Natural Speech and AAC Intervention Strategies in Children with Dysarthria and Apraxia of Speech – Course Handout

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Childhood Apraxia of Speech (CAS)

➢ *Ad Hoc committee on CAS of the American Speech-Language Hearing Association (ASHA, 2007)*

"a speech sound disorder of neurological origin characterized by impairment in the precision and consistency of speech movements in the absence of underlying neuromuscular deficits."

➢ Deficits planning & programming speech movements

o Sequential ordering

o Temporal & spatial relationships in speech

o Phonological skills

o Language acquisition

[Yorkston, Beukelman, Strand, & Bell, 1999; ASHA 2007]

CAS: Characteristics

➢ Articulation errors

  o Omissions, substitutions, distortions, & additions

  o Difficulty producing sounds with greater phonetic complexity

  o Prolongations

  o Repetitions

  o Nonphonemic productions

  o Voicing, vowel, diphthong & nasality errors

➢ Sequencing errors

  o Metathetic

  o Consonant clusters

➢ Errors increase with length & complexity of utterances

[Yorkston et al., 1999; Hall, 2007]

CAS: Characteristics

➢ Difficulty
  o Imitating sounds [Word initial position]
  o Transitioning between sounds

➢ Prosodic disturbances
  o Reduced rate of speech
  o Longer pauses
  o Reduced stress
  o Errors in syllabic stress

➢ Inconsistent errors

[Yorkston et al., 1999; Hall, 2007]

Therapy Approaches

➢ Linguistic approaches [Hall, 2000]
  o Adopted with preschool & early elementary school children
  o Aim: Help children learn sounds & rules governing the use of sounds & sound sequences

➢ Motor-programming approaches [Hall, 2000]
  o Adopt principles of motor learning

➢ Intervention Methods [Cumley & Swanson, 1999; Yorkston et al., 1999]
  o PROMPT [Chumpelik, 1984]
  o Touch-Cue methods [Bashir, Grahamjones, & Bostwick, 1984]
  o Adapted Cueing Technique [Klick, 1985]
  o MIT [Helfrich-Miller, 1994]

Dysarthria

"Motor speech disorder where weak, imprecise, & uncoordinated movements of the speech musculature are observed secondary to neurological impairment"

[Yorkston et al., 1999]

➤ Congenital disorders that can cause dysarthria
  o Craniostenosis
  o Agenesis of the corpus callosum
  o Cerebral agenesis, microcephaly
  o Hydrocephalus
  o Down's syndrome
  o Cerebral palsy
  o Moebius syndrome

[Yorkston et al., 1999]

Dysarthria

➢ Main aim of speech and language therapy
  o Maximize their communication skills

➢ Traditional speech therapy
  o Targeting the respiratory, phonatory, articulatory, & prosodic systems of speech

[Pennington, Miller, & Robson, 2009]

➢ Children with cerebral palsy & Down's syndrome
  o Minimal overall improvement in speech intelligibility without the implementation of AAC strategies

[Hustad & Shapley, 2003]

Dual Paradigm Approach

➢ *Best approach*: Natural speech supplemented by AAC strategies

[Hustad, Morehouse, & Gutmann, 2002]

➢ AAC intervention strategies shown not to hinder the development of natural speech

[Culp, 1989; Romski & Sevcik, 2005; Millar, Light, & Schlosser, 2006]

➢ Ability to integrate & use multiple modes of communication depending on the communication partner & context

o Effectively improves communication abilities

[Hustad & Shapley, 2003]

Dual Paradigm Aproach

➢ Important consideration in children with severe AOS,
[Hall, 2000]

➢ Shown to improve communication & social participation
[Beukelman & Miranda, 2005]

➢ Established lack of research examining the speech outcomes when natural speech & AAC strategies are simultaneously targeted in children
[Hustad et al., 2002]

➢ Limited literature regarding the decision making process adopted by professionals when adopting the dual paradigm approach

Research Questions

When addressing intervention for children with dysarthria & apraxia of speech, among the areas of participation, literacy, language, and speech:

How do AAC intervention specialists make decisions regarding the frequency and duration of therapy goals targeting natural speech?

