Does the complexity of Unified English Braille interfere with self-teaching?

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Purpose. Limited data suggest rates of dyslexia are higher in blind children who read Unified English Braille than in sighted children who read printed English. In the present study, we investigate whether the complex braille code might fuel this disparity by reducing instances of successful decoding and self-teaching during reading development. If blind braille readers underperform sighted print readers on a measure of phonological decoding, it could signal the braille code interferes with the phonological decoding self-teaching loop and increases rates of dyslexia diagnosis in the braille-reading population.

Method. Twenty-two adult print readers and 29 adult braille readers participated in the study. Phonological decoding was assessed with an orthographically based pseudohomophone recognition test that requires participants to silently read letter strings and judge whether, if read aloud, they would sound like real English words (e.g., *kake*) or not (e.g., *threp*). There were 24 items on the assessment, which took approximately 10 minutes to complete.

Results. We conducted a multiple linear regression controlling for age (which significantly differed between groups) of the effect of group (braille, print) on phonological decoding. Results indicated that braille readers performed significantly better than print readers on the phonological decoding assessment, $F(1, 49) = 10.28$, $p = 0.002$.

Conclusions. The finding of superior phonological decoding skills in braille readers runs contrary to our hypothesis. The results suggest that factors other than script, such as a lack of exposure to environmental print and high rates of preterm birth in children born blind, contribute to the prevalence of dyslexia in blind children.