

THE ROLE OF CHILD AND PARENTAL PHYSICAL ACTIVITY IN PREDICTING THE PERSISTENCE OF *Primitive Reflexes* IN FIRST-GRADE CHILDREN

BACKGROUND

Primitive reflexes

- automatic, involuntary movements that are present at birth and typically disappear as the nervous system matures
- most of them are expected to fade as the child's brain develops more complex motor and cognitive functions (Zaferiou, 2024)
- if they persist into school age, they can hinder a child's ability to participate fully in physical activities and cause issues with coordination and balance (Gieysztor et al., 2018a; Gieysztor et al., 2019), they can be linked to problems with fine motor skills (Alibakhshi et al., 2018; Richards et al., 2022), focus and attention (Hickey & Feldhacker, 2022), as well as eye movements and visual perception (Bein-Wierzibinski, 2001; Gonzales et al., 2013)

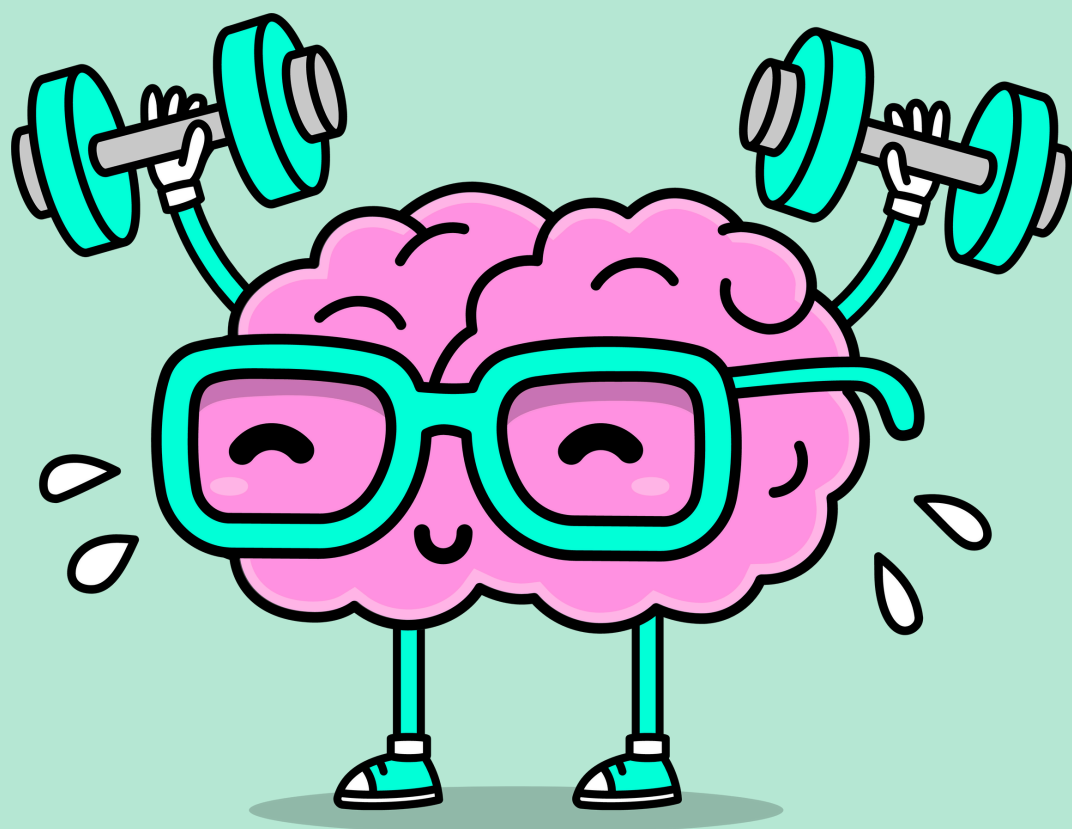
Physical activity

- The environment in which a preschool-aged child grows up plays a significant role in their motor development and the integration of primitive reflexes.
- Parental physical activity can indirectly shape children's habits, as parental lifestyle often influences the home environment and children's opportunities for spontaneous movement and play