Specifically,

➢ What are the benefits & challenges of targeting natural speech along with AAC intervention strategies?

➢ How do AAC intervention specialists make decisions regarding the time allotted for goals targeting natural speech in children?

➢ What is the frequency and duration with which goals targeting natural speech are implemented in therapy?

Method

Design

➤ Qualitative focus group methodology
- o No restriction on geographical location (Williams & Robson, 2004)
- o Allowed interaction in a convenient setting

➤ Online focus groups modified for online purposes

  [Vaughn et al., 1996; McNaughton et al., 2002]

➤ Recruitment
- o SLPs in the field of AAC with a strong record of publication
- o SLPs who had identified themselves as providing AAC services in societies & forums
- o Advertising in Division 12 of ASHA

Inclusion Criteria

➤ *Apraxia of Speech*
- o Certified SLPs with at least 5 years of clinical experience
- o Significant clinical experience
  - ❖ Providing some type of AAC intervention services to children
  - ❖ Providing some direct intervention services to children with apraxia of speech

➤ *Dysarthria*
- o Certified SLP providing direct AAC intervention services for 50% of the time
- o Experience providing AAC intervention services to children with dysarthria
- o Have at least 5 years clinical experience

Materials

➢ Online password protected forum

- o phpBB® software

➢ Demographic & screening questionnaire

- o 12 questions
- o Individual password protected forums

➢ Focus Group Discussions

- o Open ended questions
- o Password protected forums
- o Questions were created by the researchers & modified based on feedback from 6 professionals

Focus Group Discussions

- ➢ Overview of the Questions
  - ○ Adopted dual paradigm approach: Yes / No & reasoning
  - ○ Challenges & barriers implementing natural speech
  - ○ Decision making in children with severe & mild-moderate dysarthria /AOS
    - ❖ Time allotted
    - ❖ Frequency & duration of goals targeting natural speech
    - ❖ Strategies used for targeting natural speech & AAC
  - ○ Collaboration with team members
  - ○ Recommendations for a new clinician using the dual paradigm approach

Participants Enrolled

➢ *Apraxia of Speech*
- o 8 SLPs
  - ❖ 7 SLPs - Masters degree & 1 SLP - PhD
- o Settings: EI, hospitals, private & public schools, private practice
- o Specialist Training: 2 day course on the Kaufman & Beckman program, PROMPT training
- o Unaided & all levels of aided AAC used

➢ *Dysarthria*
- o 5 SLPs
  - ❖ 4 SLPs – Masters & 1 SLP - PhD
- o Settings: EI, Hospital, private & public schools, private practice
- o Specialist Training: ATP (RESNA) & Level 1 PROMPT
- o Unaided & all levels of aided AAC used

Expertise of the Participants

➢ *Apraxia of Speech*

o Determining s*ignificant* clinical experience

  ❖ Participants rated expertise on a scale from 1 to 7

  ❖ 3SLPs - 5, 1SLP – 5 to 6, 3SLPs -6, 1 SLP - 7

o Determining s*ignificant* clinical providing direct intervention services

  ❖ Participants rated expertise on a scale from 1 to 7

  ❖ 2 SLPs < 4, 1 SLP – 4, 2 SLPs – 6, 3 SLPs – 5

➢ *Dysarthria*

  o AAC intervention specialists

    ❖ Provided direct AAC intervention services 50% of the time (Beukelman, Ball, & Fager, 2008)

    ❖ Participant rating: 38-99% experience

  o Participants reported significant experience providing AAC intervention services to children with dysarthria

  o 5 years of clinical experience

Procedure

- Completed demographic & screening questionnaire
- Focus group discussions
  - Pseudonym / first name basis
  - Moderator
    - Posted weekly discussion questions
    - Send follow-up messages
    - Thanked participants
  - Welcome message & instructions for operating the forum
  - Extended for 7 -8 weeks
  - Forum kept open throughout the study
    - Greater flexibility for SLPs

Data Analysis

➤ Responses transcribed into *thought units*

   o Frankel (2006): "the smallest meaningful piece of information."

