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Brief Report

The role of older siblings in infant motor development

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ABSTRACT

Previous research has suggested that infant motor skills may be affected by older siblings but has not considered whether this is due to specific characteristics of the older sibling or of the quality of the sibling relationship. The current study used a longitudinal diary method to record infant motor milestones from 23 infants with older siblings along with parent reports and standardized assessments of motor skills. Parent reports of the older siblings' motor skills and the sibling relationship were also collected until the infants were 18 months old. The motor skills, age, and sex of the older siblings were not significantly related to any measure of infant motor development. A significant correlation was revealed between perceived agonism between siblings and infant fine motor skills at 18 months, suggesting the importance of considering reciprocal effects of motor development on sibling relationships. Overall, the suggestion that older siblings may provide a good model of motor skills for infants is not supported by the current data. In the future, it will be important to assess the dynamic interactions between different factors in predicting infant motor development, allowing early identification of motor difficulties, which could affect other areas of cognitive development and health.

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Introduction

Motor skills are central to our interactions with objects and other people, and they represent key milestones in an infant's development (Leonard & Hill, 2014). As such, it is important to understand different factors that influence the development of motor skills during infancy. One such factor is the presence of older siblings because sibling relationships provide a basis for learning opportunities and socialization in a number of contexts (Brody, 2004). In terms of motor development, older siblings may provide good role models for infants to imitate (Abramovitch, Pepler, & Carter, 1982; Barr & Hayne, 2003; Erbaugh & Clifton, 1984), or may affect the amount of time that a parent has to encourage motor milestones such as learning to sit up independently and learning to walk (e.g., Brody, 2004). The current study aimed to investigate the role that older siblings play in infant motor development, using a longitudinal approach and focusing on a range of different motor skills and milestones.

The relatively few studies that have investigated sibling effects on motor skills have reported that imitated behavior was often copied from an older sibling (e.g., Barr & Hayne, 2003) and that young children were more likely to explore objects and the environment if an older sibling was present (Samuels, 1980). This exploration is important because it provides opportunities for social and cognitive development (Campos et al., 2000); therefore, the presence of older siblings could affect a range of infant skills. Other more recent studies have reported mixed results. Specifically, Cruise and O'Reilly (2014) collected questionnaire data from a sample of more than 10,000 caregivers of 9-month-old infants and reported significantly poorer performance on motor measures for infants with older siblings compared with those without siblings. Koutra et al. (2012) also reported poorer gross motor performance by infants with older siblings compared with only children on standardized motor measures. Berger and Nuzzo (2008) reported that although some of their sample began to crawl and walk earlier than their older siblings, others took longer to achieve these milestones than their siblings.

These mixed results could be due to different measures and ages of participants across studies. However, it is important to note that most of this research focuses on the presence or absence of a sibling but does not take into account different characteristics of the older child, or of the sibling relationship, in the younger child's motor development. If an older sibling has particularly poor motor skills, then he or she might not provide an appropriate model for the younger child to copy. On the other hand, reduced age-appropriate motor development may more closely match the skills of a younger sibling, thereby providing a model of skills that infants are close to learning rather than those that are much more advanced. Although previous research has not directly addressed this question, the studies of imitation mentioned previously have not reported any age effects in their sibling dyads in either direction (Abramovitch et al., 1982; Barr & Hayne, 2003). Infants who were closer in age to their older sibling (and thus were more similar in motor skills) did not produce more imitation than those with a wider age gap.

In the study by Berger and Nuzzo (2008), although the age at which the older sibling achieved two motor milestones was compared with the younger sibling, motor skill in a broader sense (i.e., gross and fine motor interactions with other objects; early postural milestones such as sitting unsupported) was not considered. These interactions provide a fuller picture of infants' motor skills and their exploration of the environment, which is important in understanding their development within a social context. The current study aimed to address this issue, collecting measures for both younger and older siblings of a range of motor milestones, gross and fine motor skills, as well as a measure of the sibling relationship. The sibling relationship was considered important because infants who have close relationships with their older siblings may be more likely to play with them than those who are in constant conflict, providing more opportunities for imitation. Because the older siblings had a range of ages, both the age of the older sibling and the difference in ages between the younger and older sibling were taken into account in the analyses. Furthermore, the sex of both siblings was taken into account.

Therefore, the current study aimed to assess to what extent (a) the older sibling's motor skill, (b) the older sibling's age and sex, and (c) the perceived relationship between siblings affected infant motor development. To our knowledge, this is the first study to assess the role of these variables in motor development in a broader sense rather than on imitative behavior (Abramovitch et al., 1982)

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