Case
Sam is a 6-year-old boy in the first grade. His teacher is concerned with the quality of his handwriting, as it is illegible, and believes that he could benefit from occupational therapy. After a meeting with the IEP team, Sam has been recommended for an occupational therapy evaluation. His mother and father came to the school to ask what occupational therapy can do for their son’s handwriting and what evidence exists supporting it.

1 Ask: Research Question
In school aged children with learning disabilities, what is the effect of occupational therapy on handwriting performance compared with no therapy.

2 Analyze: Search Terms
Patient/Client group: Child Intervention: Occupational Therapy
Comparison: Outcome(s): Handwriting

2b Acquire: Selected Articles
Sudsawad et al. (2002): A randomized-blinded three-group research study that examined the effect of kinesthetic training on handwriting legibility in comparison to handwriting practice only and no intervention.
Marr and Dimeo (2006): A single-group pretest, posttest design to examine the benefits of a summer handwriting instruction course offered to community elementary-age students.
McKay et al. (2010): Examined the effectiveness through a pretest-posttest single-group design of the Log Handwriting Program on fundamentals of writing on the Minnesota Handwriting Assessment.
Ratzen et al. (2007): Tested efficacy of a short-term treatment on the fine-motor and graphomotor skills of first graders. The intervention group made significant gains in both graphomotor skills and on the fine-motor test.

3 Appraise: Study Quality
Sudsawad et al. (2002): Inconclusive. Randomized and blinded. However, findings were contradictory, which may indicate potential flaws in the study design.
Marr and Dimeo (2006): Suggestive: Blind rates and no dropout. Assessment may be inadequate to measure change with the curriculum.
McKay et al. (2010): Suggestive: Blinded assessor but lacked a comparison group. Standardized measure used to ensure reliability and validity.
Ratzen et al. (2007): Suggestive: RCT design and significant differences; however, lack of any treatment in control group limits interpretation.

4 Apply: Conclusions for Practice
The results of these studies offer some support for the benefits to letter legibility, form, and spatial relations as a result of handwriting intervention provided by an occupational therapist to school aged children. Individually they showed suggestive benefits of a summer handwriting program using Handwriting Without Tears curriculum and preliminary efficacy of a short-term graphomotor intervention. More research is needed using control groups and a randomized control trial design to gain stronger support.

What is the effect of occupational therapy based handwriting interventions on handwriting performance?

Handwriting intervention is commonly found in schools and is often a service delivered by occupational therapists. This CAT found suggestive evidence that occupational therapy based handwriting interventions were effective in improving handwriting performance.

References

Reviewers:
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? Unclear: Further research is needed to determine if handwriting intervention provided by an occupational therapist is effective for handwriting performance in school-aged children.