➤ Operational definitions

   o Code thought units into themes & subthemes

➤ Reliability

   o Thought units: Second judge independently analyzed two responses from each discussion question

   ❖ % agreement between both the raters calculated (> 80%)

   o Themes & Subthemes: Second judge independently categorized 20% of the total thought units based on operational definitions

   ❖ Cohen's kappa (> 0.90)

Results: Themes & Subthemes

AOS

Thought Units: 795, Themes: 7

Dysarthria

Thought Units: 487, Themes: 7

Key Decision Making Factors

Apraxia of Speech: 4 Subthemes &
43 Thought Units

Client Specific Factors

➢ Whether clients consider themselves to be verbal communicators

➢ Age

➢ Severity of AOS

➢ Current level of speech intelligibility

➢ Presence of concomitant conditions

➢ Attention span

➢ Motivation to communicate

➢ Communication needs

➢ Receptive & expressive language skills

➢ Willingness to participate in speech activities

Factors related to Prognosis

➤ Limited success observed with traditional speech therapy in 6 to 12 months

- o Focus on AAC while supporting existing speech skills

➤ Time spend on natural speech skills

- o Progress exhibited in functional communication skills

Recommendations & Input from the Team

➤ Parental preferences for verbal communication

➤ Parental involvement in take-home activities

➤ Team meetings or conferences

Factors Related to the Mode of Communication

➤ Child's preference for a specific mode of communication

Theoretical Goals and Approaches in Therapy

Apraxia of Speech : 7 subthemes & 75 thought units

Dual Paradigm Approach

- Provided the child with a means to communicate with AAC while working on natural speech skills
  - Focused on AAC while supporting the child's natural speech skills

- Increased functional communication
  - Targeting the communication mode easiest for the child & then incorporating speech targets

- Focused on increasing vocalizations with any AAC intervention

- Targeted functional language through AAC & speech

Rationale: Dual Paradigm Approach

➤ Interest & training in AAC

➤ Early understanding of benefits of AAC

Choosing Therapy Goals & Approaches

➤ Client driven

➤ Highly individualized process

➤ Spans over several sessions

Total Communication Approach

➤ Used signs, verbalizations, gestures, picture communication, & imitation therapy

   o Used for a child with severe AOS

Natural Speech Goals

➤ Targeted
  o Most meaningful words
  o Sounds that have the best chance of success
  o Stimulable sounds
  o Sounds with greatest impact on intelligibility

➤ Added
  o Syllable shapes that expand phonetic repertoire
  o Sound classes absent from the repertoire

➤ Enhanced functional verbal language
  o Based on the sounds the client produced

➤ Created & targeted a functional word list
  o Sounds that the child produced
  o Collaborated with the family & school

➤ Built a functional phrase list from the functional word list

AAC Goals

➢ AAC strategies for
  o Repair of communication breakdowns
  o Enhanced self-expression when challenging behaviors occur

➢ Expanded vocabulary, phrase length, & grammatical output
  o To match child's expressive language capacity

➢ Focused on core words combined with key fringe vocabulary

➢ Combined words into 2-3 word utterances [used core words]

➢ Taught / increased the variety of language functions

➢ Taught core words to provide means to generate novel language across environments

Therapy Strategies & Activities

Apraxia of Speech: 9 Subthemes & 438 Thought Units

General Strategies

- ➢ Built on existing communication skills
- ➢ Adopted evidence-based strategies
- ➢ Kept therapy fresh
- ➢ Followed the child's lead during the sessions
- ➢ Was aware of the child's personal needs & motivation during the session
- ➢ Practiced daily: "200 opportunities a day"

General Strategies Focusing on AAC

➢ Used AAC
  o To establish effective communication in order to isolate speech issues
  o Signs to increase speed of communication
  o To extend communication opportunities
    ❖ Used the child's intrinsic motivation
➢ Practiced core vocabulary & functional words/phrases using signs
➢ Paired pictures with initial sound productions
➢ Discovered topics that the child was likely to initiate function
➢ Created a functional word & phrase book

