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## Migrant preschool children's school readiness and early elementary school performance

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### ABSTRACT

Little is known about the early educational performance of children in migrant farmworker families. The authors examined the school readiness and early school success of 289 four-year-old preschool children of migrant families attending Redlands Christian Migrant Association centers. Children's school readiness was assessed and public school records were used for longitudinal follow-up. Children improved on age-4 school readiness domains, and although some struggled with emergent English literacy, many performed well on school readiness measures and later coursework. Children quickly became proficient in oral English, and had above-average school attendance. Many scored low on high-stakes tests; however, typically well enough for grade promotion. Students in the sample were comparable to similar students in poverty. School teachers and administrators should have high expectations for students from migrant families because many of them do stay in the public school system, and appear to be quite resilient despite many challenges they face.

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Immigration to the United States has grown tremendously since the 1990s. In the 1970s, immigrants made up about 5% of the total U.S. population; in the early 2000s, this number jumped to about 11%, and in 2014 it was 13% (Migration Policy Institute, 2014). In 2012, about 46% of U.S. immigrants came from Hispanic or Latino families, and among those immigrants who report speaking a language other than English at home, Spanish is the most common (Migration Policy Institute, 2014). With such a rise in immigration, there is also a rise in the number of native-born children who have immigrant parents. From 1990 to 2000, the number of children 0–17 years old with immigrant parents grew 59.7%, and from 2000 to 2008, the number grew 24.2% (U.S. Census Bureau, 2008). In 2005, about one fourth of all children in the United States lived in immigrant families (Hernandez, Denton, & Macartney, 2008).

By legal definition, an immigrant is any foreign-born individual who is considered a permanent resident of the United States (Department of Homeland Security, 2015). However, migrant farmworkers are agricultural workers who migrate from place to place in order to make a living (Hovey & Magaña, 2002). They usually live in the southern parts of the United States during the winter and move north for summer months. Seasonal farmworkers, on the other hand, often live in one location and are able to earn a wage that way (Hovey & Magaña, 2002). We focused on migrant farmworkers in this study. It is imperative that we understand not only what academic skills children of migrant families are bringing as they enter the school system, but also their academic trajectories throughout early schooling so we can help them succeed in the school system.

### Immigrant families

Life in the United States can be difficult for some immigrant families, especially those with limited financial resources. Unfortunately, there are minimal systems and resources in place that are easily accessible for families who may not speak English well, or who have trouble navigating education and child care services (Hernandez, 2004). Migrant farmworkers, especially, are likely to encounter difficulty when trying to negotiate these systems because of high rates of illiteracy among migrant farmworker populations (Mehta et al., 2000). The conditions of poverty present for many migrant farmworker families, including crowded housing, mobility, food insecurity, and less access to extracurricular activities, community activities, and computer or internet access (Perreira, Chapman, & Stein, 2006) make it difficult for children in migrant families to do well in school (Cruz, 2009). The National Center for Education Statistics reported that for Hispanics 18–24 years old born outside of the United States the high school completion rate was 50.3%, compared to Hispanics born in the United States as first-generation children (78.2%) and second-generation or more (85.1%, Kaufman, Naomi, & Chapman, 2004). Finally, English language proficiency is an obstacle for many immigrant children. Early proficiency in English is an important protective factor for immigrant children, and is related to positive academic performance and school completion (Cruz, 2009; Fry, 2005; Portes & Rumbaut, 2001; Suárez-Orozco et al., 2010). Thus, the speed with which immigrant children acquire English proficiency is an important topic to study (Kim, Curby, &

Winsler, 2014). Although immigrant families experience many difficulties navigating the education and community systems that are in place, there is still a sizeable portion of immigrant children who excel in school.

### ***Immigrant paradox and advantage***

Although immigrant children face many challenges associated with migrating to a new country, there are also advantages that immigrant children have over their native-born peers. The immigrant paradox is a phenomenon where first-generation immigrants often exhibit greater health and educational outcomes, compared to similarly underprivileged children born in the United States (Palacios, Guttmannova, & Lansdale, 2008). First-generation children have been found to outperform second- or third-generation immigrant children in school despite their initial disadvantages (Palacios et al., 2008). One argument for why first-generation immigrant children might outperform their peers in school may be the parental determination, perseverance, and dedication to succeed in the face of barriers due to immigration. This determination may influence and encourage immigrant children's successful outcomes (Palacios et al., 2008). Immigrant children experience firsthand the struggles and accomplishments of their parents' migration to the United States and their abilities to survive tough living and work environments. The strengths seen among immigrant children can be traced as early as prekindergarten (preK).

### ***School readiness***

School readiness can be defined as a set of physical, emotional, social, language, behavioral, and cognitive skills that work together to help a child do well in school (De Feyter & Winsler, 2009). De Feyter and Winsler examined the school readiness of first- and second-generation immigrant students and nonimmigrant students at school entry in Miami, Florida. They found that although the immigrant children were somewhat behind their nonimmigrant peers on direct assessments of cognitive and language skills upon kindergarten entry, the children of immigrant families were exceptionally strong compared to nonimmigrant students in their social-emotional skills and good behavior as reported by teachers and parents. Similar findings of immigrant advantage in early social and behavioral skills have emerged with national samples (Crosnoe, 2007). In a longitudinal follow-up of the same sample of immigrant students, De Feyter, Hartman, Hutchison, Parada, and Winsler (in review) showed that the immigrant students missed less school and outperformed the nonimmigrant students through Grade 4 on standardized tests of mathematics and reading, and on end-of-the-year student grades given by teachers. De Feyter et al. suggested that children in immigrant families use their enhanced social and behavioral skills to develop their cognitive and academic skills in the early years of school.

### ***Migrant children***

Much of the previous discussion has been about immigrant children in general, but there is a subset of immigrant children, known as children of migrant farmworkers—the focus of this

study—who are typically exposed to even more risk factors. The U.S. Department of National Agricultural Workers Survey defines a migrant farmworker as a “seasonal worker who must travel to work so that he/she is unable to return to his/her permanent residence within the same day” (Carroll, Samardick, Bernard, Gabbard, & Hernandez, 2005, p. 7). There are typically three routes that migrant farmworkers take to find work. The western route from California to the northwest and western states, the central route from Texas through the central states, and the eastern route from Florida through east coast states (the group studied in the present study). According to the National Center for Farmworker Health (National Center for Farmworker Health, 2000), there are approximately 3–5 million migrant farmworkers in the United States. Most are men (79%), primarily Latino (83%), born in Mexico (75%), and Spanish speakers (81%; Carroll et al., 2005). The annual family income of a migrant farmworker is between \$7,500 and \$10,000 (U.S. Department of Labor, 2010). In addition to the risks associated with extreme poverty (i.e., limited education, food insecurity, high residential mobility), migrant workers experience social injustices that cause anxiety and stress (Aguilar-Gaxiola, Debb-Sossa, Elliot, & Giordano, 2009). Discrimination and racism are among the various difficulties that migrant families face (Aguilar-Gaxiola et al., 2009).

Migrant children are those children who come from these families who work long laborious hours on farms. A full 82% of migrant farmworker children live in households below the poverty line, compared to 33% of farmworker children who do not migrate with their families (National Center for Farmworker Health, 2000). Many factors may contribute to the lack of information we have on this population of migrant children, such as the difficulty of locating migrant families and the erratic school enrollments of migrant children. There are very few studies that have examined migrant children and their school readiness and success. One national study done by the U.S. Department of Education (2002) interviewed principals and teachers and found that they had low academic expectations for migrant children, and indeed, migrant children performed below the national average. Early English proficiency is not known when it comes to the migrant population, but it is presumed to be low.

