Evidence based practice in relation to children with communication impairment.

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Aims for the Seminar

1. Definition and critique of EBP
2. Hierarchy of research evidence
3. EBP and communication interventions
4. Where there is evidence…
5. Where there isn't
6. Some ways of contributing to EBP

Defining Evidence–Based Practice

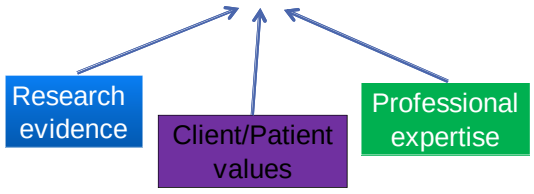
The integration of

- best available research evidence
- with professional expertise
- and client/patient values

(adapted from Sackett et al, 2000)

The EBP Triad

(adapted from Sackett et al, 2000)



Using the Evidence

- Think of a context where you use evidence in your personal life:
  - Hotel or restaurant reviews on "Trip Advisor."
  - Checking for side effects of drugs on the internet.
  - Looking at the ratings of schools, universities, banks.
- How do you use this evidence?
  - I believe every word.
  - I merge evidence with my own judgement.

Why is EBP important?

- To provide the best possible interventions.
- To avoid unethical use of ineffective interventions.
- To meet increasing demands for accountability.
- To provide a common language for use among multidisciplinary teams, and with parents, clients and other stakeholders.

BUT… re best available evidence

- Whose evidence?
- Publication bias (Dickersin, 1990; Chalmers et al, 1990; Fanelli, 2011)
- What research gets funded?
- **An absence of evidence does not mean negative evidence.**

BUT…. re professional expertise

- Who are the experts?
- Are we right? (Salmond, 2007; Vreeman & Carroll, 2007)
- What factors inform and constrain our professional decision-making?
- Eclecticism versus protocol driven or manualised interventions?

BUT…. re service user values

- In the era of "consumer choice" is there a tension between **choice** and **evidence**?
- What role do clients/family members want? (e.g. Watts Pappas et al., 2008)
- How are comfortable are we with involving clients/family members in decision-making?
- How can we ensure clients/family members have the knowledge and skills for active engagement?

Levels of Evidence

Level	Type of Evidence
1a	Systematic Review or Meta-Analysis of RCTs
1b	A single Randomised Controlled Trial (RCT)
2a	Systematic Review of Cohort Studies
2b	A single Cohort Study
3a	Systematic Review of Case Control studies or Quasi Experimental studies
3b	A single Case Control Study or Multiple Baseline SCED design
4	Non experimental descriptive studies eg correlation studies and other single case experimental designs
5	Expert opinion, textbooks, "first principles" research

Evidence hierarchy grading scheme

A (levels 1a&b) At least one randomised control trial as part of the body of literature of overall good quality and consistency addressing the specific recommendation.

B (levels 3a&b, 4) Well conducted clinical studies but no randomised clinical trials on the topic of recommendation.

C (Level 5) Evidence from expert committee reports or opinions and/or clinical experience of respected authorities. Indicates absence of directly applicable studies of good quality.

What factors influence *your* use of evidence?

- Current knowledge & experience?
- Service users'/other stakeholders' apparent preferences?
- Context?
- Aims?
- Measurements/assessment data?
- Resources?
- Access to research literature?
- Availability of relevant evidence?

Two Challenges to EBP

- **Production of knowledge**

Is the evidence base in communication impairment sufficient to inform practice?

Cochrane and other systematic reviews on aspects of language delay, aphasia, Parkinson's, acquired brain injury, cerebral palsy ...

- **Research – Practice Gap**

How can therapists and teachers access the evidence? Do we have the skills to understand and use it?