AAC Strategies Focusing on Language & Literacy

➢ Developed literacy skills using Intellikeys® with a key guard

  o Spelling the target word to facilitate success

  o Naming each letter as it was touched

  o Repeating the full word as the space bar was hit

➢ Used

  o Classroom Suite software, Tech/Talk, Unity®, Step-by Step programmer™

AAC Strategies Focusing on Language & Literacy

➤ Introduced speech generating devices & communication boards

➤ Provided visual cues to assist in expressive language through an application for an iphone® / ipad®
  o Transforms typed words/messages into a video

➤ Focused on pragmatics
  o Recognition & repair of communication breakdowns

AAC Strategies Focusing on Language & Literacy

➢ Used
- o AAC for targeting story comprehension
- o Small ABC board
  - ❖ Cue listeners regarding the phonemes
- o Low tech "communication ring"
  - ❖ Important messages on the back of the card
- o AAC as a tool for maintaining or gaining communication success
  - ❖ Fade as speech skills improve

Strategies Focusing on Improving Natural Speech Skills

➤ Provided meaningful responses to the child's initiation

➤ Offered verbal models of the target word

➤ Used the child's functional natural speech skills with familiar partners

➤ Analyzed sound patterns
  o Determined sound/syllable/word positions to be targeted

➤ Attempted to re-address speech goals every 4 to 6 months
  o If no progress was made / child did not participate in sessions
  o Goals were discontinued 3 to 4 sessions

Strategies Focusing on Improving Natural Speech Skills

➢ Targeted natural speech early in the session

  o Moved onto other goals addressing literacy skills

➢ Used functional & high occurrence messages

➢ Produced target sound at syllable level

➢ Used a combination of tactile, verbal, & visual cues

➢ Judged progress on a sliding scale

  o Closer & closer approximations of the target accepted

➢ Decreased syllable repetitions for word approximations

Strategies Focusing on Improving Natural Speech Skills

➢ Provided opportunities for imitation within natural play activities

  o Used structured tasks only if the child experiences success

➢ Used the following in therapy

  o Kaufman approach

  o Intense repetitions

  o Tactile cues: Single sound production

  o Syllable shaping: Placement of articulators

  o Visual cues: 'Catalyst' for speech

  o PROMPT

  o Sound discrimination & oral motor activities: Emphasize motor production differences

Strategies Focusing on Improving Natural Speech Skills

➢ Shaped approximations into intelligible word forms

➢ Targeted

   o Syllabification: Clapping the number of syllables in words

   o Sound production: Phonological processes

➢ Multiple word lists for practice

➢ Targeted words based on feedback / input from caregiver(s)

➢ Worked on speech in structured tasks & supported any attempts at natural speech

Strategies for the Dual Paradigm Approach & Total Communication Approach

o Used
- o Client's spontaneous use of AAC device to enhance natural speech
- o Natural speech in conjunction with AAC [after client experienced success with natural speech goals]
- o Natural speech first & integrated AAC as required or adopted AAC in instances of communication breakdowns

➢ Shifted focus from natural speech to AAC

➢ Encouraged the client to use all means of communication for functional communication

➢ Client chose an activity with the AAC device
- o Produced target word 5-10 times

Strategies for Generalization of Skills Taught in the Session

➢ Provided
  o Home programs
  o Homework to be shared with other therapists & school team

➢ Repeated skills taught in the session in different settings

➢ Mirrored approaches used by other therapists to ensure carryover

➢ Maintained
  o A notebook with a list of vocabulary targeted
    ❖ Kept with the child
  o A "smart chart" "
    ❖ Showed other members of the team how to locate specific vocabulary on the device

Strategies for Generalization of Skills Taught in the Session

➢ Carryover activity each week

   o Required use of AAC device

➢ Used a "card ring" for speech / verbal targets

   o Current words targeted written on each card

   o Client's best approximations written on the back of the card

   o Daily review of the card ring at home

➢ Communicated regularly via email with team members

➢ Promoted practice of carryover skills in different settings

Recommendations to New Clinicians

General Recommendations

➢ Be familiar with

  o Evidence-based practices

  o Research showing that AAC does not hinder the development of natural speech skills

