

Not all reviews are created equal: An overview of appraisal methods

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Why appraisal of systematic reviews?

1. Reviews are preferred sources of evidence for evidence-based practice
2. Knowledge of appraisal considerations may be helpful in planning and implementing better systematic reviews.

Goals for today

- Provide an overview of appraisal considerations
 - Schlosser, R. W., Wendt, O., & Sigafoos, J. (2007). Not all systematic reviews are created equal: considerations for appraisal. *Evidence-Based Communication Assessment and Intervention, 1*, 138-150.
- Learn of different methods and tools for appraising reviews
 - Evidence in Augmentative and Alternative Communication (EVIDAAC)
 - *Evidence-based Communication Assessment and Intervention*
 - ASHA EBP Compendium

Criteria for Appraising Reviews (Jackson, 1980; White, 1994)

1. Previous reviews need to be described and distinguished from the current review
2. The topic has to be carefully defined and delimited
3. The procedures for obtaining studies must be detailed
 - A. Domain notes
 - B. Scope notes
 - C. Selection principles notes

3A. Domain Notes

- *Domain* notes refer to all the sources used to identify the studies, including sources that failed to yield items.
 - General-purpose databases
 - Search engines
 - Journals
 - Bibliographies
 - Trials registers
 - Conference proceedings
 - Book chapters, books,
 - Grey literature, etc.

3A. Domain Notes

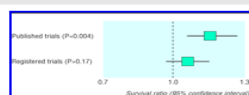
“Studies for this review were collected by hand and electronic searches. An initial search was conducted using electronic databases (MEDLINE, CINAHL, ERIC, Exceptional Child Education Resources, Linguistics and Language Behavior Abstracts, PsycINFO) and books appropriate to the topic. Reference lists of all studies retrieved from the electronic and hand searches were reviewed for additional studies. The main source for the identified studies came from journals and papers presented at professional meetings” (Schwartz & Nye, 2006, p. 3-4).

3A. Domain Notes

- Source selection bias
 - Several complementary sources fully described (not only computer searches)
 - Out of 95 included studies, 28 studies were found through means other than searching of databases (Wendt et al., 2005).
 - Database bias:
 - Medline coverage (Dickersen et al., 1994; Hyung Bok Yoo & Quebuz, 2004).

3A. Domain Notes

- Source biases
 - Publication bias (Egger & Smith, 1998)



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Analysis of published clinical trials indicates considerably better survival of patients with advanced ovarian cancer treated with combination chemotherapy compared with monotherapy with alkylating agent. Analysis of registered trials failed to confirm this

3A. Domain Notes

“The search strategies were thorough, well rationalized, and fairly comprehensive; nevertheless the number of studies that met the inclusion criteria was low and few were recent. It is possible the additional searches of unpublished literature such as theses and conference papers may have unearthed more studies that included some with more rigorous methodologies. This would have allowed the investigators to examine whether there is a publication bias with respect to this question (Rothstein, Sutton, & Borenstein, 2005). It is possible that studies which show negative effects of AAC interventions on speech production do not get published as often as do studies that do show an effect” (Balandin, 2008, p. 5; appraisal of Millar, Light, & Schlosser, 2006)

3B. Scope Notes

- ❑ Search terms used
- ❑ Geographic constraints
- ❑ Temporal constraints
- ❑ Language constraints
- ❑ “It is thus clear that linguistic exclusion criteria, in addition to being incompatible with the principle of ‘systematic overview of the totality of the evidence from all relevant unconfounded randomized trials’, can be a source of error. This source of error is much easier to control than the exhaustive search for unpublished research which authors of meta-analyses are supposed to do in order to at least partially control for publication bias” (Grégoire et al., 1995, p. 161).

3C. Selection Principle Notes

- Include any kind of editorial criteria used in accepting or rejecting studies to be reviewed
 - Type of design
 - Examples of studies with rationales as to why they were included or excluded
 - The *content* criteria for inclusion and exclusion are appropriate and fully stated
 - Log of rejected trials
 - How were decisions on the relevance of original studies made?

