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Researching intervention: how much, by whom and what next?

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Current issues and Controversies in Specific Language Impairment

Queen Margaret University 27th May 2009.

A snapshot

- Google Scholar search 20th May 2009 - ‘specific language impairment intervention studies’ since 2009.
- Summary of the first 20 titles retrieved (of c.4370 English pages!)
- Unsystematic, unscientific, biased - but fast! (0.31 seconds!)
- Weave in the findings to the questions in the title.

Summary: first 20 titles

Child difficulty:	Language impairment/ delay included **N = 12**	Literacy difficulties: N = 5	Speech disorders/ other N= 3
Of the 12 LI papers:	Intervention trial **N = 2**	Explanatory/ predictive factors (genetic, cognitive processing etc.) N = 9	Commentary/ N = 1

The two trials:

- Both involved selected pre-school children, one with expressive language and the other with receptive-expressive language impairment
- One involved parent-based intervention, the other individual teaching of grammar markers from an SLT
- Both had smallish numbers, and were controlled by delayed a intervention condition.

Just a snapshot

- This brief snapshot of activity may not be typical.
- But I suggest it shows some of the factors currently relevant in intervention research.
- And you certainly get a lot of information in 0.32 seconds!!

What the snapshot suggests.

- If it is anything like typical, the pattern is I think telling.
- Language impairment is strongly associated with literacy difficulties, and literacy has a strong research focus.
- Other clinical conditions are also associated, and studied alongside SLI.
- Definitions and labels however continue to be problematic.

What this suggests contd.

- Most studies concerned with factors underlying or associated with language impairment, working towards an explanation or theoretical conceptualisation of SLI.
- Intervention studies continue to emerge but remain relatively few in number and small in scale.
- Implications for intervention studies will be discussed in a UK and particularly Scottish context.

Why this balance?

- ‘The academy’ recognises and privileges the importance of theoretical accounts of language and cognitive functioning over intervention studies.
- Many disciplines - psychology, medicine, philosophy and education - seek theoretical explanations and conceptulisations of language and language impairment to further their studies of human functioning.
- Many academics therefore research in these areas, with many fewer concerned with intervening, and indeed relatively few qualified to try.
- Few UK professionals or academics have research interests in both language and literacy.

Why this balance? contd.

- It is expensive to conduct intervention trials.
- Research governance and ethics procedures are complex, and must be completed before trials start.
- Setting-up, planning and staffing the early stages of trail development is difficult.
- Interventions have to be conducted by appropriately informed and qualified people who are expensive to recruit and manage.
- Trials tend to be lengthy, with high administrative and record-keeping costs throughout.

Why this balance? contd.

- Securing research funds can be difficult.
- Local public services have very limited research budgets.
- Research funding bodies may have different priorities, or see intervention trials as a relatively local matter.
- Children with language impairment usually receive both (pre)school and health service provision, and research understandings differ between the two public services.

Supportive factors

- Despite such difficulties, many factors in the UK support rather than impede intervention research.
- The most significant factor, in my view, is that relevant UK professionals who are concerned with children with (S)LI (i.e. SLTs and paediatricians) work for the NHS.
- The NHS is committed to evidence-based practice.

Supportive factors contd.

- There has also been considerable political understanding of the need to find ‘good ways’ to support children with language impairments, and to secure evidence of efficacy.
- The recent Bercow review in England of services for children with speech, language and communication needs has resulted in research investment.
- This alas is not replicated in Scotland, but the studies when completed should be relevant.

Supportive factors contd.

- Public health services are universal, and accessed by most of the population, giving access to complete populations.

- Health and education co-operate, with service integration and co-working expected and indeed mandated.

- Some parts of the UK, and including much of Scotland, has a relatively stable population, enabling follow-up and familial studies.

Supportive factors contd.

- Research governance and ethics procedures are time consuming to navigate, but they have been refined, and are clear, and can be used to co-ordinate procedures across services.
- Many NHS Trusts have Research & Development officers to support local investigators.
- There are inter-university research collaborations in place.
- Methodological considerations in undertaking systematic review and trials sequences have been established.

Supportive factors contd.

- There is a skilled, registered and professional workforce, educated to degree level, individually committed to professional ethics and trained in research methods.
- Nonetheless, the case is that there are relatively few trials in the field of speech, language and communication disorders in general, or in SLI.
- Consider other relevant factors.

