

Socioeconomic Status and Motor Skills in Preschool Aged Children

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Abstract

- Fine and gross motor skills are essential for healthy development.
- Studies suggest that children in lower socioeconomic status (SES) families present a delay in these essential motor skills and, therefore, are at risk for poor motor skill development.
- This study aimed to correlate fine and gross motor skills with family socioeconomic status, as defined by parent education level.
- 87 children between the ages of 3-5 years were assessed and their family demographic information was analyzed.
- The results suggested that there was a significant correlation between SES and fine and gross motor skill performance.
- Results indicate that children from low SES families are more likely to have weaker fine and gross motor function.

Introduction

- Development of fine and gross motor skills are important for childhood growth and play. Along with social and cognitive skills, developing fundamental motor skills facilitates building a foundation of healthy habits such as regular physical activity, release of emotional stress, and successful academic performance (Engle & Black, 2008).
- Fine motor skills are tasks that involve coordination of small muscle movements, including grasping and manipulating objects. Children develop these skills through writing, drawing, and putting on articles of clothing. Gross motor skills involve the coordination of large muscle groups, including walking, running, throwing, kicking, and catching.
- Research indicates that low-SES families are more likely to have children that experience delayed development, sometimes due to poor prenatal care, substance abuse, inadequate nutrition, high exposure levels, and insufficient access to health care (Bradley & Corwyn, 2002).
- Delays in development contribute to the substantial achievement disparities in school readiness that often occurs in low-SES children when compared to their mid-SES peers (Welsh, Nix & Blair, 2010).
- Research also illustrates that the achievement gaps created in early childhood tend to persist and exacerbate over time (Engle & Black, 2008).
- This suggests that development of fine and gross motor skills are vital in fostering academic success, cognitive development, and social skills. Furthermore, low-SES children typically have less developed motor skills and, therefore, are at risk for delays in other aspects of development.

Study Design/Methods Used

- This project was a part of a larger study called *Flame retardants and home environment on children's school readiness*. 87 children between the ages of 3-5 years were recruited from preschools around the Corvallis and Bend, Oregon. This study aims to correlate child development and chemical exposure levels in the home environment.
- I visited the child's school and home in the Fall of 2012 and winter of 2013 to perform assessments, such as the Peabody Developmental Motor Scales-2 (PDMS-2), HTKS, Woodcock-Johnson, and Mullen Scales of Early Learning, in order to assess the child's fine and gross motor skills, self-regulation, IQ, and cognitive development, respectively. Family demographic data was also collected at the time of assessment.
- The sample included 36 % girls, 8% Latino/Hispanic children, 35% low SES children
- Children's motor skills were directly assessed using the PDMS-2; the gross motor quotient (GMQ), fine motor quotient (FMQ) and total motor quotient (TMQ) from the PDMS-2 were correlated with SES, indicated by parent education level, using a Pearson correlation.

Goals of the Study

- My study examined the following research question:
 - a) Is there a relationship between motor skills and socioeconomic status?
- Hypothesis: I hypothesized that children's fine and gross motor skills would be negatively correlated with SES as defined by parent education level.

Results

- A Pearson correlation showed that SES was related to total motor quotient; fine motor and gross motor combined ($p < 0.05$)
- Pearson correlations indicated that SES was significantly related to the fine motor skills of pre-school aged children ($p < 0.05$).
- Pearson correlations indicated that SES was significantly related to gross motor skills in preschool aged children ($p < 0.05$).



