The Association of Working Memory and Word Knowledge to the Phonological Awareness Subtests of the CTOPP-2

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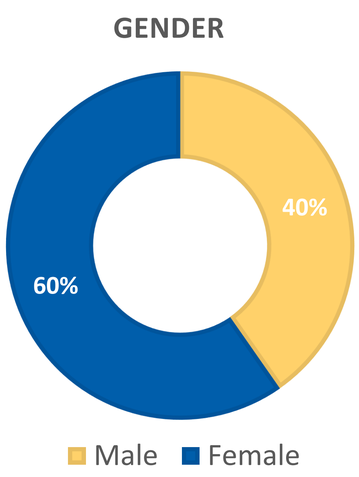
Introduction

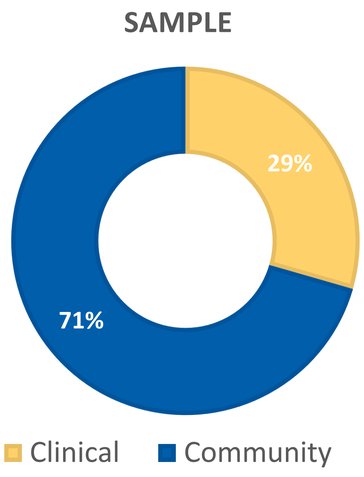
- Phonological awareness is an important cognitive process related to reading development
- Previous literature has suggested auditory working memory (WM) and word knowledge, or vocabulary (VC), also contribute to reading ability
- No study has investigated the extent to which auditory WM and VC relate to phonological awareness as measured by the CTOPP-2 Phonological Awareness Composite (PAC)
- The PAC comprises three subtests that measure different dimensions of phonological awareness, which may vary in their associations with WM and VC

PURPOSE: To examine the extent word knowledge and auditory working memory contribute to performance on each of the CTOPP-2 PAC subtests

Participants & Methods

- 129 participants (M_{age} = 9.9 years, range = 6-18) included a clinical sample (n = 38) referred for neuropsychological assessment and a community sample (n = 91) recruited for a larger study from English and French Immersion elementary schools in southwestern Ontario
- Participants were administered Elision (EL), Blending Words (BW), and Phoneme Isolation (PI) subtests from the CTOPP-2 and Digit Span (DS) and Vocabulary (VC) subtests from the WISC-V





Results

- Multiple regression analyses revealed that auditory WM was a significant predictor of performance on each of the PAC subtests
- Language ability was also a significant predictor for EL and BW, but not PI

WM	*B*	*SE B*	β	*t*	*p*
EL	.401	.064	.499	6.296	**.000**
BW	.276	.074	.322	3.724	**.000**
PI	.180	.065	.263	2.771	**.006**

VC	*B*	*SE B*	β	*t*	*p*
EL	.159	.074	.170	2.153	**.033**
BW	.232	.086	.234	2.703	**.008**
PI	-.018	.075	-.023	-.241	.810

Conclusions

- Auditory WM significantly contributes to performance on EL, BW and PI
- That language ability did not contribute significantly to PI suggests PI places greater emphasis on WM
- The findings support previous research suggesting auditory WM and word knowledge contribute to reading ability
- Because the sample was composed of a mixed language group, the findings may not extend to a unilingual sample. Further research is needed.

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