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Child, family, and community characteristics associated with school readiness in Jordan

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Abstract

The present study investigated demographic differences in school readiness within Jordan, a particularly interesting context because of wide-spread national reform currently sweeping the education system in Jordan. Teacher reports and researcher direct assessments of the school readiness of a national sample of 4,681 Jordanian first grade children were used to describe the levels of school readiness of children with respect to seven demographic characteristics. Higher levels of school readiness were associated with male gender, higher family income, higher paternal education, higher maternal education, smaller family size, fewer siblings, and urban residence. Taken together, the findings highlight the importance of Jordanian education reform, one aim of which is to improve the school readiness of all children by implementing public kindergartens, especially in poor, rural areas.

Keywords

education reform; Jordan; school readiness

Introduction

School readiness is a multi-dimensional construct that refers to how physically, cognitively, emotionally, socially, and behaviorally prepared for school children are. A large body of research has focused on school readiness not only because of its importance for children's transition to formal education but also because school readiness has been associated with important long-term outcomes including school completion and academic achievement (Duncan et al. 2007; Lee and Burkam 2002). The vast majority of research on school readiness has examined North American or European samples, which has led to important understanding of these contexts. However, other populations have been understudied, resulting in a gap in understanding how well children are prepared for a wider range of educational systems and contexts found in other parts of the world. The present study has two goals: to describe levels of school readiness for different demographic groups in Jordan and to understand demographic differences in school readiness. Jordan is a particularly interesting context in which to study school readiness because of widespread national reform currently sweeping the education system in Jordan.

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Correlates of school readiness

In an effort to understand which children are at risk for being unprepared for school and therefore in need of special services or interventions, researchers have studied child, family, and community characteristics associated with school readiness. Gender is a child characteristic that is often controlled in studies of school readiness. In research using North American and European samples, girls have been found to be more advanced in school readiness than have boys (e.g., Angenent and de Man 1989; Janus and Duku 2007; Mendez, Mihalas, and Hardesty 2006). Several explanations have been offered to explain the gender gap in school readiness. One possibility is that at a given chronological age during early childhood, girls are more biologically mature than are boys, leading them to be ready for school at younger chronological ages than boys (Gullo 1991). Another possibility is that girls may be socialized in ways that prepare them better for school than the ways that boys are socialized (Block 1983), and that parents and teachers have higher expectations for girls' than boys' school success (Wood, Kaplan, and McLoyd 2007). However, gender-related beliefs vary widely across cultural groups, and it is unclear to what extent these gender differences in school readiness would extend to cultural groups with different beliefs related to gender.

The most widely studied correlate of school readiness has been family socioeconomic status (SES), as indicated by household income and parents' levels of education. It is well documented that children from lower SES families are less ready for school than are children from higher SES families (e.g., Janus and Duku 2007). A number of mechanisms have been proposed to account for the link between family SES and school readiness. For example, families with fewer available financial resources are less able to provide enriching experiences (such as books, toys, games, and outings) to children (Bradley and Corwyn 2002). Parents with lower educational attainment might have a more difficult time engaging in their own children's education and be less sure how to foster academic success (Hill et al. 2004). Lower SES families are also more likely than higher SES families to live in neighborhoods populated with other low SES families, who may not model the behavior and attitudes needed to foster school readiness (Lapointe, Ford, and Zumbo 2007). Therefore, many academic and policy arguments have focused on enhancing the school readiness of lower SES children (e.g., Perez-Johnson and Maynard 2007; Ramey and Ramey 2004).

In addition to SES, family size and number of siblings in the family have been examined as possible family-level correlates of school readiness. Particularly in lower SES families where having more children may mean that each individual child has fewer available resources to support their development, large family size may be related to lower school readiness (Scott and Kobes 1975). The number of siblings children have may be important not only for financial reasons but also because parents' time and energy must be divided among more children in larger families, and an individual child in such a family may experience lower levels of the kinds of parental attention that can support school readiness (e.g., may be read to less often, may not have as much one-on-one parent-child interaction that can foster cognitive development and language acquisition; Ramey and Ramey 2004).