The pressures faced by children of migrant families are not confined to the United States. In China, rural migrant children often have difficulty being accepted in new urban cities. Migrant parents have to negotiate many financial burdens and extensive paperwork in order to enroll their children in public schooling (Hu & Szente, 2010). Chen, Wang, and Wang (2009) found that rural migrant children in China experience more depression, more peer victimization, marginalization, and negative perceptions compared to other children. With limited information on highly mobile migrant children, school teachers and staff might act more on the basis of negative stereotypes and have low expectations for academic performance and could display a lack of investment in their progress (Guyll, Madon, Prieto, & Scherr, 2010; Kunda & Thagard, 1996).

### ***The Redlands Christian Migrant Association program in Florida***

Redlands Christian Migrant Association (RCMA; 2010) runs 70 centers located throughout Florida. The RCMA provides

childcare and early education to children of migrant farmworkers and rural, low-income families. The demand is extremely high with many children vying for a spot at its many locations across Florida. The free programs for these children include voluntary childcare and preK classes to improve school readiness and early literacy skills, often but not always involving Head Start, Early Head Start, and Migrant Head Start. Comprising eight centers, in 2008–2009 with the second-highest attendance of students statewide, Miami-Dade County had 1,012 students attending their programs overall. Of an estimated 7,000 children attending an RCMA program in Florida, the Migrant Head Start program has the highest enrollment with approximately 1,700 students. This program adapts to the needs and work schedules of seasonal farmworkers by accepting newborns to 5-year-olds. The children attending RCMA programs are given developmental assessments to test for developmental strengths and weaknesses, and assessments of language proficiency at various time points (Redlands Christian Migrant Association, 2010).

For the parents, there is also a community learning center. Parents are able to take various courses, and learn about health and parenting skills and how to be involved in the public school system, while children can receive homework help (Redlands Christian Migrant Association, 2010). RCMA centers also work with various assessors and conduct health and developmental screenings periodically to help ensure that students are ready for school (Redlands Christian Migrant Association, 2010). As a result of the developmental screenings, children may receive various supports to give the child and family the help they need. RCMA classrooms are arranged in order to promote growth within the children, and teachers are trained to promote diverse skill development in every child (Redlands Christian Migrant Association, 2010).

It is important to note that migrant children do not necessarily go on to attend public schools and may not even stay in Miami-Dade County. RCMA has created a few charter schools that have been shown to improve migrant children's reading test scores between kindergarten and Grade 3 (Redlands Christian Migrant Association, 2010). RCMA is a unique program partly because for most children in the program, English is their second language. The teachers/staff at RCMA centers are typically composed of former migrant workers, and there are plenty of programs before and after school, and parental involvement is required. Little empirical data, however, have been collected on RCMA children, especially after the children leave the preschool program.

### **The present study**

The present study examined a sample of children from migrant farmworker families attending RCMA centers in South Florida. Four-year-old RCMA children were assessed for cognitive, fine motor, gross motor, language, prewriting, personal or social, and self-help skills using the Learning Accomplishment Profile Third Edition (LAP-3; Sanford, Zelman, Hardin, & Peisner-Feinberg, 2003). This sample was followed into the Miami-Dade County public school system from kindergarten to Grade 3. The following research questions were addressed:

Research Question 1: How do children of migrant farmworker families attending RCMA centers perform on school readiness measures with regard to cognitive, fine motor, gross motor, language, prewriting, personal or social, and self-help skills at 4 years old, and how does performance change over time during the preK year?

Research Question 2: How many of these children of migrant farmworker families attending RCMA centers remain in the area and chose to attend public elementary schools in Miami-Dade County?

Research Question 3: How well do such children perform in regular public school kindergarten, as measured by kindergarten readiness tests, course grades, English proficiency, school attendance, and retention?

Research Question 4: How well are these students performing in Grades 1–3 on standardized tests, course grades, English proficiency, and attendance?

## **Method**

### **Participants**

Participants included 289 four-year-old children attending RCMA centers in three cohorts between 2004 and 2007. The children in this study attended one of six RCMA centers located in Miami-Dade County that were also participating in a larger scale, longitudinal school readiness intervention and assessment program, Miami School Readiness Project (Winsler et al., 2008). Limited family and child background information is available on the children. In the 2004–2005 sample, there were 142 four-year-old Hispanic children. In the 2005–2006 sample, there were 56 four-year-old children, who were predominantly Hispanic, including one child who identified as Black. In the 2006–2007 sample, there were 91 four-year-old children who were all Hispanic with the exception of one Asian/Pacific Islander student. Given the cohort-sequential longitudinal design of the study, this sample of children was followed into the Miami-Dade County public school system up through Grade 3 for the first cohort of children, up through Grade 2 for the second cohort, and up through Grade 1 for the last cohort of children when data collection ended. Thus, there is some subject attrition by design, in that not all children were old enough to get to Grade 3 when data collection ended. All instruction from preK to elementary school was reportedly given in English, with the exception of some bilingual teachers sometimes using Spanish in the classroom. As the sample moved through early elementary school (kindergarten through Grade 3), children were carefully matched, with the help of the public schools, based on student ID, date of birth, name, RCMA center attended, and an ID number assigned to them when they were first assessed.

Data for questions regarding performance at 4 years old in the RCMA program make up the largest sample size ( $n = 289$ ). However, as the sample progresses through kindergarten and grade school, the sample sizes understandably decrease substantially. It is obviously very difficult to track children of migrant families due to their mobility. Therefore, there is larger attrition than is typical for similar longitudinal studies tracking children over time. This serves as both a limitation but also

**Table 1.** Number of children with data from kindergarten to Grade 3.

	PreK	K	Grade 1	Grade 2	Grade 3
Lap-3	289				
Grades		91 <sup>b</sup>	66	NA	48
ESOL <sup>a</sup>		96 <sup>b</sup>	45	38	33
ESI-K		77			
DIBELS (LNF)		77			
DIBELS (ISF)		74			
ECHOS		29			
SAT-10			18 <sup>c</sup>	66 <sup>c</sup>	
FCAT					47

Note. The ESI-K was administered during the 2004–2005 academic year. DIBELS LNF and ISF were both administered during the 2004–2005 academic year. The ECHOS was administered during the 2006–2007 academic year. Due to the cohort-sequential nature of this project, there are varying numbers of children who had a chance to provide data for any given grade (96 were old enough when data collection stopped to provide data through Grade 3, 94 could only provide through Grade 2, 70 could only provide through Grade 1, and 29 could only provide through kindergarten). The years that children reached each grade varied because of the cohort sequential nature of the dataset, for 2004–2005 ( $n = 142$ ), and 2005–2006 ( $n = 56$ ), and 2006–2007 ( $n = 91$ ).

<sup>a</sup>ESOL level indicates that students are not yet proficient in English and have an ESOL level less than 4.

<sup>b</sup>Includes their first time in kindergarten, whether on time or delayed entry.

<sup>c</sup>Includes on-time students, retained/second time in that grade, and students who delayed entry into kindergarten.

helps answer our second research question that explores the extent to which children of migrant farmworker families attending RCMA centers remain in the community and become integrated into the local public school system. Table 1 shows the sample sizes at each time point.

## Procedures and measures

### School readiness in preschool: LAP-3

Multiple times during their 4-year-old school year, children were individually assessed (in English), by their bilingual teachers using the LAP-3 (Sanford et al., 2003). The LAP-3 is a developmental and curriculum-based instrument that is used to test the child's developmental strengths and weaknesses across seven developmental domains: cognitive, fine motor, gross motor, language, prewriting, personal or social, and self-help skills. The entire LAP-3 assessment takes approximately an hour and a half to administer and can be done in several sessions.