Result? In my area: a dearth of evidence

- Many interventions in learning disabilities are 'of uncertain value and which have never been tested' (Parmenter, 2001, p.191).
- In relation to PMLD, "researchers have shown a limited interest in providing an empirical base for these interventions" (Vlaskamp & Nakken, 2008, p.334).
- "randomized trials are rarely applicable for students from a low incidence population" (Snell, 2003, p.143).

What can we do about this?

- Make the best use of what there is.
  - Look at available sources.
  - See worked example.
- Influencing what is researched.
- Contribute to the evidence base.
  - SCEDs; AAC evidence base.

Sources of evidence 1

- Norwegian sources of synthesised evidence?
- AACKnowledge – Communication Matters (ISAAC UK) AAC database.
  - http://www.aacknowledge.org.uk/
- Evidence-Based Communication Assessment and Intervention journal – appraises the latest research on communication.
  - http://www.psypress.com/journals/details/1748-9539/

Sources of evidence 2

- Speechbite –Speech Pathology Database for Best Interventions and Treatment Efficacy
  - www.speechbite.com
- What Works - database of evidenced interventions to support children's speech, language and communication
  - www.thecommunicationtrust.org.uk/projects/what-works.aspx
- Cochrane reviews - www.cochranelibrary.com/

Making the best of what there is

- Reviews identified six approaches in PMLD with *some* evidence base.
  - The best three: **Intensive Interaction**, **Switch-based**, **Objects of Reference**.
- A survey of approaches used by speech & language therapists (Goldbart et al, 2014)
- Interview and focus group study identified parents' views (Goldbart & Caton, 2010)

www.mencap.org.uk/node/6185#node-6185

Intensive Interaction (II)

- Developed by Nind and Hewett (e.g. Hewett & Nind, 1998; Nind & Hewett, 2006).
- Based on the highly responsive, individualised interactions between babies and their caregivers.
- Described primarily as a way of building up enjoyable interactions between people with complex communication needs and significant others, increasing sociability.
- Predominantly used in UK and Australia.

Intensive Interaction: Evidence

- A growing number of formal evaluations since Nind (1996) including some using Single Case Experimental Designs.
- Positive changes in observable behaviour related to interaction ability (Leaning & Watson, 2006).
- II results in rapid increases in social engagement (Zeedyk et al., 2009).
- Care staff can learn to use II but find it hard to embed in daily routine (Samuel et al., 2008).
- Level of evidence: mainly 3b and 4. Grade B.

Switch-based interventions

- Using simple switches or other cause & effect devices to help people with pmld understand that their actions have consequences, i.e. intentionality.
- Intentionality can be seen as a step towards intentional communication.
- Can enable people with PMLD to gain the attention of others and understand, make and convey choices.
- May lead into more advanced AAC, i.e. augmentative & alternative communication

Switch-based approaches: evidence

- Lancioni et al. 2001 review paper: 20 studies, 1 to 15 pts. Mainly multiple baseline. Largely positive results.
- Typically single case designs but with few participants.
- People with PMLD can learn to make and convey choices, (Lancioni et al., 2006a & b).
- and to gain the attention of other people for social contact, (Lancioni et al., 2009)
- Level of evidence: 3b. Grade B.

Objects of Reference

- To signal what is about to happen and to offer choices.
- A concrete link into language, through increasingly abstract representations:
- **Index**: objects are used which are a direct part of the event they refer to.
- **Icon**: using an object which has a concrete relationship to the action or event, but is not part of the event.
- **Symbol**: using a more abstract representation; a transition into using a symbol system.

Objects of Reference: evidence

- Only one published evaluation with this client group: Jones et al. (2002) showing modest success with adults.
- Very large number of web documents including school guidance, courses and information sheets, but many bear little relation to the version which was evaluated.
- Type of evaluation –small quasi experimental study
- Level of evidence -3b/4 BUT only one study.

Professional expertise

Survey of UK Speech & Language Therapists working with children and adults with PMLD.

Aims:

- To determine what **communication intervention approaches** are used by SLTs working with children and adults with PMLD.
- To explore **SLTs' decision-making** regarding choice of interventions.

