because motivation to engage with their young children and expectations for their children's development can be affected by whether or not parents know that early years matter (e.g., Bornstein & Cote, 2004; Huang, Caughy, Genevro, & Miller, 2005). Such knowledge can also affect parents' interactions with their children (Bugental & Johnston, 2000).

In addition to providing researchers with a tool to explore these issues, perhaps the most significant finding of the study is that parents generally accord little importance to learning in the first years of life. Many parents view this time as a period when a child's physical and emotional needs must be met, but believe that little learning occurs or even *can* occur. In our focus groups, a few parents thought it was inappropriate to bombard very young children with too much in their first year of life when they can't listen or understand much of anything (Zellman et al., 2014). While two-thirds of parents correctly believe that experiences in the first year of life have major impacts on later school performance, we know from our focus groups and

survey pretesting that parents, in responding to this question in the affirmative, are typically thinking in terms of ensuring a child's healthy development and sense of security. Cognitive development is only occasionally considered (see Zellman et al., 2014).

This minimization of the importance of learning in the first year of life is consistent with parents' knowledge about child development in the early years. Nearly half the parents incorrectly believe that brain development and learning does not begin until after a child's first birthday, and nontrivial numbers believe that brain development starts as late as a child's fourth year. The fact that mothers score better in child development knowledge is surprising in some respects because as noted above the average education level of mothers in our sample was substantially lower than that for fathers. As expected, higher levels of family resources are associated with more accurate knowledge: For example, the mean level of correct knowledge of lower-income parents was 7.5 while the mean for parents in the higher income group was 8.4.

Given beliefs among many parents that brain development does not begin until after the first year, it is not surprising that parents report spending less time than Western parents teaching their young children letters and words, reading stories, or teaching numbers and counting (DYG, 2000). Some of this lesser involvement, e.g., few trips to bookstores or libraries, also may reflect the limited numbers of bookstores and libraries available in Casablanca (Zellman et al., 2014). As a result, young children are growing up in learning environments that are far less rich than they might be.

Moreover, parents generally are far less inclined than parents in other countries to send their children to high-quality child care and early learning programs where they could be exposed to rich learning experiences. Parents' reported reluctance to enroll even 4-5 year olds in

high-quality early education programs is consistent with fairly low preschool program enrollment rates in Morocco (e.g., Faour, 2010; Young, 2009).

The reluctance to enroll their children in formal preschool programs, even if programs are of high quality and money is not a barrier, is likely to reflect the views that we heard in our focus groups. In general, parents across education and income levels argued that experiences in the first years of life do not affect longer-term intellectual development or school success. Given that parents believe that little learning goes on in the earliest years, safe and affectionate care is viewed as more than meeting their young children's needs. Most families who need care report being able to secure safe and affectionate care from close family members (Zellman et al., 2014). Consequently, parents saw little value in early intellectual stimulation or formal preschool education.

#### *Gender Differences*

There were no statistically significant gender differences in our results, either between mothers and fathers, or between sons and daughters. One reason, noted above, is our small sample size. But even if one ignores statistical significance and looks at gender differences in mean responses, few differences emerge. Mothers on average were slightly more knowledgeable about child development. The higher level of knowledge among mothers is somewhat surprising given the lower average education level of mothers in our sample. This may reflect the strong gender differences in this traditional culture, where few mothers work and child-rearing is assumed to be the mother's responsibility. Yet traditional roles do not seem to apply in terms of parental involvement with children. Fathers were slightly more likely than mothers to engage in most learning activities, consistent with their higher level of education.

There were few differences in reported engagement with sons and daughters. Fathers reported reading more often with their daughters than with their sons and teaching numbers or counting; mothers reported teaching letters or words more often to their daughters than to their sons.

### *Determinants of parents' knowledge and engagement*

We ran three multivariate regression models. One model predicted level of parents' knowledge about child development. Two models (one for sons and a separate one for daughters) predicted parents' involvement in learning activities with their young children. Predictor variables for the three models included parent gender, the two fatalism subscales, parent access to information on child development, and income. For the two parental engagement models we also added parental knowledge as a predictor.

**Knowledge.** The only significant predictor of knowledge was parental beliefs in individual control; this negative association was small. Beliefs in God's control were not predictive of level of knowledge, nor were family income or the extent to which parents rely on professional sources of child-rearing information. The lack of association between income and information sources and knowledge was somewhat surprising, as we expected parents of high socioeconomic status, who are likely to have easier access to information on child development from professional sources, would have a more accurate understanding about how their behaviors influence child development. We also expected those who relied on professional parenting information to be better-informed.

