

**Investigation of parents' beliefs about readiness for kindergarten:  
An examination of National Household Education Survey  
(NHES: 93)**

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*The purpose of this study was to clarify our understanding of the structure of parents' beliefs about kindergarten readiness, and the relationship between those beliefs and parenting practices. Based upon the results of data analyses using the National Household Education Survey (NHES: 93), social-interaction skills were reported as being more important for kindergarten readiness than were academic skills. In order to clarify typologies underlying parents' beliefs, we conducted a cluster analysis which revealed three definable groups: 'Typical', 'High standards', and 'Low academic emphasis' groups. Other analyses suggested that views of kindergarten readiness varied across demographic characteristics such as age, education, income, and ethnic background. Most interesting was the finding that there is no strong consistency between parents' beliefs and their activities with their children at home. Implications for policy and suggestions for future research were also discussed*

Whereas original ideas behind kindergarten emphasized children enjoying opportunities to learn socialization skills and play with other children (Cosden, Zimmer, and Tuss, 1993; Ellwein, Walsh, Eads II, & Miller, 1991), today's kindergarten has become academically oriented. This "escalation of curriculum" (Shepard & Smith, 1988) has resulted in parents who hold their children back a year from kindergarten if they perceive them to have "poor readiness." Although there is no clear evidence that holding results in improvement of children's readiness (Walsh, Ellwein, Eads, & Miller, 1991), many parents believe that their children need more time in preschool to develop the prerequisite skills to function successfully in kindergarten. Whether or not parents' beliefs rest on accurate understandings of their children's developmental status, they are a critical component in

determining the timing of their children's enrollment (Piotrkowski, Botsko, & Matthews, 2001).

The meaning of parents' beliefs about kindergarten readiness can be summarized as 'readiness for school' and 'readiness to learn' (Kagan, 1992; 1994). 'Readiness for school' refers to the belief that a child must have a certain level of mastery of pre-academic skills before entering kindergarten. 'Readiness for school' determines not only placement of children, but also instructional planning at kindergarten (Shepard & Smith, 1986; 1988). Parents who have strong beliefs in 'readiness for school' tend to hold children out of kindergarten until they are older than other children (Meisels, 1992).

In contrast, 'readiness to learn' focuses on children's developmental maturation or biological growth. According to this perspective, it is not important to know about children's learning prior to entering kindergarten, but rather their natural or biological growth, which, will presumably determine their ability to learn in school. Thus, if parents have concerns about their children's readiness, they can wait until the child shows developmental growth, and their concerns abate. This approach to readiness emphasizes the 'gift of time' (Eisenhart & Graue, 1990; Shepard & Smith, 1988), in that it assumes that readiness is rooted in developmentally predetermined physical and social maturation processes. As a result of holding these beliefs, many parents want to keep their children at home in order to avoid early failure in school.

Unfortunately, neither the 'ready for school' nor 'ready to learn' philosophy reflects reality because children's readiness for kindergarten is not simply determined by pre-academic skills or developmental maturation (Graue, 1992). Parents may not understand that readiness is also determined by regional characteristics including curriculum design, educational philosophy, and social consensus in each community.

Even within the same school district, understanding about readiness can vary (Graue, 1992). As such, a "ready child" in one region, school district or school can be understood as a 'not ready child' in other regions (Graue, 1993).

Given the variation in philosophies and practices of "readiness," it seems reasonable to expect similar variation in parents' beliefs about kindergarten readiness. Indeed, research suggests that parents' beliefs about kindergarten readiness vary by their income level (Shepard & Smith, 1986), their education level (West, Hausken, & Collins, 1993), ethnicity (Diamond, Reagan, & Bandyk, 2000; Ferver,

Kim, & Lee, 1995), and immigration background (Okagaki & Sternberg, 1993), as well as with the philosophy of the local teachers and administrators (Graue, 1992, 1993). Compared with teachers' beliefs, parents are more likely to have stronger beliefs about the importance of pre-academic skills (Knudsen-Lindauer & Harris, 1989; Piotrkowski et al., 2001; West et al., 1993).

