improved more in the spelling of dictated pseudowords than the group that received orthographic treatment. However, the younger orthographic treatment group demonstrated greater improvements in real word spelling compared to the morphological treatment group. The older morphological and orthographic participant groups did equally as well in real word spelling. Both orthographic and morphological treatments were associated with improved reading. The

This meta-analysis provides suggestive evidence that MA intervention programs improve the reading and spelling ability of children with reading disability/dyslexia.

Cross-Sectional Study

Cross-sectional studies are considered Level III evidence (Oxford Centre for Evidence-based Medicine, 2009). Cross-sectional studies are performed to examine the presence or absence of an outcome and an exposure at a specific point in time.

Tsesmeli and Seymour (2009) conducted a cross-sectional ability level design study to determine the effectiveness of explicit morphological instruction on spelling in students with dyslexia. Three groups of participants were included in this study: a dyslexic group (n=9), a chronological age control group (n=14), and a spelling/reading age control group (n=23). Each student in the dyslexic group received 32 individual MA intervention sessions (40 minutes each) administered by one teacher. The MA intervention aimed to teach participants the internal structure of words to demystify English orthography. The authors developed a word list that was used for the pre-test, training programme, and post-test for each separate study. A delayed post- test was given to the dyslexic group approximately two months after the completion of the study.

Through appropriate statistical analysis, researchers determined that their intervention improved the accuracy of spelling, especially for words with complex derivational morphology for children in the dyslexic group. Based on the fact that the chronological age control group did not show significant improvement in spelling ability, researchers are confident the gains made in the dyslexic group are due to intervention effects. Pre-testing, post-testing, and delayed post-testing procedures and the intervention are well described, increasing replicability. However, the pre-test and post-test measures were not standardized, reducing the reliability of their results. Additionally, the authors included longer-term effects and generalizability of the intervention which have not been included in other studies. However, the intervention was provided to each student by a single teacher which could promote a "teacher effect" (a measurable difference that a particular teacher has on the outcome measure of interest above and beyond the intervention itself), impacting the validity of results. Additionally, the

term effects and generalizability of MA interventions for this population.

Clinical Implications

Overall, the current literature included in this review provides suggestive evidence that MA training improves the reading and spelling outcomes of school-aged children with dyslexia. However, due to the highly variable intervention methodology and outcome measures, S-LPs and educators should carefully examine each intervention and select the most appropriate methodology and outcome measure to fit the individual needs of their students.

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