**Engagement.** The strongest predictor of parental engagement in learning activities with their sons and daughters was whether the mother or father sought information on childrearing from professionals. Parents who reported obtaining information on child development from

parenting books and magazines, doctors, and psychologists tended to report being more involved with their children in learning activities. Parents' beliefs in God's control were also positively associated with their engagement in learning activities with their sons and daughters.

These findings of the association between relying on professional sources and being more engaged with their young children make sense if one assumes that those parents who seek professional information may be more motivated to be good parents and also are more open to new ideas about how to raise children. Professional sources of childrearing information are likely to rely at least to some extent on empirical research on child development. This research, as noted above, increasingly suggests that the first years of life are a critical period for cognitive development. These sources are also likely to promote the importance of one-on-one interactions with young children and argue that such activities as watching educational TV together are inadequate substitutes for these interactions.

The importance of beliefs in God's control as a predictor of parent engagement with their children is consistent with studies that find that strong beliefs in God's control are associated with active efforts to improve one's life and the life of one's children (e.g., Jackson & Coursey, 1988). It may also be the case that those who believe more strongly in God's control are simply more religious; being a good Muslim, we were told in focus groups, means being devoted to one's family and to one's children and their development (Zellman et al., 2014). In Morocco's traditional culture, believing in God's control may also reflect the degree to which an individual accepts key tenets of the culture. Another aspect of this culture, discussed at length in our focus groups, is the importance of family and of being a good parent. Many of the focus group parents talked about the obligations they felt to provide their children with recreational and cultural experiences, affection, and support. Believing in God's control may simply be part of being a

good person and a good parent. Engagement with one's children may be another aspect of this quest.

## **Conclusion**

Survey data and our analyses open a window on the beliefs that parents in Casablanca hold about child development and the ways in which they are raising their children. The general view that teaching and learning in the first years are unimportant may help to account for poor performance of Moroccan children later in life relative to those from other nations of similar economic status.

While the results are clearly limited by small sample size and geography, they suggest that efforts need to be made to inform parents and encourage them to be teachers of their children from the beginning. The goal of such efforts should be to change the national conversation about young children: encouraging citizens and policymakers to view children's upbringing as the responsibility of the community, and not just of their families, and to reinforce the idea that cognitive development should be supported from the beginning of each child's life. If these goals can be achieved, there will be more motivation to provide a range of programs that will help parents understand the importance of the early years and the vital role that they can and should take as teachers of their young children, and individual parents will be likelier to engage with their young children in learning activities that are consistent with an expanded view of their role to include that of teacher.

Such efforts and programs must be culturally appropriate. In a culture disinclined to sending young children outside the family for educational experiences, it is critical to help improve the quality of children's experiences at home. Media campaigns that stress the enormous amount of learning that occurs in early years and its relevance to later success would

help to change the conversation. A range of services might be offered to reinforce this message, including training for obstetricians and pediatricians about how to talk to parents about brain development and early learning, and the development of informational materials made available in obstetricians' and pediatricians' offices and offered in hospitals when a baby is born. Ongoing programs that could be established might include home visiting, where trained personnel talk to new mothers about early learning and model learning activities for them. Parent-child interaction groups led by professionals might also convey the importance of early learning and demonstrate ways to interact with young children in cognitively supportive ways within a cultural context in which preschool is not viewed by many as a viable option.

Obviously, our work is preliminary and our study has many limitations. A small sample size drawn from a single city in just one country limits the possibility of robust findings and the generalizability of results. Moreover, these data are cross-sectional, which limits how much we can learn about how parents change over time. In addition, our assessment of parent engagement relied on self-reports. Future studies should collect more in-depth interview and observational data about parents' actual practices. Finally, it is important to extend this work to more parents in MENA countries to better understand how parents think and to better track the factors that predict involvement and knowledge.

Nevertheless, our model appears to pinpoint important factors that help to explain parent behavior towards their young children. The survey seems a promising tool to assess parent views of these important issues; the fact that it can be administered online makes it easier to deploy in future work. Research with larger numbers of parents would enable us to test the model more effectively. In the meantime, the findings of this study should not be ignored: parents do not think the early years matter in terms of intellectual development. Parents need to

better understand that children's brain development begins prior to birth, and that what they learn or fail to learn in their earliest years may affect learning trajectories over their lifetimes.