Geographic residence has been examined as a community-level correlate of school readiness. Particularly in developing countries, there has been concern that children who live in rural areas may be less ready for school than are children who live in urban areas (Aboud 2006; Nonoyama-Tarumi and Bredenberg 2009). One hypothesis has been that children in rural areas have access to a less stimulating environment than do children in urban areas and therefore may be less ready for school (Aboud 2006). However, community-level SES may play a larger role than rural or urban residence per se.

Education in Jordan

Although some correlates of school readiness may be similar across countries, other correlates may depend on the larger cultural contexts within which education systems are situated. For example, in much of the literature based on North American and European samples, girls have been reported to be more advanced in school readiness than have boys. However, in Jordan there has been concern that girls are less likely to be given the opportunity to attend kindergarten and, therefore, may be less ready for mandatory schooling, which begins in first grade. Until recently, kindergartens were either not available to most children or were available only in the private rather than public sector, and educators were concerned that parents were more likely to pay to send their sons but not daughters to private kindergartens. Thus, gender differences favoring girls that have been found in school readiness in several other countries may not be found in Jordan. However, as in other countries, there is considerable concern in Jordan that children from lower SES families may be less ready for school than are children from higher SES families. This problem may be especially pronounced in larger families and families with more children because poorer families may not have the financial resources to send all of their children to private kindergartens (in the absence of public ones). The urban versus rural distinction is also important in Jordan because, especially until recently, children were much less likely to have access to kindergartens in rural than in urban areas.

Jordan is now in a period of education reform. Since 2003, the Ministry of Education has established 532 public kindergartens in Jordan. The expansion of kindergarten into the public sector is being implemented as part of a larger reform to address the vision of King Abdullah in making Jordan the information technology hub in the Middle East and in developing human capital for the knowledge economy. In July 2003 the Ministry of Education launched a five year project called Education Reform for the Knowledge Economy (ERfKE). The initial phase of the project is now complete, and a second phase of ERfKE will be launched in 2009. One of the main components of this broad reform is promoting school readiness through expanded early childhood education (Ministry of Education 2002). According to a report released by the National Council for Family Affairs and UNICEF (2008), prior to ERfKE, around 30% of Jordanian children attended kindergarten before beginning mandatory schooling in first grade. After the reforms associated with ERfKE, 40% of Jordanian children now attend kindergarten. The goal is to increase kindergarten enrollment to 50% by 2012, particularly because evidence from an evaluation of education reform in Jordan suggests that Jordanian children who attend kindergarten are more ready for first grade than are Jordanian children who do not attend kindergarten (Al-Hassan and Lansford 2009). As the demands for accountability and improved student performance have increased, policy makers and educators have attempted to understand which children are at particular risk of not being ready for school to provide guidance in where to direct additional resources to boost school readiness of the most at-risk children. Our study is important because it provides this policy-relevant information about which children are most at risk of low school readiness in Jordan and offers an empirical example of how evaluation can be incorporated into education reform. In the contemporary context of promoting evidence-based practices in education, evaluation is particularly important in enabling policymakers to make informed decisions regarding which policies are likely to promote the best educational opportunities for students.

The present study

The present study focused on understanding school readiness in Jordan in relation to seven important characteristics of children, their families, and their communities. Specifically, we investigated whether Jordanian children's school readiness differed as a function of child gender, family income, father's education, mother's education, family size, number of

siblings, or residential area (urban versus rural). We hypothesized that higher school readiness would be associated with male gender, higher income, higher father education, higher mother education, smaller family size, fewer siblings, and urban residence.

Method

Participants

The present sample included 4,681 grade one students who were identified by the National Center for Human Resources Development (NCHRD) from the Ministry of Education's database. Most of the sample ($n = 3,657$) was selected to represent the national population. A nationally representative stratified random sample of 144 schools from a defined population of schools with first grade enrolment of more than 9 children was selected. The remainder of the sample ($n = 1,024$) was a stratified over-sample that was selected from 47 schools where public kindergartens were newly established as part of the national education reform; these schools served several towns, were located in rural poor areas, and were not previously served by the public sector.

Procedure and measures

Data were collected by 63 field researchers who were kindergarten supervisors at the Ministry of Education. All of them had a university degree in education or a related field. In addition, they had specialized training in early childhood education and participated in a workshop that was held in the NCHRD for the purpose of preparing them for the research tasks.

