Summary of the Systematic Review

ARTICLE CITATION

A Systematic Review of Treatment Outcomes for Children with Childhood Apraxia of Speech

Murray, E., McCabe, P., et al. (2014).

American Journal of Speech-Language Pathology, 23, 486-504.

Go to Article

Sponsoring Body

Douglas and Lola Douglas Scholarship on Child and Adolescent Health; Speech Pathology Australia Nadia Verrall Memorial Research Grant and Postgraduate Research Award; University of Sydney James Kentley Memorial Scholarship and Postgraduate Research Support Scheme; Australian Research Council Future Fellowship

ARTICLE QUALITY RATINGS

Read about Our Rating Process

Indicators of Review Quality

YESThe review states a clearly focused question/aim.

YESCriteria for inclusion of studies are provided.

YESSearch strategy described in sufficient detail for replication.

YESIncluded studies are assessed for study quality.

NOQuality assessments are reproducible.

YESCharacteristics of the included studies are provided.

ARTICLE DETAILS

Description

This is a systematic review of the published literature, specifically single-case experimental design (SCED) studies, investigating the efficacy of treatment approaches for childhood apraxia of speech (CAS).

Questions/Aims Addressed

Four aims were specified:

to describe the study quality, research phase, and level of evidence of included studies;

to define treatment procedures, goals, and structure of treatment (e.g., frequency/intensity of treatment) for each study;

to examine treatment, maintenance, and generalization outcomes; and

to determine the level of certainty for each treatment approach and to determine effect sizes as appropriate.

Population

Children (less than 18 years of age) with suspected or diagnosed CAS

Intervention/Assessment

Interventions were categorized as primarily motor, linguistic/phonological, or augmentative and alternative communication (AAC)

Number of Studies Included

23

Years Included

1970-October 2012

Evidence Ratings for This Document

The authors used the "Certainty of Judgements in Health Evaluations" (Smith, 1981) and Tate et al.'s (2013) "Single-Case Experimental Designs and n-of-1 Trials" (SCED) to classify the following levels of certainty to determine how likely the results are to be true:

Conclusive Evidence: results were defined as "undoubtedly true" when results were from meta-analyses and systematic reviews of a number of Phase III studies of a provided treatment approach paired with Phase IV effectiveness studies in clinical situations

Preponderant Evidence: results were defined as "probably true" when results were from Level IIb or better evidence, statistically significant treatment effects, and clear maintenance of treatment gains at least two weeks posttreatment

Suggestive Evidence: results were be defined as "possibly true" when results were from Level IIb or better evidence that did not meet all the above criteria

CONCLUSIONS FROM THIS SYSTEMATIC REVIEW

What are Conclusions?

Apraxia of Speech (Childhood)

Go to Map

Treatment

Interventions with suggestive evidence include augmentative and alternative communication (AAC), some combined cueing/motor approaches, rate control, and some combined linguistic/motor treatments.

Keywords: Age, Diagnosis/Condition, Augmentative and Alternative Communication (AAC), School-Age Children, Apraxia of Speech, Rate Control

The three treatments with demonstrated treatment effects (i.e., Integral Stimulation/Dynamic Temporal and Tactile Cueing, Rapid Syllable Transition, and Integrated Phonological Awareness Intervention) "are best suited to interim clinical use, with sessions at least twice a week and dose above 60 trials per session" (p. 501).

Keywords: Dosage, Dosage (Intensity/Duration), Apraxia of Speech (Childhood), Dynamic Temporal and Tactile Cueing, Integrated Phonological Awareness Intervention, Motor Planning, Rapid Syllable Transition Treatment, Phonological Awareness Intervention

"Intensive treatment delivery in impairment-based intervention appears crucial for obtaining positive treatment outcomes" (p. 501).

Keywords: Dosage, Dosage (Intensity/Duration), Apraxia of Speech (Childhood)

The included studies indicated the following findings:

Dynamic Temporal and Tacticle Cueing (DTTC) "appears to work better for clients with more severe [childhood apraxia of speech] CAS;

Integrated Phonological Awareness Intervention appears to work better for children 4–7 years of age with mild to severe CAS; and

[Rapid Syllable Transition Treatment] ReST appears to work better for children 7–10 years of age with mild-to-moderate CAS" (p. 501).

Keywords: Timing (e.g. Pre- and Post-Op), Apraxia of Speech (Childhood), Dynamic Temporal and Tactile Cueing, Integrated Phonological Awareness Intervention, Motor Planning, Rapid Syllable Transition Treatment, Phonological Awareness Intervention

The following treatments were indicated to have predominant evidence supporting positive treatment and generalization effects:

Integral Stimulation/Dynamic Temporal and Tactile Cueing (DTTC);

Rapid Syllable Transition Treatment (ReST); and

Integrated Phonological Awareness Intervention.

