

Title: Is Special Education Service Receipt a Risk Factor for Socioemotional Maladjustment in Middle School?

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To be considered for:

- 1) 502. Flash Session: Gender, Race/Ethnicity, and Health (Organizer: Hedwig Lee)
- 2) 413. Policies, Programs and Their Impacts on Health and Mortality (Organizer: Michael D. M. Bader)

Short Abstract (150 words):

Whether and to what extent socioemotional maladjustment may be the result of special education service receipt has been unknown. We statistically matched 2,370 children with disabilities participating in the ECLS-K:1998 in order to investigate 8th grade children's self-reported feelings of academic competency, peer relationships, internalizing feelings, school belongingness, self-concept, educational expectations, and locus of self-control. In a novel design, we included only students who received services during at least one K-8 grade, and assessed their risk for socioemotional maladjustment based on their propensity to have last received services at Kindergarten, 1st grade, 3rd grade, 5th grade, or 8th grade. Results indicated that receiving special education between Kindergarten and 5th grade was associated with a higher locus of self-control but was not significantly related to any other socioemotional outcomes or academic competencies in middle school, contradicting the idea that receiving special education services contributes to socioemotional maladjustment among students with disabilities.

Longer Abstract (2-4 pages):

Background. Children who are socially and emotionally well-adjusted are more likely to experience educational and societal success over their life course (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011; Hair, Halle, Terry-Humen, Lavelle, & Calkins, 2006; Hamre & Pianta, 2005). Special education services are provided to children with disabilities (CWD) attending U.S. schools to mitigate the adverse effects of specific disabling conditions (e.g., autism, speech or language impairments, learning disabilities) on their school functioning, including social-emotional adjustment. Yet, CWD receiving special education services have often been reported to more frequently experience emotional and interpersonal difficulties, lower motivation, and greater peer rejection, delinquency, victimization, academic failure, and school dropout (e.g., Bender & Wall, 1994; De Boer, Pijl, & Minaert, 2012; Hamre & Pianta, 2001; Kam, Greenberg, & Kusché, 2004; Kavale & Forness, 1996; Krull, Wilbert, & Henneman, 2014; Reynolds & Wolfe, 1999; Rose, Monda-Amaya, & Espelage, 2011).

Two competing hypotheses have been put forth to explain the observed relation between lower social-emotional adjustment and the receipt of special education services in U.S. schools by CWD. The first is that receiving special education services results in stigma associated with disability labeling (e.g., Green, Davis, Karshmer, Marsh, & Straight, 2005; Hinshaw, 2005; Lauchlan & Boyle, 2007; Riddick, 2000; Shifrer, 2013), attending segregated special education classrooms (e.g., Wiener & Tardif, 2004; Renick & Harter, 1989; Gans, Kenny, & Ghany, 2003), and/or receiving ineffective or inappropriate special education services (e.g., Burns & Ysseldyke, 2009; Cook & Shirmer, 2003; Kavale & Forness, 1999). Second, and conversely, it may be that the lower social-emotional adjustment of CWD who are receiving special education services results from previously experiencing severe academic and/or behavioral difficulties that, independently of special education service receipt, make social-emotional maladjustment more likely (e.g., Chesmore, Ou, & Reynolds, 2016; Morgan, Farkas, & Wu, 2009; Morgan, Farkas, & Wu, 2012; Morgan, Farkas, Tufis, & Sperling, 2008).

Yet, and to date, few studies have directly addressed social-emotional outcomes for CWD while also controlling for academic or behavioral functioning (e.g., Chesmore et al., 2016; Shifrer, 2013). This means that it is unclear whether socioemotional outcomes and competencies are impacted as a direct consequence of special education services above and beyond their established relationship with early academic struggles. To this end, we investigated whether the timing of special education service receipt was associated with an increased risk of socioemotional maladjustment in middle school. In other words, was the relative "recency" of special education itself a risk factor for later socioemotional maladjustment?