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Table 1

*Fatalism Indices and Items*

<b>Fatalism Indices: God's Control &amp; Individual Control</b>	<b>Mean Response<sup>a</sup></b>
<b>God's Control Index (<math>\alpha = .81</math>)<sup>b</sup></b>	3.5
Everything that happens is part of God's plan	3.5
Everything that happens to a person was planned by God	3.6
Whatever happens to me in life, is because God wanted that way	3.4
God controls everything good and bad that happens to a person	3.5
God has a plan for each person and you cannot change his plan	3.6
<b>Individual-Control Index (<math>\alpha = .86</math>)<sup>c</sup></b>	3.0
I feel that when good things happen, they happen as a result of my own efforts	3.1
What happens to me in the future mostly depends on me	2.8
My life is determined by my own actions	3.0
What people get out of life is always due to the amount of effort they put into it	3.2
What happens to me is a consequence of what I do	3.0
I can do almost anything if I really want to do it	3.1

*Note.* The indices were adopted from a validated multidimensional fatalism scale (Esperaza, 2008). Parents responded to the question: "To what extent do you agree or disagree with the following statements?"

<sup>a</sup>Parents responded to survey questions using a five-point scale in which: 1=Strongly Disagree; 2=Disagree; 3=Agree; 4=Strongly Agree.

<sup>b</sup>The items below are included in the God's Control Index.

<sup>c</sup>The items below are included in the Individual Control Index.

Table 2

*Parent Engagement with Sons and Daughters Indices and Items*

Parent Engagement with Sons and Daughters: Learning and Non Learning Activities Indices	<u>Means<sup>a</sup></u>	
	Sons	Daughters
<b>Learning Activities</b> ( $\alpha = .92$ and $.94$ for sons and daughters, respectively) <sup>b</sup>		
Taught them letters or words	5.0	5.1
Read them a story	4.9	5.1
Taught them numbers or counting	4.9	4.8
<b>Non Learning Activities 1</b> ( $\alpha = .88$ and $.82$ for sons and daughters, respectively) <sup>c</sup>		
Visited a library or bookstore together	3.5	3.2
Taught them songs, poems or rhymes	3.7	3.7
Cooked with them	3.5	2.9
Visited a mosque with them	4.2	3.8
Watched educational TV programs	4.6	–
Played games outside with them (for sons only)	4.8	–
Visited friends with them (for sons only)	4.5	–
<b>Non Learning Activities 2</b> ( $\alpha = .40$ for daughters) <sup>d</sup>		
Played games outside (for daughters only)	–	4.8
Visited friends with them (for daughters only)	–	4.5

<sup>a</sup>Cell entries are means based on parents' response to survey question, "In the past year, how often have you done the following things with any of your sons (separately, daughters) age 6 years and younger?" Parents responded to survey questions using a seven-point scale in which: 1=Never; 2=About Once a Year; 3=About Once a Month; 4=A Few Times a Month; 5=About Once a Week; 6=Several Times a Week; 7=At Least Once a Day.

<sup>b</sup>The items below are included in the Learning Activities index.

<sup>c</sup>The items below are included in the Non-learning Activities index.

<sup>d</sup>The items below are included in the Non-learning Activities index for daughters only.

Table 3

*Selected Demographic Characteristics of Participating Parents*

<b>Parent characteristic</b>	<b>Sample (n=78)</b>	<b>Mothers (n= 38)</b>	<b>Fathers (n=40)</b>
<b>Years of education</b>			
Less than high school grad	17.9	26.3	10.0
High school grad	29.5	31.6	27.5
Vocational education	5.1	7.9	2.5
College exposure	47.4	34.2	60.0
<b>Monthly family income<sup>a</sup></b>			
Lower (up to 70000 dhs)	56.4	55.3	57.5
High (7001-10,000+ dhs)	43.4	44.7	42.5
<b>Age at first child's birth</b>	28.2 years	28.8 years	27.7 years
<b>Number of children</b>	1.8 children	2.0 children	1.6 children

*Note.* Cell entries are percentages except where indicated.

<sup>a</sup>Moroccan dirhams are valued at approximately 12 to the US dollar. Parents in the lower income category are reporting monthly incomes of up to \$860. Those in the higher category report monthly incomes above that figure; some report incomes well above it.

