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RESEARCH ARTICLE

Understanding the Effects of Naturalistic Developmental Behavioral Interventions: A Project AIM Meta-analysis

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We examined the quality of evidence supporting the effects of Naturalistic Developmental Behavioral Interventions (NDBIs) for facilitating change in young children with autism. We also investigated whether effects varied as a function of specific features of the intervention, samples, and outcomes measured. Twenty-seven studies testing the effects of NDBIs were extracted from data collected for the **Autism Intervention Meta-analysis (Project AIM)**, a comprehensive meta-analysis of group design, nonpharmacological intervention studies for children with autism aged 0–8 years. We extracted effect sizes for 454 outcomes from these studies for use in meta-regression analyses testing associations between intervention effects and mean participant chronological age, language age, autism symptomatology, percentage of sample reported as male, cumulative intervention intensity, interventionist, outcome boundedness, outcome proximity, and risk of parent/teacher training correlated measurement error. The extant literature on NDBIs documents effects on social communication, language, play, and cognitive outcomes. However, our confidence in the positive and significant summary effects for these domains is somewhat limited by methodological concerns. Intervention effects were larger for context-bound outcomes (relative to generalized), and for proximal outcomes (relative to distal). Our results indicate that NDBIs have promise as an approach for supporting development for some, but not all of the core and related features of autism in early childhood. Confidence in summary effect estimates is limited by study quality concerns, particularly an overreliance on measures subject to high detection bias. The results of this review support the use of proximity and boundedness as indicators of the limits of intervention effects. *Autism Res* 2021, 14: 817–834. © 2021 International Society for Autism Research, Wiley Periodicals LLC.

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Cranck et al. 2021: NDBI meta-analisi

Dalla ricerca del 2020 Autism Intervention Meta-analysis Project sono stati estratti i dati relativi a 27 ricerche su NDBI per rispondere a due domande di ricerca:

- Quale evidenza a favore degli interventi NDBI in autismo?
- L'efficacia varia in funzione di intensità e durata dell'intervento o delle caratteristiche dei partecipanti?



Meta-analisi 2020 project AIM



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Project AIM: Autism Intervention Meta-Analysis for Studies of Young Children

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Inclusion Project AIM 2020

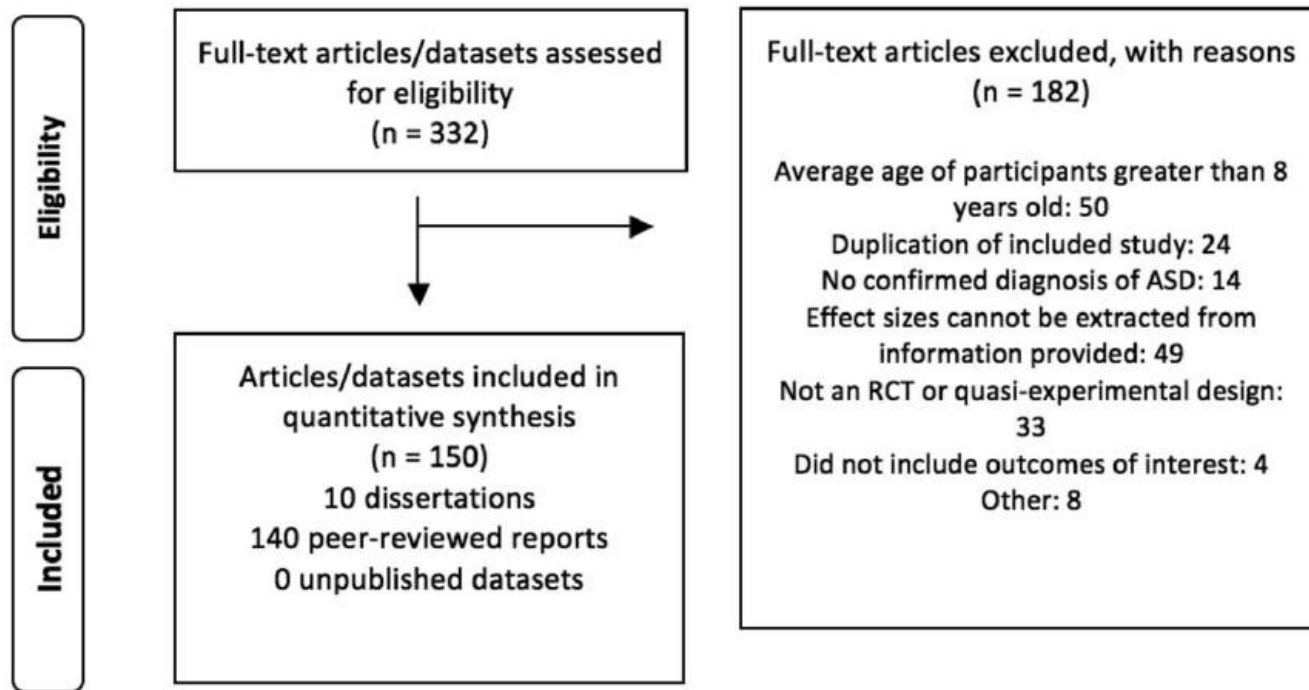


Figure 1. PRISMA (preferred reporting items for systematic reviews and meta-analyses) flow. RCT = randomized controlled trial; ASD = autism spectrum disorder.



Conclusioni Project AIM 2020

- SE nell'analisi dei dati vengono inseriti sia studi a caso singolo che di gruppo e NON vengono considerati i limiti metodologici delle single ricerche, allora I risultati di interventi comportamentali, basati sullo sviluppo e NDBI sono positivi
- SE si limita l'analisi ai randomized controlled trial (RCT), la dimostrazione di efficacia si limita all'intervento basato sullo sviluppo e NDBI



Conclusioni NDBI meta-analisi 2021

Incremento significativo del supporto a favore delle NDBI in autismo per sostenere gli apprendimenti in aree

- sintomatologiche «core» come la comunicazione sociale
- e prossimali come il linguaggio

Limiti metodologici importanti però non permettono di trarre conclusioni definitive a loro supporto.