The LAP-3, a criterion-referenced test, was standardized using a representative sample of preschoolers ( $n = 363$ ) in the United States, based on population projections for the year 2000 by the U.S. Census Bureau (1995; Sanford et al., 2003). Reliability analyses for each domain of the LAP-3 were conducted by the instrument developers. The correlation of each domain with age was strong ( $r = .77-.84$ ) on six of the seven items, and moderate ( $r = .61$ ) on the personal or social domain (Chapel Hill Training Outreach Project, 2004). Instrument developers also found that the internal consistency of the LAP-3 was very strong ( $rs$  from .96 to .99) for each domain, and strong for individual age groups ( $rs$  from .78 to .98). Test-retest reliability involved a subsample of 40 children and was found to have a high degree of stability ( $rs$  from .96 to .99). Interrater reliability involved a subset sample of 33 children and was administered by two examiners with a result of  $rs$  from .84 to .98.

The LAP-3 contains different benchmarks at different ages that a child must obtain to be considered developmentally on time. For example, the cognitive domain contains 87 items in total; however, a child who is 59 months old has to receive pluses on the first 49 items to have mastered that domain. For fine motor, a 4-year old has to complete the first 30 items (of 40) correctly to be considered age-appropriate for that domain. Similarly, 37 of 54 items should be obtained for the gross motor domain by 4-year-old children, 48 of 69 items in language, 35 of 45 items in personal or social skills, 26 of 38 items in prewriting skills, and 41 of 50 items in the self-help domain.

To examine the construct validity of the LAP-3, the intercorrelations among domains were calculated by developers, the high correlations ( $rs$  from .61 to .89) possibly indicate a single underlying construct. Partial correlation coefficients were also conducted, controlling for age ( $r = .26-.57$ ). The reliability and validity of the LAP-3 prove to be favorable in assessing the development of 36–72-month-old children (Chapel Hill Training Outreach Project, 2004).

The children in this study were administered the LAP-3 at various time points (3–7) throughout the preschool year. For consistency, only three time points (beginning, middle, and end-of-the-year) dates were chosen to analyze their progress. Of the four-year olds who participated in the LAP-3 assessment between 2004–2007, 289 children had three time points of data, this is the largest sample size that we will be concerned with for the remainder of the study.

### School readiness in kindergarten

Because these data come from the school system, we had no control over the assessments given to children once they entered school. As school district policy, a variety of assessments are given to kindergarteners to determine their school readiness. The particular assessment used by the school district changed somewhat from year to year, so different cohorts of children in some cases received school readiness assessments in kindergarten. Florida Department of Education implemented the Early Screening Inventory–Kindergarten (ESI-K) to assess children in kindergarten from 2002 to 2005. In 2004–2005, the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) Letter Naming Fluency (LNF) and Initial Sound Fluency (ISF) tests were implemented lasting through the 2008–2009 school year. From 2006 to 2007, as part of the Florida School Readiness Screener, the Early Childhood Observation System (ECHOS) assessment was introduced to kindergarten classrooms. Depending on the cohort of the child, some of the children in this study were administered the ESI-K, the DIBELS, or the ECHOS. Sample sizes for each measure are detailed in Table 1.

### DIBELS

The DIBELS (Good & Kaminski, 2002) was administered once early in the kindergarten year. The DIBELS is designed to assess students' early literacy skills in English and is also used as an early identification tool for those children who may need extra instruction and support in the early stages of English reading (Good, Gruba, & Kaminski, 1995).

The ISF and LNF subscales were administered by the schools. The ISF measures phonological awareness and assesses

the child's ability to produce and understand sounds within (English) words (Good & Kaminski, 2002). During the test, four pictures are presented and named by the examiner, the examiner then produces a letter sound and the child is asked to choose the picture that begins with the sound that the examiner produced. Then the child is asked to produce the beginning sound for a word that matches one of the other three pictures they were originally shown. To obtain a score, the amount of time that it took the child to identify/produce the correct sound is converted into the number of the initial sounds correct in a minute (ISF score =  $[60 \times \text{number correct}] / \text{seconds}$ ). For the DIBELS, the following are the benchmarks that correspond to the scoring system: above average indicates scoring at or above the 60th percentile, low risk indicates scoring at grade level, moderate risk denotes slightly below grade level (between the 20th and 40th percentiles) and in need of some intervention, and high risk denotes severely below grade level (performing lower than 20% of their peers in their district) and in need to serious intervention (Florida Department of Education, 2007).

The LNF helps determine a child's standing on a standardized measure of reading ability (Good & Kaminski, 2002). During this assessment, a page of randomly selected upper and lower case letters is presented to the child and the task is to name as many letters correctly as possible in 1 min. The ISF and LNF outcomes give teachers an overall idea if children fall into a category of low risk, some risk, or at risk for reading difficulties based on their performance. For example, if a student is at risk on LNF at the beginning of kindergarten, that means that the student may have a hard time reaching the established goal for LNF of 27 initial sounds per minute in the middle of kindergarten. The higher the score is, the greater their emergent English literacy is and the lower the chances are of them being at-risk readers.

### **ESI-K**

Kindergarteners in Florida public schools were also given the ESI-K (Meisels, Marsden, Stone-Wiske, & Henderson, 1997). The ESI-K is based on performance used to determine if a child is developmentally at risk in kindergarten (Cronbach's  $\alpha = .89$ , Meisels et al., 1997). Once early in their kindergarten year, the teachers tested students in the areas of visual-motor/adaptive, language and cognition, and gross motor development. The visual-motor/adaptive tasks include tasks such as building a tower of blocks, copying forms, drawing a person, and remembering the sequential order of two to three cards (visual sequential task). The language and cognition tasks include counting blocks, asking the child to describe the ball, button, block, and small car (verbal expression), reading four statements and scoring a child's answer to each statement (verbal reasoning), and telling the child two-, three-, or four-digit numbers and asking them to repeat the numbers in the exact order that they were given (auditory sequential memory). Last, the gross motor tasks include balancing on each foot for 10 s, hopping five times on each foot, and skipping (without galloping). There are three scores that are obtained on the ESI-K are OK (ready) with a total of 21 or more points across the three domains, rescreen (getting ready) with a total of 19–20 points overall, and refer (not ready) with a total of less than 18 points (NCS Pearson, 2011).

### **ECHOS**

Last, the ECHOS is an ongoing, observational assessment given to kindergarteners in Florida in the 2006–2007 academic year only (Florida Department of Education, 2010). Focused on academic subjects, the ECHOS provides a view of development in the seven areas of language and literacy, mathematics, social and personal skills, science, social studies, physical development and fitness, and creative arts. Scores from all domains are calculated, and students receive one of three overall readiness scores: not yet demonstrating, emerging/progressing, and demonstrating. All children entering public school kindergarten are assessed within the first 30 days of the school year. A student who arrives after 31 days is excluded from the ECHOS screening (Florida Department of Education, 2010).

In the fall of 2007, the Florida State Report from the Miami-Dade County District showed that 44% of children were demonstrating, 43% were emerging, and 13% had not yet acquired these skills (Florida Kindergarten Readiness Screener, 2007). For the ECHOS screening, the following benchmarks are used: consistently demonstrating indicates the student is continually showing that he or she has adequately learned the skill or behavior, emerging/progressing denotes the student is at the early stages of growth in the area, and not yet demonstrating indicates the student is not showing any signs of the benchmark (Florida Department of Education, 2007).

### **Elementary school grades**

At the end of their kindergarten, first-, second-, and third-grade years in the public schools, children received grades from their teachers across several course subjects. In kindergarten, students are assigned grades as N for needs improvement, S for satisfactory and, E for excellent. Kindergarten grades were converted on a 3-point scale (needs improvement = 1, satisfactory = 2, or excellent = 3) and averaged across all subjects. In Grades 1–3, grades are assigned across 10 subjects on a 5-point scale (A = 5, B = 4, C = 3, D = 2, and F = 1) and averaged across all subjects.

