AACA Update and the Intersection of Clinical Audiology and Speech Pathology in Management of Auditory Processing Disorders (APD)

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www.acaeaccred.org
ACAE Update and the Intersection of Clinical Audiology and Speech Pathology in Management of Auditory Processing Disorders (APD)

- ACAE Update
  - Mission and purpose of ACAE
  - Key advantages
  - 2016 standards
  - Survey of stakeholders

- Best Practices in Audiology Today
  - Historical perspective
  - Definition and rationale
  - Clinical practice guidelines
  - Concept of value added tests
  - Instilling best practices in AuD student education
ACAE Update:

Mission of ACAE

To serve the public by establishing, maintaining and applying standards to ensure the academic quality and continuous improvement of audiology education, reflecting the evolving practice of audiology.
ACALE Update:
Purpose of ACAE

- To establish rigorous educational standards for the full scope of practice for doctoral level audiologists
- To monitor and evaluate Doctor of Audiology (AuD) programs for high quality outcomes, so consistency prevails in every curriculum
- To empower audiologists to practice their chosen profession autonomously and responsibly
- To prove educational outcomes that ensure audiologists are providing the highest level of care to the public.
- To demonstrate graduates of AuD programs are ready for limited license practitioner status in the US
ACAE Update:
Key Advantages

- Expertise in accreditation domestically and globally
- Continually abreast of trends in standards and higher education
- Extensive experience and commitment in the profession of audiology and audiology accreditation
- Entire team of audiologists and support staff working for program improvement and successful outcomes
- ACAE is the only accrediting body “of, by, and for audiologists”
- ACAE accredits only Doctor Audiology programs
Aacea update:
High Educational Standards:
*Foundation of the Profession*

- Practice
- Clinical Education
- Academic Education
  (The Foundation)
AACE Update: Summary of Current (2016) Standards

- Additional standards areas include “Health and Safety Standards, e.g.,
  - Technical standards
  - Immunizations
  - Communicable and/or infectious disease policy
  - Liability insurance
  - Equipment policies
  - Emergency action plan
Enhanced competences including but not limited to:
- Pharmacology
- Genetics
- Business/personnel management
- Self-advocacy skills for patients and families

Programs demonstrate how students possess a working knowledge of all competencies as well as the ability to incorporate them into practice.

Recipients of AuD degrees will have sound knowledge and professional skills enabling them to function as autonomous direct care providers.
ACAE Update

- Mission and Purpose of ACAE
- Key Advantages
- New 2016 Standards
- New Developments

Clinical Simulation in Audiology Education

- Acknowledgements
- Definition and rationale
- Clinical practice guidelines
- Concept of value added tests
- Instilling best practices in AuD student education
ACALE Update:  
2019 Board of Directors

James W. Hall III, Chair   Martha R. Mundy, Vice-Chair
Samuel Atcherson            Rupa Balachandran
Carol Cokely                Erica B. Friedland
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Kitty Werner  
(Executive Director)
Andrew Stafford  
(Director of Professional Standards & Credentialing, American Academy of Audiology)
ACAE Update: For more information ...

ACAE Corner in Audiology Today

The Importance of Accreditation “Of, By, and For Audiology”

By James W. Tall III

Off to a Great Start

By Scott Griffin

ACAE’s 2016 Standards Today

In March 2016, the Board of Directors approved the new 2016 educational standards. The approval was the result of four years of intense work of study, research, revision, and development. Beginning in 2013, the ACAE Standard Review Committees and Task Force engaged in a stakeholder survey, a comprehensive review of the current standards, and a wide distribution of the current standards to educators. In preparation, educators and other external constituencies of the Academy participated in developing input from each group led to the development of standards that were timely, up to date and relevant. Over the next few years, adherence to these standards will provide a high level of quality and consistency among ACAE accredited programs.