Keywords: Generalization/Maintenance, Apraxia of Speech (Childhood), Dynamic Temporal and Tactile Cueing, Integrated Phonological Awareness Intervention, Motor Planning, Rapid Syllable Transition Treatment, Phonological Awareness Intervention

Service Delivery

The three treatments with demonstrated treatment effects (i.e., Integral Stimulation/Dynamic Temporal and Tactile Cueing, Rapid Syllable Transition, and Integrated Phonological Awareness Intervention) "are best suited to interim clinical use, with sessions at least twice a week and dose above 60 trials per session" (p. 501).

Keywords: Dosage, Dosage (Intensity/Duration), Apraxia of Speech (Childhood), Dynamic Temporal and Tactile Cueing, Integrated Phonological Awareness Intervention, Motor Planning, Rapid Syllable Transition Treatment, Phonological Awareness Intervention

"Intensive treatment delivery in impairment-based intervention appears crucial for obtaining positive treatment outcomes" (p. 501).

Keywords: Dosage, Dosage (Intensity/Duration), Apraxia of Speech (Childhood)

Augmentative and Alternative Communication (AAC)

Go to Map

Treatment

Interventions with suggestive evidence include augmentative and alternative communication (AAC), some combined cueing/motor approaches, rate control, and some combined linguistic/motor treatments.

Keywords: Age, Diagnosis/Condition, Augmentative and Alternative Communication (AAC), School-Age Children, Apraxia of Speech, Rate Control

Speech Sound Disorders

Go to Map

Treatment

The three treatments with demonstrated treatment effects (i.e., Integral Stimulation/Dynamic Temporal and Tactile Cueing, Rapid Syllable Transition, and Integrated Phonological Awareness Intervention) "are best suited to interim clinical use, with sessions at least twice a week and dose above 60 trials per session" (p. 501).

Keywords: Dosage, Dosage (Intensity/Duration), Apraxia of Speech (Childhood), Dynamic Temporal and Tactile Cueing, Integrated Phonological Awareness Intervention, Motor Planning, Rapid Syllable Transition Treatment, Phonological Awareness Intervention

"Intensive treatment delivery in impairment-based intervention appears crucial for obtaining positive treatment outcomes" (p. 501).

Keywords: Dosage, Dosage (Intensity/Duration), Apraxia of Speech (Childhood)

The included studies indicated the following findings:

Dynamic Temporal and Tacticle Cueing (DTTC) "appears to work better for clients with more severe [childhood apraxia of speech] CAS;

Integrated Phonological Awareness Intervention appears to work better for children 4–7 years of age with mild to severe CAS; and

[Rapid Syllable Transition Treatment] ReST appears to work better for children 7–10 years of age with mild-to-moderate CAS" (p. 501).

Keywords: Timing (e.g. Pre- and Post-Op), Apraxia of Speech (Childhood), Dynamic Temporal and Tactile Cueing, Integrated Phonological Awareness Intervention, Motor Planning, Rapid Syllable Transition Treatment, Phonological Awareness Intervention

The following treatments were indicated to have predominant evidence supporting positive treatment and generalization effects:

Integral Stimulation/Dynamic Temporal and Tactile Cueing (DTTC);

Rapid Syllable Transition Treatment (ReST); and

Integrated Phonological Awareness Intervention.

Keywords: Generalization/Maintenance, Apraxia of Speech (Childhood), Dynamic Temporal and Tactile Cueing, Integrated Phonological Awareness Intervention, Motor Planning, Rapid Syllable Transition Treatment, Phonological Awareness Intervention

Service Delivery

The three treatments with demonstrated treatment effects (i.e., Integral Stimulation/Dynamic Temporal and Tactile Cueing, Rapid Syllable Transition, and Integrated Phonological Awareness Intervention) "are best suited to interim clinical use, with sessions at least twice a week and dose above 60 trials per session" (p. 501).

Keywords: Dosage, Dosage (Intensity/Duration), Apraxia of Speech (Childhood), Dynamic Temporal and Tactile Cueing, Integrated Phonological Awareness Intervention, Motor Planning, Rapid Syllable Transition Treatment, Phonological Awareness Intervention

"Intensive treatment delivery in impairment-based intervention appears crucial for obtaining positive treatment outcomes" (p. 501).

