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Systematic reviews across different components of language.

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Unpacking the evidence for and theory of intervention in childhood language impairment: Systematic reviews across different components of language.

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Background

Children with Primary language impairment (PLI) or Developmental language disorder (DLD), estimated at 1-2 children in every classroom (Norbury, Gooch et al 2016), are at risk for poorer social, emotional and mental health outcomes and lower academic and vocational attainments than the majority of their peers who acquire oral language without difficulty (Bishop, Snowling et al 2017). We have growing evidence for the efficacy and cost-effectiveness of intervention to improve the language skills of these children, but efficacy across languages is unknown. Additionally, systematic reviews of the evidence base have not explicitly uncovered the theoretical bases for interventions. Language interventions are underpinned by a range of linguistic, cognitive and processing theories linked to language acquisition and to proposed deficits. Intervention theory proposes how the components of an intervention act on the targeted areas to reach the desired outcomes and can support the replication of effective interventions (Turkstra, Norman et al 2016).

Aims

1. Identify the theories and mechanisms of change underpinning interventions in PLI/DLD.
2. Evaluate the efficacy of interventions for childhood language impairment.

Methodology

Population: Children 3-18 with PLI/DLD.
Sources: Peer-reviewed articles from systematic search of empirical databases (PsychInfo; ERIC; Web of Science; LLBA; Scopus; PubMed)
Dates 2006-2017; all languages.
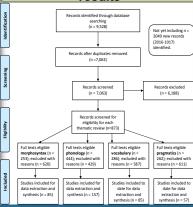Process: Systematic Reviews. Protocols available at
https://www.crd.york.ac.uk/prospero/
(search COST IS1406).
- 20% of hits double-screened for inclusion on title & abstract
- Two members from each review team double-screened full texts for topic relevance (language component)
- Full texts are being double-coded and critically appraised
- *Codes: Participants, language, intervention context, setting, practitioners; dosage; Theoretical approach, Intervention components (targets, ingredients, mechanism of change); primary and secondary outcomes.*
Analysis: Meta-analysis of quantitative data. Qualitative meta-synthesis of theoretical data.

Systematic search & screening results

Identification	Records identified through database searching (n = 9,528)	Not yet including n = 2049 new records (2016-1017) identified.
Screening	Records after duplicates removed (n =7,063)	
	Records screened (n = 7,063)	Records excluded (n = 6,188)
Eligibility	Records screened for eligibility for each thematic review (n=873)	
	Full texts eligible morphosyntax (n = 253); excluded with reasons (n = 620)	Full texts eligible phonology (n = 444); excluded with reasons (n = 429)	Full texts eligible vocabulary (n = 286); excluded with reasons (n = 587)	Full texts eligible pragmatics (n = 262); excluded with reasons (n = 611)
Included	Studies included for data extraction and synthesis (n = 85)	Studies included for data extraction and synthesis (n = 157)	Studies included to date for data extraction and synthesis (n = 85)	Studies included to date for data extraction and synthesis (n = 57)

Study characteristics

Language of participants in included studies.	Majority participants English speaking; Minority German, Spanish, French, Portuguese (1) Polish (1), Cantonese (1), Korean (1). Bilingual children in 12 studies across topics
Age Profile	All groups aged 3-18, majority studies with younger children

Emerging Findings
Example: Morpho-Syntax (17 studies)

Designs	Randomised Control Trials-35% Non-randomised Group with control-26% Group design no control-5% Single case studies-7% Case series-18% SRs & non-systematic reviews-9%

Theoretical orientations

Specified	Not specified/ implicit	Unclear
41% Cognitive/Social-interactionist/ Constructivist/ Linguistic/ Behavioural	42% Cognitive/Social-interactionist/ Constructivist/ Linguistic/ Behavioural	17% No clear reference to an underpinning theory

Intervention Components

Targets	MLU/length. Morphemes. Simple & Complex sentences. Receptive grammar. Narrative micro-Structure
Ingredients	Explicit teaching (30%) Linguistic modelling (47%) Hybrid Parent-child interaction Non-linguistic cognitive treatment
Mechanisms of Change	Specified (47%) Hypothesised (inferable) (41%) Not-specified (12%).

Systematic reviews ongoing. COST IS1406 also involves reviews of national, country-specific literature.