

Delayed kindergarten enrollment dramatically reduces ADHD in children, study shows

By May Wong

A new research paper co-authored by Professor Thomas Dee finds strong evidence of mental health benefits in delaying kindergarten.

A new study on the mental health effects of kindergarten enrollment ages found strong evidence that a one-year delay dramatically improves a child's self-regulation abilities even into later childhood.

According to the study co-authored by Stanford Graduate School of Education Professor Thomas Dee, children who started kindergarten a year later showed significantly lower levels of inattention and hyperactivity, which are jointly considered a key indicator of self regulation. The beneficial result was found to persist even at age 11.

"We found that delaying kindergarten for one year reduced inattention and hyperactivity by 73 percent for an average child at age 11," Dee said, "and it virtually eliminated the probability that an average child at that age would have an 'abnormal,' or higher-than-normal rating for the inattentive-hyperactive behavioral measure."

Findings from the study, which Dee co-authored with Hans Henrik Sievertsen of

the Danish National Centre for Social Research, could help parents in the recurring debate over the pros and cons of a later school entry.

Though many children in developed countries now start their formal schooling at an older age, a growing body of empirical studies could neither conclusively point to improved test scores nor higher incomes from a delayed kindergarten entry, the study stated.

Dee and Sievertsen's research, however, provides new evidence instead on mental health aspects that are predictors of educational outcomes.

In the psychology realm, the measure of inattention and hyperactivity – the mental health traits behind Attention Deficit Hyperactivity Disorder – effectively reflects the concept of self regulation. A higher level of self regulation, which describes a person's ability to control impulses and modulate behavior in attaining goals, is commonly linked to student achievement.

Staying focused, faring better

The underlying theory is that youngsters and teens who can stay focused, sit still and pay attention longer, fare better in school.

Dee's study found similar correlations: comparisons of seven-year-old children attending the same schools showed that the students who had lower inattention-hyperactivity ratings had higher school assessment scores.

For the study, researchers used data from a nationwide mental-health screening tool of children in Denmark – a survey that is widely used internationally in clinical and academic settings – and matched it against the Danish census. Linking the two allowed researchers to make analyses using exact dates of birth, allowing for robust comparisons among similarly aged children.

Because children in Denmark enroll in kindergarten in the calendar year they turn six, kids born exactly on Dec. 31 would have started kindergarten earlier that year, while those born a day later on Jan. 1 would be 6-years-and-8-months old when they start formal schooling.

Researchers were thus able to examine differences between children who were born a certain number of days before the Dec. 31 enrollment cut-off and those born after the cut-off. They used full-sample sizes from the parent-reported mental health survey; 54,241 parents responded when their children were age 7 and 35,902 responded when the children were about 11 years old.

Large effects of significantly improved mental health were consistently found in the inattention-hyperactivity category, for both boys and girls, according to the study.

“This is some of the most convincing evidence we’ve seen to support what parents and policymakers have already been doing – choosing to delay kindergarten entry,” Dee said.

The percentage of children entering kindergarten at age six instead of age five has steadily increased to about 20 percent in the United States, according to the study. Part of the trend stems from school policy changes, but most of the increase can be attributed to academic “redshirting” – a sports term for the practice of postponing a college athlete’s participation in competitive games.

Many parents are opting to delay kindergarten enrollment for a year in the hope of giving their children a leg up in maturity and other social emotional skills.

“The study will give comfort to those who have done it,” Dee said. “And for those who are making the decision, it’ll give them a chance to consider the benefits.”

Dee noted, however, that decisions about schooling involve several factors and this study addresses one area. He suggests conversations about start time include both teachers and parents.

Dee also said while there are strong, large effects in the study, kids who delay kindergarten in Denmark have universal access to reasonably good pre-K. In the absence of consistent access to good pre-K, Dee said, children in the U.S. may not be as harmed by starting kindergarten earlier.

Prolonging play

The study's findings also align with other research that has shown an extended period of early childhood play – such as in preschools – yields mental health developmental gains.

As a result, Dee said he hopes his research will lead to broader examinations on how kindergarten is taught. It could be pedagogy pointed more toward play rather than structured academics.

“It’s not just a question of when do you start kindergarten, but what do you do in those kindergarten classes?” Dee said. “If you make kindergarten the new first grade, then parents may sensibly decide to delay entry. If kindergarten is not the new first grade, then parents may not delay children’s entries as much.”

The study, aptly titled, [“The Gift of Time? School Starting Age and Mental Health,”](#) was published Oct. 5, by the National Bureau of Economic Research. A version of the article is also available here as a working paper from the Stanford Center for Education Policy Analysis at the GSE. The research was supported in part with a grant from The Danish Council for Strategic Research.

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