



Preschool Education and School Completion

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Topic

School completion

Introduction

Preschool education programs were implemented in the United States more than four decades ago. The goal of such programs is to enhance the school readiness of children at risk due to primarily economic disadvantage, so they can begin formal schooling on a more equal footing with their peers. Findings since the 1960s have indicated that preschool programs can enhance children's cognitive skills, literacy and social skills necessary for school success, as well as promoting school achievement in the elementary grades, reducing the need for special education and grade retention, reducing the risk of delinquency and increasing levels of educational attainment.¹⁻⁶ Among these outcomes, educational attainment is particularly important, given its link to economic self-sufficiency and positive health behaviours. This review will focus on the connection between preschool participation and measures of school completion in the published literature.

Subject

For this review, preschool programs are defined broadly as the provision of educational and social services to children at ages three or four, many of whom are at risk of poor outcomes because they reside in low-income families or have developmental disabilities. Given the timing and breadth of services, these programs are preventive. Programs that begin at birth are included if services are also provided for three- and four-year-olds. Programs in kindergarten and from birth to age three are excluded (see Behrman⁷ for reviews of the latter).

Preschool programs have been found to be associated with higher IQ scores, better school achievement, lower rates of grade retention and special education placement, and lower rates of delinquency.^{5,8-13} These outcomes are known predictors of school completion.¹⁴⁻¹⁶ Preschool programs are likely to have effects on school completion through the effects on these and other predictors.

Review Findings

Results from several model programs have shown the positive effects of preschool participation on school completion and years of education.^{3,17-20} Participants in the High/Scope Perry Preschool Program were found to have higher rates of high-school graduation (67% vs. 49% at age 19; 71% vs. 54% at age 27). Participation in the Abecedarian Project was found to be associated with a higher rate of attending four-year college (36% vs. 14%) and more years of education at age 21. Similar results were found in a large-scale program, the Chicago Child-Parent Center (CPC).^{13,21,22} Participants in the CPC preschool program have higher rates of school completion (49.7% vs. 38.5% at age 20; 65.8% vs. 54.2% at age 22) and more years of education. However, Head Start, the largest preschool program in the U.S., has had mixed results.⁴ Some studies, such as Garces, Thomas and Currie,²³ found effects on school completion (64.6% vs. 58.6%) and college attendance (25.1% vs. 17.6%) at age 23, and Oden et al.,⁴ found effects on high-school completion (95.1% vs. 81.1%) for females in Florida. However, other studies found no long-term effects.²⁴⁻²⁶ Table 1 displays a summary of these findings.

To sum up, the effects of preschool programs on school completion were examined in only eight published studies. They are the High/Scope Perry Preschool Program, the Abecedarian Project, Curriculum Comparison Study, Consortium for Longitudinal Studies (including Perry Preschool, Early Training Project, the Philadelphia project, and Karnes, Shwedel and Williams's project), Chicago Child-Parent Center Program, and three Head Start studies in different locations.

Problems and Research Context

Although many studies showed the link between preschool programs and school achievement, few studies examined school completion as outcomes due to the availability of longitudinal data. Moreover, most of the studies examined model programs, thus the sample sizes were small, usually less than 150. In addition to the need for more evidence to support the association between preschool programs and school completion, researchers have also recognized the importance of understanding the mechanisms of long-term effects of preschool programs.^{8,27,28} That is, how do preschool programs lead to positive outcomes over time? Recently, studies have been conducted to examine the mechanisms of the link between preschool participation and school completion. Two major issues warrant further attention. First, more studies of large-scale programs are needed. Moreover, greater understanding of how preschool participation can lead to higher levels of school completion is crucial to identify the most important program elements and the school and family experiences that are necessary for lasting effects.

Key Research Questions

Beyond the findings on the effects of preschool programs on school achievement, the linkage between preschool programs and school completion has gained more attention, because school completion is ultimately linked to people's economic and social well-being and can reduce the need for remedial education and social welfare services.^{29,30} How preschool programs are associated with school completion is addressed in the next section.

Recent Research Results

The theory behind preschool programs has been tested in some studies.^{5,8,20,21,31-35} Several hypotheses explaining the long-term effects of preschool program have been proposed. The two major hypotheses investigated most in the studies are the cognitive advantage hypothesis and the family support hypothesis.