ACAE’s 2016 Standards Today

Tomorrow’s Standards Today

By Lisa Tulman, James W. Tall III, and Darra Gordon

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The importance of such educational standards was evident in at least three areas. First, programs are now required to utilize evidence-based instruction and to develop and implement a strategic plan that addresses student learning outcomes. Second, the new standards include revised guidelines for the development of student assessment instruments, which must be used to assess student learning outcomes. Third, the new standards require programs to develop and implement a plan for continuous quality improvement, which includes the use of feedback from students, faculty, and external reviewers. These changes are intended to improve the quality of education provided by ACAE accredited programs.

The new standards also require programs to demonstrate their commitment to the continuous improvement of their educational programs. This is accomplished by requiring programs to develop and implement a plan for continuous quality improvement, which includes the use of feedback from students, faculty, and external reviewers. These changes are intended to improve the quality of education provided by ACAE accredited programs.

Tomorrow’s Standards Today

By Lisa Tulman, James W. Tall III, and Darra Gordon

The new standards were developed with the goal of ensuring that all programs meet the same standards of education. Although we can see that the future is bright, we must not lose sight of the past. The new standards are designed to ensure that all programs meet the same standards of education. Although we can see that the future is bright, we must not lose sight of the past. The new standards are designed to ensure that all programs meet the same standards of education.

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ACAE Update and the Intersection of Clinical Audiology and Speech Pathology in Management of Auditory Processing Disorders (APD)

- ACAE Update
- Intersection of Clinical Audiology and Speech Pathology in Management of Auditory Processing Disorders (APD)
  - Scope of Practice and Standard of Care
  - Risk Factors for APD in Children and Adults
  - Comorbidities and Disorders Co-Existing with APD
  - Efficient and Accurate Diagnosis of APD
  - Effective Management Options for APD
I’m lost in this class! What’s wrong with me? I just can’t hear right.
APD in Adults: Serious Impact on Communication, Employment, and Quality of Life

What are they saying?
Everyone mumbles and talks too fast. I’m confused!
Assessment and Diagnosis
Assessment of hearing includes the administration and interpretation of behavioral, physioacoustic, and electrophysiologic measures of the peripheral and central auditory systems. Assessment of the vestibular system includes administration and interpretation of behavioral and electrophysiologic tests of equilibrium. Assessment is accomplished using standardized testing procedures and appropriately calibrated instrumentation and leads to the diagnosis of hearing and/or vestibular abnormality.

Treatment
The audiologist administers audiologic identification, assessment, diagnosis, and treatment programs to children of all ages with hearing impairment from birth and preschool through school age. The audiologist is an integral part of the team within the school system that manages students with hearing impairments and students with central auditory processing disorders. The audiologist participates in the development of Individual Family Service Plans (IFSPs) and Individualized Educational Programs (IEPs), serves as a consultant in matters pertaining to classroom acoustics, assistive listening systems, hearing aids, communication, and psycho-social effects of hearing loss, and maintains both classroom assistive systems as well as students' personal hearing aids. The audiologist administers hearing screening programs in schools, and trains and supervises non audiologists performing hearing screening in the educational setting.
AAA Clinical Guidelines on Auditory Processing Disorders: A Manual for Evidence Based Assessment and Management (www.audiology.org)
The Intersection of Clinical Audiology and Speech Pathology in Management of APD

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- Efficient and Accurate Diagnosis of APD
- Effective Management Options for APD
Risk Factors for APD in Children: Team Work is Important in Identification and Assessment

- Neurological dysfunction and disorders (*physicians*), e.g.,
  - Neonatal risk factors (e.g., asphyxia, prematurity, CMV)
  - Head injury
  - Seizure disorders
- Chronic otitis media in preschool years (*otolaryngologists*)
- Academic underachievement (*teachers, psychologists, SLPs*)
- Family history of academic underachievement (*parents*)
- Co-existing disorders (*multiple professionals*)
- *Repeated concerns about hearing loss yet normal audiograms* (*audiologists … remember liability with failure to refer patients*)
Risk Factors for Auditory Processing Disorders in Adults