### **Standardized test scores**

Standardized tests in the state of Florida at the time started in Grade 1. The Stanford Achievement Test Series, 10th Edition (SAT-10; Pearson Assessment, 2003) is a normative assessment comparing one test taker to the rest of his/her peers. The SAT-10 is an untimed multiple-choice test in which first-grade students are required to complete the reading and mathematics portions.

As third-grade students, the Florida Comprehensive Assessment Test (FCAT) is given to all students. The FCAT reading and mathematics tests were found to be highly reliable with an internal consistency of .91 for reading and .88 for mathematics using Cronbach's alpha (Florida Department of Education, 2004). The FCAT is also designed to meet the Sunshine State Standards (SSS); therefore, it has high content validity. Because of the No Child Left Behind Act of 2001 (2002), every third-grade student must pass the FCAT Reading test in order to move on to Grade 4 (Florida Department of Education, 2004). Third-grade students must score at level 2 or above on reading to be promoted. Achievement levels on the FCAT are based on scale scores ranging from 100 to 500 or levels 1–5. At level 1,

children are described as having little success with the challenging content on the test, and at level 5, children have success answering most of the test questions correctly including the most challenging questions.

### Delayed kindergarten entry

Parents of kindergarteners can choose to delay their child's entry into kindergarten. Delayed kindergarten entry, in our dataset, is defined as any child who did not show up to kindergarten even though he/she was of age (5 years old on or before September 1 of the given school year), but the child showed up the following year as a kindergartener, and completed this year with end-of-the-year grades.

### Retention

Students were considered retained if they had completed a grade level and received end-of-year grades the first time, and the following academic year, they completed the same grade and received end-of-year grades a second time. For the purposes of this study, due to data availability, grade retention was examined for kindergarteners only. Since this dataset is structured in a cohort sequential design, recall that we lose students due to the fact that they have not gotten a chance to reach a particular grade level yet.

### Attendance

School attendance was based on the number of days the student was counted as being present and on time in the classroom according to school records. School attendance was examined for kindergarten and first-, second-, and third-grade students for the 180-day school year. We used a measure of the number of days children were absent from school and the number of days they were tardy for this study for analyses.

### English proficiency

In the school district, each ELL child was assessed at the initial start of the school year for English proficiency. If parents responded affirmatively to the following questions, the child was placed in an English for speakers of other languages (ESOL) program until further assessments were done to determine if the child was limited English proficient: (a) "Did the student have a first language other than English?" or (b) "Does the student most frequently speak a language other than English?" For the purposes of this study, we focused on the level of ESOL performance that students are assigned in kindergarten through Grade 3. The ESOL program scores were evaluated on a 5-point Likert-type scale ranging from 1 (*beginner status of oral English language proficiency*) to 5 (*fully proficient in oral English*). Once children reach level 5, they are considered as graduated from the ESOL program and no longer received ESOL services. In Miami-Dade County, the Miami-Dade County Oral Language Proficiency Scale-Revised (Abella, Urrita, & Schneiderman, 2005) was used as the Early Language Learner screening test (Oral Language Proficiency Scale, 1978).

## Results

In order to determine how migrant children performed on school readiness measures, performance averages were calculated and compared to benchmarks or citywide averages. Mean comparisons (repeated measures analysis of variance) and bivariate analyses (chi square) were used to determine if migrant children were scoring similarly across time during the age-4 year.

### Research Question 1: How do the children perform on school readiness tests at 4 years old?

#### School readiness data

To investigate the school readiness and change over time during the age-4 year of migrant preschool children using the LAP-3 developmental domains, a repeated measures multivariate analysis of variance was conducted with time as the repeated measure, with raw scores from the LAP-3's seven developmental domains as the dependent variables. There was a significant within-subjects time effect from the beginning through the end-of-the year (during the 4-year-old academic year) on the multivariate test (Wilks'  $\lambda = .12$ ),  $F(14, 275) = 141.61$ ,  $p = .001$ . Specifically, across the seven LAP-3 developmental domains, the improvement of student raw scores over time was significant (see Table 2). Before addressing the time effect on score improvement, it should be noted that Mauchly's test indicated a violation of the assumption of sphericity,  $\chi^2(2, N = 289) = 50.60$ ,  $p < .001$ ; therefore, degrees of freedom were corrected using Huynh-Feldt estimates of sphericity ( $\epsilon = .87$ ) for the cognitive; fine motor,  $\chi^2(2, N = 289) = 52.74$ ,  $p < .001$ ,  $\epsilon = .86$ ; gross motor,  $\chi^2(2, N = 289) = 24.55$ ,  $p < .001$ ,  $\epsilon = .92$ ; language,  $\chi^2(2, N = 289) = 59.63$ ,  $p < .001$ ,  $\epsilon = .84$ ; personal or social,  $\chi^2(2, N = 289) = 43.78$ ,  $p < .001$ ,  $\epsilon = .88$ ; prewriting,  $\chi^2(2, N = 289) = 68.20$ ,  $p < .001$ ,  $\epsilon = .83$ ; and self-help subscales,  $\chi^2(2, N = 289) = 51.81$ ,  $p < .001$ ,  $\epsilon = .86$ .

There was a significant time effect for the cognitive,  $F(1.73, 498.56) = 755.97$ ,  $p < .001$ ; fine motor,  $F(1.72, 495.86) = 804.52$ ,  $p < .001$ ; gross motor,  $F(1.86, 535.64) = 854.89$ ,  $p < .001$ ; language,  $F(1.70, 487.54) = 617.62$ ,  $p < .001$ ; personal or social,  $F(1.76, 477.83) = 340.96$ ,  $p < .001$ ; prewriting,  $F(1.66, 477.83) = 680.69$ ,  $p < .001$ ; and self-help domains,  $F(1.73, 497.03) = 650.86$ ,  $p < .001$ . In this study, time (beginning, middle, and end of year) demonstrated developmental gains for all children in all seven domains (see Figure 1). Overall, migrant

**Table 2.** Means and standard deviations for LAP-3 domains in preK (raw scores).

Domain	Time 1 (beginning of year)		Time 2 (middle of year)		Time 3 (end of year)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Cognitive	32.79	10.95	43.37	13.08	55.06	13.70
Fine motor	28.38	5.74	34.38	5.28	37.95	3.75
Gross motor	32.40	8.14	41.17	8.43	47.58	6.44
Language	27.88	9.78	36.34	11.74	45.84	12.39
Personal/social	31.51	8.67	37.73	7.49	41.36	4.70
Prewriting	23.32	5.94	28.98	5.54	33.32	4.67
Self-help	37.03	6.07	43.10	5.40	46.81	4.03

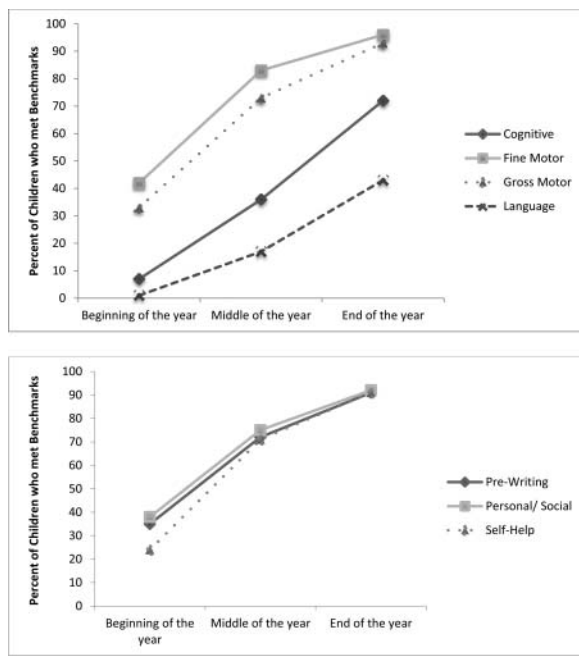


Figure 1. Time effect for LAP-3 domains.

children in this sample struggled the most with and made the least gains in the language and cognitive domains of the LAP-3 assessment.