Table 4

*Individual's Control and God's Control Item Means by Parent Gender*

	<b>Sample Mean</b>	<b>Mother Mean</b>	<b>Father Mean</b>
<b>God Control items</b>			
All that happens part of God's plan	93.6	92.1	95.0
All that happens to a person planned by God	91.0	89.5	92.5
My life events reflect God's wishes	92.3	89.5	95.0
God controls all good and bad for each person	92.3	94.7	90.0
God has unchangeable plan for each person	96.2	97.4	90.0
<b>Individual Control items</b>			
Good things are result of my own efforts	83.3	84.2	82.5
Future mostly depends on me	69.2	68.4	70.0
My life determined by my own actions	79.5	81.6	77.5
What one gets out of life determined by efforts one puts in	84.6	89.5	80.0
My outcomes result of what I do	80.8	73.6	87.5
I can do almost anything if I want to	87.1	89.5	80.0

*Note.* Cell entries are percentage of parents who "agreed" or "strongly agreed" with each statement.

Table 5

*Parent knowledge about child development*

<b>Item</b>	<b>Sample</b>	<b>Mother</b>	<b>Father</b>
<b>Importance of 1<sup>st</sup> year experiences</b>			
Major impact <sup>a</sup>	68.0	68.4	67.5
Little impact	15.4	15.8	15.0
Not sure	16.7	15.8	17.5
<b>Beginning of brain development</b>			
Prenatal period <sup>a</sup>	15.4	18.4	12.5
1 <sup>st</sup> year of life	32.0	34.0	30.0
Age 1-4 years	34.6	31.6	37.5
4 years and older	17.9	15.8	20.0
<b>Parents' 1<sup>st</sup> impact on brain development</b>			
None	5.1	10.5	0.0
Prenatal period <sup>a</sup>	7.7	7.9	7.5
1 <sup>st</sup> year of life	32.0	31.6	32.5
Age 1-4 years	35.9	21.0	30.0
4 years and older	14.1	17.4	10.0

*Note.* Cell entries are percentages.

<sup>a</sup>Signifies the correct response to the question.

Table 6

*Activities considered “extremely important” in promoting a two-year-old’s intellectual development*

<b>Activity</b>	<b>Sample Percentages</b>	<b>Mother Percentages</b>	<b>Father Percentages</b>
Play	51.3	47.4	55.0
A healthy diet	74.6	71.0	77.5
Reading with the child	62.8	63.1	62.5
Talking with the child	69.2	71.0	67.5

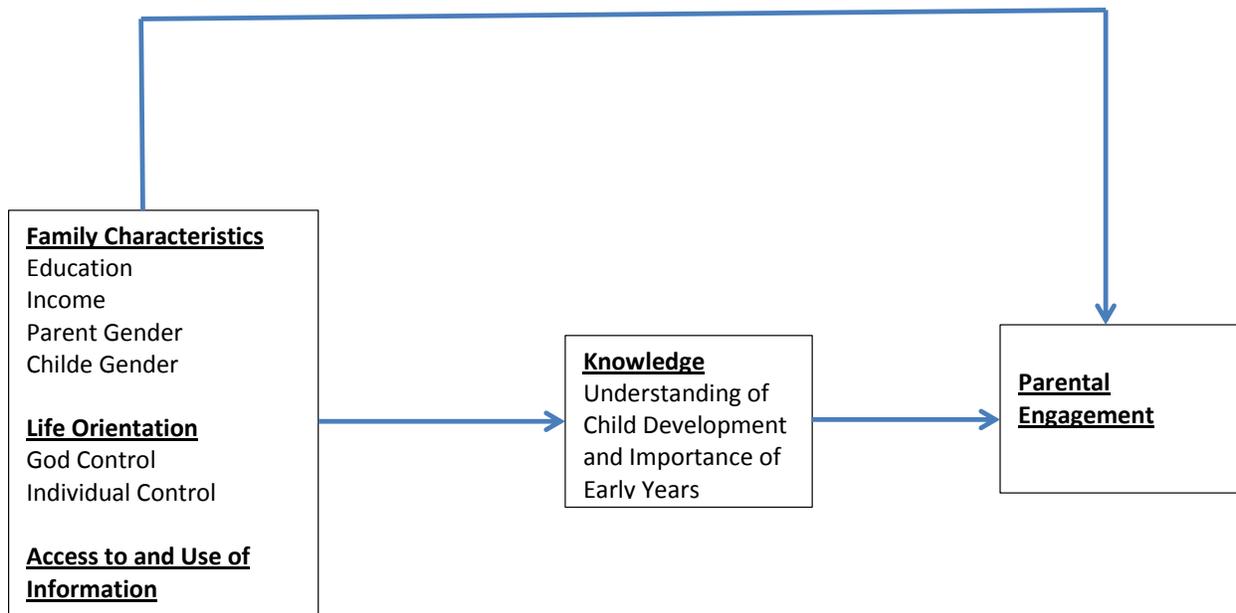
*Note.* Cell entries are percentages.