Criteria for Appraising Reviews

4. The degree to which the studies share the same dependent and independent variables must be reported
5. The process of data extraction from the original studies is clearly delineated
 - A. What?
 - Coding categories extracted from studies are listed and defined
 - B. Who?
 - C. How?
 - Data extracted by more than one observer, blinded to the treatment groups, blinded to the results (Cook et al., 1977)
 - How are disagreements being dealt with?

Criteria for Appraising Reviews

6. The criteria used to arrive at judgments of **effectiveness** should be stated
7. The criteria used to arrive at judgments of **quality** should be stated:
 - A. Design
 - B. Treatment integrity
 - C. Blinding
 - D. Reliability
8. The co-variation of study outcomes with study characteristics must be examined
 - Study outcomes: Effect sizes
 - Study characteristics: Gender, age, quality indicators

Tools for Appraising Reviews

- A project funded by the Agency of Healthcare Research and Quality evaluated 20 existing tools for appraising reviews, and arrived at two that met key quality criteria
 - West, S., King, V., Carey, T. S., et al. Systems to Rate the Strength of Scientific Evidence. *Evidence Report/Technology Assessment No. 47 (Prepared by the Research Triangle Institute-University of North Carolina Evidence-based Practice Center under Contract No. 290-97-0011)*. AHRQ Publication No. 02-E016. Rockville, MD: Agency for Healthcare Research and Quality. April 2002.

Tools for Appraising Reviews Cont'd

- Two tools met their criteria
 - Auperin, A., Pignon, J.-P., & Poynard, T. (1997). Review article: critical review of meta-analyses of randomized clinical trials in hepatogastroenterology. *Aliment Pharmacological Therapy*, *11*, 215-225.
 - Sacks, H. S., Reitman, D., Pagano, D., & Kupelnick, B. (1996). Meta-analysis: An update. *The Mount Sinai Journal of Medicine*, *63*, 216-224.

Appraisal of Reviews in EVIDAAC: Evidence in Augmentative and Alternative Communication

- Schlosser, R. W., Raghavendra, P., Sigafos, J. and the EVIDAAC team (2008). *EVIDAAC Systematic Review Scale*. Manuscript in preparation.*
 - *This project was in part supported by a Field-Initiated Development Grant from the National Institute on Disability and Rehabilitation Research (NIDRR), U.S. Department of Education (#H133G070150-08) to Ralf W. Schlosser. The authors, however, bear sole responsibility for the content; funding by NIDRR does not imply that the content is endorsed by the agency.
- <http://www.evidaac.org>
- <http://www.evidaac.com>

EVIDAAC

Evidence in Augmentative and Alternative Communication

Appraisal Item	Rating
1. The review addresses a clearly focused question? (e.g., was there enough information on the population studied, the intervention given, the outcomes considered?) p. (): <i>Rationale:</i>	Yes No
2. The search methods were pre-defined. p. (): <i>Rationale:</i>	Yes No
3. Multiple complementary sources that collectively minimize source selection bias are consulted (Consider databases, hand searches, ancestry searches, contacting authors, forward citation searches). p. (): <i>Rationale:</i>	Yes No

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4. An attempt was made to locate unpublished studies (e.g., trial registers, dissertations, etc.) p. (): <i>Rationale:</i>	Yes No
5. Databases are carefully selected so that they, together, minimize the potential of systematically excluding studies. p. (): <i>Rationale:</i>	Yes No
6. The search terms are stated <u>and</u> appropriate for each database. p. (): <i>Rationale:</i>	Yes No
7. The criteria for inclusion <u>and</u> exclusion of studies are pre-defined. p. (): <i>Rationale:</i>	Yes No

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Evidence in Augmentative and Alternative Communication

8. The criteria for inclusion and exclusion are appropriate given the purpose of the review. p. (): <i>Rationale:</i>	Yes No
9. A log of rejected studies is reported/available upon request. p. (): <i>Rationale:</i>	Yes No
10. A reasonable percentage of studies (>=> 20%) is evaluated reliably for inclusion by more than one rater. p. (): <i>Rationale:</i>	Yes No
11. Coding categories for data extraction are pre-defined. p. (): <i>Rationale:</i>	Yes No