Given the complexity of the concepts underlying children's readiness as well as the variation in parents' beliefs about kindergarten readiness, one would also expect a considerable amount of heterogeneity in the home-based educational practices and activities that parents engage in with their children. Moreover, although Stipek and her colleagues (1992) reported a strong relationship between parents' beliefs about kindergarten readiness and their actual behaviors with children at home, this relationship is not consistently found across studies. Holloway and her colleagues (1995) reported an inconsistent relationship between parents' beliefs about kindergarten readiness and their behaviors. According to the results of longitudinal interviews, it was found that low-income mothers' beliefs about teaching strategies were not always matched with their educational practices. A recent study conducted by Diamond and her colleagues (2000) also reported that parents' concerns about their children's kindergarten readiness were not related to their involvement with the children's learning activities at home.

In sum, although previous studies (e.g., Piotrkowski et al., 2001) suggest that parents' beliefs about readiness play a key role in their decision making regarding their children's enrollment in kindergarten, few studies have investigated parents' beliefs about kindergarten readiness (Diamond et al., 2000). And even fewer have been based on large-scale databases, allowing us to understand the ideas of the larger population. Therefore, the purpose of this study was to clarify the structure and variation in structure of parents' beliefs about readiness for kindergarten using data collected as part of National Household Education Survey (NHES: 93). Since it is not easy to find consistent results from previous research studies, the aim was not only to add to the knowledge bases about majority parents' beliefs about the kindergarten readiness, but also to figure out any particular pattern of their beliefs and its relationship to other relevant variables. For this purpose, four research questions were explored: First, what skills are seen as more versus less important for children's readiness. Second, are there discrete groups or types of parents with different profiles of beliefs about kindergarten readiness? Third, do parents' type of beliefs

varies based on demographic characteristics? Fourth, are parents' types of beliefs related to activities they engage in at home with their child?

### **Method**

#### Survey data and sample

The data came from the second National Household Education Survey (NHES) conducted by the National Center for Education Statistics (NCES) in 1993. Parents were selected for interviewing using random-digit-dialing methods. The complete data were collected from 10,888 parents who have children aged 3-8 years old whereas parents' beliefs about kindergarten readiness was ascertained from the subsample of 4423 parents who had preschool children at the time of the study. Of the 4423, 157 responses were discarded because the parents reported that their children had disabling conditions (e.g., mental retardation, speech impairment, emotional disturbance), leaving 4356 in the final sample. The sample included 3307 Caucasian, 560 African American, 41 Native Indian or Alaskan Native, and 102 Asian or Pacific Islander. Respondents' average age was 32.1 (SD = 6.51), and about 97% of the respondents were either the father or mother of the child.

#### Measures

Two major constructs utilized for this study were *parents' school readiness beliefs* and their *parents' weekly home activities*. These constructs were developed as part of school readiness questionnaire of NHES. The questionnaire was designed by a national research team through collaboration with 9 national level panel members and the Goal One Resource Group of the National Education Goals Panel. Evidence of content validity is based on a review of the items by the research team and expert panel members. Readiness beliefs were assessed using 7 items measuring parents' perceptions of the importance of children's pre-academic abilities and other school-related behaviors for entry into kindergarten (i.e., count to 20 or more, able to use pencils and paint brushes, knows the letters of the alphabet, takes turns and shares, communicates his or her needs, wants, and thoughts verbally, enthusiastic and curious in approaching new activities and sits still & pays attention). Parents were asked to rate the importance of each item using a 5 point Likert scale (1: not at all important - 5: essential). The Cronbach alpha reliability coefficient for parents' school readiness beliefs was .81.

Respondents were also asked to answer their involvement with eight home activities (told a story, taught letter, words, or numbers, taught songs or music, did arts and crafts, played with toys or games indoors, played games or sports outdoors, took child along while doing errands, and involved child in household). These responses were collected and coded as yes (1) or no (0).