Table 7

*Parent Factors Associated with Knowledge and Parental Engagement*

<b>Activity</b>	<b>Knowledge</b>	<b>Learning Activities with Sons</b>	<b>Learning Activities with Daughters</b>
R-Squared	.08	.18	.53
Parent Gender	.03	.00	.01
Income	.05	.01	.03
God's Control	.01	.12**	.28**
Individual Control	-.06**	-.03	.00
Sources of Child Development Information	.02	.09*	.34***
Knowledge	NA	.00	.03

\*\*\*p=.00, \*\*p<=.01, \*p<=.05



*Figure 1.* Model Predicting Parents' Child Development Knowledge and Level of Engagement

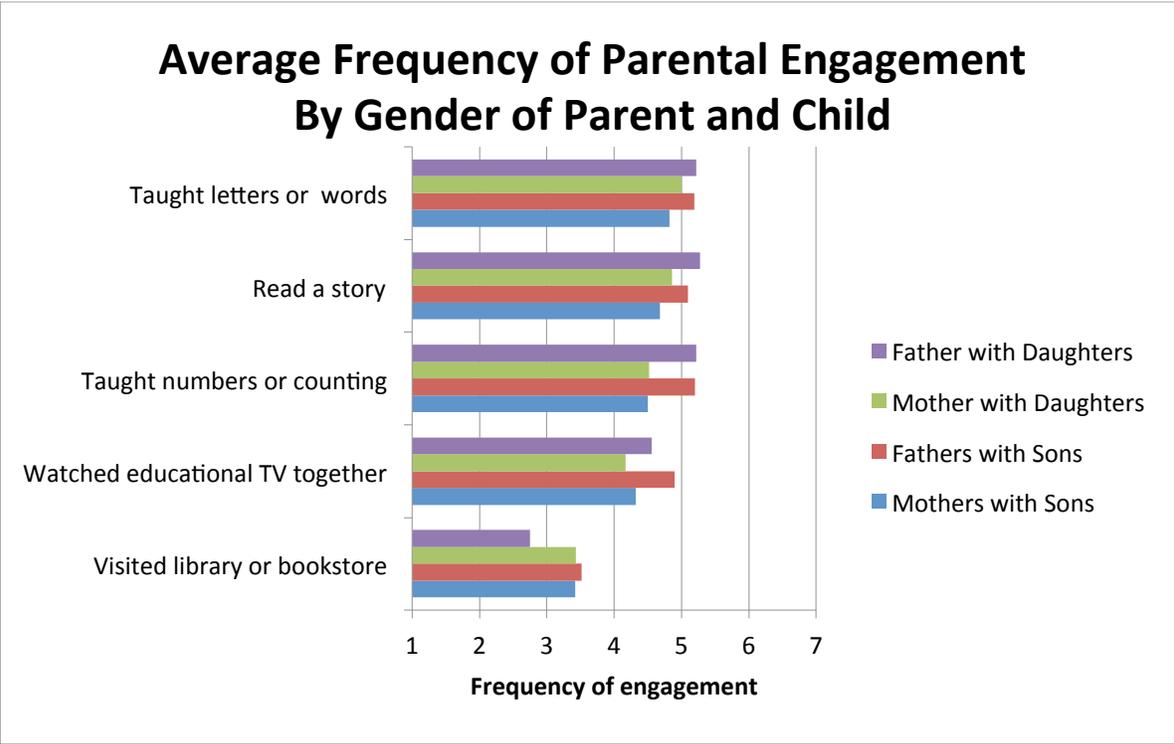
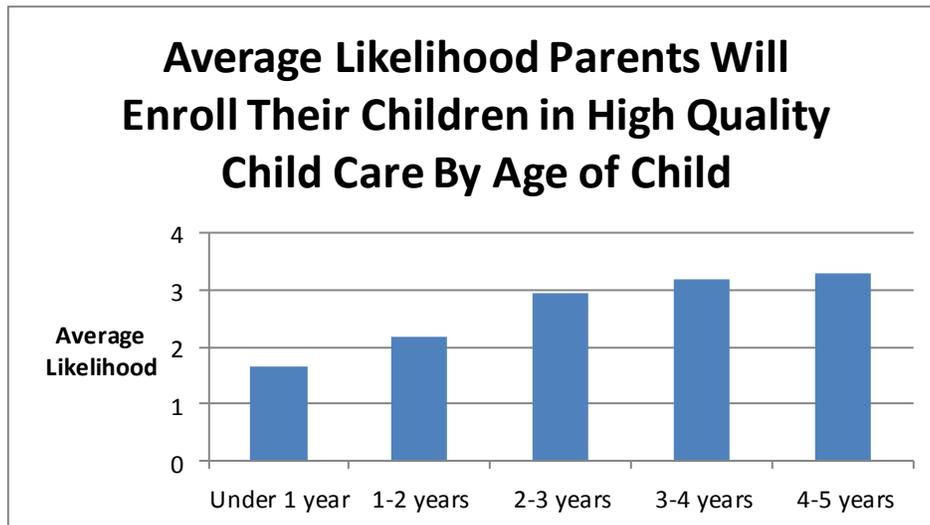


