EBP: What it is and what is not - ISHA 2020

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WHO definition of Health

Health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity.

2016 Scope of Practice for Speech-Language Pathology – 1st page

"The practice of speech-language pathology continually evolves. SLP’s play critical roles in health literacy; screening, diagnosis, and treatment of autism spectrum disorder; and the use of the International Classification of Functioning, Disability, and Health (ICF, World Health Organization) to develop functional goals and collaborative practice.

2016 Scope of Practice for Speech-Language Pathology – cont.

"The overall objective of speech-language pathology services is to optimize individuals’ abilities to communicate and to swallow, thereby improving quality of life. As the population of the United States continues to become increasingly diverse, SLP’s are committed to the provision of culturally and linguistically appropriate services and to the consideration of diversity in scientific investigations of human communication and swallowing."
The domains of speech-language pathology service delivery complement the ICF, the WHO multipurpose health classification system (WHO, 2014). The classification system provides a standard language and framework for the description of functioning and health. The ICF framework is useful in describing the breadth of the role of the SLP in the prevention, assessment, and habilitation/rehabilitation of communication and swallowing disorders and the enhancement and scientific investigation of those functions.

**Evidence Based Practice Beginnings**

- Archibald Cochrane, epidemiologist, started writing about it in 1970’s
- David Sackett, epidemiologist in Canada
- First in Canada and U.K., then 1992 U.S. joined the party with publication in journal Journal of American Medical Association (JAMA)

**Expanded Definition of EBP- Sackett, Strauss, Richardson, Rosenberg, and Haynes, 2000**

**Clinical Expertise**

- Doing it a long time does not make one automatically better
- Read the literature, follow the protocol, see if it works for clients as a whole or a subset of clients. If it does, great. If not, drop it.
- Comparing it to success before
  - Your own single subject design
  - Conference- let’s discuss what has worked and not worked
  - When something works, think “How could I make it better?” or “How can I make it work in less time?”
  - If conflicts with research, go with the clinical process in a real person in front of you.

**Application of EBP to Communication Disorders**

- Research – often not there in classic sense of randomized controlled trials
  - Fight our own game - e.g. single subject designs
- Clinical expertise- Time does not make better but reflective time can, expert panels that truly objective.
- Client preferences- One of principle ethical tenets in health care is autonomy.
  - Communication is personal level- not objective like blood pressure
Patient values

- Research shows better the mutual respect of the relationship better the outcomes
- Do you think you have gotten better? How? Does this make you happy?
- How well do you do?
- How often or wish to do?
- How much miss not doing?
- Rank ordered what frustrates you the most
- How upset are you usually about not being able to do as well on this task
- Any new activities taken up to make up for ones can no longer do? How is that working?
- Best multicultural assessment: Tell me about your life before your stroke and how it is now. But only works if mutual respect established
- If can’t get from patient and families what they want or what change would mean the most to their quality of life, then cannot have the best possible outcomes.

Responsibilities of Clinical Researchers

- Clinical researchers should pick relevant clinical topics, including recognizing inherent complexity.
- Clinical researchers should include enough information in articles to fully understand all aspects of the study.
- Clinical researchers should write in a way that clinicians can understand and implement if wish.

EBP reporting in journals

- Cannot do meta-analysis if authors writing of results varies too widely
- Cannot easily review abstracts for possible further study if no consistent structure of abstracts

Oxford Centre for Evidence-based Medicine Levels (2001)

- Therapy/Prevention, etiology, harm
- Prognosis
- Diagnosis
- Differential diagnoses/symptom prevalence study
- Economic and decision analysis

Classic Levels of Evidence- Intervention

- **Ia** -- Meta-analysis of >1 randomized controlled trial
- **Ib** -- Well-designed randomized controlled study
- **Ib** -- Well-designed quasi-experimental study
- **III** -- Well-designed non-experimental studies, i.e., correlation and case studies
- IV -- Expert committee report, consensus conference, clinical experience of respected authorities

- **Message often missed** - May be a hierarchy but all above are evidence

EBP and all clinical fields

- Without evidence, funds can be cut at will
- More data kept centrally means more accountability, easier for governments to do comparisons among facilities, regions, settings
- Can also see who has given outcomes for the least cost
Evidence based practice and cultural/personal variation