### Results

Means and standard deviations for the 7 items assessing parents' beliefs about kindergarten readiness are presented in Table 1. The average score reported in all 7 areas was above 3 (i.e., more than somewhat important). To determine whether parents saw some items as more necessary for kindergarten readiness than others, a repeated measures analysis of variance was conducted across the seven items. The data analysis results revealed a significant difference with the Wilks' criterion,  $F(6, 4288) = 468.5, p < .01$ .

**Table 1. Means, standard deviation, and frequency of Beliefs about Readiness for Kindergarten**

<i>Dimension</i>	1	2	3	4	5	M	SD
Count to 20	59	331	1355	1712	837	3.7	0.9
Take turns and share	5	13	343	2577	1356	4.2	.58
Enthusiastic and curious	3	27	636	2649	979	4.1	0.62
Use pencil and brushes	27	164	1294	2039	770	3.8	0.78
Sits still and pay attention	6	58	788	2520	922	4	0.66
Knows alphabet	45	296	1487	1748	718	3.66	0.85
Communicate verbally	-	12	316	2661	1305	4.23	0.57

**Note. 1: not at all important - 5: essential**

Interestingly, the higher means were found for the social interaction items (i.e., communication and take turns/share abilities). Relatively, pre-academic ability items (i.e., counts to 20, uses pencils and paint brushes, and knows alphabet) perceived as less important items compared to the social interaction items.

In order to determine if groups of parents holding unique, distinct typologies of beliefs, cluster analysis was employed. Cluster analysis was used to determine if definable profiles exist for parents' beliefs about the kindergarten readiness subtypes within the national sample. Euclidean distance between individuals on the seven items was used as the measure of similarity. The average-linkage algorithm for hierarchical clustering was used to form the clusters. Standardization of variables was not necessary because all variables were on the same

scale. The overall similarity measure was compared as the number of clusters decrease. By monitoring the clustering (agglomeration) coefficients change, the researchers found that a three-cluster solution would be appropriate to interpret three definable groups showing a very different pattern in their means (see Table 2).

The first cluster can be called 'overall agreement', and includes parents who rate that all seven readiness skills as equally important. The pattern of their mean scores across the seven items looks very similar to the overall means presented in Table 1. Thus, this cluster was named the "Typical parent group." The second cluster describes a parent who, like parents in cluster one agree with all the beliefs, but their average level of agreement is even stronger than those in cluster one. We called this cluster the "High standards group." Parents in this group had mean responses of close to 5 (essential) on all seven items. The third cluster reflects parents who do not give strong priority to academic readiness relative to social readiness. Their beliefs about two pre-academic readiness items (i.e., counts to 20 and knows alphabet) are lower compared to the other two clusters of parents, however, their beliefs about the importance of social/emotional interaction is high. The third cluster was named "Low academic emphasis group." To confirm the perceived differences in these clusters, we conducted a one-way analysis (ANOVA) with follow-up Tukey tests on all 7 items using cluster as the grouping variable. The results revealed that statistically significant differences on all of the seven means across three clusters,  $F_s(2, 4178)$ ,  $p < .001$  (see Table 2). Consistent with our assigned names, the 'high standards group' (cluster 2) rated all 7 skills as more important than did either the 'typical parents' (cluster 1) or the 'low academic emphasis group' (cluster 3). Parents in cluster 3 rated all skills as less important than both clusters 1 and 2, they also gave extremely low ratings to the two academic skills (counting and spelling) as compared to the other skills.