Figure 2. Average frequency of parental engagement by gender of parent and child.

Note. Chart based on mean parent response to survey question: “In the past year, how often have you done the following things with any of your sons (separately, daughters) age 6 years and younger?” Rated using a seven-point scale in which: 1=Never; 2=About once a year; 3=About once a month; 4=A few times a month; 5=About once a week; 6=Several times a week; 7=At least once a day.



*Figure 3.* Average likelihood parents will enroll their children in high quality child care by age of child.

*Note.* Chart based on mean parent response to survey question: “If your family could afford it, how likely would you be to enroll your child in a high quality child care center or nursery school at each of the ages below?” Rated using a four-point scale in which: 1=very unlikely, 2=somewhat unlikely, 3=somewhat likely, 4=very likely.

## Appendix A

Table A1

*Parent involvement in literacy and numeracy activities with sons and daughters*

<b>Activity</b>	<b>Sample Mean</b>		<b>Mother Mean</b>		<b>Father Mean</b>	
	<b>Sons</b>	<b>Daughters</b>	<b>Sons</b>	<b>Daughters</b>	<b>Sons</b>	<b>Daughters</b>
Taught letters or words	5.02	5.10	4.82	5.00	5.19	5.22
Read a story	4.90	5.05	4.68	4.68	5.1	5.28
Visited library or bookstore	3.47	3.15	3.42	3.43	3.52	2.75
Taught songs, poems, rhymes	3.72	3.66	3.64	4.0*	3.80	3.22
Taught numbers or counting	4.86	4.83	4.50	4.52	5.2	5.22
Watched educational TV together	4.62	4.34	4.32	4.17	4.9	4.56

*Note.* Cell entries are means based on parents' response to survey question, "In the past year, how often have you done the following things with any of your sons age 6 years and younger?" Rated using a seven-point scale in which: 1=Never; 2=About Once a Year; 3=About Once a Month; 4=A Few Times a Month; 5=About Once a Week; 6=Several Times a Week; 7=At Least Once a Day.

Table A2

*Likelihood of enrolling children in child care center or nursery school at different ages*

<b>Child age</b>	<b>Mean</b>	<b>SD</b>	<b>Mother mean</b>	<b>Mother SD</b>	<b>Father mean</b>	<b>Father SD</b>
Under 1 year	1.67	0.92	1.55	0.86	1.78	0.97
1-2 years	2.19	2.04	2.24	1.09	2.15	1.00
2-3 years	2.96	0.98	2.94	0.98	2.98	0.99
3-4 years	3.20	0.93	3.13	0.96	3.28	0.91
4-5 years	3.30	0.89	3.29	0.90	3.33	0.89

*Note.* Cell entries are means based on parent response to survey question: “If your family could afford it, how likely would you be to enroll your child in a high quality child care center or nursery school at each of the ages below?” Rated using a four-point scale in which: 1=very unlikely, 2=somewhat unlikely, 3=somewhat likely, and 4=very likely.

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