(Goldbart et al., 2014)

Frequency of Use by SLTs (n=55)

(Goldbart, Chadwick & Buell, 2014)

Intervention	Overall		Adult		Child	
	N	%	N	%	N	%
Intensive Interaction	47	85.5	32	91.4	23	79.3
Objects of Reference	40	72.7	27	77.1	20	69.0
Switch-based Cause & Effect	6	10.9	5	14.3	2	6.9

Clients' or their proxies' values

It is difficult to access views and values of people with PMLD (Ware, 2004).

- Observational approaches (e.g. Grove et al., 2000; Coupe-O'Kane & Goldbart, 1998)
- Physiological measures (Vos et al., 2010)
- Talking Mats (Cameron & Murphy, 2008)
- Proxy perspectives: family carers & direct support staff (e.g. Goldbart & Caton, 2010; Windley & Chapman, 2010)

Mencap study: parents' view (n~30)

- "Communication with people with the most complex needs is most successful with familiar, responsive partners who care about the person with whom they are communicating."
- Few intervention strategies were identified by parents: Intensive Interaction=2, Switching=2, Objects of Reference=1

What would you choose?

Intervention approach	Research evidence	Clinical expertise	Parent values
Switching	3b	Limited support 10.9%	Limited support
Intensive Interaction	3b/4	Strong support 85.5%	Limited support
Objects of Reference	V. limited 4?	Strong support 72.7%	Limited support

Influencing Research: PICO

- **Patient Group**: who will be the subject of the research?
- **Intervention**: what will be researched?
- **Comparator**: against which the intervention will be compared.
- **Outcome/s** to be measured: why the research will be important for patients/clients.

- For AAC research Schlosser et al., (2007) suggest PESICO:
- Person, **Environments**, **Stakeholders**, Intervention, Comparison, and Outcome.

What research question would you like answered?

- Person: Who are the participants?
- Environments: What is the setting?
- Stakeholders: Who are the other stakeholders or communication partners?
- Intervention: What is the intervention, teaching strategy or therapy?
- Comparison: What are you comparing it with?
- Outcome: What outcome will you measure?

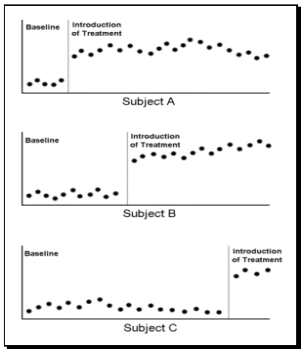
Contributing to the evidence base

- Resources may not be available to undertake large scale studies especially in low incidence conditions.
- Practitioners may have invaluable data or the potential to collect such data.
- Single Case (or Single Subject) Experimental Designs (e.g.Kazdin, 2011; Romeiser-Logan et al., 2008) provide scope for small scale studies to contribute meaningfully to the evidence base.

Single Case Experimental Design

- "deliberate, systematic, and a priori research designs that have the potential to minimize threats to internal validity and contribute to external validity through the process of replication." (Schlosser, 2009)
- Each participant serves as their own control
- Practitioners can contribute to the evidence base (Cakiroglu, 2012; Horner et al., 2005)

MB design across participants (from http://allpsych.com/researchmethods/multiplebaselines.html



Communication Matters Case Study Database

- Case study template to support experimental design in AAC and AT (Murray et al., 2014)
- Template allows consistent detailed information to be uploaded to a database.
- Database holds detailed information on approaches to treatment that practitioners can interrogate on submission of approved request.
- Since May 2013, 35 case studies uploaded.
- You can apply to have your case study uploaded.

Conclusions

- A lack of evidence is not excuse!
- We need to be creative in working out ways
  - **to use the evidence we have**,
  - **generate new evidence** and
  - **influence what research is carried out**.

Thank you

- Any questions?
- Contact me at j.goldbart@mmu.ac.uk