Differences in Predictive Ability of Gross and Fine Motor Skills Towards Language Outcomes: A Systematic Review

Veronica Alvarez, Sandy L. Gonzalez, and Eliza L. Nelson
Department of Psychology, Florida International University, Miami, Florida, 33199

Motor skills can be divided into two types: gross motor skills (e.g., crawling, walking) and fine motor skills (e.g., grasping). When infants are first learning to navigate their environment, motor skills are a primary way for infants to independently explore and interact with objects and people. Importantly, research has indicated that motor skills can have a cascading effect on language acquisition. The purpose of the current study is to systematically review current literature on the relation between gross and fine motor abilities and language development in order to investigate any potential differences in predictive abilities of gross and fine motor skills towards language outcomes.

Abstrackr, an online screening tool, was used to import database searches and screen through articles. Searches from three databases: PsycINFO, PubMed, and MEDLINE were conducted. Keywords used were a combination of "gross motor", "fine motor", "motor performance", "motor development", or "psychomotor development" along with "language", "language development", or "communication skills". Database options for peer-reviewed articles only, human, and age limits of participants (infancy through 5 years old) were selected when available. This yielded a total of 6210 articles. Abstracts were then screened through Abstrackr as relevant based on: inclusion of a typically developing sample ranging in age from 0 to 5 years of age and direct measurement of motor and language skills. A total of 3000 articles (48.3%) were screened manually, and the remaining 3210 were subsequently sorted as relevant versus irrelevant utilizing Abstrackr's prediction algorithm based on our previous responses. In total 123 articles were deemed relevant to our current review. Currently, relevant articles are being read in detail to further refine the final relevant article count and begin analyzing differences in gross and fine motor skills in relation to language outcomes. Reviewing the existing literature can help researchers leverage motor skills towards language interventions.