Each field researcher was assigned a number of schools and was trained how to select the sample. In schools where there was more than one section of first grade, one section was randomly selected. In the sections where there were more than 24 students, 24 students were randomly selected. In small schools where there were fewer than 24 students in first grade, all of the students were selected. In first grades where there were both genders, approximately equal numbers of males and females were selected.

The instrument that was used in this research was developed in Canada as part of a five-year research project called Understanding the Early Years (UEY). The Early Development Instrument used in UEY (Janus and Offord 2007) was adapted and validated with Jordanian children, resulting in the Early Years Evaluation Tool (EYE). The EYE assessment/evaluation tool has been identified as a useful measure in cross-cultural comparisons of developing countries. The World Bank intends to use the EYE in developing countries to compare children's readiness to enter school; countries in the first phase of the World Bank's work are Jordan, India, and Turkey.

The EYE assesses children's performance in five domains: Social Skills and Behavior, Awareness of Self and Environment, Cognitive Skills, Language and Communication, and Physical Development. The tool is composed of a total of 49 items ($\alpha = .94$). In the social skills and behavior domain (14 items), each item was rated by teachers on a 4-point scale with 1 = This trait is never present and has not been observed, 2 = This trait is seldom present and rarely observed, 3 = This trait is frequently present and is usually observed, or 4 = This trait is consistently present and is always observed. In the remaining domains, a trained researcher observed the child's performance on specific tasks and rated the child's performance on each item with 1 = Child is unable to do this and appears not to have any of the skills required for this task, 2 = Child has some of the skills required for this task but was unable to do it at this time, 3 = Child can do this partially but not consistently. It appears that he/she will soon master this task, 4 = Child can do this confidently and consistently; It is clear that he/she could do it correctly whenever asked.

On the basis of the teacher and observer ratings, four levels of school readiness were defined. Level 1 (mean score < 1.5) indicated that children were developing readiness slowly and were not yet ready for school; the skills, knowledge, or behaviors necessary for readiness were absent or rarely demonstrated by children at this level. Level 2 (mean score ≥ 1.5 and < 2.5) indicated that children were approaching readiness; skills, knowledge, or behaviors were emerging but not yet demonstrated consistently. Level 3 (mean score ≥ 2.5 and < 3.5) indicated that children were ready for school and almost proficient; the skills, knowledge, or behaviors were partially demonstrated, and children were on the verge of mastery. Level 4 (mean score ≥ 3.5) indicated that children were fully ready for school and proficient; the skills, knowledge, or behaviors were firmly within the children's range of performance.

The instrument also included questions about the child's gender, family's income, father's and mother's education levels, number of family members living at the same home, number of siblings, and residential area (rural or urban).

Results

To provide a broad, descriptive picture, Table 1 shows the number and percentage of children in each demographic group at each of four levels of school readiness. As shown, very few children were classified at the lowest level of school readiness—less than 1.5% of every demographic group. Across the entire sample, 94% of children were classified as being either mostly ready or fully ready for school (levels 3 or 4). However, there was variability across demographic groups in the distribution of children within the highest three classifications of school readiness.

As shown in Table 1, 4.9% of boys were approaching school readiness, 51.2% were mostly ready, and 43.7% were fully ready for school, compared to 7.2%, 57.7%, and 35.0% of girls, respectively. In relation to family income, 8% of children were approaching readiness, 59.4% were mostly ready, and 32.4% were fully ready in the lowest income group, compared to 2%, 34.7%, and 63.3% of the highest income group, respectively. The demographic differences were most dramatic for parents' education levels. For children of illiterate fathers, 18.3% were approaching school readiness, 63.4% were mostly ready, and only 16.9% were fully ready; for children of fathers with a university degree, 1.9% were approaching readiness, 34.5% were mostly ready, and 63.7% were fully ready. The numbers were similar with respect to mothers' education. For children of illiterate mothers, 18.7% were approaching readiness, 62.2% were mostly ready, and 18.4% were fully ready; for children of mothers with a university degree, .5% were approaching readiness, 33% were mostly ready, and 66.6% were fully ready. When residential area was considered, 6.5% of rural children were approaching readiness, 55.6% were mostly ready, and 37.8% were fully ready; 5.5% of urban children were approaching readiness, 52.2% were mostly ready, and 42.2% were fully ready.