- Not just for bleeding hearts anymore
- Can look, technically, at syndromes and diseases without looking at culture - but cannot look at functioning in one’s chosen life and quality of life without examining all aspects of culture
- Cannot achieve meaningful real life outcomes without examining the person in their life contexts

Bad EBP Questions

- Bad questions
  - Does therapy work?
  - As bad as “Does surgery work?”
  - Or “Is private school good for children?”
  - What does work mean? At Body Function level? At Activity/Participation level? At Environmental Factors level?
  - What does work mean? Is statistical significance enough or effect sizes or neither. Is it patient satisfaction? Is it quality of life? Is it able to go back to work?
  - Quality of therapist
  - Does therapy X better than therapy Y?
  - Better for whom?
  - Better for which conditions?
  - Better for which time frames?
  - Quality of therapist

One aspect of Function - Use of ICF

- Need more than just HOW to do a study but need direction on WHAT and WHY study
- Understand different aspects of functioning and how interact with each other

International Classification of Functioning, Disability, and Health (ICF)

- 2001 publication of the World Health Organization
- Significantly revised and expanded version of the 1980 International Classification of Impairments, Disabilities, and Handicaps (ICIDH)

The International Classification of Functioning, Disability and Health (ICF) (WHO, 2001)

- Describes functioning of persons 18 years and older

The International Classification of Functioning, Disability, and Health for Children and Youth (ICF-CY) - 2007

- Describes functioning for persons from birth to age 17
ICF is endorsed and/or used by

- Speech Pathology Australia (SPA)
- American Speech-Language-Hearing Association (ASHA)
  - Preferred Practice Patterns for the Profession of Speech-Language Pathology (ASHA, 2004)
- Royal College of Speech and Language Therapists (RCSLT)
- Canadian Association of Speech-Language Pathologists and Audiologists (CASLPA)

ICF endorsements/adoptions

- American Occupational Therapy Association
- Association of Rehabilitation Nurses
- American Physical Therapy Association
- International Society of Physical Medicine and Rehabilitation
- Institute of Medicine
- National Library of Medicine - USA
- Centers for Disease Control and Prevention - USA

WHO Classification Consolidation

- ICF and ICF-CY combined into one
- Ultimately ICD and ICF form one document capturing all components of health

ICF Framework

Health Condition (disorder/disease)

- Body function & structure (Impairment)
- Activities (Limitation)
- Participation (Restriction)

Environmental Factors

Personal Factors

Body Structures

CHAPTER 1 Structures of the nervous system
CHAPTER 2 The eye, ear and related structures
CHAPTER 3 Structures involved in voice and speech
CHAPTER 4 Structures of the Cardiovascular, Immunological and Respiratory systems
CHAPTER 5 Structures related to the Digestive, Metabolic and Endocrine systems
CHAPTER 6 Structures related to the Genitourinary and Reproductive system
CHAPTER 7 Structures related to movement
CHAPTER 8 Skin and related structures

BODY FUNCTIONS

CHAPTER 1 Mental Functions
CHAPTER 2 Sensory Functions and Pain
CHAPTER 3 Voice and Speech Functions
CHAPTER 4 Functions of the Cardiovascular, Hematological, Immunological and Respiratory Systems
CHAPTER 5 Functions of the Digestive, Metabolic and Endocrine systems
CHAPTER 6 Genitourinary and Reproductive Functions
CHAPTER 7 Neuromusculoskeletal and movement-related functions
CHAPTER 8 Functions of the skin and related structures
### ACTIVITIES AND PARTICIPATION

- **CHAPTER 1** Learning and applying knowledge
- **CHAPTER 2** General tasks and demands
- **CHAPTER 3** Communication
- **CHAPTER 4** Mobility
- **CHAPTER 5** Self-care
- **CHAPTER 6** Domestic Life
- **CHAPTER 7** Interpersonal interactions and relationships
- **CHAPTER 8** Major life areas
- **CHAPTER 9** Community, social and civic life