Also, there was a large percent of children who reached the 4-year-old age benchmarks for five of the seven domains by the end of the year. Specifically, the benchmarks for the fine motor, gross motor, prewriting, self-help, and personal or social domains were achieved by more than 90% of the children by the time they left the RCMA center. Overall, migrant children were having trouble with (English) language (with only 43% reaching benchmarks) and cognitive tasks (with only 72% reaching benchmarks) but performed quite well by the end of the year in the other domains. These LAP-3 scores for children of migrant families are similar to and sometimes exceed the LAP-D scores for the larger low-income sample for those children in center-based child care (Winsler et al., 2008). For the cognitive domain of the LAP-D, the larger study sample average at time 1 and time 2 was similar to the migrant sample ( $M = 40.78$  percentile and 49.93 percentile, respectively) with children of migrant families scoring slightly higher at time 2. Similar scores were achieved for the language domain, with the larger study's center-based sample achieving at 32.68 on average for the beginning of the year, and 46.70 on average at the end of the year, results which are slightly higher than the present migrant sample. Children of migrant families performed slightly lower than the larger center-based sample at both time points on fine motor skills, ( $M = 43.30$  percentile and 52.35 percentile, respectively; Winsler et al., 2008).

### Research Question 2: How many of the children enter and remain in Miami-Dade County Public Schools?

Our second research question asked what proportion of children of migrant families shows up in the county public school

system for kindergarten through Grade 3. Because these data were divided into student cohorts, not all cohorts provided data for all years or grades when data collection ended. The first cohort ( $n = 96$ ) provided data through Grade 3, the second cohort ( $n = 94$ ) reached Grade 2, the third cohort ( $n = 70$ ) only finished Grade 1, and the last cohort ( $n = 29$ ) providing data for the preK and kindergarten years only. In kindergarten, 96 of the migrant children (33% of the original 289 children) were identified as having started kindergarten. Interestingly, only 76 of the 96 who started (79%) completed the entire K year and had end-of-year grades in kindergarten, meaning that a number of children started their kindergarten year but then left Miami-Dade County Public Schools before the year ended. A total of 66 children (25% of those who completed kindergarten and were old enough to get to Grade 1) stayed in the area and completed Grade 1. All 66 who completed Grade 1 remained in the school system for Grade 2. In Grade 3, 48 (72% of those present in Grade 2 and old enough to get to Grade 3) remained the whole year and had end-of-the-year Grade 3 grade point average (GPA) data. In summary, about a third of the original children of migrant families in RCMA preschool centers at ages 3 and 4 years old stayed in the community long enough and entered regular public school kindergarten, and once they entered the school system, about half remained and went on to complete Grade 3.

### Research Question 3: How do the children perform in regular public school kindergarten?

#### Kindergarten grades

On average, children of migrant farmworker families who attended RCMA preK centers did well overall in their average grades during their first time in kindergarten (whether delayed or on time), averaging 2.14 ( $SD = 0.37$ ) of a possible 3.0 points or 70% of the total points possible. Children in migrant families were between the satisfactory and excellent range of classroom grade performance. Most of the children in this study received satisfactory scores with a few excellent scores across ten subjects (language development, prereading skills, handwriting, mathematics, science, social studies, art, music, physical education, and Spanish). This average is only slightly lower than the average for low-income children who attended center-based childcare at 4 years old in the county from the larger project ( $M = 2.28$ ).

#### DIBELS

Results for emergent literacy assessed by the DIBELS are shown in Figure 2. The LNF scores, in English, ( $M = 5.23$ ,  $SD = 8.75$ ) were relatively poor for this group of children of migrant farmworker families. About half (51.9%) of the children scored in the high-risk category on the LNF test. Also, 24.7% scored in the medium-risk category, 13% in the low-risk category, and 10.4% in the above-average category. It is notable and evidence of resilience that almost a quarter (23.4%) of the migrant sample exposed to deep poverty showed little risk or above-average performance in English emergent literacy.

The ISF score measured phonological awareness through the production of the first sound of different words. The ISF ( $M = 6.18$ ,  $SD = 4.84$ ) test showed that 33.8% of the children



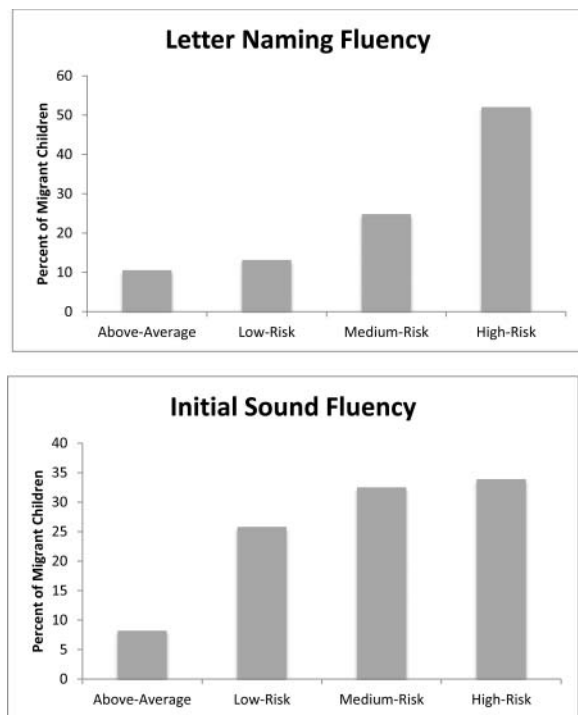


Figure 2. DIBELS performance levels.

fell in the high-risk category, 32.4% in the medium-risk category, 25.7% in the low-risk category, and 8.1% in the above-average category. A high-risk placement for both LNF and ISF shows that, overall, many of the children of migrant farmworker families who attended RCMA preK centers have difficulty identifying letters and making letter sounds in English, although there was a quarter of the sample doing fine on this measure.

### ESI-K

Students in our sample scored anywhere from 10 to 28 points, overall, in the domains of visual motor/adaptive, language and cognition, and gross motor development of the ESI-K, which resulted in achievement of an average of 74% of the total possible points. Of the 77 children who were assessed on the ESI-K, 81% ( $N = 62$ ) were declared ready, 14% ( $n = 11$ ) were declared getting ready and only 5% ( $n = 4$ ) were declared not ready for school. Quite similarly, in the 2004–2005 school year, in the entire state of Florida, 84% of students were declared ready, 12% were declared getting ready, and 5% were not ready (Florida Department of Education, 2005). These values are also very similar to those of children who experienced center-based care at age four in the larger community sample from which these data come, with 85.2% of children declared ready, 12.2% declared getting ready, and 2.5% considered not ready (Ansari & Winsler, 2016).

### ECHOS

The students in our sample scored anywhere from 15 to 38 points in the areas of language and literacy, mathematics, social and personal skills, science, social studies, physical development and fitness, and creative arts on the ECHOS screening, which resulted in average achievement of 71% of the total

possible points. The scores are divided into three categories, demonstrating, emerging, and not yet. Children of migrant farmworker families who attended RCMA preK centers, overall, were considered in the emerging and demonstrating categories ( $M = 1.68$ ,  $SD = 0.54$ ). There were 62.1% of the students who fell into the emerging skills category, 34.5% of students in the demonstrating category, and there were only 3.4% who were in the not yet category. These values compare similarly to kindergarteners in the larger community sample for those who attended center-based care (Ansari & Winsler, 2016) with 39.8% of those children falling in the demonstrating category, 45.8% falling in the emerging category, and 14.4% falling in the not yet category. Notably, fewer migrant children are falling in the not yet category, compared to the larger community sample, despite their increased poverty-related risk factors.