Table 2 shows means and standard deviations of the continuous school readiness variable for each demographic group. Demographic groups were compared on school readiness using *t* or *F* tests to determine whether there were significant gender, SES, and residential area differences. As shown in Table 2, there were significant gender differences; boys were significantly more ready for school than were girls. There also were significant family SES differences in school readiness indicating that higher family income, higher paternal education levels, and higher maternal education levels all were significantly related to greater school readiness. In addition, there were significant residential area differences in school readiness, with children in urban areas significantly more ready for school than children in rural areas.

To examine whether family size and number of siblings were related to children's school readiness, we computed bivariate correlations between the continuous measure of school readiness and family size and number of siblings. School readiness was significantly ($p < .001$) correlated with family size ($r = -.04$) and number of siblings ($r = -.17$). Children from larger families and children with more siblings were less ready for school than were children from smaller families and those with fewer siblings.

Discussion

The overall pattern of findings suggests a great deal of similarity in factors related to school readiness in Jordan compared to factors related to school readiness in the primarily North American and European contexts that have been examined previously. In particular, as in other countries (e.g., Janus and Duku 2007), family SES (as indicated by family income, fathers' education, and mothers' education) was robustly related to higher levels of school readiness in Jordan. Children whose fathers or mothers had a university degree were nearly four times more likely to be fully ready for school than were children of illiterate fathers or mothers. Likewise, smaller family sizes and fewer siblings were related to higher levels of school readiness, as has also been reported in other research (Scott and Kobes 1975). In the present study, urban residence was related to higher levels of school readiness than was rural residence, supporting the concern in previous research about rural children's risk for lower school readiness, especially in developing countries (Aboud 2006). In much previous research, girls have been found to have higher levels of school readiness than have boys (Angenent and de Man 1989; Janus and Duku 2007; Mendez et al. 2006), but in the present study, we found that boys had higher levels of school readiness than did girls. Historically, boys in Jordan have been provided with more experiences that could enhance school readiness than have girls. For example, in Jordan girls are more often kept at home with their mothers, whereas boys are more often given the opportunity to explore their environments outside the home.

Lower parental education is associated with lower income and may therefore relate to lower school readiness through the pathway of having fewer available resources. Parents who are less educated also have less experience in education systems and may feel less comfortable in helping their children with their own education (Hill et al. 2004). Less educated parents may also be less able to model skills important in school (e.g., reading to children to promote children's early literacy).

Availability of resources is also likely important in the link between school readiness and family size and number of siblings, especially in Jordan where kindergartens historically have been run primarily in the private sector, requiring parents to pay for their children's attendance. In larger families, parents may not be able to afford to send all children to kindergarten. In the past, parents have been more likely to send boys than girls to kindergarten when they had to choose to send only certain children. Education reform (ERfKE) focusing on increasing all children's access to kindergarten is meant to reduce demographic disparities in access to kindergarten. One implication of our findings is that given the demographic differences we found to be associated with differences in school readiness, education reforms currently underway in Jordan have the potential to set children from different backgrounds on more equal footing when they enter first grade because children would have to rely less on their parents' ability to pay for them to attend kindergarten in the private sector. Girls, children in larger families, and children from lower SES backgrounds, in particular, are likely to benefit from the ERfKE emphasis on increasing access to public kindergartens.

Taken together, the findings suggest that more limited resources are associated with poorer school readiness in Jordan. The implication of these findings is that lower income families, families with less educated parents, and families living in rural areas may need more external supports to help prepare their children fully for school. The ERfKE focusing on opening public kindergartens in rural, underserved areas of Jordan is a good step in this direction. Other research suggests that school readiness improved from 2004 to 2007 in Jordanian communities that implemented public kindergartens during that time (Al-Hassan and Lansford 2009).

Despite the room for improvement in school readiness, especially for girls, and for children from lower SES, larger, rural families, it is encouraging that the vast majority of Jordanian children are either mostly or fully ready for first grade, the first year of mandatory schooling in Jordan. Thus, the major change that the increased availability of kindergartens may bring about would be in moving children from being almost ready for first grade to being fully ready for first grade. Children who are fully ready when they enter school are at an advantage for several reasons. Because they already have mastered prerequisite skills, they do not need to “catch up” to more advanced peers. Because they already have a solid foundation, they are better able to build on existing skills in learning new material. Given the importance of school readiness in predicting future academic achievement and school completion, the investment in early childhood education is an important one.