### ENVIRONMENTAL FACTORS

- **CHAPTER 1** Products and technology
- **CHAPTER 2** Natural environment and human-made changes to environment
- **CHAPTER 3** Support and relationships
- **CHAPTER 4** Attitudes
- **CHAPTER 5** Services, systems and policies

### PERSONAL FACTORS

- Not coded in ICF because of wide international variability and thus could not agree upon codes
- Still is included in framework because of its importance to understanding functioning and disability

### Universal Qualifier

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>xxx.0</td>
<td>NO problem (none, absent, negligible) 0-4%</td>
</tr>
<tr>
<td>xxx.1</td>
<td>MILD problem (slight, low...) 2-24%</td>
</tr>
<tr>
<td>xxx.2</td>
<td>MODERATE (medium, fair) 25-49%</td>
</tr>
<tr>
<td>xxx.3</td>
<td>SEVERE (high, extreme, ...) 50-95%</td>
</tr>
<tr>
<td>xxx.4</td>
<td>COMPLETE (total...) 96-100%</td>
</tr>
<tr>
<td>xxx.8</td>
<td>not specified</td>
</tr>
<tr>
<td>xxx.9</td>
<td>not applicable</td>
</tr>
</tbody>
</table>

*E.g. 100.2 would indicate a moderate problem in this area*

### Activity/Participation Qualifiers

- Uses Universal Qualifier ranges for all four qualifiers
  - Performance- how person does in their natural environment
  - Capacity without assistance – how person does in clinical setting without assistance
  - Capacity with assistance – how person does in clinical setting with assistance
  - Performance without assistance- how person would perform in environment without assistance
Environmental Factors Qualifiers

Can either be a Facilitator or Barrier

- Universal qualifier applies to barriers or impediments to function
- Facilitating qualifiers
  - +0 – No facilitator
  - +1 – Mild facilitator
  - +2 – Moderate facilitator
  - +3 – Substantial facilitator
  - +4 – Complete facilitator

Dysphagia (swallowing disorder)

- Medical Condition
  - Can lead to aspiration pneumonia
  - Can lead to malnutrition
  - Can lead to dehydration
  - Can lead to decreased functioning of pulmonary system
  - Can interfere with ability to take medications per oral
  - Can increase likelihood of bacteria infections in oral cavity secondary to decreased ability to clear saliva

Dysphagia - Disability

- Is often a chronic condition
- Patients and/or significant others could view the person as less competent
- Can limit social interactions
- Can cause depression
- Can limit ability to participate in family/community events

Body Structure- Swallowing

- s320 Structure of mouth
  - Teeth
  - Gums
  - S3202 Structure of palate
  - S3203 Tongue
  - S3204 Structure of lips
- s3208 Structure of mouth, other specified
- s520 Structure of oesophagus
- s510 Structure of salivary glands

Body Function Codes- Swallowing

- b510 Ingestion Functions
  - b5100 Sucking
  - b5101 Biting
  - b5102 Chewing
  - b5103 Manipulation of food in mouth
  - b5104 Salivation
- B 5101 Swallowing
  - b51050 Oral swallowing
  - b51051 Pharyngeal swallowing
  - b51052 Oesophageal swallowing
  - b51058 Swallowing, other specified
  - b51059 Swallowing, unspecified

Body Functions- Influences on Eating/Drinking behaviors

- b110 Consciousness functions
- b117 Intellectual functions
- b1301 Motivation
- b1302 Appetite
- b1303 Craving
- b1670 Reception of language
- b2102 Quality of vision
- b250 Taste function
- b140 Attention functions
- b144 Memory functions
- b147 Psychomotor functions
- b156 Perceptual functions
- b1664 Insight
- b1646 Problem-solving
- b255 Smell function
Activity/Participation Codes - Swallowing

- d5201 Caring for teeth - Looking after dental hygiene, such as by brushing teeth, flossing, and taking care of a dental prosthesis or orthotics.
- d550 Eating – Carrying out the coordinated tasks and actions of eating food that has been served, bringing it to the mouth and consuming it in culturally acceptable ways, cutting or breaking foods into pieces, opening bottles and cans, and using eating implements, having meals, feasting or dining.

