

# **Deficient Motor Skills Predict Psychosocial Difficulties in Children—A Research Summary**

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## **Introduction**

In the research study, “Motor Problems in Children with Severe Emotional and Behavioural Difficulties,” Taylor et al. (2020) pointed out that children with various psychosocial problems, labeled together as emotional and behavioral difficulties (EBD), often experienced extensive challenges. The authors explained that challenges associated with EBD were co-occurring and may “lead to vicious cycles where the EBD of the child exacerbate or compound other problems, and vice versa” (Taylor et al., 2020, p. 720). The co-occurring problems discussed were family upset, attention-deficit hyperactivity disorder (ADHD), poor literacy, and motor difficulties (Taylor et al., 2020, p. 720).

## **Purpose and Research Questions**

Given the interwoven complexity surrounding the issues of children with EBD, Taylor et al. (2020) sought to measure whether various factors could predict psychosocial problems such as those seen in EBD. A primary purpose of the study was to see if there were significant differences in motor skills among children with EBD versus children without EBD. The children were from similar disadvantaged socio-economic situations (Taylor et al., 2020, p. 720). The authors aimed to measure motor skills within the context of common co-occurring issues experienced by children with EBD such as family upset, ADHD symptoms, and poor literacy (Taylor et al., 2020, p. 720).

Taylor et al. (2020) also measured the presence of asymmetrical tonic neck reflex (ATNR) for primary reflex persistence. When this involuntary ATNR motor response persisted beyond infancy, it was likely a marker of neurodevelopmental delay (Taylor et al., 2020). The

ATNR was measured to gain more detailed insight into the relative impact this motor component might have in children with EBD (Taylor et al., 2020).

### **Review of Related Literature**

To highlight the importance of their research, Taylor et al. (2020) cited studies about the psychosocial problems seen in EBD. For example, they cited a study that showed possible long-term negative outcomes for children with EBD saying this was a “major concern” (Taylor et al., 2020, p. 719). They provided research that showed children with EBD were more likely to experience academic challenges (Taylor et al., 2020); and that reading and writing challenges were associated with a higher risk of psychiatric issues in children (Taylor et al., 2020).

To further support their specific research questions, Taylor et al. (2020) cited studies connecting psychosocial problems with motor challenges: Motor challenges appeared to have a negative impact on social and peer relationships, and on behavioral challenges in school-age children. Taylor et al. (2020) highlighted research that linked mental health diagnoses to motor challenges, and research that suggested “motor difficulties may reflect underlying, neurological vulnerability” (Taylor et al., 2020, p. 720). They also pointed out that motor difficulties may “act as a primary stressor on psychosocial functioning” (Taylor et al., 2020, p. 721) and may be among the factors that give rise to severe EBD (Taylor et al., 2020). While they cited research studies connecting EBD with motor difficulties, Taylor et al. (2020) also noted that previous studies did not take into account factors such as family upset, ADHD symptoms, and literacy problems, which are common in children with EBD.

The Taylor et al. (2020) research provided the first study to examine the relative impact of motor difficulties, including the persistence of a primary reflex, in children with severe EBD.

They also took into account the co-occurring factors of family upset, ADHD symptoms, and poor literacy.

### **Research Design and Methods**

There were several factors in the design of the Taylor et al. (2020) study that helped to bring the research questions into focus. First, children aged 8-11 years were divided into three groups, severe EBD, non-EBD boys, and non-EBD girls, “matched for age, IQ, and social disadvantage” (Taylor et al., 2020, p. 722). Standardized tests were given to all of the children in a school setting as follows:

- an IQ test; a psychosocial functioning screen;
- part of an ADHD screening (for inattention and hyperactivity/impulsivity);
- a test for literacy skills; and
- a gross and fine motor assessment.

The children also received a clinical protocol to measure persistence of ATNR (Taylor et al., 2020).

### **Research Findings**

Taylor et al. (2020) used a hierarchical multiple regression model to analyze the data in progressive steps. The results showed that within the severe EBD group, a significantly larger proportion of children had experienced each of the following: family upset, social-emotional difficulties, ADHD symptoms, and lower literacy scores, compared to each of these qualities measured in both groups of non-EBD children (Taylor et al., 2020). On the motor assessments, children in the severe EBD group had lower basic motor skills and higher levels of primary reflex persistence than in the two non-EBD groups; these differences were statistically significant for both motor assessments. (Taylor et al., 2020).

## Conclusion

Taylor et al. (2020) acknowledged that a limitation of their study was the lack of a longitudinal perspective that could have given more information about the impact of motor skills on social and emotional functioning over time. Despite this limitation, Taylor et al. (2020) provided important conclusions. Their study revealed that “family upset, hyperactivity/impulsivity, literacy, basic motor skills, and reflex persistence were all significant predictors of psychosocial outcome” (Taylor et al., 2020, p. 731). Basic motor skills and the motor component of a persisting primary reflex were each significant predictors of psychosocial difficulties, even when accounting for the presence of other significant predictors (Taylor et al., 2020). Given these findings, Taylor et al. (2020) concluded that it is an urgent matter to improve motor skills for children with EBD.

In their study, Taylor et al. (2020) successfully determined the relative impact of deficiencies in motor skills for children with EBD in the context of other contributing factors. Of the motor deficiencies discussed, the persistence of ATNR, seems especially important to explore further because it is a motor pattern that originates in infancy. Infant motor patterns likely determine future motor skills. Therefore, early intervention for addressing ATNR and other primary reflexes may play an important role in prevention of EBD. Based on the Taylor et al. (2020) research, it seems wise to address motor issues for school children as early as possible—especially for those children who are at risk of emotional and behavioral challenges.

## Reference

Taylor, B., Hanna, D., & McPhillips, M. (2020). Motor problems in children with severe emotional and behavioural difficulties. *British Journal of Educational Psychology*, 90(3), 719–735. <https://doi.org/10.1111/bjep.12327>