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Biographies

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Table 1

Number and percent of children at each level of school readiness.

Variable	Level 1	Level 2	Level 3	Level 4
Gender				
Male (<i>n</i> = 1974)	4 (.2)	97 (4.9)	1010 (51.2)	863 (43.7)
Female (<i>n</i> = 1692)	2 (.1)	122 (7.2)	976 (57.7)	592 (35.0)
Family Income (Jordanian Dinars)				
Less than 299 (<i>n</i> = 2295)	6 (.3)	183 (8.0)	1363 (59.4)	743 (32.4)
300–599 (<i>n</i> = 950)	0 (0)	26 (2.7)	456 (48.0)	468 (49.3)
600–899 (<i>n</i> = 173)	0 (0)	1 (.6)	49 (28.3)	123 (71.1)
900 and above (<i>n</i> = 49)	0 (0)	1 (2.0)	17 (34.7)	31 (63.3)
Father Education				
Illiterate (<i>n</i> = 213)	3 (1.4)	39 (18.3)	135 (63.4)	36 (16.9)
Grades 1–6 (<i>n</i> = 510)	1 (.2)	63 (12.4)	339 (66.5)	107 (21.0)
Grades 7–10 (<i>n</i> = 641)	0 (0)	47 (7.3)	394 (61.5)	200 (31.2)
Secondary (<i>n</i> = 1231)	2 (.2)	38 (3.1)	685 (55.6)	506 (41.1)
Diploma (<i>n</i> = 373)	0 (0)	11 (2.9)	174 (46.6)	188 (50.4)
University (<i>n</i> = 586)	0 (0)	11 (1.9)	202 (34.5)	373 (63.7)
Mother Education				
Illiterate (<i>n</i> = 299)	2 (.7)	56 (18.7)	186 (62.2)	55 (18.4)
Grades 1–6 (<i>n</i> = 518)	1 (.2)	67 (12.9)	331 (63.9)	119 (30.9)
Grades 7–10 (<i>n</i> = 573)	1 (.2)	28 (4.9)	367 (64.0)	177 (30.9)
Secondary (<i>n</i> = 1158)	0 (0)	45 (3.9)	647 (55.9)	466 (40.2)
Diploma (<i>n</i> = 579)	1 (.2)	16 (2.8)	251 (43.4)	311 (53.7)
University (<i>n</i> = 437)	0 (0)	2 (.5)	144 (33.0)	291 (66.6)
Residential Area				
Rural (<i>n</i> = 1999)	3 (.2)	130 (6.5)	1111 (55.6)	755 (37.8)
Urban (<i>n</i> = 1581)	2 (.1)	87 (5.5)	825 (52.2)	667 (42.2)

Note. Tabled values are frequencies of children at each level, with percents of children in parentheses. Level 1 = not ready. Level 2 = emerging readiness. Level 3 = almost ready. Level 4 = fully ready.

Table 2

School readiness of children by demographic categories.

Variable	<i>M (SD)</i>	<i>t or F</i>
Gender		6.71
Male	3.34 (.44)	
Female	3.24 (.47)	
Family Income (Jordanian Dinars)		59.26
Less than 299	3.21 (.47)	
300–599	3.41 (.39)	
600–899	3.58 (.30)	
900 and above	3.53 (.32)	
Father Education		100.55
Illiterate	2.90 (.55)	
Grades 1–6	3.00 (.48)	
Grades 7–10	3.20 (.46)	
Secondary	3.30 (.40)	
Diploma	3.40 (.39)	
University	3.50 (.36)	
Mother Education		109.26
Illiterate	2.97 (.52)	
Grades 1–6	3.09 (.49)	
Grades 7–10	3.24 (.44)	
Secondary	3.33 (.41)	
Diploma	3.44 (.40)	
University	3.56 (.31)	
Residential Area		3.64
Rural	3.27 (.46)	
Urban	3.32 (.44)	

Note: All test statistics were significant at $p < .001$.