

Using Encephalog smartphone's application to evaluate motor and cognitive manifestations in patients with Parkinson's Disease.

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Introduction:

Encephalog offers a digital version for conducting standard motor and cognitive tests. Using the smartphone integral sensors several tasks such as static posturography, gait, tremor, along with cognitive tests can be measured

Method:

- 11 ambulatory patients with PD were recruited
- Patients were assessed for attention reaction, resting tremor, hand tapping, and time up and go (TUG-10m) test, using Encephalog App
- Data obtained was sent to a website platform
- MOCA score and the Hoehn-Yahr scale were gathered during the clinical evaluation.

Results:

Sex	n=11
Male	7
Female	4
Age	Mean SD: 68.4 ± 10.23
Disease duration	Mean SD: 6.09 ± 3.53
Hoehn-Yahr scale	Mean SD: 2.04 ± 0.7
MOCA score	Mean SD: 24.09 ± 4.08
Mean tremor frequency	Right hand: 6.56 Left hand: 9.94

Encephalog smartphone's application provided **real-time data about cognitive and motor functions** in patients with **Parkinson's Disease**

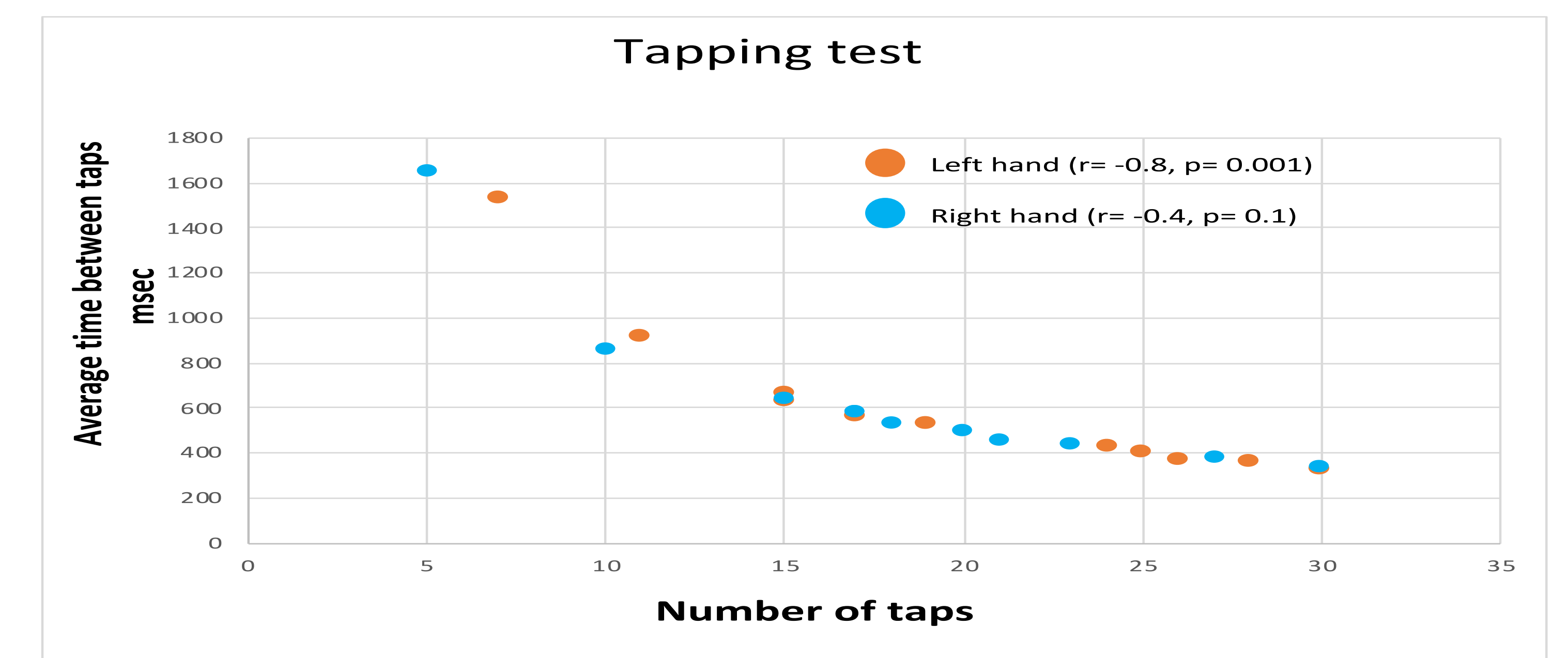