12. At least a 20% sample of the data are extracted reliably by more than one rater (blinded to the treatments, if applicable) p. (): <i>Rationale:</i>	Yes No
13. Criteria used to arrive at judgments of <i>quality</i> are pre-defined and appropriate for the types of included designs. p. (): <i>Rationale:</i>	Yes No
14. Methods used to arrive at judgments of <i>effectiveness</i> for each study are pre-defined and operationalized. p. (): <i>Rationale:</i>	N/A Yes No
15. The outcomes are relevant p. (): <i>Rationale:</i>	N/A Yes No
16. The outcomes are objective p. (): <i>Rationale:</i>	N/A Yes No

17. The outcomes are homogenous. p. (): <i>Rationale:</i>	N/A Yes No
18. Confidence intervals are supplied for individual studies <u>and</u> pooled results. p. (): <i>Rationale:</i>	N/A Yes No
19. A sensitivity analysis is conducted with varying end-points (i.e., outcomes) and statistical methods or with exclusion of some studies. p. (): <i>Rationale:</i>	N/A Yes No
20. The co-variation between pre-defined study or participant characteristics and treatment outcomes is examined. p. (): <i>Rationale:</i>	N/A Yes No
Total Number of "Yes" Responses	
Total Number of "No" Responses	
Total Number of "NA" Responses	

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EVIDAAC Systematic Review Scale

1. The review addresses a clearly focused question? (e.g., was there enough information on the population studied, the intervention given, the outcomes considered?)

Definition: Consider the examples in parenthesis to arrive at your rating. A focused question will define not only the population but also the intervention and targeted outcomes. If even one of these is missing, mark "No"

EVIDAAC Systematic Review Scale

2. The search methods were pre-defined.

Definition: The “search methods” refers to the sources consulted as well as the search strategies (e.g. use of keyword searches, handsearches, etc.). “Pre-defined” means “apriori” or that the search methods are explained upfront before the authors report on included studies and results (rather than as an after thought when the authors mention in the discussion section that they searched a particular database which had not been mentioned in the Methods section).

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3. Multiple complementary sources that collectively minimize source selection bias are consulted (Consider databases, hand searches, ancestry searches, contacting authors, forward citation searches).

Definition: Source selection bias might occur when the mix of consulted sources is inadequate to minimize the potential for bias. For example, reliance on databases only in absence of other sources would render a “no” response.

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4. An attempt was made to locate unpublished studies (e.g., trial registers, dissertations, etc.)

Definition: As part of the description of search methods, the authors may describe that they aimed to locate unpublished studies and how they went about doing so. This item refers to deliberate rather than accidental attempts of locating such studies.

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5. Databases are carefully selected so that they, together, minimize the potential of systematically excluding studies.

Definition: Each database indexes only certain journals. So, in order to minimize bias it is important that the review author carefully selects databases so that together chances of bias are minimized.

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6. The search terms are stated and appropriate for each database.

Definition: The search terms used should be listed per data base. A listing of search terms in general without cross-referencing it with certain databases would trigger a “no” response.

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7. The criteria for inclusion and exclusion of studies are pre-defined.

Definition: The criteria for inclusion and exclusion need to be stated upfront or apriori so that the reader knows exactly what it takes for a study to qualify for inclusion. Although in most cases it will be necessary to report criteria for exclusion in addition to criteria for inclusion (in order to get a complete sense of the decision-making), if the mere listing of inclusion criteria leads to an adequate operational understanding of what was included and excluded (consider your response to # 8 below), then it would be fine if the review did not report exclusion criteria.

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8. The criteria for inclusion and exclusion are appropriate given the purpose of the review.

Definition: Are the constraints (geographic, temporal constraints, linguistic, study-design, population, intervention, and outcome – see Schlosser, Wendt, & Sigafoos, 2007 for descriptions of these) stated suitable to the purpose of the review? Are the constraints omitted consequential given the purpose of the review?