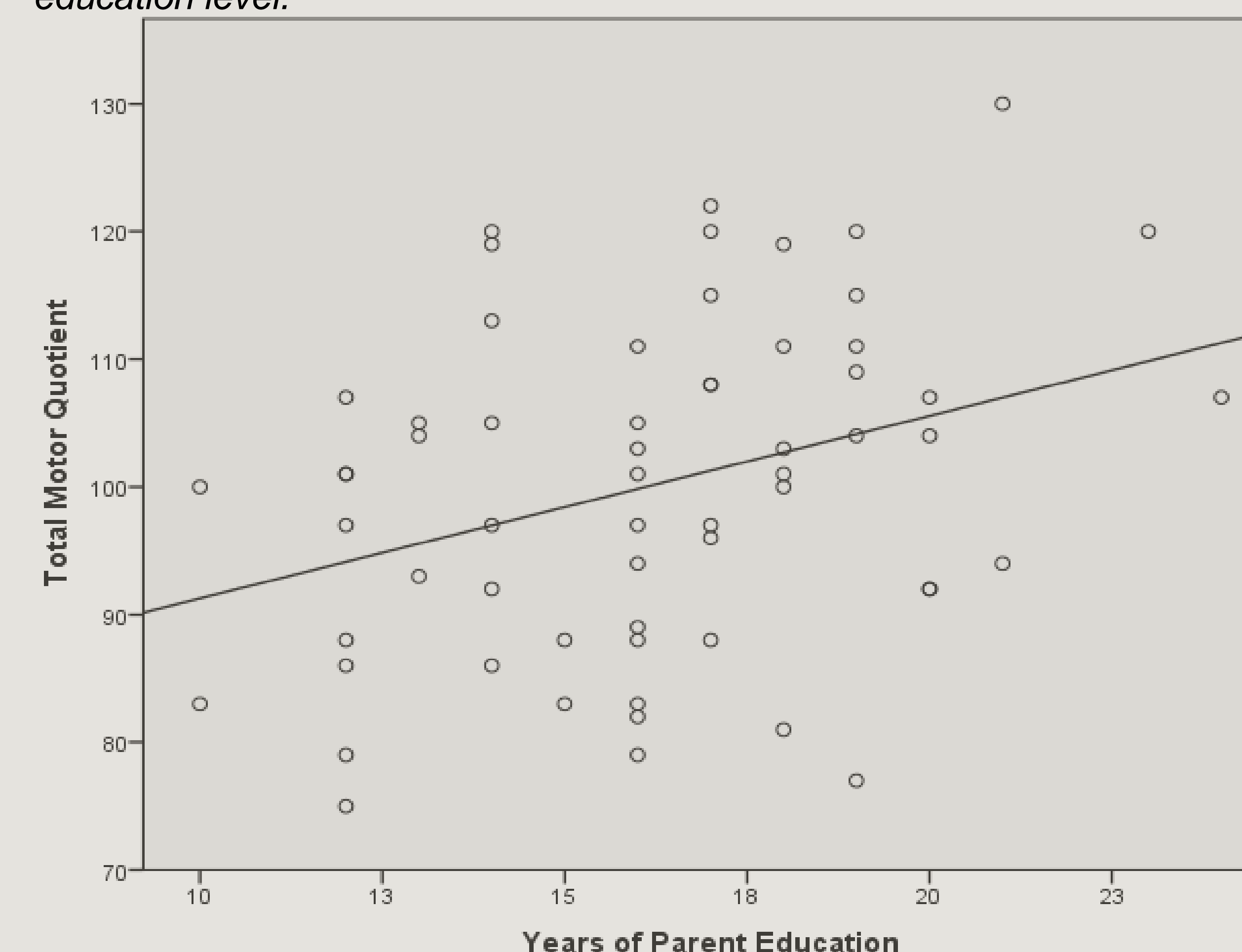
Figure 2. Kezie Hirsch and Dr. Megan MacDonald practicing gross motor skills.

Table 1. Years of parent education and child's fine and gross motor quotients and total motor quotient.

Variables	Total Motor Quotient (TMQ)	Gross Motor Quotient (GMQ)	Fine Motor Quotient (FMQ)
Parent Education	Pearson Correlation 0.337**	0.219*	0.226*
	Sig. (2-tailed) 0.008	0.046	0.040
	N 87	83	83

* $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$

Figure 1. Correlation of Total Motor Quotient and SES, using parent education level.



Summary/Conclusion

- The results suggested that children who are of lower SES are more likely to have worse fine and gross motor skills.
- These results indicate the importance of parent education and SES in the development of children's fine and gross motor skills. When family SES is lower, the child might have fewer opportunities to develop essential motor skills.
- This is important because the child's physical development can impact cognitive development and future academic success.
- Providing necessary physical activity and motor development opportunities to children of all SES can help to improve their motor function and development.
- *Flame retardants and home environment on children's school readiness* will continue to collect environmental samples and child development data in order to better understand the relationship between a child's chemical environment and his or her physical and cognitive development.

References

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