Activity/Participation Codes - Swallowing - 2

- d560 Drinking - Taking hold of a drink, bringing it to the mouth, and consuming the drink in culturally acceptable ways, mixing, stirring, and pouring liquids for drinking, opening bottles and cans, drinking through a straw or drinking running water such as from a tap or a spring; feeding from the breast.

Activity/Participation Codes - Related to Eating/Drinking

- d630 Preparing meals
- d850 Remunerative employment
- d9100 Informal associations
- d9191 Ceremonies
- d920 Recreation and leisure
- d9300 Organized religion

Environmental Factors - Swallowing

- e1100 Food – Any natural or human-made object or substance gathered, processed, or manufactured to be eaten, such as raw, processed and prepared food and liquids of different consistencies, herbs and minerals.
- e115 Products and technology for personal use in daily living
- e240 Light
- e250 Sound

Environmental Factors - Systems - Swallowing - 3

- e580 Health services, systems and policies
  - Health services
  - Health systems
  - Health policies
Personal Factors influence on Eating/Drinking
- Age
- Race
- Gender
- Food preferences
- Individual psychological assets
- Fitness
- Lifestyle
- Habits
- Upbringing
- Coping Styles
- Education
- Social Background
- Other health conditions

Our measurements
- May have reliability but not necessarily validity
- Could be twisting our methods of measurement to fit what already believe to be true or simply what we are comfortable measuring

EBP and severity – Facing the mirror
- What do we mean by terms mild, moderate, severe, and profound?
- Always a problem, but now supposed to assign it a number that would go in a chart or electronic medical system
- Hard to fudge with "mildly moderate," "moderately severe"
- If cannot measure severity, how do know broadly that a person has improved???

Severity –according to who?
- Therapist?
- Client?
- Family?
- Objective measure?
- Strangers?

Improvement – how much is enough?
- One a 1 to 5 scale?
- No improvement, some improvement, much improvement, great improvement
- Life no, some, much, greatly better
- Clinically significant versus statistically significant

The “usual”
- Tyranny of the mean
- Statistical significance versus clinical significance
- Example of personalized medicine – lung cancer treatment
Single Subject Designs
- Multiple baselines
- Treatment
- Withdrawal of treatment
- Resume treatment

Single subject design - generalization
- Repetition as highest level of evidence
- Randomized single subject design, possible paradigm of future

Patient reported outcomes
- Example of hypertension drug
- If patient does not think they are better they are not
- Health is being able to do what you want – drug companies understand

US and Europe consortium
- “Traditionally, the assessment of a patient’s response to investigative medical produces has been made by medical professionals. More and more, it has been recognized that some assessments might best be made by patients themselves”

“A patient reported outcome (PRO) is any report of the status of a patient’s health condition that comes directly from the patient, without interpretation of the patient’s response by the clinician or anyone else”

Well defined and reliable PRO instruments can be used to support a claim in medical produce labeling if the claim is consistent with the instrument’s documented measurement capacity”
- The Patient Reported Outcomes (PRO) Consortium (2010)
**Challenges of PRO**
- The instrument itself, technology and software can help
- Use with persons with cognitive and communication disorders
- Culturally relevant language and questions

**Improvement in use of PRO**
- Research
- Patient/family involvement
- Internal and external validity
- Flexible standardization

**EPB and ICF**
- Broader view of evidence because broader view of what is improvement
- Complexity of questions to be answered
- Standard yardstick by which to do judge clinical effectiveness and to do meta-analysis
- Same language clinicians and researchers
- Highest goal- improved quality of life

**Take Home Messages**
1. Functional Health IS Health
2. Communication Disorders interfere with achieving full health
3. Disability studies require comprehensive approach

**Bottom Line- EBP and ICF**
- Sackett, Rosenberg, Gray, Haynes, and Richardson (1996) state -
  - "Evidence based medicine is not "cookbook" medicine, because it requires a bottom up approach that integrates the best external evidence with individual clinical expertise and patient's choice, it cannot result in lavish, cookbook approaches to individual clinical expertise. External clinical evidence can inform, but can never replace, individual clinical expertise, and it is this expertise that decides whether the external evidence applies to the individual patient at all, and, if so, how it should be integrated into a clinical decision (p. 72)."