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9. A log of rejected studies is reported/available upon request.

Definition: This is self-explanatory

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10. A reasonable percentage of studies ($\geq 20\%$) is evaluated reliably for inclusion by more than one rater.

Definition: the level of inter-rater agreement should be a value of greater than 0.75 Cohen's Kappa or Fleiss' kappa (when more than 2 raters are involved) or greater than 80% percent agreement

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11. Coding categories for data extraction are pre-defined.

Definition: The coding categories refer to the types of information or data that are being extracted from each included study. These categories need to be stated upfront/apriori.

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12. A sample of at least 20% of the data are extracted reliably by more than one rater (blinded to the treatments, if applicable)

Definition: To answer this in the affirmative, the level of inter-rater agreement should be a value of greater than 0.75 Cohen's Kappa or Fleiss' kappa (when more than 2 raters are involved) or greater than 80% percent agreement.

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13. Criteria used to arrive at judgments of *quality* are pre-defined and appropriate for the types of included designs.

Definition: This refers to criteria used for appraising the quality (i.e., how good) of the included studies, including study design, reliability, treatment integrity, blinding allocation, etc. In rating this item, consider whether the criteria are stated upfront and whether they are appropriate/sufficient to the included treatment designs.

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14. Methods used to arrive at judgments of *effectiveness* for each study are pre-defined and operationalized.

Definition: The criteria used to determine effectiveness from the original studies such as “effect size,” standard mean difference, percentage of non-overlapping data etc., need to be stated upfront. The criteria need to be operationalized in a way that allows someone to replicate the judgment. If the criteria are stated upfront but not operationalized mark “no.”

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15. The outcomes are relevant (to the intervention & purpose), homogenous (i.e., small variability around the mean among the to-be-meta-analyzed studies).

Definition: This applies to meta-analyses only. The outcomes need to be relevant to the intervention and purpose of the review.

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- 16. The outcomes are objective

Definition: This applies to meta-analyses only. The outcomes need to publicly verifiable.

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- 17. The outcomes are homogenous (i.e., small variability around the mean among the to-be-meta-analyzed studies).

Definition: This applies to meta-analyses only. The outcomes present small variability around the mean among the to-be-meta-analyzed studies..

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18. Confidence intervals are supplied for individual studies and pooled results.

Definition: This applies to meta-analyses of group designs only (as of yet it is unknown whether confidence intervals can be produced for single-subject experimental designs). In order to mark “yes” confidence intervals need to be reported for both types of results. If confidence intervals are provided only for individual studies but not for pooled results or vice versa or if they are not reported at all, mark “no.”

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19. A sensitivity analysis is conducted with varying end-points (i.e., outcomes) and statistical methods or with exclusion of some studies.

- *Definition:* Applies to meta-analyses only. Refers to a re-analysis of data by systematically/gradually removing outliers in terms of effect size, and monitoring its impact on aggregated effect sizes.

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20. The co-variation between pre-defined study or participant characteristics and treatment outcomes is examined.

Definition: This applies to meta-analyses only. Analyses are implemented to determine whether treatment outcomes vary with upfront stated study characteristics (e.g., design, treatment integrity) or participant characteristics (e.g., severity, diagnosis).

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Appraised Reviews: *EVIDAAC*

- Millar, D. C., Light, J. C., & Schlosser, R. W. (2006). The impact of augmentative and alternative communication intervention on the speech production of individuals with developmental disabilities: A research review. *Journal of Speech, Language, and Hearing Research*, 49, 248-264.
- Score: 9 out of 14
- Appraisal considerations
 - Publication bias
 - Database bias
 - Search terms
 - Inclusion agreement
 - Log of rejected studies

EVIDAAC
Evidence in Augmentative and Alternative Communication

Appraised Reviews: *EBP Compendium*

- Millar, D. C., Light, J. C., & Schlosser, R. W. (2006). The impact of augmentative and alternative communication intervention on the speech production of individuals with developmental disabilities: A research review. *Journal of Speech, Language, and Hearing Research*, 49, 248-264.
- Score: 5 out of 5

EBP Compendium: Summary of Systematic Review

The Impact of Augmentative and Alternative Communication Intervention on the Speech Production of Individuals With Developmental Disabilities: A Research Review

Millar, D.C., Light, J.C., et al.