➢ Do not hesitate to ask for help

➢ Ask for support & resources from other SLPs

➢ Provide a rationale for choosing an intervention strategy

Recommendations regarding the Client & Session

➢ Use AAC as a supplement

➢ Experience success in communication first before targeting speech goals

➢ Interpret the child's messages accurately & sensitively

➢ Be caring communication partners

➢ Establish meaningful relationships with the client

➢ Explore the client's interests & motivation when choosing topics

➢ Develop age appropriate activities

   o Help increase the child's confidence & success in the school environment

Recommendations regarding the Client & Session

➢ Teach
- o Reading & writing [when speech is unintelligible]
- o Increasingly complex sentence structures & vocabulary
- o Language that helps resolve conflicts

➢ Create opportunities & reduce barriers to increase the use of AAC across multiple environments

➢ Model speech & thought processes

➢ Frequent re-evaluation

➢ Know the client's strengths & weaknesses

➢ Be patient & flexible & listen

➢ Adopt a total communication approach to therapy

Recommendations regarding Team Work

➢ Involve the family meaningfully

➢ Determine cultural & personal preferences that drive therapy

➢ Provide light tech solutions if the family is not ready to accept SGDs

➢ Know that team members contribute alternate solutions, communication opportunities, & help in the participation of selecting priorities

➢ Develop a workable treatment plan

➢ Expect day-to-day participation of the team in practicing AAC strategies, taking notes, & measuring progress

Recommendations Regarding the Frequency & Duration of Goals Targeting Natural Speech

For Clients with Mild-Moderate Severity of AOS

➢ More time on goals focusing on natural speech skills

➢ Developed home programs

➢ 50% of the time /session: Natural speech goals

➢ Focused primarily on natural speech

  o Integrated AAC as needed [1hour allotted for the session]

For Clients with Severe AOS

➢ Targeted
- o Speech goals every session
- o Speech goals during the first session & AAC goals in the second session
- o Natural speech goals in a structured manner for 50% of the time
- o Natural speech goals: 45-50% of the time depending on the client's abilities
- o Natural speech in repetitive segments
  - ❖ Target speech sounds for 5 minutes, move onto another activity, & return to initial activity for another 5 minutes

For Clients with Severe AOS

➢ Focused on the use of natural speech with the AAC device for support in at least one session per week

➢ Did not spend more than 3-5 minutes for a task [Client with short attention span]

➢ Shifted balance from spending all the time in the therapy session on natural speech to splitting the time between natural speech & AAC

Benefits

Apraxia of Speech: 2 Subthemes &
38 Thought Units

Benefits: AAC

- ➢ AAC strategies complimented the child's natural speech skills
- ➢ Supports
  - o Receptive & expressive language
  - o Speech
  - o Behavior
- ➢ Focus on other goals in therapy without adding the stress of speech production
- ➢ Prevents greater delays in the child's language abilities

Benefits: AAC

➢Augments vocalizations, gestures, word approximations, eye gaze, & facial expressions
➢Supplemental mode of communication till functional verbal communication is achieved

Benefits: Additional Mode of Communication

➢ Reduces the pressure on the child to communicate verbally

- o Enable the child to relax
- o Make willing attempts at natural speech production at his/her own time and pace

Challenges Faced by the Clinician

Apraxia of Speech: 6 Subthemes &
58 Thought Units

Challenges: Natural Speech Therapy

➢ Dealing with the child's frustration

- o Unintelligible speech
- o Communication breakdowns
- o Reduced motivation in therapy

➢ Client specific

- o Severity of AOS
  - ❖ Intelligibility of speech
- o Stimulability
- o Presence of concomitant conditions
- o Age
- o Avoidance to speech tasks
- o Lack of willingness to attempt speech

➢ Difficulty sustaining interest in articulation therapy

Challenges: Natural Speech Therapy

➢ Initial barrier
  o Getting the child to produce vocalizations followed by verbalizations
  o Achieving adequate intelligibility of vowel productions

➢ Counseling regarding the time taken by the child to demonstrate progress

➢ Encouraging
  o Child with severe AOS to use natural speech for communication
    ❖ Especially when they possessed the skill to do so
  o Interaction & participation in therapy exercises