What is problematic?

- Effect sizes (the amount of change that can be detected) tend to be small in interventions that aim to improve language skill or function. Intervention effects also tend to disappear over time.
- Small effects do raise questions of the value of intervening.

- Large numbers of similar children are needed in a trial, and large numbers of families and services must be accessed and agree to be involved. These should also be representative.

- Child services are typically organised and managed in the UK in relatively small units.

What is problematic? contd.

- Intervention procedures must be planned and documented, and above all carried out to schedule.
- It may be difficult to ensure an intervention is consistently offered, especially when involved in indirect work via advice, risk management and consultancy, to parents or teachers.
- Current intervention studies suggest considerable amounts of intervention are needed to be effective. This can also be very difficult to secure.
- Ignoring current service delivery modes however risks charges of researching unrealistic practices, and clinical irrelevance.

What is problematic? contd.

- Expressive language problems appear to be most responsive to intervention, but receptive difficulties are associated with the most severe and ongoing impairments to education and life chances.
- Intervention research should be based on interventions of probable efficacy, giving a circularity problem - few effective interventions, and limited opportunity to research to find new ones.

What is problematic? contd.

- Early interventions may show effects, but are confounded by normal language development.
- Language skill-based intervention may still be effective later, but at some point, gains in activity and participation rather than gains in language scores would be sought.
- We have very few established outcome measures for activity and participation

And the last problem!

- There is a big risk in evaluating an intervention.
- It might be shown to be less efficacious than had been hoped.
- If an individual is personally committed to the outcome, or professionally committed to the intervention programme, this can be a huge disappointment.
- It can be more comfortable not to know.

Back to the title!

- From here, go back to the title questions:

- Intervention research - how much, by whom and what next?

How much?

- Clearly many more high-level RCTs.
- But also more pooling of available data, into meta-analyses and regular updates of systematic reviews.
- Also more lower-level controlled studies, to give suggestions about promising interventions.
- Issue also around the amount of intervention trialled - with children showing gains in research studies often receiving more language intervention than is currently offered in UK practice.

By whom?

- Someone with not a lot to lose if outcomes do not suggest efficacy!
- Large-scale studies need an experienced multi-professional research team: there are technical issues to be understood and accommodated. Intervention research is no longer (if ever) an amateur pursuit.
- Administrative and secretarial support are also needed, and there are few ‘trial centres’ as yet.
- These suggest HEI support is needed.
- However, evaluative, small scale and cohort studies are within the capabilities of local services.
- These are essential, and are where new therapies will originate.

What next?

- Persistence and determination to further develop intervention research.
- Issues around setting up and managing projects will be discussed, and the content of interventions.

What next - management

- Collaborative partnerships will be needed - and ideas will have to be shared, and links made to set up trials. This is particularly true for small services.
- Those involved will have to agree to ‘comply’ with trial procedures - not always popular with independent practitioners.
- We need to stop being apologetic about seeking to fund the full costs of research.
- If a trial series shows or develops effective practice, it is probably worth the research costs. And the ongoing interventions costs can be estimated against the benefits expected.
- If it shows current practice to be ineffective, we don’t need to pay anyone to do that again!

What next - management contd.

- Appropriate numbers of children and appropriate controls are essential.
- Intervention research is difficult, and undertaking it is a ‘real job’, so not always something that a clinical service can take on as an extra responsibility.
- However, it would be very helpful to construct a guide for clinicians about the ‘whole story’, at least in the SLT field, where there is no suitable text to hand.

What next - content

- We need to update systematic reviews at least every two years, to include insights from new studies. We need to inspect ‘promising interventions’ as well as RCTs.
- We need to develop and agree upon outcome measures that consider activity and participation, as well as language skills.
- We need to plan interventions that provide enough time on intervention activities to allow change.

What next - content contd.

- We need to specify the ‘active ingredients’ of intervention. What is meant to make the intervention ‘work’. Context? Increased attention? Modelling and recasting? Meta-cognitive training? And manipulate them?
- We need to look hard (again!) for anything that may develop receptive language abilities.
- We need to discuss care aims with SLT services - are indirect approaches towards improving language, or about transferring risk to others (schools or parents?)
- We need to interrogate the ongoing work on factors underlying or associated with language impairment, to seek insights relevant to clinical practice.

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So -

- Enough to be getting on with!

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