According to the cognitive advantage hypothesis, the positive effects of preschool on cognitive development at school entry launch children into positive scholastic development and commitment that facilitate improved developmental outcomes in adolescence and beyond. As a central rationale behind preschool programs, the cognitive advantage hypothesis has consistent research support. Among the developed abilities to be nurtured from this perspective are language and literacy skills, knowledge of quantitative concepts, oral communication, school readiness and general cognitive skills. Of course, achievement motivation, attitudes and interests also contribute to cognitive and scholastic development.^{36,37}

The family support hypothesis indicates that long-term effects of interventions will occur to the extent that program participation enhances family functioning and parenting practices. Increased parent involvement, for example, may strengthen home support for children's learning by motivating higher aspirations for children's educational performance and increasing the quality of interactions and activities that occur (e.g. reading to and with children, going to the library). Participation in preschool programs may also promote the family and school stability through increasing interaction between parents and teachers. According to Bronfenbrenner,³⁸ long-term effects of preschool are more likely if the home environment, children's major early learning context, is strengthened. Preschool programs are time-limited, but family experiences persist.

The cognitive advantage and family support hypotheses suggest that strengthening literacy, language and cognitive skills, as well as parent involvement in children's lives, are important goals of preschool programs. Activities and curricula to support these goals can contribute to positive long-term effects on school completion and other outcomes.

Three other hypotheses have also been investigated to explain the long-term effects of preschool education. The contribution of the school support hypothesis has been demonstrated in several studies.^{21,24,34,39} The school support hypothesis predicts that the program will increase the probability of children's attendance in effective schools and reduce the probability of school mobility, both of which are positively associated with educational attainment.⁴⁰ Two other hypotheses, motivation and social adjustment hypotheses, have been proposed to explain the long-term effects of preschool programs. However, few studies have tested these hypotheses, and findings are not consistent. Additional studies are needed. A comprehensive model of those hypotheses is provided in Figure 1.

Conclusions and Implications

In summary, preschool programs are embedded in a broader context of family, community and school processes.⁴¹ The effects of preschools will be more likely to

SCHOOL COMPLETION

persist if learning gains are reinforced and supported by family and school experiences after the end of program participation.^{42,43}

The findings of this review suggest various implications for social policy. Preschool programs for children at risk can lead to higher levels of school completion. The long-term effects have been explained, in part, by the cognitive advantage, family support and school support hypotheses of intervention effects. High-quality preschool programs should be promoted. Research indicates that the lasting effects of preschool programs on educational attainment can benefit the participants and society, with outcomes that include higher projected lifetime earnings and savings from less special education placement.^{29,30,44-47}

Findings from the present study, in conjunction with other studies, suggest some future directions. More studies are needed to examine long-term effects of preschool programs on school completion and higher educational attainment, such as college attendance. In particular, studies of large-scale programs, such as Head Start and state-funded preschools, are needed. Finally, greater understanding of the mechanisms of long-term effects is needed.