Keywords: Dosage, Dosage (Intensity/Duration), Apraxia of Speech (Childhood)

The included studies indicated the following findings:

Dynamic Temporal and Tacticle Cueing (DTTC) "appears to work better for clients with more severe [childhood apraxia of speech] CAS;

Integrated Phonological Awareness Intervention appears to work better for children 4–7 years of age with mild to severe CAS; and

[Rapid Syllable Transition Treatment] ReST appears to work better for children 7–10 years of age with mild-to-moderate CAS" (p. 501).

Keywords: Timing (e.g. Pre- and Post-Op), Apraxia of Speech (Childhood), Dynamic Temporal and Tactile Cueing, Integrated Phonological Awareness Intervention, Motor Planning, Rapid Syllable Transition Treatment, Phonological Awareness Intervention.

Summary of the Systematic Review

ARTICLE CITATION

Interventions for Childhood Apraxia of Speech

Morgan, A. T., Murray, E., et al. (2018).

Cochrane Database of Systematic Reviews, 5, Cd006278.

Go to Article

Sponsoring Body

The Cochrane Collaboration; National Health and Medical Research Council (Australia)

ARTICLE QUALITY RATINGS

Read about Our Rating Process

Indicators of Review Quality

YESThe review states a clearly focused question/aim.

YESCriteria for inclusion of studies are provided.

YESSearch strategy described in sufficient detail for replication.

YESIncluded studies are assessed for study quality.

YESQuality assessments are reproducible.

YESCharacteristics of the included studies are provided.

Quality Rating Notes

Study Quality: Risk of bias assessment provided ratings for each item.

ARTICLE DETAILS

Description

This article was updated from Morgan & Vogel (2008). This is a systematic review of randomized controlled trials and quasi-randomized trials investigating speech and language interventions in children and adolescents with childhood apraxia of speech (CAS).

Questions/Aims Addressed

"To assess the efficacy of interventions targeting speech and language in children and adolescents with CAS as delivered by speech and language pathologists/therapists" (p. 7).

Population

Children and adolescents with childhood apraxia of speech

Intervention/Assessment

Speech and language interventions

Number of Studies Included

1

Years Included

up to April 10, 2017

Evidence Ratings for This Document

The authors used the Grading of Recommendations Assessment, Development and Evaluation (GRADE) methodology to assess the quality of the evidence using the following classifications:

High Quality: We are very confident that the true effect lies close to that of the estimate of the effect.

ModerateQuality: We are moderately confident in the effect estimate; the true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different.

Low Quality: Our confidence in the effect estimate is limited; the true effect may be substantially different from the estimate of the effect.

Very Low Quality: We have very little confidence in the effect estimate; the true effect is likely to be substantially different from the estimate of effect.

CONCLUSIONS FROM THIS SYSTEMATIC REVIEW

What are Conclusions?

Apraxia of Speech (Childhood)

Go to Map

Treatment

The limited evidence indicated that intensive Nuffield Dyspraxia Program- Third Edition and Rapid Syllable Transition Treatment may improve word accuracy in children, 4 to 12 years-old, with childhood apraxia of speech (Moderate Quality).

Keywords: Dosage, Dosage (Intensity/Duration), Apraxia of Speech (Childhood), Nuffield Dyspraxia Program, Rapid Syllable Transition Treatment, Visual Biofeedback

Service Delivery

The limited evidence indicated that intensive Nuffield Dyspraxia Program- Third Edition and Rapid Syllable Transition Treatment may improve word accuracy in children, 4 to 12 years-old, with childhood apraxia of speech (Moderate Quality).

Keywords: Dosage, Dosage (Intensity/Duration), Apraxia of Speech (Childhood), Nuffield Dyspraxia Program, Rapid Syllable Transition Treatment, Visual Biofeedback

Speech Sound Disorders

Go to Map

Treatment

The limited evidence indicated that intensive Nuffield Dyspraxia Program- Third Edition and Rapid Syllable Transition Treatment may improve word accuracy in children, 4 to 12 years-old, with childhood apraxia of speech (Moderate Quality).

Keywords: Dosage, Dosage (Intensity/Duration), Apraxia of Speech (Childhood), Nuffield Dyspraxia Program, Rapid Syllable Transition Treatment, Visual Biofeedback

Service Delivery

The limited evidence indicated that intensive Nuffield Dyspraxia Program- Third Edition and Rapid Syllable Transition Treatment may improve word accuracy in children, 4 to 12 years-old, with childhood apraxia of speech (Moderate Quality).

Keywords: Dosage, Dosage (Intensity/Duration), Apraxia of Speech (Childhood), Nuffield Dyspraxia Program, Rapid Syllable Transition Treatment, Visual Biofeedback