**Table 2. Comparison of Cluster Means on the Seven Readiness Belief Items**

<i>Dimension</i>	ypical (N= 2937)	High Standards (N =973)	Low Academic emphasis (N = 329)	F (2, 4178)
Count to 20	3.59 <sup>a</sup>	4.58 <sup>b</sup>	1.97 <sup>c</sup>	804.68***
Take turns and share	4.11 <sup>a</sup>	4.74 <sup>b</sup>	3.85 <sup>c</sup>	337.40***

Enthusiastic and curious	3.91 <sup>a</sup>	4.61 <sup>b</sup>	3.77 <sup>c</sup>	294.42***
Use pencil and brushes	3.64 <sup>a</sup>	4.55 <sup>b</sup>	2.88 <sup>c</sup>	376.45***
Sits still and pay attention	3.87 <sup>a</sup>	4.59 <sup>b</sup>	3.40 <sup>c</sup>	304.69***
Knows alphabet	3.50 <sup>a</sup>	4.57 <sup>b</sup>	2.41 <sup>c</sup>	763.59***
Communicate verbally	4.08 <sup>a</sup>	4.75 <sup>b</sup>	4.00 <sup>b</sup>	295.68***

\*\*\* $p < .001$  Note. Means with different superscripts differ at .05

**Table 3: Comparison of Cluster Means on Demographic Variables**

<i>Variable</i>	Typical (N= 2937)	High Standards (N =973)	Low Academic Emphasis (N = 329)	$F/ \chi^2$
Father's age	34.40 <sup>a</sup>	34.12 <sup>a</sup>	35.57 <sup>b</sup>	5.60*
Mother's age	31.16 <sup>a</sup>	31.22 <sup>a</sup>	32.74 <sup>b</sup>	11.51 **
Father's working hour	44.8	45.56	46.12	2.8
Mother's working hour	33.44	34.21	33.35	.87
<b><i>Income</i></b>				
Less than \$15,000	586 (20.0%)	166 (17.1%)	44 (13.4%)	31.56**
\$15,000 – 25,000	453 (15.4%)	145 (14.9%)	46 (14.0%)	
\$25,000 – 35,000	600 (20.4%)	184 (18.9%)	62 (18.8%)	
\$ 35,000 – 50,000	625 (21.3%)	218 (22.4%)	74 (17.6%)	
\$50,000 – 75,000	418 (14.2%)	134 (13.8%)	58 (17.6%)	
Over \$75,000	255 (8.7%)	126 (12.9%)	45 (13.7%)	
<b><i>Mother's education</i></b>				
Up to 11 <sup>th</sup> grade	457 (15.9%)	100 (10.5%)	22 (6.8%)	50.59 **
High school diploma	1008 (35.0%)	319 (33.5%)	112 (34.5%)	
Bachelor's degree	885 (30.7%)	316 (33.2%)	99 (30.5%)	
Graduate or	334 (11.6%)	138 (14.5%)	52 (16.0%)	
Professional school	195 (6.8%)	80 (8.4%)	40 (12.3%)	
<b><i>Father's education</i></b>				
Up to 11 <sup>th</sup> grade	288 (12.4%)	77 (10.1%)	22 (7.7%)	22.01*
High school diploma	798 (34.4%)	258 (33.7%)	76 (26.7%)	
College training	621 (26.7%)	220 (28.8%)	88 (30.9%)	
Bachelor's degree	335 (14.4%)	101 (13.2%)	52 (18.2%)	
Graduate or	280 (12.1%)	109 (14.2%)	47 (16.5%)	

Professional school

***Ethnicity***

White	2197 (68.4%)	395 (71.8%)	67 (67.7%)	
African-American	737 (22.9%)	139 (25.3%)	22 (22.2%)	22.29*
Asian or Pacific Islander	278 ( 8.7%)	16 ( 3.9%)	10 (10.1%)	*

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\* $p < .01$ , \*\* $p < .001$  Note. Means with different superscripts differ at .05