SCHOOL COMPLETION

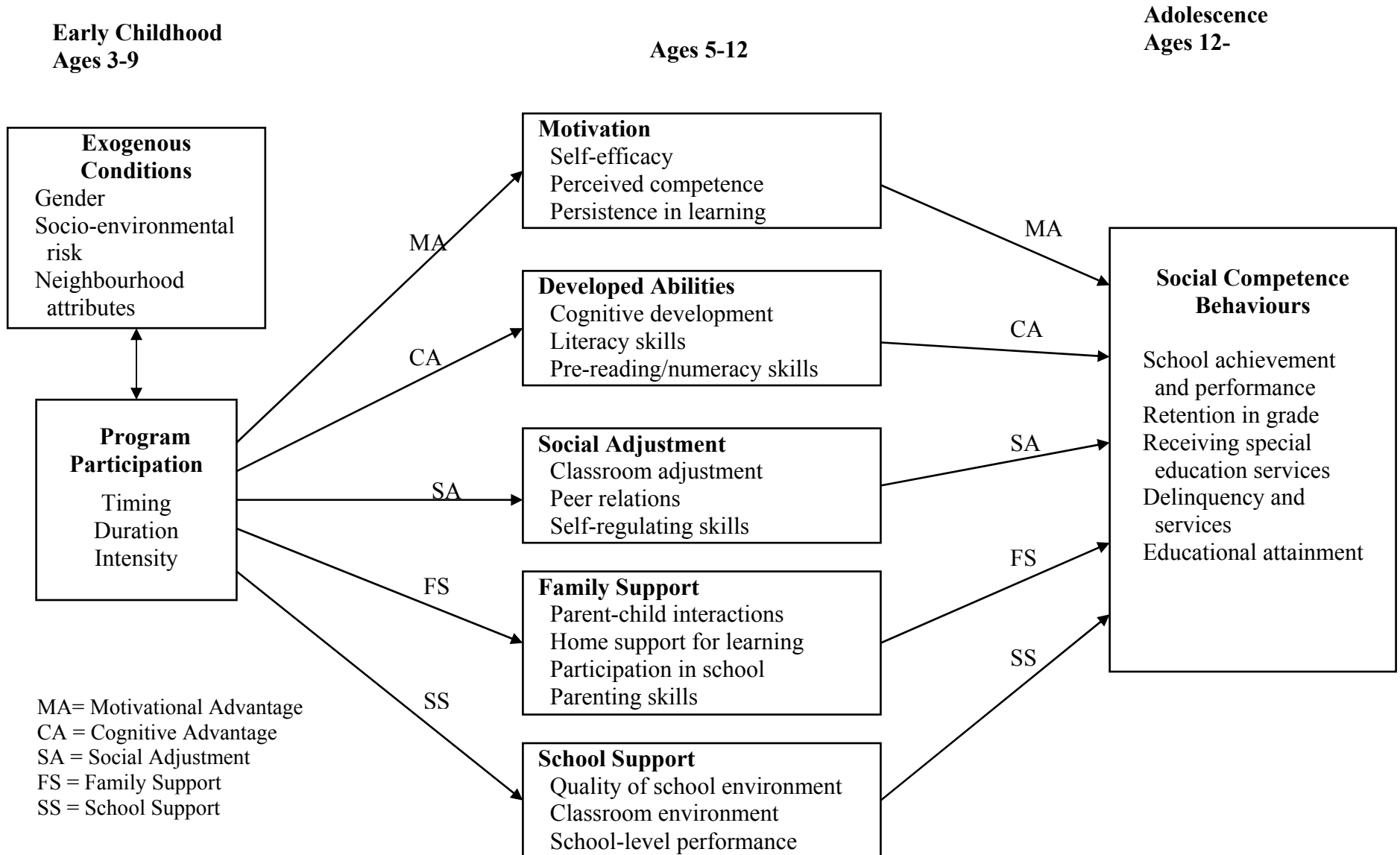
Table 1
Summary Information on Selected Studies

Early Intervention Programs	Age of entry and length	Program description	Original Sample sizes	High-school completion rates	College attendance
<u>Model programs</u>					
Carolina Abecedarian Project ^{18,19}	6 weeks-5 or 8 / 5 to 8 years	Full-day child care for preschoolers; Parent program for school-age	N=111 E=57 C=54	<i>Age 21</i> E (70%) > C(67%) *Not significant	<i>Age 21</i> E (36%) >C (14%) (4-year college)
Curriculum Comparison Study ⁴⁸	4 years/ 1 to 2 years	Part-day preschool program, kindergarten program	N=312 E=244 C=68	<i>Post-high school</i> E(67%) > C (53%) (Graduation) * Not significant	
Consortium ⁴⁹		Preschool program	N=364	<i>Average age 20</i> E (64.8%) > C (52.5%)	
Perry Preschool Program ^{5,8}	3 to 4 years/ 1 to 2 years	Preschool program 12 1/2 hours/week, home visits 1 1/2 hours/week, 30 weeks a year	N=123 E=58 C=65	<i>Age 19</i> E (67%) >C (49%) <i>Age 27</i> E (71%) > C(54%) (Graduation)	<i>Age 27</i> E (33%) > C (28%) *Not significant
<u>Large-scale programs</u>					
Chicago Child-Parent Center Program ^{13,21}	3 or 4 years / 1 to 6 years	Half-day preschool program; Half-day or full-day kindergarten program	N=1,539 E=989 C=550	<i>Age 20</i> E (49.7%) >C (38.5%) <i>Age 22</i> E (65.8%) >C (54.2%)	<i>Age 22</i> E (23.8%) > C (18.3%) * Not significant
Head Start ^{4,23}	3 or 4 years / 1 year	Preschool program	N=3,255	<i>Average Age 21</i> E (95.1%) > C (81.1%) (Female) <i>Age 23</i> E (64.6%) > C (58.6%)	<i>Age 23</i> E (25.1%) > C (17.6%)
Rome, Georgia Head Start ⁵⁰	3 to 5 years/ 1 year	Preschool program	N=218 E=130 C=88	<i>Post-high school</i> E (50%) > C (33%)	

Note: 1. Four projects were included: Perry Preschool, Early Training Project, the Philadelphia project, and Karnes, Shwedel and Williams's project.

SCHOOL COMPLETION

Figure 1. Alternative Paths Leading to Social Competence



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