Journal of Speech, Language, and Hearing Research, 2006. 49(2): 248-264

Indicators of Review Quality:

The review addresses a clearly focused question	Yes
Criteria for inclusion of studies are provided	Yes
Search strategy is described in sufficient detail for replication	Yes
Included studies are assessed for study quality	Yes
Quality assessments are reproducible	Yes

Description:

Meta-analysis

Questions Addressed:

What are the effects of augmentative and alternative communication on the speech production of individuals with developmental disabilities?

Population:

Individuals with developmental disabilities who had significant speech impairments (ages ranged from 2 to 60 years)

Intervention/Assessment:

Augmentative/alternative communication

Number of Studies Included:

23

Years Included:

1975 - 2003

Findings:

Of 27 participants, speech increased for 24 (89%), and remained unchanged for 3 (11%). None of the participants was observed to have a decrease in speech production.

Conclusion:

"Clinicians and parents should not hesitate to introduce AAC interventions to individuals with developmental disabilities whose speech is inadequate to meet their communication needs." (p. 258)

Sponsoring Body:

Unknown

Appraised Reviews: Evidence-Based Communication Assessment and Intervention

- Balandin, S. (2007). Unaided AAC interventions such as manual signs appear to facilitate the development of speech. Rigorous research is required to establish the effects of AAC systems and interventions on speech production across a variety of populations with developmental disabilities, *Evidence-Based Communication Assessment and Intervention, 1*, 63-64.
 - Millar, D. C., Light, J. C., & Schlosser, R. W. (2006). The impact of augmentative and alternative communication intervention on the speech production of individuals with developmental disabilities: A research review. *Journal of Speech, Language, and Hearing Research, 49*, 248-264.

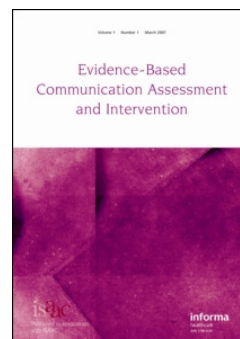
Appraising Systematic Reviews for *Evidence-based Communication Assessment and Intervention*

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The Ninth Annual International
Campbell Collaboration
Colloquium
Oslo, Norway, May 18-20, 2009

Evidence-based Communication Assessment and Intervention

- Selects and appraises the latest and highest quality studies and reviews related to
- Assessment, intervention, diagnosis, and prognosis published across 60+ professional journals in speech-language pathology and related fields
- Publishes structured abstracts on research evidence, original articles advancing review methodology, experiential accounts by clinicians, critically appraised topics
- Published by Psychology Press
- Editors: Ralf W. Schlosser & Jeff Sigafoos



***EbCAI* Appraisal of Systematic Reviews**

Systematic Review Article:

- Moss, A., & Nicholas, M. (2006). Language rehabilitation in chronic aphasia and time postonset: A review of single-subject data. *Stroke*, 37, 3043-3051.

Abstract:

- Wendt, O., Koul, R., & Hassink, J.M. (2008). Time postonset does not impact response to treatment in patients with chronic aphasia who are ≥ 1 year after stroke [Abstract]. *Evidence-based Communication Assessment and Intervention*, 2(4), 199-202. Abstract of Moss, A., & Nicholas, M. (2006). Language rehabilitation in chronic aphasia and time postonset: A review of single-subject data. *Stroke*, 37, 3043-3051.

General Structure of *EbCAI* Abstract for Reviews

- Title
- Original review reference
- Source of funding
- Commentary author(s) and affiliations
- Question
- Methods

General Structure of *EbCAI* Abstract for Reviews (cont.)