### Kindergarten retention

Of the 76 students who completed kindergarten, 20% ( $n = 15$ ) had delayed their kindergarten entry for a year, and another 17% ( $n = 13$ ) students ended up repeating kindergarten the following year. These rates for migrant children for both kindergarten retention and voluntary delayed entrance to kindergarten are higher than those reported for the larger community project (5% for kindergarten retention, and 0.5% for delayed entry (Winsler et al., 2012). A repeated measures analysis of variance was done to investigate whether these 13 children who repeated kindergarten improved their average grades in kindergarten the second time around. Grades from their first matriculation in kindergarten ( $M = 1.74$ ,  $SD = 0.19$ ) improved during their second time around in kindergarten ( $M = 2.32$ ,  $SD = .44$ ; Wilks'  $\lambda = .30$ ,  $F(1, 12) = 27.97$ ,  $p < .001$ ).

### Kindergarten attendance

Children of migrant farmworker families who attended RCMA preK centers who arrived to kindergarten were only absent an average of 8.12 days a year ( $SD = 7.85$ ). This is highly comparable and slightly better compared to kindergarteners in the larger community sample, more generally ( $M = 8.71$ ,  $SD = 8.39$ ). Some students were never absent all year (8.3%) and a small number were absent 10–39 times (2.4%). The number of days that children were tardy for kindergarten ranged from 0 to 22, and the average was also low ( $M = 1.58$ ,  $SD = 3.07$ ), and lower than kindergarteners in the larger community more generally ( $M = 7.53$ ,  $SD = 12.44$ ; Morrissey, Hutchison, & Winsler, 2014). In sum, children of migrant farmworker families who attended RCMA preK centers and showed up to the public school system were attending kindergarten regularly and showing up on time, even better than their similarly low-income peers in the larger community.

### Research Question 4: How well do the children do in Grades 1–3?

#### GPA and attendance

All children received grades ranging from 2 to 5, meaning all children scored a letter grade of A–D (no Fs in the sample). Overall, first-grade students' average grades were 3.92 ( $SD = 0.65$ ), a high C average, across all school subjects in Grade 1. For the larger community sample it is slightly higher—all on-time first-grade students who attended center-based childcare at age four received an

average GPA of 4.19 ( $SD = 0.63$ ). Unfortunately, due to a data collection/merging/linking error, we had no data on Grade 2 GPA for on-time second-grade students. There were however 23 children who either repeated Grade 2 or were delayed in entering the grade meaning that their Grade 2 data came a year later (a year when we didn't have the data linking error). These children all received a letter grade of A–D (no Fs). Overall, they also obtained an average score on grades ( $M = 3.82$ ,  $SD = 0.70$ ), a high C average across all school subjects. The larger community sample of second-grade students who were either delayed or repeated a grade prior and who attended center-based childcare at age four was the same – they received an average GPA of 3.82 ( $SD = 0.58$ ). In Grade 3, children also received letter grades of A–D (no Fs). Overall, they averaged 3.78 ( $SD = 0.51$ ), a high C average across all school subjects. Of all on-time third-grade students who attended center-based childcare at age 4 years old in the larger community sample, the average GPA was slightly higher, at 4.03 ( $SD = 0.58$ ).

Attendance at school in the later grades continued to be good for our sample of children of migrant farmworker families who attended RCMA preK centers. First-grade students were absent less often ( $M = 6.29$ ,  $SD = 6.88$ ) than were first-grade students in the larger community sample ( $M = 7.18$ ,  $SD = 7.14$ ). A similar trend was observed for second-grade students ( $M = 4.40$ ,  $SD = 5.14$ ) compared with second-grade students in the larger community sample ( $M = 6.32$ ,  $SD = 6.45$ ; Morrissey et al., 2014).

### Standardized tests

A small number ( $n = 18$ ) of first-grade students (who were either delayed into kindergarten or retained previously) took the SAT-10 in reading (percentile:  $M = 33.11$ ,  $SD = 21.03$ ) and mathematics (percentile:  $M = 21.61$ ,  $SD = 21.10$ ) in Grade 1. In Grade 2, during these years all students in Miami-Dade County were required to take the SAT-10 (Pearson Assessment,

2003). There were 66 second-grade students taking the SAT-10 reading test for the first time (percentile:  $M = 33.24$ ,  $SD = 23.35$ ), and 72 taking the mathematics SAT-10 for the first time (percentile:  $M = 21.97$ ,  $SD = 19.58$ ). With the national average being at the 50th percentile, our sample of children of migrant farmworker families was typically scoring lower, on average, than national averages. However, the large standard deviations indicate that a number of students are, in fact, scoring above average on this exam.

A total of 47 children took the FCAT in mathematics and reading in Grade 3. Overall, migrant children performed well on the mathematics (categorical score:  $M = 2.91$ ,  $SD = 0.99$ ) and reading portion of the FCAT (categorical score:  $M = 2.38$ ,  $SD = 1.10$ ). A clear majority (72%) of our children of migrant farmworker families passed the FCAT reading test in Grade 3 with a level 2 or above ( $n = 34$ ), meaning they should have been promoted to Grade 4 if all other promotion factors were met (i.e., grades; see Figure 3). Compared to third-grade students in the larger community sample who attended center-based care, children in the present sample did fail the FCAT reading test more often (28% for migrant students versus 13.9% low-income community sample); however, the majority of the migrant children passed the test.

### ESOL

To investigate kindergarteners English proficiency, we calculated the percentage of students in each ESOL level category (see Table 3). The children placed in level 5 were considered English proficient. We examined students' trajectory of ESOL level category and how it changed over their years of schooling (Table 3). The first year of schooling is classified as a student's first time in kindergarten (either delayed entry or on time); there were 96 students in this category and 10.4% of them were already classified as proficient in English (receiving a level 5 in

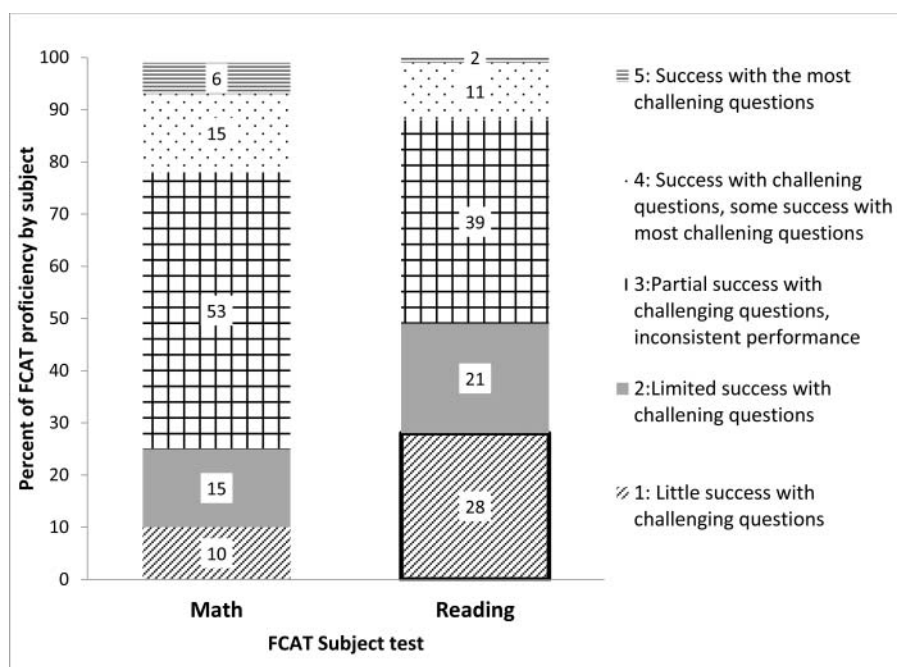


Figure 3. FCAT reading and mathematics outcomes for Grade 3. The section outlined in black indicates failing the FCAT and likely state-mandated grade retention.

