

2021 AERA Virtual Annual Meeting

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Classroom Placement and Twin's Social Behaviors in Elementary School : Providing Empirical Evidence to Inform Educational Policy

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AMERICAN EDUCATIONAL RESEARCH ASSOCIATION

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2021 VIRTUAL ANNUAL MEETING
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Classroom Placement

- ▶ **Assumptions about classroom separation of twins**
- ▶ **Policy at the school, state or district-level**
 - ▶ 71.0% of school principals believed that twins should be separated in kindergarten (Gordon, 2015)
 - ▶ Lack of empirical evidence

Objectives

- ▶ **This study examined the effects of classroom placement (i.e., classroom separation vs classroom sharing) on social behaviors in a sample of 560 twin pairs from ages 5 to 12 years.**
- ▶ **Overcomes limitations by :**
 - ▶ controlling for the sex and twins' behaviors prior to formal schooling;
 - ▶ examining whether the classroom placement is associated with twins' behaviors at multiple occasions throughout the elementary school years;
 - ▶ testing the cumulative years (i.e., total number of years) of classroom sharing on twins' behaviors
 - ▶ considering inattention behaviors to test the hypothesis that twins in separate classrooms would be more inattentive than those sharing the same classroom;
 - ▶ estimating the contribution of the classroom placement on the quality of the intertwin relationship.

Methodology

Participants : Participants are from the Quebec Newborn Twin Study (N= 560 pairs)

Measures :

- ▶ Classroom placement : separately (coded 0) vs together (coded 1)
 - ▶ Cumulative years of classroom sharing (0 = separated during all the elementary school)
- ▶ Twins' prosocial behavior, physical aggression, social withdrawal, anxiety, inattention behaviors
- ▶ Intertwin relationship

Procedure : The twin's behaviors prior to attending elementary school (M= 5.30, SD= 0.27) were assessed by the mother. Teachers rated the twins' behaviors at ages 6, 7, 9, 10 and 12 years.

- ▶ In most cases, twins were in separate classrooms during the elementary school years. No differences between the proportion of MZ twins and the proportion of DZ twins sharing the same classroom or being in separate classrooms, across ages.

Analyses

- ▶ One twin selected randomly out of each pair
- ▶ Multivariate regression models on variables corrected for age and controlling for :
 - ▶ mother's educational attainment, household income, the twin's sex and behaviors prior to formal schooling (at age 5)
 - ▶ estimate the overall contribution of concurrent classroom placement on twins' prosocial behaviors, physical aggression, social withdrawal, anxiety and inattention
- ▶ Multivariate regression models were also conducted to test the cumulative years of classroom sharing (from ages 6 to 12) on twins' behaviors at age 12.

Results

- ▶ Is classroom placement associated with twins' behaviors and the intertwin relationship?
- ▶ Classroom sharing was significantly associated with lower levels of social withdrawal at ages 6 and 10, lower levels of physical aggression and inattention at age 12.

Table 2. Linear regressions predicting twins' behaviors from being in the same or different rooms

Ages	Constructs	Model A				Model B
		Sex	Zygoty	Baseline	SC/DC	SC/DC X zygoty
6	Prosocial behaviors	0.11	-0.05	0.05	0.08	-0.01
	Physical aggression	-0.18**	0.07	0.14	0.13	0.04
	Social withdrawal	0.00	0.07	0.15**	-0.19***	-0.24
	Anxiety	0.07	-0.02	0.07	0.04	0.02
	Inattention	-0.20***	0.03	0.30***	-0.04	-0.10
7	Prosocial behaviors	0.23***	-0.05	0.05	0.04	-0.10
	Physical aggression	-0.34***	0.02	0.28***	0.00	0.13
	Social withdrawal	-0.19***	-0.13	0.25***	-0.07	-0.25
	Anxiety	-0.05	-0.06	0.16**	0.02	0.15
	Inattention	-0.17**	0.09	0.23***	-0.01	0.13
9	Prosocial behaviors	0.25***	-0.02	0.04	0.08	-0.01
	Physical aggression	-0.26***	-0.05	0.12	0.02	-0.19
	Social withdrawal	-0.10	0.07	0.03	-0.03	0.15
	Anxiety	0.01	-0.07	-0.02	-0.06	-0.04
	Inattention	-0.16**	1.03	0.21***	0.06	-0.10
10	Prosocial behaviors	0.16**	-0.03	0.12	0.05	-0.10
	Physical aggression	-0.34***	-0.03	0.13	-0.09	0.03
	Social withdrawal	-0.09	-0.05	0.12	-0.20***	0.28
	Anxiety	-0.04	-0.08	-0.02	-0.09	0.11
	Inattention	-0.16	0.00	0.26***	-0.01	0.13
	Intertwin relationship	0.18***	-0.05	---	0.06	0.16
12	Prosocial behaviors	0.30***	0.06	0.17**	0.13	-0.30
	Physical aggression	-0.34***	-0.13	0.11	-0.17**	0.07
	Social withdrawal	-0.11	0.03	0.22	-0.05	-0.05
	Anxiety	-0.01	0.06	0.02	-0.06	-0.17
	Inattention	-0.21***	-0.03	0.20**	-0.18**	-0.03

Results

- ▶ Are cumulative years of classroom placement associated with twins' behaviors and the intertwin relationship?
- ▶ The more years twins shared the same classroom, the less physically aggressive they were at age 12.

Table 3. Linear regressions predicting twins' behaviors from number of years in the same classroom

Age	Constructs	Model A				Model B
		Sex	Zygoty	Baseline	nSC/DC	nSC/DC X zygoty
10	Intertwin relationship	0.18***	-0.06	---	0.03	0.19
12	Prosocial behaviors	0.29***	0.05	0.18**	0.06	-0.51
	Physical aggression	0.33***	-0.12	0.12	-0.16**	0.25
	Social withdrawal	-0.11	0.03	0.22***	0.02	-0.09
	Anxiety	-0.01	0.07	0.01	0.02	-0.14
	Inattention	-0.20**	-0.02	0.21***	-0.05	-0.01

Conclusion

These findings provide modest evidence that educating twins together is associated with positive twins' behaviors and social functioning at school

- ▶ These results do not translate into individual effects of classroom placement
- ▶ Reinforce the idea that a one-size-fits-all approach to classroom placement of twins might not be beneficial

Questions?

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