STUDY SAMPLE AND METHODOLOGY

First wave of longitudinal research DigiLitA - The effect of environment on child development: The association of digital technology use, home literacy environment and physical activity with the well-being of children in early school years

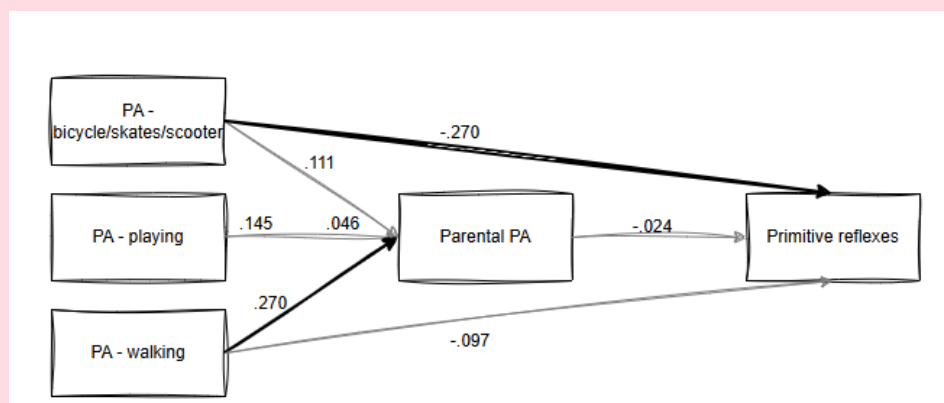
- Data were collected during september and october of 2024
- 221 children (117 girls) aged 6 to 8 years (M = 7.06, SD = 0.33), first-grade students + one of their parents
- Children were individually tested for the persistence of three primitive reflexes - using The INPP Developmental Screening Test and School Intervention Programme (Goodard Blythe, 2012)
- The Asymmetrical Tonic Neck Reflex (ATNR) was assessed using the quadrupod Ayers test for the ATNR; The Symmetrical Tonic Neck Reflex (STNR) was assessed using the quadrupod test for the STNR; and The Tonic Labyrinthine Reflex (TLR) was assessed using the erect test for the TLR
- Parents reported the time their child spent in activities such as cycling, walking, or outdoor play. Parents also reported their estimated average daily activity



THIS STUDY AIMED TO EXAMINE THE PRESENCE OF PRIMITIVE REFLEXES IN FIRST-GRADE CHILDREN AND EXPLORE THEIR RELATIONSHIP WITH DIFFERENT TYPES OF PHYSICAL ACTIVITY, AS WELL AS THE POTENTIAL MEDIATING ROLE OF PARENTAL PHYSICAL ACTIVITY.

RESULTS

- Children engage in different physical activities such as playing outside, walking, or riding a bicycle/scooter/skates approximately four times per week
- Parents reported engaging in physical activity an average of two times per week.
- The presence of primitive reflexes was also analysed, and a mean score of 1.79 suggests a minimal presence of primitive reflexes in first-grade children. In fact, 40.5% of children had no primitive reflexes retention.



RESULTS SHOWED A DIRECT EFFECT BETWEEN TIME SPENT IN ACTIVITIES LIKE CYCLING OR SKATING AND THE PERSISTENCE OF PRIMITIVE REFLEXES. NO SIGNIFICANT EFFECT WAS FOUND FOR WALKING OR GENERAL OUTDOOR PLAY. THE ASSUMED MEDIATING EFFECT OF PARENTAL PHYSICAL ACTIVITY WAS NOT CONFIRMED.

FURTHER IMPLICATIONS

- Findings suggest that the presence of primitive reflexes in school-aged children is a complex issue that requires an expanded model to identify key factors for better understanding and adapting intervention strategies that support motor skill development.
- It is possible that the impact of parental physical activity is indirect, operating through other factors such as modeling healthy behaviors, encouraging movement and motor skill development in children, or creating an environment that supports physical activity.