Our hypotheses were as follows. First, students with disabilities who received services earlier in schooling may demonstrate better socioemotional outcomes in middle school relative to students who received services later in schooling, given the hypothesized links between socioemotional maladjustment and special education service receipt. Alternatively, and second, if special education services were not independently associated with socioemotional maladjustment after conditioning on academic and behavioral functioning, we expected to see no relation between the timing at which services were delivered and middle school outcomes.

Method. We designed this study to examine whether and to what extent the timing of children's receipt of special education services increased their risk for experiencing socioemotional maladjustment during middle school. To better control for selection bias and so more rigorously estimate the risks associated with the length and timing of special education service

receipt, we investigated our research questions among a sample of U.S. schoolchildren who received special education services at least once between kindergarten and 8th grade. Multinomial propensity scores were created from a host of variables, and differentiated students' likelihood of receiving each "treatment" – in other words, the last timepoint at which students received special education services (K, 1, 3, 5, and 8). Any demographic, achievement, behavioral, or special education service variable that was significantly related to at least one outcome or to the different treatment groups at $p < .10$ was included in the creation of the multinomial propensity scores. A visual inspection of these scores reveals sufficient overlap among all treatment levels (Figures 1 and 2).

Results. Relative to students who received services in 8th grade, students who last received services in any grade K-5 did not generally demonstrate better or poorer socioemotional outcomes (see Table 1). This finding supports our second hypothesis that special education services are not related to poorer socioemotional adjustment after controlling for academic and behavioral struggles. In fact, coefficients were largely positive in directionality, indicating that receiving earlier services may be associated with better (though not significant) socioemotional adjustment in middle school. However, and aligned with our first hypothesis, students who last received services in any grade K-5 reported a higher locus of self-control than students who received services in 8th grade (effect sizes ranged from .30 to .37 standard deviations).

Discussion. Special education services delivered early in school do not appear to produce socioemotional maladjustment among CWD when conditioning on prior academic and behavioral struggles. Although students who received services in 8th grade report feeling less control over their lives, overall, results suggest little relation between socioemotional maladjustment in middle school and special education service receipt among students who receive services between grades K-5. It is likely that the reported links between special education service receipt and socioemotional maladjustment are largely due to an uncontrolled association between special education and poorer academic and behavioral functioning. Moreover, our results are bolstered by the fact that we analyzed a sample of CWD who received special education services at least once during K-8th grade, removing the problem of a poor comparison group (i.e., comparing CWD to non-disabled peers receiving general education services). These findings should be heartening to researchers, educators, and policymakers concerned that providing special education services to young children may engender negative socioemotional outcomes.