Challenges: Process Barriers

➢ Lack of insurance coverage

➢ Difficulty arranging transportation

➢ Scheduling conflicts

General Challenges

➢ Lack of training or expertise in a specific area

➢ Limited time in therapy to address goals targeted,

➢ Understanding that young children have difficulty empathizing with others

Challenges: AAC

➢ Addressing parent concern

    o AAC: *Affect natural speech skills?*

➢ Reluctance to accept AAC, especially when the child has natural speech skills

Challenges: Generalizing Skills

➢ Difficulty with having the parents follow through with a home program

➢ Transferring isolated production into meaningful utterances in different environments

➢ Having parents practice techniques taught in therapy at home

Strategies for Collaborating with the Team Members

Apraxia of Speech: 3 Subthemes & 136 Thought Units

Strategies for Collaborating with the Parents / Caregivers

➢ Educated parents on why their child needed help & what they could do to help

➢ Asked parents to be accurate interpreters of child's nonverbal communication

➢ Worked with parents regarding
  o Family acceptance of AAC
  o Strategies used to ensure consistency among settings
  o Identification of strategies that worked best for the child & motivating topics for sessions
  o Identification of meaningful vocabulary [family]
  o Identification of targets for practice at home
  o Development of goals

Strategies for Collaborating with the Parents / Caregivers

➢ Encouraged parent participation in the sessions

➢ Provided
   o Written instructions for reference
   o Video recording of the session for review

➢ Discussed & critiqued the effectiveness of techniques

➢ Advised incorporation of AAC techniques at home

Strategies for Collaborating with the School / EI Team

➢ Met to discuss goals & measured progress toward goals on a monthly basis

➢ Collaborated with the school SLP on natural speech goals & strategies

➢ Communicated with

   o Teachers & aides: Regarding carryover activities

   o Educators: Regarding classroom routines & curriculum needs

➢ Followed the interdisciplinary model described by Prelock et al., 2003

➢ Provided written information to the school team

General Strategies for Collaborating with Team Members

➢ Understood & respected different learning & teaching styles
➢ Targeted activities & vocabulary not focused on in school settings
➢ Shared responsibilities
➢ Offered specific solutions to concerns
➢ Set motivation priorities
➢ Agreed on meaningful goals
➢ Focused on removing communication barriers
➢ Willing to
  o Adjust to new growth
  o Abandon a failed strategy
  o Accept success as a team rather than an individual triumph

Theme: Other

AOS: 7 thought units

Results: Themes & Subthemes

Dysarthria:

Thought Units: 487, Themes: 7

Key Decision Making Factors

Dysarthria: 6 Subthemes & 77
Thought units

Client Factors

➢ Need for recognizing attempts at communicating

➢ Age

➢ Case history

➢ Duration for which natural speech was worked on & +/ - improvements

➢ Intelligibility to familiar & unfamiliar listeners and in connected speech tasks

➢ Severity of the child's dysarthric speech

- o Established based on the word repertoire
- o Positioning needs of the child

Factors Related to Prognosis

➢ Focused more on augmentative communication
  o Limited improvement in speech intelligibility
  o Natural speech targeted over time / regression – speech skills

Assessment Findings

➢ Meeting with the family & child
➢ Documenting & evaluating communication modalities
➢ Use of an assessment tool [Social Networks]
  o Profile of the student's communication skills in different environments
  o Assess – families rate effectiveness & intelligibility of natural speech

Situational & Contextual Factors

➢ Special events that required specific skills
  o Example: Using the device in a school play or using natural speech for a conversation over the telephone

Mode of communication

➢ Speed of AAC *vs.* natural speech
  o AAC significantly slower than speech

Recommendations from team members

Theoretical Goals & Approaches

Dysarthria: 7 Subthemes & 58
Thought Units

Goals / Approaches

➢ Knowledge of strategic competence
  o Knowing which unaided / aided communication is most effective
  o Repairing communication breakdowns
  o Applying repair strategies when unaided means fail

➢ Used
  o Multi-modal communication
  o Dual paradigm approach in the initial sessions
    ❖ Establishing rapport
    ❖ Rewarding successful communication
    ❖ Functional approach
  o Total communication approach
  o Focus on communication goals & speech goals