- Aging of the central auditory nervous system
- Combined peripheral and central auditory disorders
  - Central auditory dysfunction with progressive peripheral hearing loss
  - Peripheral hearing loss with progressive central auditory dysfunction
  - Complaints of hearing loss (speech perception in noise) with normal audiogram
- Referral from vocational rehabilitation
- Medical disorders and diseases, e.g.,
  - Neoplasms
  - Cardiovascular disease
  - Cognitive impairment and dementia, including Alzheimer’s dementia
  - Schizophrenia
- Traumatic brain injury (TBI)
  - Motor vehicle accidents
  - Gunshot wounds
  - Military blasts and explosions
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Differential Diagnosis of Auditory Specific Processing Disorder versus Co-Existing Disorders

“Differential Diagnosis:

Diagnosis based on comparison of symptoms (signs) of two or more similar diseases (disorders) to determine which the patient is suffering from.”
Co-Existing Disorders: *Shared Neuroanatomy in One Brain*

- Reading (literacy)
- Language
- Auditory processing
- Cognition, e.g., Memory
- Attention
APD in Children: Co-Existing Disorders and Comorbid Conditions

- Peripheral (conductive and sensory) hearing loss
- Specific language impairment (SLI)
- Learning disabilities (LDs)
- Reading disorders (dyslexia)
- Attention deficit/hyperactivity disorder (ADHD)
- Emotional and psychological disorders
- Cognitive and developmental delay
- Seizure disorders
- Traumatic brain injury (TBI)
APD in Adults:  
*Dementia is One of Several Comorbid Conditions*  

*Review Article*

The Association Between Cognitive Performance and Speech-in-Noise Perception for Adult Listeners:  
A Systematic Literature Review and Meta-Analysis

Adam Dryden¹,², Harriet A. Allen², Helen Henshaw³,⁴, and Antje Heinrich¹

**Abstract**  
Published studies assessing the association between cognitive performance and speech-in-noise (SiN) perception examine different aspects of each, test different listeners, and often report quite variable associations. By examining the published evidence base using a systematic approach, we aim to identify robust patterns across studies and highlight any remaining gaps in knowledge. We limit our assessment to adult unaided listeners with audiometric profiles ranging from normal hearing to
APD in Adults:
Other Comorbid Conditions May Be Risk Factors

Percent of patients seen by Audiologists with each condition

Hypertension

64.95
55.36
42.91
33.08
29.11
24.79
21.49
15.86
15.84
13.18
12.77
11.42
10.67
9.83
4.81
2.55
The Intersection of Clinical Audiology and Speech Pathology in Management of APD

- Scope of Practice and Standard of Care
- Risk Factors for APD in Children and Adults
- Comorbidities and Disorders Co-Existing with APD
- Efficient and Accurate Diagnosis of APD
- Effective Management Options for APD
Assessment of APD: Peripheral Test Battery (< 30 minutes)

- Distortion Product Otoacoustic emissions (DPOAEs)
  - Diagnostic protocol (500 to 8000 Hz and ≥ 5 frequencies per octave)
  - OAEs are abnormal in 35% of children undergoing APD assessment

- Aural immittance measures
  - Tympanometry
  - Acoustic reflexes: Crossed vs. uncrossed conditions = initial measure of CNS function

- Pure tone audiometry
  - Air conduction only if hearing sensitivity and middle ear measures are normal
  - Inter-octave frequencies of 3000 and 6000 Hz

- Speech audiometry:
  - Word recognition in quiet with recorded materials
  - 10 most difficult words first and stop if score is 100%
Assessment of APD: Test Battery for Auditory Processes (~ 1 hour)

- **Monaural Low-Redundancy Speech Tests**
  - Speech perception in noise or in a competing message
  - Time compressed speech
  - Filtered speech