- Methods
 - Design
 - Data sources and search strategies
 - Study selection and assessment
 - Outcomes
 - Outcome measure
- Main results
- Authors' conclusions
- Commentary

EbCAI Abstract Example: Wendt, Koul, & Hassink (2008)

- Title: *Time postonset does not impact response to treatment in patients with chronic aphasia who are \geq 1 year after stroke*
- Commentary Authors: Oliver Wendt¹, Rajinder Koul², and Johanna M. Hassink¹
¹Department of Educational Studies, and Department of Speech, Language, and Hearing Sciences, Purdue University, West Lafayette, IN, U.S.A.;² Department of Communication Disorders, Texas Tech Health Sciences Center, Texas Tech University, Lubbock, TX, U.S.A.

***EbCAI* Abstract Example (cont.): Wendt, Koul, & Hassink (2008)**

- Abstracted from: Moss, A., & Nicholas, M. (2006). Language rehabilitation in chronic aphasia and time postonset: A review of single-subject data. *Stroke*, 37, 3043-3051.
- Source of funding: Not reported

***EbCAI* Abstract Example (cont.): Wendt, Koul, & Hassink (2008)**

- Question:
 1. Does the amount of time postonset of aphasia at the initiation of intervention affect response to treatment in the chronic phase (i.e., \geq one year postonset [ypo])?
 - a) Is treatment after 1 ypo indicated?
 - b) What methodological aspects need to be resolved to answer this question?
- Methods:
 - Design: Systematic review

***EbCAI* Abstract Example (cont.): Wendt, Koul, & Hassink (2008)**

- Data sources and search strategies:
 - General-purpose databases from 1985 to 2003
 - Cochrane Database of Systematic Reviews
 - Education Resources Information Clearinghouse
 - MEDLINE & PsycInfo
 - Five search terms: ‘aphasia,’ ‘follow-up studies,’ ‘language,’ ‘recovery,’ and ‘treatment.’
 - VA Field Advisory Council Evidence-Based Treatment Outcomes was also reviewed.
 - No hand search and/or ancestry searches

***EbCAI* Abstract Example (cont.): Wendt, Koul, & Hassink (2008)**

- Study selection and assessment:
 - Individual data for patients with aphasia who were treated for either impairment in oral expression or auditory comprehension and were at least one year postonset of aphasia at the time of the study
 - More specific study inclusion criteria:
 - (1) Adequate experimental control
 - (2) Studies needed to provide time postonset data for each participant. The intervention program needed to target a spoken language disorder and be provided by a speech-language pathologist in a face-to-face interaction.

***EbCAI* Abstract Example (cont.): Wendt, Koul, & Hassink (2008)**

- More specific study inclusion criteria (cont.):

- (3) Pre-therapy and post-therapy scores had to refer to change in either oral expression or auditory comprehension.
- (4) Studies were excluded if they targeted psychological, functional, and emotional difficulties.
- (5) Studies were excluded if they focused on caregiver's communication abilities.
- (6) Group therapy studies were excluded as well.
- (7) Studies that did not provide a means for calculating maximum scores for outcome measures were excluded.
- (8) In addition, two studies were excluded because the journals in which they were published could not be located.

⇒ final set of 23 studies with a total of 57 participants

***EbCAI* Abstract Example (cont.): Wendt, Koul, & Hassink (2008)**

● Outcomes

- Changes in oral expression or auditory comprehension as measured by scores on standardized tests
- Absolute change in performance on therapy tasks (not measured by standardized tests)

● Outcome measure(s)

- Percentage of maximum possible change (%MPC)
- Determined by dividing the difference obtained between the (maximum possible score and pretherapy score) by the difference obtained between the (final score and pretherapy score); multiplied by 100 to derive a percent value

***EbCAI* Abstract Example (cont.): Wendt, Koul, & Hassink (2008)**

- Main results
 - Studies reported improved performance for every participant except one participant
 - Time post-onset had no effect on %MPC scores indicating response to therapy may not be affected by time postonset
- For studies targeting verbal expression ($n=47$), correlational analysis did not detect a significant relationship between time postonset and %MPC
- For studies targeting auditory comprehension, statistical analyses could not be performed, but wide variability was observed for %MPC scores