**Table 3.** English as a second language performance outcomes.

English as a second language grade	<i>N</i>	<i>M</i> ( <i>SD</i> )	Reached fluency
First year of schooling (first time in kindergarten)	96	3.25 (1.2)	10.4% ( <i>n</i> = 10)
Second year of schooling (first time Grade 1 or second in kindergarten)	69	3.7 (.97)	18.8% ( <i>n</i> = 13)
Third year of schooling (first time in Grade 2 or second year)	55	4.11 (.90)	38.2% ( <i>n</i> = 21)
Fourth year of schooling (Grade 3)	33	4.12 (.89)	39% ( <i>n</i> = 13)

their ESOL category). The second year of schooling is considered a student's first time in Grade 1 or their second time in kindergarten (i.e., the repeated year in kindergarten); there were 69 students who were in this category and a cumulative/additional 18.8% more of those students were now considered proficient in English. The third year of schooling was considered a student's first time in Grade 2 or second time in Grade 1 (i.e., the repeated year in Grade 1); there were 55 students who fell into this category, with another 38.2% of them now considered proficient in English. Finally, the fourth year of schooling was considered a student's first time in Grade 3; there were 33 students in this category and another 39% more them were considered English proficient by then.

The main takeaway point from this information is the clear positive trajectory that migrant students follow in gaining English proficiency. During consecutive years, fewer and fewer students were still in an ESOL category below a level 5, signifying a significant proficiency rate as students got older and moved through years in school. Almost all students had reached the district's level for English proficiency by the end of Grade 3. This indicates that migrant students are improving over the school years and the school is likely helping them gain English proficiency.

## Discussion

Much of the research suggests that migrant youth face many challenges growing up in high-poverty, at-risk environments, which makes it hard to navigate and succeed in the American education system (Barrueco, 2012; U.S. Department of Education, 2002). However, most migrant youth have hardworking parents, value education, and are respectful to teachers and the school (Free, Kriz, & Konecnik, 2014). Longitudinal research on children in migrant families is rare because the mobility of this population makes it difficult to track students' educational trajectories over time. Our study sought to determine the early academic trajectories of children from migrant farmworker families who attended RCMA preK programs at age 3 or 4 years old in South Florida between the years of 2004 and 2007. We examined the early school readiness trajectories of migrant children in preschool using direct child assessments and then followed them if they attended the local public school system in kindergarten and Grades 1–3 using administrative data on kindergarten readiness, school grades, grade retention, attendance, English proficiency, and standardized mathematics and reading test performance through Grade 3.

Overall, the children made impressive gains from the beginning to the end of their preK year in a broad set of school readiness

domains (personal or social, prewriting, fine motor, gross motor, cognitive, language, self-help) and achieved most developmental milestones of the LAP-3 assessment. The two weakest domains at 4 years old for this group were (English) language skills and cognitive skills (assessed in English). These areas tend to be the weakest school readiness domains for children in poverty in general, both in this community (Winsler et al., 2008) and nationwide, and may make the first few years of school a challenge for children of migrant farmworker families (Ezell, Gonzales, & Randolph, 2000). However, it is notable that these children of migrant families who experience all kinds of additional stressors (Barrueco, 2012) are performing on par with other children in the community living in poverty at school entry. Factors present in high-quality RCMA preK centers, such as active learning classrooms based on a High Scope Curriculum, Individual Education Plans when needed, small class sizes to encourage teacher–student interaction, other family services received, and the development of activities to support the child in areas of concern throughout the year, all likely contributed to the relatively healthy gains made by the children in school readiness throughout the preschool year (Redlands Christian Migrant Association, 2010). Children of migrant farmworker families not attending such specialized RCMA preK programs tailored to the needs of migrant families likely do not arrive at the kindergarten door as ready to learn. Also, the children of migrant farmworkers at RCMA centers likely experience less discrimination, bias, and low expectations from peers and adults or staff than do similar migrant peers not in RCMA programs.

The present study is one of the first to prospectively track preschool-age children of migrant farmworker families into early elementary school. This task is obviously made very difficult by the highly mobile nature, by definition, of migrant farmworker families. Our second research question, thus, was an important one—how many of these children remain in the community and enter public elementary school? Contrary to what some preschool teachers might assume about migrant children—that they will all be gone soon moving on to a new community—a full third of our sample of children of migrant families remained in the county and arrived at the regular public school kindergarten doors. And of those who started kindergarten, about half were still enrolled in the public schools in Grade 3. This level of mobility or longitudinal attrition is understandably somewhat higher than that seen in longitudinal studies of low-income children in general (Winsler et al., 2008) given that the families often move to the new job location as conditions change. It is known that some migrant families with a narrower migration zone will often have a home base where young children will stay typically with their mothers or an extended family member, while the father travels further to find work. This makes the home living situation more stable and allows children to attend a school for a longer period of time (Klayman & Hubbell-McKey, 2000). Perhaps that is the case for the children included in the present study.

On school district–administered kindergarten readiness assessments given to all children at the beginning of kindergarten, most of the children of migrant farmworker families who attended RCMA centers were declared Ready for school, which is quite impressive considering the poverty- and mobility-related stressors experienced by migrant families. Furthermore, according to the observational ECHOS measure, the migrant

kindergarten students were overall demonstrating or emerging on core subjects (mathematics, science, etc.), which are important for future predictions of success in first through third grade curriculum. Our migrant sample overall averaged satisfactory grades for the year, which complimented their emerging scores on the ECHOS. These scores suggest that migrant children as a group are doing OK in Kindergarten. In comparison, statewide percentages in 2007 show that 48% of kindergartners in Florida are demonstrating, and 40% are emerging (Florida Kindergarten Readiness Screener, 2007), therefore, migrant children are performing in the range of typical kindergartners in the state of Florida. This is indeed impressive since this statewide statistic includes children who have many more resources and are from more affluent school districts. Clearly, this group of children from migrant farmworker families who had high-quality RCMA preschool are doing generally as well as other children upon entry to kindergarten and should not be seen with low expectations.

As to be expected given that their first language is Spanish, the area that our sample had the most trouble with in kindergarten was emergent literacy in English. More than half of the migrant children in this study fell in the high-risk category for English literacy on the DIBELS measures; a predictor of future English reading difficulty. In addition to limited exposure to English in the early years, children of migrant farmworker families are likely to have parents with low education and literacy levels and they may not read (in English or Spanish) as much with their children, which might help explain why they are lagging behind their peers in English emergent literacy (Zalaquett, McHatton, & Cranston-Gingras, 2007). As our migrant sample moved from one grade to the next, however, their English language proficiency improved considerably over time, even if they started off in the lower levels of the ESOL program. By their fourth year of schooling, students met district standards in English with almost all of them reaching full proficiency. Other studies have also found strong and rapid gains in English language proficiency among low-income ELL children in Miami (Kim et al., 2014).