- **Binaural Interaction Tests**
  - Listening in Spatialized Noise (LiSN-S)

- **Auditory Discrimination Tests**

- **Auditory Temporal Processing and Patterning Tests**
  - Gap detection (e.g., Gaps in Noise or GIN, test)
  - Pitch and duration pattern tests

- **Dichotic Speech Tests**

- **ABR and Cortical Auditory Evoked Responses (as indicated)**
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- Efficient and Accurate Diagnosis of APD
- Effective Management or Intervention Options for APD
Auditory Processing Disorders

*Intervention Options*

*(AAA Clinical Practice Guidelines, 2010)*

- Counseling
- Advocacy
- FM technology
- Computer based auditory training
- Direct auditory remediation
- Phonological awareness programs
- Language-based options
- Appropriate referrals
- Documenting benefits
Clinical Guidelines on Auditory Processing Disorders: Terminology for Habilitation/Rehabilitation

- **Intervention**: “…encompassing term referring to one or more actions taken in order to produce an effect and to alter the course of a disease, disorder, or pathological condition.”

- **Treatment**: “…any specific procedure used to prevent, remediate (i.e., cure), or ameliorate a disease, disorder, or pathological condition.”

- **Management**: “…refers to compensatory approaches (e.g., strategies, technologies) used to reduce the impact of deficits that are resistant to remediation.”
Clinical Guidelines on Auditory Processing Disorders: “Bottom Up” Intervention

- Bottom up “stimulus driven” approaches (audiologists)
- Auditory training, e.g.,
  - Earobics
  - LACE (Listening and Communication Enhancement)
- Direct auditory skill remediation
  - Dichotic Interaural Intensity Difference (DIID) training
  - Aural Rehabilitation for Interaural Asymmetry (ARIA)
- Enhancement of listening environment
  - Classroom acoustical modifications
  - Classroom amplification (FM) systems
  - Personal FM systems
Clinical Guidelines on Auditory Processing Disorders: “Top Down” Intervention

- Approaches are often implemented by speech pathologists and other professionals
- Language strategies
- Cognitive/metacognitive strategies
- Speaker modifications
- Instructional modifications and strategies
- Accommodations in listening settings
Auditory Processing Disorders

Appropriate Referrals (1)

- Speech language pathologist
  - Language assessment
  - Phonological awareness assessment
  - Reading remediation
  - Top-down cognitive or meta-linguistic therapy

- Psychologist or neuropsychologist
  - Assessment of cognitive function
  - Assessment of ADHD
  - Professional counseling
  - Diagnosis and management of other disorders, e.g., emotional disorders and depression
Auditory Processing Disorders

Appropriate Referrals (2)

- **Otolaryngologist**
  - Diagnosis of ear disease
  - Management of middle ear dysfunction
  - Neuro-radiological studies

- **Neurologist**
  - Assessment of neurological functioning
  - Rule out neurological disease (e.g., seizure disorders)

- **Occupational therapist**
  - Evaluation of visual processing
  - Evaluation of motor processing
  - Assessment of sensory integration disorders
Psychosocial Status of Children with Auditory Processing Disorder

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Abstract

**Background:** Children with hearing loss often exhibit reduced psychosocial status compared to children with normal hearing. It is reasonable to assume that psychosocial function may also be affected in children diagnosed with auditory processing disorder (APD). However, there are no published studies specifically addressing the psychosocial health of children with APD.

**Purpose:** This investigation examined relationships between APD and psychosocial status, with an aim to examine nonauditory factors that may influence quality of life of children diagnosed with APD.
Management of APD: 
Counseling Patients and Parents of Patients

- “Non-professional” counseling (by audiologists)
  - Informational (content) counseling*
  - Personal adjustment counseling

- Professional counseling (by trained counselor, psychologist, or psychiatrist)
  - Identifying unconscious behaviors
  - Managing major personality changes (e.g., clinical depression)
THANK YOU!

QUESTIONS?