Analysis of variance (ANOVA) and Chi-square analyses were conducted in order to examine whether parents' type of beliefs varied based on demographic characteristics. Because these demographic variables are moderately intercorrelated with each other, we used a more conservative alpha (.01) to reduce the possibility of type 1 error. According to the results of this comparison, there are background differences across clusters on all variables except the parents' working hours (see Table 3). By and large, parents in the 'High standards' and 'Low academic emphasis' groups reported higher income,  $X^2(10, N = 4239) = 31.56, p < .001$  and the education levels,  $X^2(8, N = 4239) = 50.59, p < .001$ ;  $X^2(8, N = 4239) = 22.01, p < .001$  than did those of 'Typical parent group.' Parents in the 'low academic emphasis group' are older, better educated, and at a better economic level compared to the first and second group. Chi-square analysis was also conducted using the belief type and their ethnicity. Since American Indian or Alaskan Native group had only 54 people, three ethnic groups (i.e., White, African-American, and Asian or Pacific Islander) were utilized for the analysis. The results of Chi-square revealed that parents' belief type differs by their ethnicity,  $X^2(4, N = 4239) = 22.29, p < .001$ . The proportion of Asian or Pacific Islander (3.9%) in 'High Standards' group was lower than the other two groups.

In order to examine the relationship between parents' belief type and their home activities, the researchers conducted a series of Chi-square analyses crossing the three belief types with the percentage of parents' reporting yes versus no to the 8 weekly home activities. Through these analyses, we were interested in understanding whether any particular belief type showed more frequent involvement in their home activities.

According to the results of Chi-square analyses, parents' home activities varied as a function of the belief type in six areas out of eight (see Table 4). Relatively, parents in the 'High standards group' reported more frequent involvement in direct instruction related areas (told a story, taught letter, words, or numbers, and taught songs or music). In

particular, the frequency of their activities with children in 'Taught letters, words, or numbers' was much higher than that of 'Typical parent group' and 'Low academic emphasis group.' In contrast, parents in 'Low academic emphasis group' showed that their involvement in games or sports outdoors was higher than that of 'Typical parent group' and 'High standards group.' Parents in all of the three groups reported that they took their children along while doing errands (range: 94.2 - 96.3%) and household chores (90.7 - 93.8%).

**Table 4. Results of Chi-square analyses using the belief type and home activities**

<i>Variables</i>	<i>Rs</i>	Typical (N= 2937)	High Standards (N =973)	Low Academic Emphasis (N = 329)	$\chi^2$ (2, N = 4239)
Told a story	Yes	2200 (74.9%)	776 (79.8%)	256 (77.8%)	9.9**
	No	737 (25.1%)	197 (20.2%)	73 (22.2%)	
Taught letters, words, or numbers	Yes	2547 (86.4%)	874 (96.1%)	259 (78.7%)	26.3**
	No	400 (13.6%)	99 (3.9%)	70 (21.3%)	
Taught songs or music	Yes	2069 (70.4%)	724 (74.4%)	221 (67.2%)	8.2*
	No	868 (29.6%)	249 (25.6%)	108 (32.8%)	
Did arts and crafts	Yes	1986 (67.6%)	697 (71.6%)	230 (69.9%)	5.7
	No	951 (32.4%)	276 (28.4%)	99 (30.1%)	
Played with toys or games indoor	Yes	2819 (96.0%)	935 (96.1%)	313 (95.1%)	.6
	No	118 (4.0%)	38 (3.9%)	16 (4.9%)	
Played games or sports outdoor	Yes	1878 (63.9%)	625 (64.2%)	234 (71.1%)	6.7*
	No	1059 (36.1%)	348 (35.8%)	95 (28.9%)	
Took child along while doing errands	Yes	2768 (94.2%)	937 (96.3%)	315 (95.7%)	6.8*
	No	169 (5.8%)	36 (3.7%)	14 (4.3%)	
Involved child in household chores	Yes	2665 (90.7%)	913 (93.8%)	305 (92.7%)	9.6**
	No	272 (9.3%)	60 (6.2%)	24 (7.3%)	

\*  $p < .05$  \*\*  $p < .01$  Note. *Rs* = response

## Discussion

Data from this study help to clarify our understanding of the structure of parents' beliefs about kindergarten readiness, and the relationship between those beliefs and parenting practices. Based upon the results of data analyses using the National Household Education Survey (NHES: 93), parents who have preschool children, in general, believe that all seven areas in kindergarten readiness are important (see Table 1). Interestingly, social-interaction related beliefs were reported as being more important for kindergarten readiness. This result is different from the results of previous studies (Knudsen-Lindauer & Harris, 1989; Piotrkowski et al., 2001; West et al., 1993) reporting that parents' place a higher value on academic areas related to children's kindergarten readiness.