Also of note was that a sizeable group of migrant children were retained in kindergarten or by Grade 2. Also, there were a larger number of children who voluntarily showed up late to kindergarten than is reported in other studies of low-income families. The United Farmworkers of America (2011) reported that 17% of migrant students overall have been found to attend school at a grade level lower than their same-age peers. Interestingly, the current study also found that exactly 17% of the migrant children in Miami repeated kindergarten. This retention rate is more than that seen with larger low-income samples in Miami-Dade County, with other studies reporting about 3.6% are retained in kindergarten (Mead, Hutchison, Levitt, & Winsler, 2016) and 6% of immigrants more broadly, in Grade 3 (De Feyter et al., *in review*). In this study, migrant children received better grades the second time around in order to be promoted to the next grade. However, the existing literature is unclear about the long-term benefits of such retention, especially for such a low-income population. Mead et al. (2016) found that for very low-income children in the same county, those who repeated kindergarten were actually doing better than similarly low-performing kindergarteners who were

promoted anyway through Grade 3, so it is not clear if early retention is a bad thing. The effects of early retention for children in migrant families is an important topic of future investigation.

Regarding standardized testing, overall, children from migrant farmworker families did not show strong success in mathematics and reading in the Grade 2, but did generally meet Florida State minimum passing score requirements on the Grade 3 FCAT reading exam. For third-grade students in our sample, 28% failed the FCAT reading test, which is a higher rate than the average for all Miami-Dade county third-grade students, who fail this exam at a rate of 21% (Florida Department of Education, 2012). Because the FCAT is a high-stakes exam, this puts migrant children at greater risk for being retained (perhaps for a second time for those 20% or so already retained earlier) in Grade 3. Again, early grade retention might indicate a greater risk later on, especially for low-income populations, and the literature is largely unclear about the long-term benefits or harms of such retention based on high-stakes tests, for migrant children and for children more generally. A recent study using the same larger community sample found long-term disadvantages of being retained in Grade 3 because of the FCAT, such as poorer academic grades and worse standardized test scores just a few years later (Tavassolie, Mead, & Winsler, 2015). This might indicate that migrant children need extra support from teachers and parents throughout their schooling in order to be successful on state high-stakes tests.

Similarly, migrant students in our sample performed average in school grades, but slightly below average in Grades 1–3 compared to the larger low-income community sample of those attending center-based childcare. This comparison demonstrates that migrant students are performing roughly one standard deviation below their same-grade counterparts in the larger sample of children who attended center-based childcare at age four. This difference is actually impressive given that migrant children have access to much fewer resources (Barueco, 2012) compared with the larger population of children in the larger longitudinal dataset.

School attendance throughout the year remained relatively steady. According to Martinez and Cranston-Gingras (1996), too many absences was a primary reason for older migrant children to eventually drop out of school. Overall, our results showed that migrant children in this community were attending school regularly and were not tardy to school often, an important habit to maintain in order to continue their education. This is similar to a recent finding using the larger community sample that immigrant children are actually quite good at attending school compared to their native-born peers (De Feyter et al., *in review*). Also, their good attendance rates may have been influenced by the fact that children in this study were still too young to become agricultural workers themselves. An estimated 300,000–500,000 migrant farmworkers in the United States are children under 18 years old (United Farm Workers of America, 2011). It would be interesting and important to investigate what the educational outcomes and school attendance rates of migrant children become as they get older and are able to work in the fields.

Despite the disadvantages and barriers that are present for the migrant population, most children from migrant farmworker families in this study demonstrated growth and resilience in multiple developmental areas. It is difficult to state why these particular migrant children reached the academic success they did, however, a possible explanation or a contributing factor is that they attended high-quality RCMA preschool before entering public schooling. Magnuson, Meyers, Ruhm, and Waldfogel (2004) claimed that early schooling while children are 3–4 years old may have positive impacts on future academic progress and cognitive development. The earlier migrant children acquire school readiness and English skills, the easier the transition to public schooling may be. Little research has been done on the success rate and effectiveness of the RCMA program, but this study might be an indicator that it is, in fact, helping migrant children do well in school. Clearly, a well-controlled study is needed with a comparison group of migrant children who don't get RCMA preschool.

Immigrant paradox and immigrant advantage as described by Palacios et al. (2008) and Garcia Coll and Marks (2012) could be an important factor that may explain how these migrant children do as well as they do in school despite their increased risk factors. The hard work and struggle of their parents and an emphasis on education may have been present in the lives of the children that stayed throughout the years. Perhaps the parents of the migrant children that stayed in Miami, or those that may have left the children with family or with one parent to go work elsewhere, may have wanted a more stable life for their children.

### Limitations

There are several limitations to this study that affect generalizability to other populations of migrant farmworker children. First, the small sample size provided a significant limitation. This study represents a small number of migrant children between the ages of four and eight throughout the early years of education. Due to the nature of this mobile population, it is very hard to keep track of children longitudinally; therefore simply being able to follow this group for a few years is an enormous feat. However, it seems as though migrant children who remain in public school are performing reasonably well compared to other children in poverty at least in these early elementary school years. As adolescents, outcomes for children of migrant families appear to be less optimistic with higher rates of high school dropout (Cranston-Gingras & Anderson, 1990) and increased feelings of social prejudice, school mobility, and difficult home environments (Martinez & Cranston-Gingras, 1996). It is imperative that we follow this unique population further in their educational careers and provide the supports that they need so they can succeed throughout the educational system.

Another limitation of this study was the location. Our results are specific to children in Miami-Dade County, Florida, and may not generalize to other states or even between the other 68 RCMA preschool centers and public schools located throughout Florida. However, we provided an in-depth analysis of outcomes for this population in one community, and this is a unique contribution to the literature. Also, our data end at Grade 3. It would be interesting to investigate what happens to

those who did not pass the FCAT reading test in Grade 3, and ultimately how many of them graduate from high school. These limitations may serve as future research considerations to investigate migrant children in this and other locations and for longer periods of time.

Finally, our data come from administrative district-wide data sources. Secondary archival data bring both challenges and benefits. With every passing year in the school system, assessment often changed. Whether mandated by the local or federal government, school districts must change their policies with what is required of them (i.e., use of ESI-K, ECHOS, and others in varying academic years). This greatly affects the data that we received from the schools. Year by year our data changed with the growing and constantly shifting educational atmosphere. Although this may seem like a limitation, in fact, this reflects the natural progression of educational systems. This hinders the ability for us to analyze these data for stability, however, it affords us a closer, ecologically valid look at the ever-changing educational system with authentic school-based measures that are linked with students' actual academic trajectories.

### Implications

RCMA early childhood education programs appeared to be helpful in getting migrant children ready for kindergarten. Additional support as school progresses for migrant children is needed, particularly in the areas of English reading or literacy. Teachers, especially those in areas with many migrant families, need to receive specialized, intensive training in addressing language and literacy in the classroom to adequately respond to the needs of this valued group of children and families. Martinez and Cranston-Gingras (1996) found that when students have little or no connection to their teachers and school staff, it is harder for them to stay in school. Teachers, school psychologists, and academic counselors can have an enormous effect on migrant student's education (Cranston-Gingras & Anderson, 1990), therefore they need to be open and willing to learn about what is best for migrant children and families to ensure their success in the future. Clair and Jackson (2006) noticed that migrant children could have better language and English reading skills if their families were involved in a literacy program as well. The findings from this study have wide implications for the benefits of targeted intervention programs in areas with large migrant populations. As a country experiencing a great influx of immigrant youth entering school systems, we need to invest heavily in their future in order to maintain good academic standing and remain in school.

This study challenges many preconceived ideas about how successful migrant children can be in school, and demonstrates the need for policy reform in this particular area. This study shows that children from migrant farmworker families have great potential and can achieve at levels comparable to their native-born, low-income peers. Teachers and school administrators should have high expectations for these resilient and hard-working students. Migrant children need more support, however, in order to be successful in school, and we should assist this deserving population that sits at the crux of our society and economy.

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