- ➤ Goals / Approaches for AAC users
  - o Used high tech tools for specific purposes
    - ❖ Writing, giving presentations, telling stories
  - o Determined the most important repair strategy
    - ❖ Depending on communication partner / communication environment
  - o Improved ability to predict harder phonemes for partners to interpret
    - ❖ Used AAC for harder phonemes
  - o Improved intelligibility of speech with an AAC strategy
    - ❖ First letter alphabet cueing
- ➤ Client-driven
  - o Supported client's preferred mode of communication
  - o Play based
  - o Low pressure

Therapy Strategies & Activities

Dysarthria: 10 Subthemes & 223
Thought Units

General Strategies

➢ Mode of communication that makes the child most functional with unfamiliar listeners

➢ Worked on
  o Identifying aspects of communication that were challenging
  o Chart of various ways of interacting with partners
  o Oral motor function through snack and play activities

➢ Identified
  o Barriers to staying in conversation
  o Best times to use an aid or strategy practiced in the session

➢ Set goals for the next day
  o Based on what worked & did not work in the previous sessions

➢ Used extension activities

Strategies Focusing on AAC

➤ Frequency & duration of AAC goals [Examples]
  o AAC - 70% of the time / session
  o AAC - 20minutes in a 30 minute session
  o AAC - 50% of the time / session

➤ Aided language stimulation with AAC

➤ Listed no tech, low tech, & high tech communication devices

➤ When the team was not open to AAC intervention
  o Limited AAC intervention to one, powerful activity to show immediate benefits of AAC

➤ Recognized a communication breakdown
  o Determine the appropriate strategy to repair the breakdown

Strategies Focusing on Improving Natural Speech Skills

➢ Frequent repetitions of tasks

➢ Focused on [In the presence of significant deficits]
- o Speech production
- o Breath support
- o Positioning
- o Functional word vocabulary

➢ PROMPT training

➢ Taught self-awareness & understanding of how client's sounded to others

Strategies Focusing on Improving Natural Speech Skills

➢ Frequency & duration of goals targeting natural speech skills

- o Verbal speech: 20 to 30 minutes / 60 minute session
- o Targeted to achieve 50+ repetitions from the child within 20 to 30 minutes
- o Natural speech goals: 15 minutes in the session (mild dysarthria)
- o Speech production goals: once per week for 6 months

Strategies for the Dual Paradigm Approach & Total Communication Approach

➢ Worked on natural speech & aided AAC separately
  o Then introduced integrated activities
  o When improvement was observed in both the modes
➢ Designed AAC interventions that made use of the child's natural speech skills
➢ Exposed the child to different modes of communication
  o Express preference for one or more modes of communication
  o Followed the child's lead
➢ Consistently used low tech or no tech AAC & speech in all environments
➢ Incorporated activities for natural speech & AAC in each session

Strategies for the Dual Paradigm Approach & Total Communication Approach

➢ Activities to incorporate natural speech & AAC
- o Story book reading
- o Composed a message on the device & verbalized the message using natural speech

➢ Used
- o Aided means to communicate [Failure to communicate after 3 verbal attempts]
- o First-letter alphabet cueing

➢ Targeted both speech & AAC during the 30 minute session [x 2/week]

➢ Practiced a skill / strategy taught in the session,
- o Attempted with familiar partners
- o Attempted with peers

Strategies for Generalization of Skills Taught in the Session

➢ Chose specific environment

- o Child required independent use of skills

➢ Taught new strategy

- o Incorporated role play / isolated practice [familiarization]
- o Changed location of intervention

➢ Reverse-inclusion opportunities

➢ Emailed updates

➢ Checked in frequently with the student

- o Provide a measure of their success with the strategy or technique

➢ Embedded goals & objectives into natural routines

➢ Checked with the school team

Recommendations to New Clinicians

General Recommendations

➢ Keep up with research

➢ Adopt evidence-based practices

➢ Follow your best judgment

➢ Look into the future when considering goals

    o Consider independence in teen & adult life

➢ Provide many options while communicating

    o Encourage multimodal communication

➢ Be open minded to new techniques & suggestions

➢ Do the best you can!