***EbCAI* Abstract Example (cont.): Wendt, Koul, & Hassink (2008)**

- Authors' conclusions
 - Therapy considerations should not be influenced by the factor of time postonset
 - Time postonset may interact with other aspects, such as severity of aphasia, aphasia type, etc.
 - Impossible to determine postonset effects after eight years due to a lack of relevant treatment literature
 - Lack of published data on patients who do not make progress (“file drawer problem”)
 - Possible interaction between aphasia type & therapy type
 - A major problem is comparing greatly different measures of treatment response

***EbCAI* Abstract Example (cont.): Wendt, Koul, & Hassink (2008)**

- Commentary

- Extent of recovery after the first year is a matter of debate among clinicians and is yet to be resolved
- Noteworthy strengths:
 - Well-rounded context for this review
 - Review questions are clearly focused
 - Search methods pre-defined & multiple databases used
 - Criteria for inclusion and exclusion are stated explicitly
 - Provide the coding categories used for extracting data
 - Clearly describe the implementation of the selected outcome metric along with data analysis decisions

***EbCAI* Abstract Example (cont.): Wendt, Koul, & Hassink (2008)**

- Limitations:
 - Publication bias mentioned, but not no attempts to search for unpublished literature or ancestry searches or hand-searches
 - Reliability of study inclusion/exclusion decisions
 - Lacks critical appraisal of study quality
 - Inclusion of pre-experimental studies, i.e., A-B designs
 - Outcome metric (%MPC) for the aggregation of vastly different outcome measurements – not validated, lacks concrete guidelines for interpretation
- Bottom line: patients with chronic aphasia respond positively to aphasia treatment, irrespective of the time post-onset

Guidelines for *EbCAI* Abstract

General issues to consider in completing the abstract:

- a. Is the title of the structured abstract informative?
- b. Is the stated question accurate, concise, and comprehensible?
- c. Is the original reference provided?
- d. Is the contact e-mail of the corresponding author of the original reference provided?
- e. Is the funding source (if any) for the original work identified?

Guidelines for Abstract (cont.)

- f. Does the Methods section contain and address all study-relevant subheadings. A review should have the subheadings of (1) Design, (2) Data sources and search strategies, (3) Study selection and assessment, and (4) Outcomes.
- g. Is the information presented in the Methods section accurate?
- h. Are the main results summarized accurately and succinctly?
- i. Does the commentary raise important and relevant methodological issues that help the reader get a good sense of the quality of the evidence?

Guidelines for Abstract (cont.)

- l. Does the commentary state the clinical bottom line in a way that makes sense in light of the raised methodological issues
- m. Is the length of the abstract appropriate (no more than 5 pages double-spaced, 1 inch margins on all sides)

Some Experiences and Advice From a Reviewer's Perspective

- Know what you are talking about!
 - Have to be an expert on the topic
 - Invite co-author(s) with further expertise if necessary
- Don't "trash" original authors' work!
 - Remember conducting a sound and comprehensive systematic review is not easy
 - Quality of evidence and standards vary from field to field
 - Point out the strengths but be clear on limitations and applicability/generalizability

Some Experiences and Advice (cont.)

- Remember you are writing for a more practitioner-oriented audience!
 - Avoid unnecessary technical jargon
 - Come straight to the point, don't get off on a tangent (even if there is more to say)
 - Stick to the practical issues, not so much research implications and methodological aspects
 - If evidence permits, make sure there is a strong clinical bottom line (what should practitioners do now based on the results from this review?)

Some Experiences and Advice (cont.)

