

## Summary

A neuropsychological test verbal fluency was applied by Thurston in 1962 for the first time. Since then has been a method of test administration fundamentally changed and the area of use has broadly expanded. A Czech version of the test has been developed in 2002 and it has been validated in 2002. No alternative to validated NKP version of phonetic verbal fluency exists in Czech language. The practice effect after one month retest is not known.

A goal of our project was to find up a full-value alternative to validated NKP version of phonetic fluency and to assess a practice effect after one month retest in both found versions of phonetic and categorical verbal fluency.

**Methodology:** 32 healthy volunteers (16 men, 16 women), age  $20.8 \pm 1.7$  years, duration of education  $15.3 \pm 1.9$  years, were assessed by a verbal fluency test with the letters N, K, P, B, D, L, M, T, R, S and categorical verbal fluency test. Retest was performed after 1 month.

**Results:** We have not found an alternative to the validated NKP version of a verbal fluency test. The performance reached in subtests beginning with N, K, P correlated significantly most with subtests beginning with B, M, T ( $r = 0.65$ ,  $r = 0.67$ ,  $r = 0.63$ ,  $p < 0.05$ ). But subscores of K and P were in accordance with subscores of M and T significantly higher. We have found three pairs of subtests beginning with letter N-B, K-P and T-L with significant correlation ( $r = 0.65$ ,  $r = 0.52$ ,  $r = 0.66$ ,  $p < 0.05$ ) and non-significant difference in performance score during test and retest. These pairs have made two alternative versions of Czech verbal fluency test. Mean score of NKT version was  $46.1 \pm 12.4$  words with CI95% 41.5-50.8 and mean score of BPL version was  $48.1 \pm 10.3$  words with CI95% 44.2-51.9 in first session. Practice effect was significant in both versions with CI95% 7.4-14.7 respectively 7.1-11.4 words after one month. Total score of NKT and BPL version was not significantly different during both sessions. The correlation was significant during first ( $r = 0.82$ ,  $p < 0.05$ ) and second session ( $r = 0.85$ ,  $p < 0.05$ ). Categorical verbal fluency test practice effect was significant with CI95% 6.1-14.1 words. Verbal fluency practice effect of validated NKP version was significant with CI95% 8.2-14.6 words.

**Conclusion:** We have not found an ideal alternative version to validated Czech version of phonetic verbal fluency among letters B, D, L, M, T, R, S. We have found three pairs of subtests which have formed two alternative versions of phonetic verbal fluency – NKT and BPL. Both versions seem to be interchangeable. The practice effect of categorical verbal fluency was significant with CI95% 6.1-14.1 words. Practice effect of validated version NKP was also significant with CI95% 8.2-14.6 words. The practise effect of a new developed version NKT was  $11.0 \pm 9.6$  words (CI95% 7.4-14.7), for BPL version it is  $9 \pm 6.3$  words (CI95% 7.1-11.4). For both NKT and BPL versions was practice effect significant (Wilcoxon matched pair test  $T = 28.0$ ,  $Z = 4.31$ ,  $p < 0.001$  resp.  $T = 17.0$ ,  $Z = 4.52$ ,  $p < 0.001$ ).