Parents' strong beliefs in social interaction seem to be inconsistent with the current trend emphasizing academic skills (e.g., escalation of curriculum) at the kindergarten level. This finding tells us that parents' understanding of kindergarten readiness is closer to 'ready to learn' compared to 'ready for school'. In other words, parents' actual concern might not be academic failure at kindergarten. Rather, parents could be more concerned about their children's developmental readiness to learn social interaction related skills (e.g., take turns and sharing, verbal communication). Parents seem to believe that children should be ready for social interaction before acquiring basic academic skills.

Although the average responses to each item allow us to see which skills are generally seen as more or less important, they do not provide information about the variability among parents and the different typologies underlying parents' beliefs systems. To clarify these typologies, we used cluster analysis which revealed three definable groups: 'Typical', 'High standards', and 'Low academic emphasis' groups (see Table 2). Recall that 'Typical parent group' endorsed generally strong beliefs about the importance of all of the skill and comprised 70% of the sample population. Their beliefs in social interaction areas are stronger than other areas. In contrast, members of the 'High standards group' endorsed all 7 items with greater strength; whereas the, 'Low academic emphasis group' reported lower means in academic skills and relatively higher means in social interaction areas. In particular, their scores in academic skills items (count to 20 and knows alphabet) were very low compared to the other two groups. Dynamics within the national sample show a complex structure of the parent belief in kindergarten readiness.

Our analyses also suggest that there is a relationship between

demographic variables and belief typologies: beliefs about kindergarten readiness varied across demographic characteristics such as age, education, income, and ethnic background. In particular, 'Low academic emphasis group' reported a very different profile compared to 'Typical parent group' and 'High standards' group.' Parents in 'Low academic emphasis group' are older, better educated, and at better economic level compared to other groups. This finding is particularly interesting as we know that it is the parents' of these children who are most apt to have high levels of future academic success. Perhaps these families do not focus on academic skills as readiness indicators as much as other groups because it does not occur to them that their child would be held back at some point, and /or because they have the privilege able to take for granted that their children will get good educational opportunities.

The most impressive finding in this study is the lack of consistency in the relationship between parents' belief type and the kinds of home activities the engaged in. For instance, although the 'Typical parent group' reported higher beliefs in social interaction areas compared to academic areas (see Table 2), they frequently engaged indirect instruction (highly academic) in addition to things that are more social in nature, such as 'indoor games', 'doing errands', and 'household chores'. Additionally, "typical" parents involvement in outdoor games, which could presumably improve children's social skills, was lower for this group than the other groups.

An inconsistent pattern was also found in 'High standards group.' Although this group indicated they had high standards for both social and academic outcomes, behaviorally, their emphasis at home was on academic development only, and their involvement in academic skill training was much higher than other groups. Other home activities that showed higher involvement were 'told a story', 'taught songs or music', 'took child along while doing errands', and 'involved child in household chores'. Two activities ('did arts & crafts' and 'played with toys or games indoor') revealed insignificant differences across the three belief types, and 'Played games or sports outdoor' showed lower involvement. Thus, the actual meaning of 'High standards' may be close to 'High emphasis on academic skills', rather than overall emphasis in all seven areas. Their stronger beliefs in all seven areas do not represent their actual behaviors at home.

