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La relación entre las habilidades matemáticas simbólicas y no simbólicas en niños.

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LA RELACIÓN ENTRE LAS HABILIDADES MATEMÁTICAS SIMBÓLICAS Y NO SIMBÓLICAS EN NIÑOS

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RESUMEN

Introducción: Una amplia gama de estudios proponen una relación entre el sistema numérico aproximado (encargado de representar magnitudes no simbólicas) y el sistema numérico simbólico (especializado en representar cantidades precisas). La evidencia sobre las características de esta relación, sin embargo, es heterogénea. **Objetivo:** Investigar la asociación entre medidas del sistema numérico aproximado y el sistema numérico simbólico. **Método:** Se realizó un metaanálisis siguiendo la declaración PRISMA. Se realizó una búsqueda sistemática en las bases de Wiley, APA-Psycnet y PubMed de artículos publicados entre 2012 y 2022, con participantes de entre 3 y 13 años de edad, que incluyeran al menos una tarea de estimación de cantidades no simbólicas y una asociada al conocimiento del sistema numérico arábigo. **Resultados:** El conjunto de datos está compuesto por 35 tamaños de efecto, reportados por 27 estudios correspondientes a 5994 participantes, con un promedio de edad de 80.6 meses ($DE=24.7$). El efecto global estimado fue 0.36 ($z = 9.62$, $p < .001$, $IC95\% = 0.29, 0.43$), indicando asociación entre las variables de intensidad moderada, y la variabilidad entre los estudios fue alta ($I^2 = 86.34\%$). **Discusión:** El análisis realizado sugiere que hay una asociación entre el procesamiento del sistema numérico aproximado y el sistema numérico simbólico.

Palabras clave

Sistema simbólico - Sistema aproximado - Código arábigo - Línea numérica

ABSTRACT

THE ASSOCIATION BETWEEN SYMBOLIC AND NON-SYMBOLIC SKILLS IN CHILDREN

A wide variety of studies has proposed an association between the approximate number system (in charge of representing non-symbolic magnitudes) and the symbolic number system (specialized in representing exact quantities). However, the evidence regarding this association's properties is contrasting. In this study, we examined the relationship between measures of the symbolic and approximate number systems. A meta-analysis was performed in line with the PRISMA declaration. The databases Wiley, APA-Psycnet, and PubMed were researched for articles published between 2012 y 2022 with participants between the ages of 3 and 13 years, including at least one non-

symbolic magnitude estimation task and one task associated with the Arabic numeral system knowledge. Data consisted of 35 effect sizes, reported by 27 studies corresponding to 5994 participants, with an age average of 80.6 months ($SD=24.7$). The estimated global effect was 0.36 ($z = 9.62$, $p < .001$, $IC95\% = 0.29, 0.43$), indicating the variables' association was of moderate intensity, and the variability between studies was high ($I^2 = 86.34\%$). The analysis of this data suggests that there is an association between the symbolic number system and the approximate number system.

Keywords

Approximate number system - Symbolic number system - Arabic numerals - Mental number line

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