- Involve your advanced graduate students and post-docs!
 - Beneficial educational experience
 - Additional reviewers add fresh perspectives
- Look out for systematic reviews that interest you and propose an abstract!
 - Most beneficial for you
 - Most likely to result in high quality abstract due to your expertise and motivation

Using the EVIDAAC Scale to Guide the Process of Conducting a Systematic Review

The Ninth Annual International Campbell Collaboration
Colloquium
Oslo, Norway, May 18-20, 2009

Miriam Chacon Boesch, MS
Department of Educational Studies
Purdue University

EVIDAAC as a Guiding Tool

- Boesch, M. C., & Wendt, O. (in preparation). *Using Functional Communication Training to reduce aggressive behaviors in autism: A systematic review.*
- EVIDAAC scale used apriori during the planning stages and conduction of review
- Provides overview and structure for a reviewer on the review process (especially for a new reviewer)
 - Ensures that all critical elements are being addressed
 - Develop and refine review protocol
 - Educational benefit for graduate/PhD students

Functional Communication Training (FCT)

- Systematic intervention in which the challenging behavior is replaced by more socially appropriate behavior (Sigafos & Meikle, 1996)
 - replacement behavior is intended to serve the same purpose as the challenging behavior (Carr, 1988)
 - underlying notion that challenging behaviors are communicative intents (Durand, 1993)

Purpose of Review

- Evidence Based Practice (EBP)
 - provide evidence about the effectiveness of FCT for practitioners
 - provide a systematic review using quantitative measures to determine treatment effectiveness
- Research Question
 - Is FCT an effective treatment in decreasing aggressive behaviors in individuals with autism?

Inclusion Criteria

Out of 39 studies, 16 met the inclusion criteria:

- FCT was operationally defined
- Subjects were diagnosed as having autism (other PDD's excluded)
- Single-subject research design
 - true experimental design only, no pre-experimental
- Published in English language in peer-reviewed journals from 1976 - Spring 2008
- Aggressive behaviors were targeted in the intervention
- Data had to allow for calculations of non-parametric measures

Findings

- FCT ranged from fairly effective to highly effective in the studies reviewed
- FCT yielded greater behavior decrease when speech was used as a replacement behavior, however the mean PRD shows less variability
- Overall, FCT was effective in reducing aggressive behaviors for the participants in these studies

TABLE	Mean	
	PND	PRD
speech	98%	98%
manual signs & gestures	88%	87%
graphic symbols	77%	92%

Applying EVIDAAC

Appraisal Item	Rating (yes, no, or N/A)	Appraisal Item	Rating (Yes, No, or N/A)
1	Yes	9	Yes
2	Yes	10	No
3	Yes	11	Yes
4	No	12	No
5	Yes	13	Yes
6	Yes	14	Yes
7	Yes	15-20	N/A
8	Yes	Total "Yes" Responses = 11	

Applying EVIDAAC: Results

- 11 out of 14 appraisal items were met
- Item 4, 10, & 12 were not addressed in this systematic review because:
 - 4. ("locate unpublished studies"): searched but due to time constraints, only published studies were analyzed & reported
 - 10. ("inclusion reliability by 2nd rater") will be addressed in the future when all studies are located (published/unpublished)
 - 12. ("coding by 2nd rater"): coding procedures are currently being refined & 2nd rater will be used

Future Modifications and Extensions

- **Master theses & dissertations are currently under review and will be included in the future**
- Inclusion of studies in which FCT is part of a treatment package is warranted & will be analyzed in the future
- **Reliability analysis**
 - inclusion of study coding
 - quality assessment
- Use of 3rd statistic
 - Percentage of Zero Data (PZD) for measuring behavior suppression
- PRD needs to be developed further
 - no conventions available for score interpretation regarding degree of effectiveness

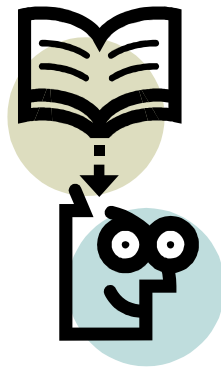
Conclusion

- In the FCT review, the EVIDAAC scale was instrumental in
 - assessing the quality of the review
 - providing solid guidance to increase its thoroughness
 - guiding the process so that many of the components were well-defined
 - identifying areas that were underdeveloped
- ⇒ using the EVIDAAC scale, the quality of the FCT review increased

Conclusion (cont.)

- In the FCT review, the EVIDAAC scale was instrumental in
 - pointing out missing information that is necessary in a well conducted systematic review

Questions



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