Recommendations regarding the Client & Session

➢ Support the most comfortable methods

➢ Encourage new, effective, & efficient strategies

➢ Be thorough with expectations of when & how to use AAC

➢ Remember that

- Aided & unaided AAC can be used simultaneously
- Duplications: Waste of time, energy, & space on a communication board
- Change the strategy or focus on a specific skill area
  ❖ Not the student's failure if progress is not being made towards the goals

➢ Encourage natural speech when using AAC systems

- Learns to simultaneously use natural speech & AAC

Recommendations regarding the Client & Session

➢ Assessment tools

  o Social Networks, Framing a Future

➢ Incorporate data from assessment of linguistic, motoric, sensory skills, & QOL indicators in the intervention plan

➢ Keep good data

  o On intelligibility

  o On speech & AAC simultaneously

    ❖ Assess whether speech or AAC has the most +ve effect on functional communication

Recommendations regarding Team Work

- Be willing to be part of the team
- Share information with all team members
- If the team does not seem to accept AAC
  - Spend more time on speech intervention & keep AAC interventions short
- Document expectations in collaboration with the team
  - Review them on a regular basis
- Client is the most important member of the team
- Understand what each member of the team considers as a priority
- Train team members to carryout goals & objectives when engaging in daily routines

Benefits

Dysarthria: 2 Subthemes & 5 Thought Units

AAC & Natural Speech

- ➢ AAC
  - o Used for functional communication [Severe speech impairment]
  - o Vital when the child gets older & social world gets bigger
    - ❖ Prognosis in speech skills is difficult to determine
  - o Communicate with more unfamiliar partners
    - ❖ Less dependence on interpreters
    - ❖ More independence in teen & adult life

- ➢ Natural Speech
  - o Important to have a few intelligible words to meet rapid needs

Challenges

Dysarthria: 4 Subthemes & 55 Thought Units

Challenges: Natural Speech Therapy

➢ Articulation therapy

    o Uninteresting / tedious for the child

    o Not child directed

    o Client has difficulty working on goals & objectives

➢ Child's frustration and / or embarrassment

    o Partners limited understanding of the child's natural speech

    o Frequent repetition of messages

    o Frequent use of repair strategies

    o Reduced use of natural speech for communication

Challenges: AAC

➤ Parent & child apprehension: *Shift focus from natural speech therapy*
- o Slow implementation
- o Difference in opinion between clinician & family
- o Parents refusal to accept alternate mode of communication

➤ Family preference for natural speech, oral motor exercises, & articulation drills
- o Child's preference for natural speech

➤ Difficulty introducing another tool for communication
- o In addition to natural speech
- o Use of AAC with familiar partners
- o Refusal to use an AAC device

General Challenges

- ➢ Limited therapy time
- ➢ Difficulty
  - o Expanding vocabulary
    - ❖ Clients with established & thorough vocabulary
  - o Balancing time
    - ❖ Verbal vocabulary vs. that needing an AAC device
- ➢ Limited EBP recommendations

Challenges: Generalization of Skills

- ➢ Lack of generalization
  - o If skills are only taught in the clinic setting

Strategies for Collaborating with the Team Members

Dysarthria: 3 Subthemes & 59
Thought Units

Strategies for Collaborating with the Parents / Caregivers

➢ Parent participation in the session

  o Take over an activity

➢ Discussions with parents

  o Additional activities at home in which strategies could be incorporated

  o Different problem solving strategies

➢ Home visits

➢ Communicated with the parents via email or written notes

➢ Taught the families how to integrate goals and activities into the child's daily routines & play activities

Strategies for Collaborating with the School / EI Team

➢ Exchanged information & ideas with the school/private SLP

  o Strategies & activities that work for the child during the sessions

  o Explained goals being addressed & prompts used

  o Weekly meetings

➢ Encouraged feedback from the team members

  o Use & success of strategies in different environments

➢ Modeled activities for the classroom staff

➢ *Participation plan*

➢ Developed a check list or chart

General Strategies for Collaborating with Team Members

➢ Maintained a '*communication binder*'

    o Log of what was targeted in each session to share with the team

    o Communicate & get feedback from the team

    o Vocabulary and programming needs

➢ Developed a '*cheat sheet*'

    o Consisted of important activity specific vocabulary

Theme: Other

Dysarthria: 10 Thought Units

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