Figure 1. Number of taps and average time between taps in right hand

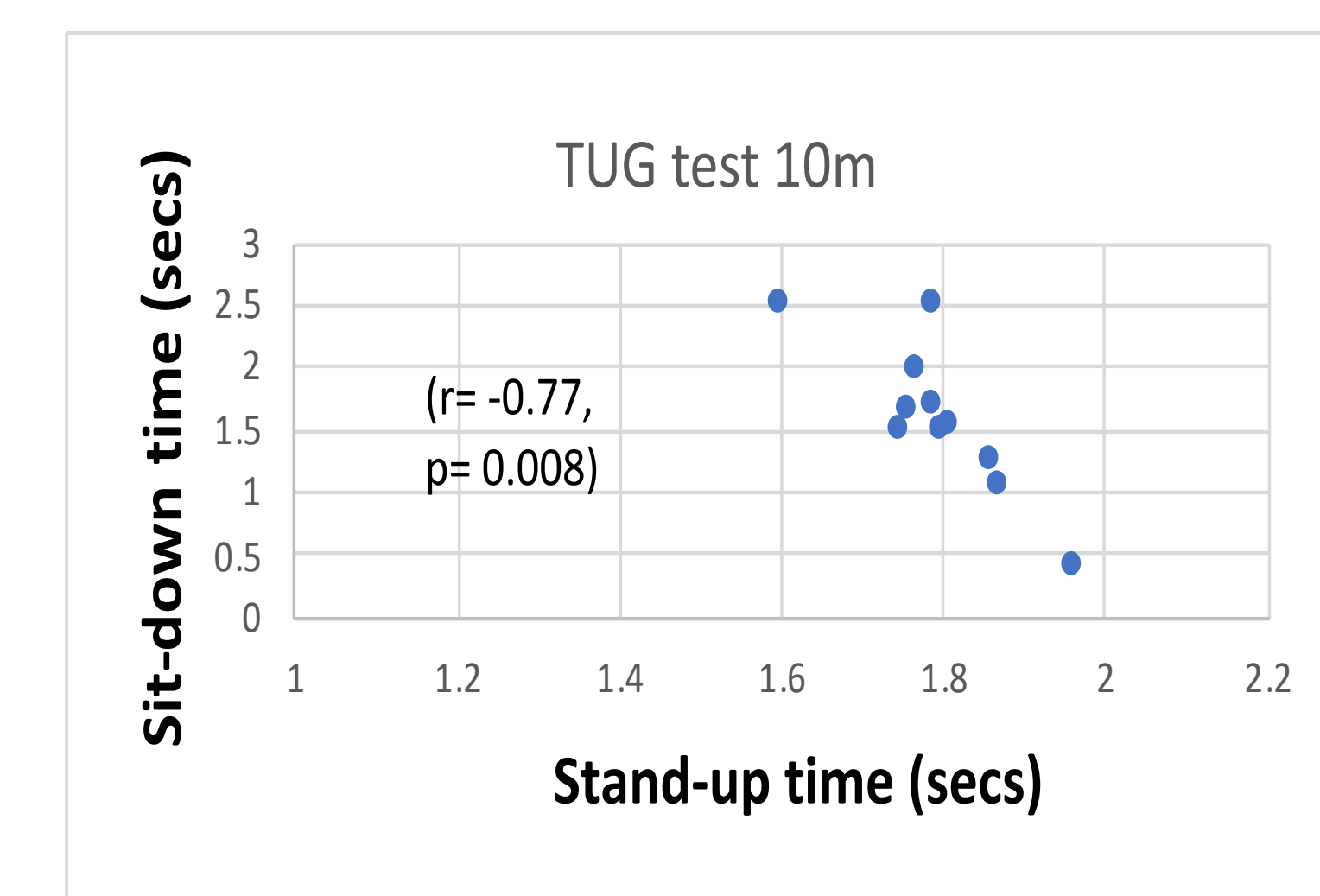


Figure 2a. stand-up time and sit-down time

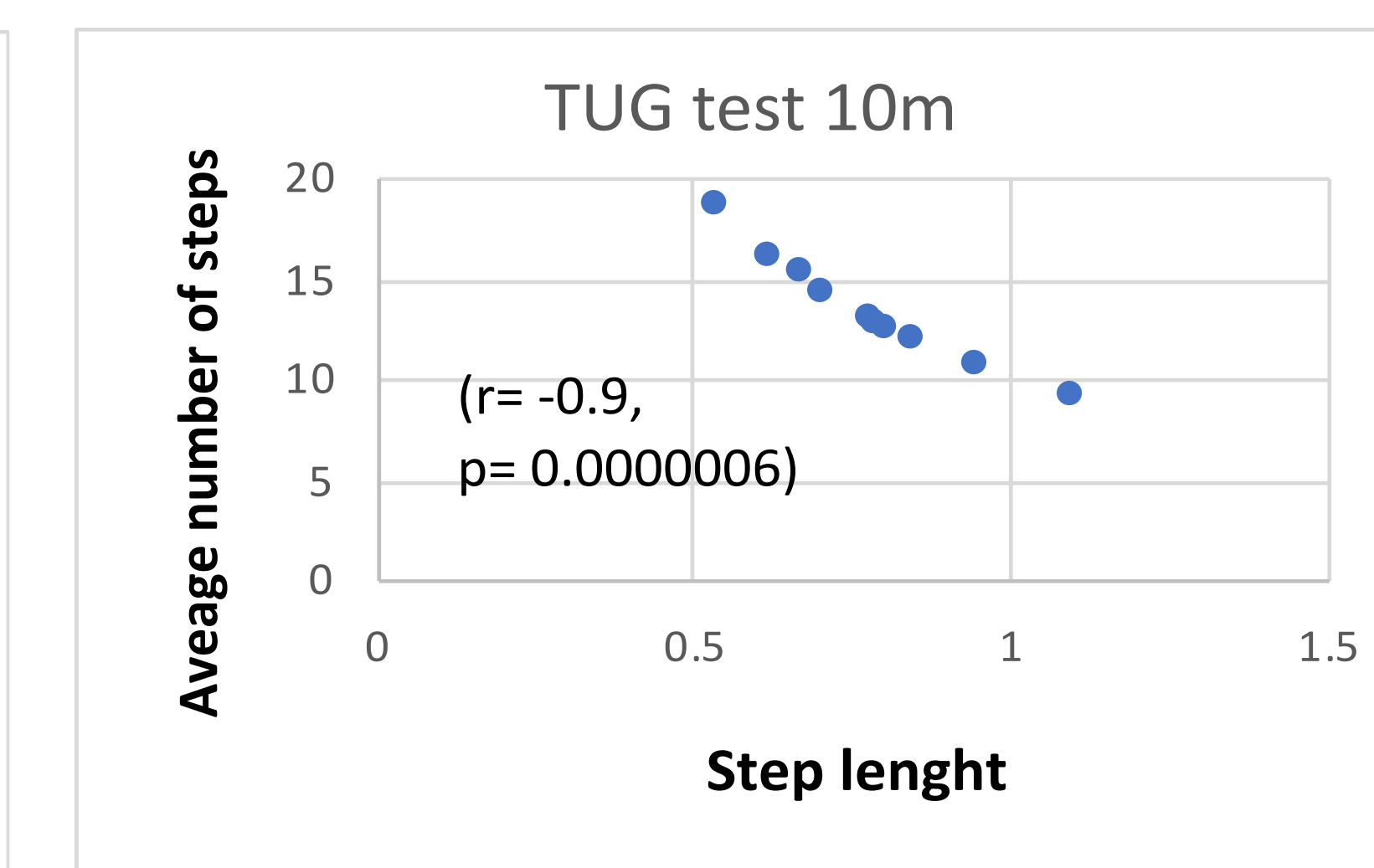


Figure 2b. Step length and average number of steps

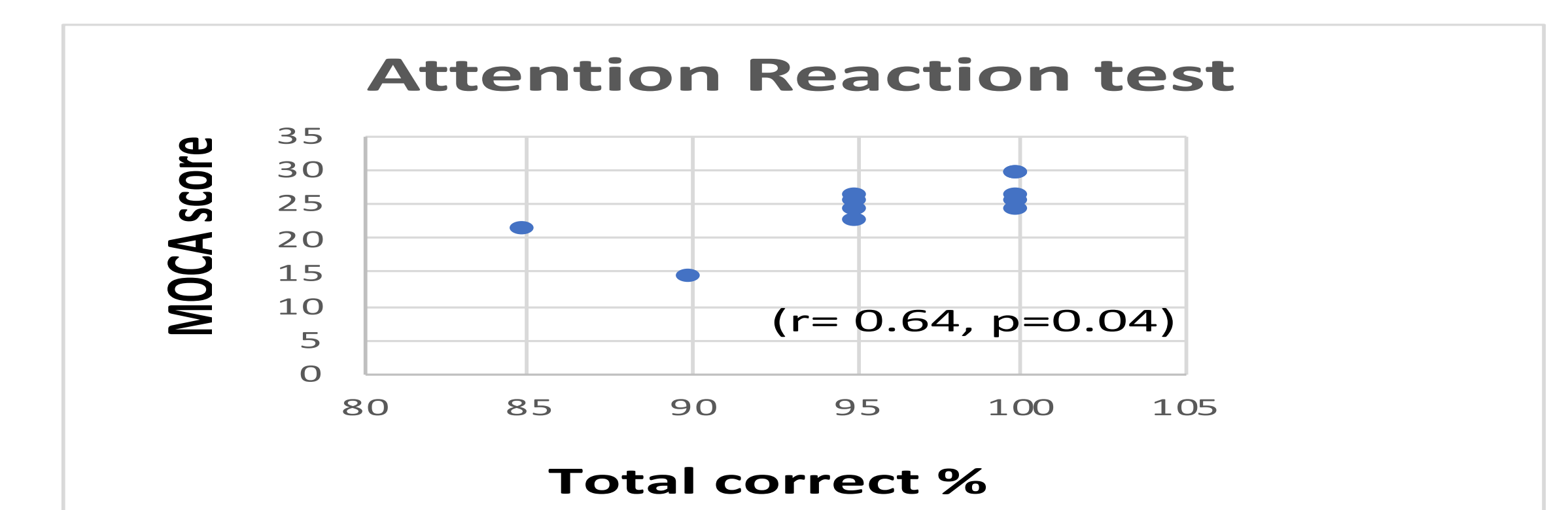


Figure 3. total correct percentage and MOCA score

Conclusion

- Motion data from smartphone detected quantitative real-time results.
- This app offered information about tasks of daily functions required for independent living.
- patients can be assessed remotely from home while providing telehealth.