

A Causal Loop Diagram of factors that influence motor skills in school-aged children

Author(s)

Pepping, Rian; Janssen, Mirka; Streppel, Martinet; Fukkink, Ruben; Engelbert, Raoul; van Hartingsveldt, Margo; Busch, Vincent; Stallen, Mirre; Oosterlaan, Jaap

Publication date

2022

Document Version

Final published version

[Link to publication](#)

Citation for published version (APA):

Pepping, R., Janssen, M., Streppel, M., Fukkink, R., Engelbert, R., van Hartingsveldt, M., Busch, V., Stallen, M., & Oosterlaan, J. (2022). *A Causal Loop Diagram of factors that influence motor skills in school-aged children*. 266-266. Abstract from ISBNPA 2022 - The International Society of Behavioral Nutrition and Physical Activity, United States.



General rights

It is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), other than for strictly personal, individual use, unless the work is under an open content license (like Creative Commons).

Disclaimer/Complaints regulations

If you believe that digital publication of certain material infringes any of your rights or (privacy) interests, please let the Library know, stating your reasons. In case of a legitimate complaint, the Library will make the material inaccessible and/or remove it from the website. Please contact the library: <https://www.amsterdamuas.com/library/contact/questions>, or send a letter to: University Library (Library of the University of Amsterdam and Amsterdam University of Applied Sciences), Secretariat, Singel 425, 1012 WP Amsterdam, The Netherlands. You will be contacted as soon as possible.

P2.16 A Causal Loop Diagram of factors that influence motor skills in school-aged children

Ms. Rian Pepping^{1,2}, Dr. Mirka Janssen¹, Dr. Martinet Streppel¹, Prof. Ruben Fukkink^{1,3}, Prof. Raoul Engelbert¹, Ms. Margo van Hartingsveldt¹, Dr. Vincent Busch², Dr. Mirre Stallen^{1,4}, Prof. Jaap Oosterlaan⁵
¹Amsterdam University of Applied Sciences, Amsterdam, Netherlands, ²Sarphati Amsterdam. Public Health Service of Amsterdam, Amsterdam, Netherlands, ³University of Amsterdam, Amsterdam, Netherlands, ⁴Leiden University, Leiden, Netherlands, ⁵Amsterdam University Medical Centers, Amsterdam, Netherlands

SIG - Primary Choice: H. Policies and environments

Age Category: Children 6-12 yrs

Subject Category: Physical Activity

Purpose: Physically active children develop better motor skills. Children with good motor skills enjoy being physically active more. When children enjoy being physically active, they will be physically active more frequently. And being physically active on a regular basis has a positive effect on their health, well-being and self-confidence. However, because of inequalities in family situation or neighbourhood where children grow up, not every child gets the opportunity to develop good motor skills. This inequality has only increased due to the corona pandemic resulting in closed schools and more time spent at home. Therefore, we want to gain insight into the complex interplay of personal and environmental factors that contribute to a healthy development of motor skills in children from a system dynamics perspective.

Methods: Literature related to development of motor skills in children was reviewed from a multidisciplinary point of view. We extracted the main determinants from literature by expert meetings and integrated these determinants into a systems dynamics tool: a Causal Loop Diagram (CLD). The CLD provides a visual image of the determinants related to motor skills and the coherence between determinants. In addition, the effect size and strength of the evidence are included in the CLD.

Results: We found key determinants for in different layers of the system, like challenge and variety of movement, parenting style and access to special services such as sportclubs. The CLD showed how these determinants were interrelated and the great coherence between different disciplines. In other words, the CLD shows a complex system around children which is only partially influenced to improve their motor skills.

Conclusion: This causal loop diagram provides leverage points to positively influence development of motor skills in children. Further work is required to use this as a blueprint for specific neighbourhoods and provide insight in the specific local system. Subsequently, tailored intervention strategies can be developed in order to improve motor skills in children.