Distribution of Propensity Scores for Each Timing Treatment

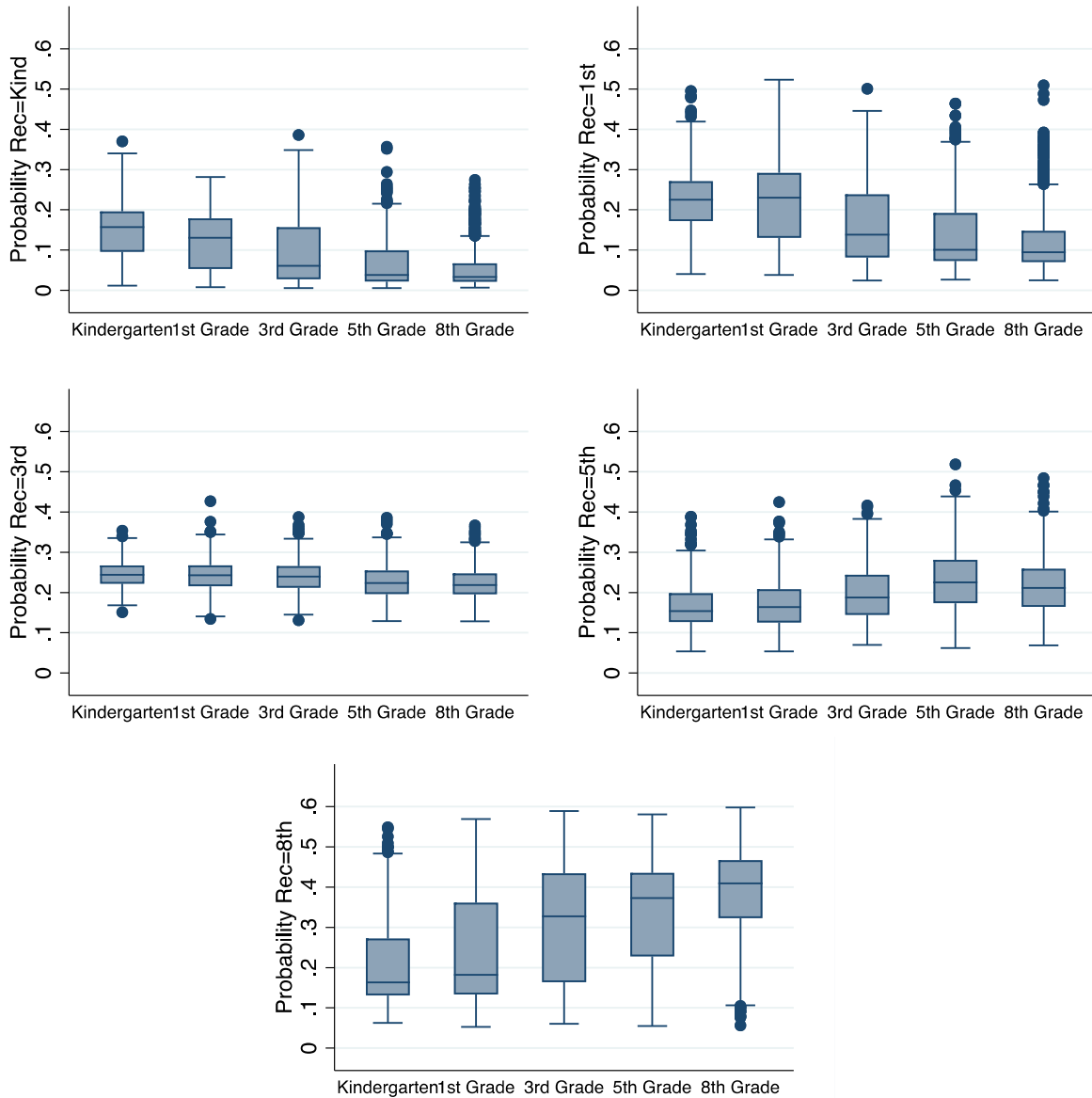


Figure 1. Distribution of probability scores for each treatment outcome (grade at which last special education services delivered) within the region of common support.

Table 1.

Estimated Treatment Effect Relative to 8th Grade Service Receipt.

	<i>n</i>	Kindergarten		1 st Grade		3 rd Grade		5 th Grade	
		B	95% CI	B	95% CI	B	95% CI	B	95% CI
Reading Competency	1551	0.19	-.06, .43	0.10	-.10, .29	0.11	-.05, .26	0.12	-.01, .25
Math Competency	1555	-0.07	-.32, .18	-0.08	-.28, .12	-0.13	-.29, .03	-0.05	-.19, .09
Internalizing Problems	1554	-0.06	-.33, .21	-0.10	-.32, .11	-0.06	-.24, .11	-0.06	-.20, .09
Locus of Self-Control	1542	0.36***	.11, .62	0.37***	.16, .57	0.32***	.16, .49	0.30***	.16, .44
Self-Concept	1549	0.21	-.04, .46	0.08	-.12, .28	0.20	-.05, .36	0.26***	-.12, .40
Educational Attainment	1203	0.09	-.21, .38	0.21	-.03, .45	0.22	-.02, .41	0.21	-.04, .38
School Belonging	1528	0.11	-.16, .37	0.07	-.14, .28	0.23	-.06, .40	0.08	-.07, .22
Peer Relationships	1533	0.12	-.15, .40	0.08	-.14, .30	0.14	-.04, .32	0.05	-.10, .20

*** $p < .001$

Note: Estimates adjusted for 10 comparisons using the Benjamini-Hochberg correction.