Relatively, responses from the parents in 'Low academic emphasis group' showed a better consistency in the relationship between their beliefs and home activities. Their involvement in academic skills training is much lower than the other two groups. Their more frequent involvement compared to 'Typical parent group' was found at 'told a story', 'took child along while doing errands', and 'involved child in household chores'. They also reported more frequent involvement in outdoor activities. Thus, their stronger beliefs in low academic skills were confirmed based on the results of Chi-square analyses. However, an inconsistent relationship between their beliefs in social interaction areas and home activities was also found. That is, although they reported weaker beliefs in social interaction areas compared to the 'Typical parent group' (see Table 2), they reported more frequent involvement in home activities that might enhance social interaction (see Table 4). Therefore, parents in the 'Low academic emphasis group' may not have an accurate understanding of their beliefs about kindergarten readiness or they may underestimate their beliefs.

The inconsistent relationships between the parent belief type and home activities do not support previous research studies (e.g., Stipek et al., 1992). Based upon the results of Chi-square analyses, parents seem to have unstable beliefs about kindergarten readiness. If parents' beliefs about kindergarten readiness are not stable, this result provides us with important information regarding parents' decision making process for their children's kindergarten enrollment. Although it is a common belief that parents have the best understanding of their children's development and growth (e.g., Cochran & Dean, 1991; Henderson, 1987), that does not automatically mean that parents have stable or accurate beliefs about kindergarten readiness.

Parents' unstable beliefs about kindergarten readiness imply that they need to understand meaning of readiness with contextual information at local level. In other words, their understanding about kindergarten readiness needs to be clarified through sharing each school district's policy on readiness assessment and requirements for enrollment in kindergarten. Otherwise, parents' decision making regarding their children's enrollment would be relying on their naïve psychological concerns about their children's 'ready for school.'

In order to help parents to understand kindergarten readiness meaningfully, local school district can develop frequent meetings with parents. Through the meetings, administrators and teachers can provide the school district's educational philosophy, learning models, curriculum structure, and detailed screening process for kindergarten

admission. This type of meeting is helpful for parents not only to understand kindergarten readiness in the school district, but also to build a consensus about the readiness with preschool teachers. Based upon the consensus about the meaning of kindergarten readiness, preschool teachers and parents can develop appropriate activities for their children, and reduce unnecessary stress before their children's entering to kindergarten.

Given these results and implications from the data analyses, the researchers suggest the following ideas for future research. First, although the variability of parents' beliefs about kindergarten readiness was partially explained by their belief type and demographic information, it is necessary to investigate other relevant variables. For instance, since only individual level variables were utilized in this study, variables at local levels could be included in future analyses. Technically, because children and parents are nested within school districts, multi-level data analyses are recommended. In other words, parents' beliefs about kindergarten readiness can be explained by a combination of individual and local level data. Through conducting the multi-level analysis, we can investigate whether parents' beliefs differ by characteristics of local community. The results of the multi-level analysis might provide new insights for holistic understanding of children's readiness within community as well as development of shared educational responsibilities across teachers, parents, administrators, and educational agencies.

Another suggestion is to consider moderators and mediators of the inconsistent relationships between parent belief and home activities. For instance, the relationship may vary in accordance with children's educational experiences, family history, children's gender, and other demographic variables. Additionally, the relationship could be mediated by parents' motivation in home activity involvement or attitudes toward kindergarten education. In order to get a bigger picture of the relationship, it is necessary to examine many possible moderating and mediating models.

Finally, we can think about developing a thorough grouping method discriminating parents' belief type. In this study, we relied on a statistical technique (i.e., cluster analysis), but it is also necessary to build a theoretical model. This exploratory analysis can be utilized as a spring-board to develop a systemic way of grouping parents' belief type. Using this belief type, administrators and teachers can develop better communication channels for the discussion about kindergarten readiness.

The primary limitation of the current study was the

measurement of parents' beliefs and home activities. In this study, parents' beliefs about kindergarten readiness were measured using only seven items. In order to assess parents' beliefs about kindergarten readiness accurately, future studies should develop more reliable and valid measurement instruments. Additionally, home activities were measured using only eight items. Although a national panel supported content validity of the selected home activities, more detailed items covering a variety of home activities could be developed and utilized.

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