

# EXAMINATION OF CORRELATIONS BETWEEN CORE STABILITY, LOW BACK PAIN AND STRESS IN THE STAFF OF THE HUNGARIAN NATIONAL AMBULANCE SERVICE

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## OBJECTIVES

Ambulance workers are exposed to high levels of physical and mental strain as a result of their work. Our goal was to investigate the correlations between their lower back pain, stress, quality of life and core stability.

## METHODS

Four ambulance stations of the Hungarian National Ambulance Service with 100 people (age 18-65) were observed between July and August in 2021. Excluding criteria: surgery in the last 6 months, spine disease requiring surgery, neurological symptoms. Perceived Stress Scale (PSS), Short Form 36 (SF-36) quality of life survey, Oswestry Low Back Pain Disability Questionnaire (ODI), Low Back Pain Knowledge Questionnaire (LKQ) and Posture Screen application. The applied tests were Leg-Lowering (LLT)-, Core- and Kraus Weber-tests (KW). Data analysis was performed with IBM SPSS Statistics 25, Kruskal-Wallis-, Mann Whitney-U-, Chi-squared-, T-tests, ANOVA, Pearson- Spearman correlation ( $p < 0.05$ ).

## RESULTS

54% of the ambulance workers suffered from lower back pain. In PSS they scored  $20.22 \pm 7.92$  (male:  $19.79 \pm 7.67$ , female:  $24.56 \pm 9.53$ ). In SF-36 women performed significantly worse than men ( $587.61 \pm 87.25$ - $647.72 \pm 93.07$ ,  $p = 0.038$ ). We found significant correlation between quality of life and pain ( $p < 0.001$ ,  $r = -0.442$ ); quality of life and stress ( $p < 0.001$ ,  $r = -0.703$ ), working years and stress level ( $p = 0.016$ ,  $r = -0.241$ ). In LLT 50% achieved acceptable result and there was a significant difference between people with low back pain and those not ( $p = 0.034$ ). In KW the average score was  $49.89 \pm 8.99$ . The respondents scored  $15.65 \pm 4.25$  point in LKQ (maximum 24) and the total score was related to the position held ( $p < 0.05$ ).

## CONCLUSIONS

The results show that many ambulance workers live with low back pain and high stress level that affect their quality of life. More attention should be paid to the physical and mental health of them.

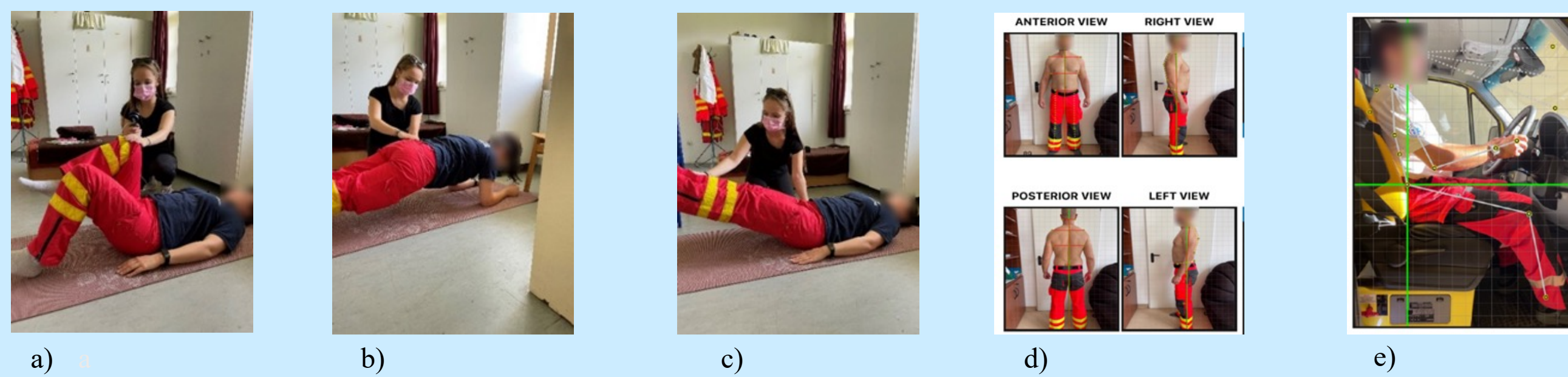


Figure 1.

Applied methods: a) Core (Stabilizer)-test b) Plank-test c) Leg-Lowering test d) Posture Screen analysis in standing position e) Posture Screen analysis in sitting position

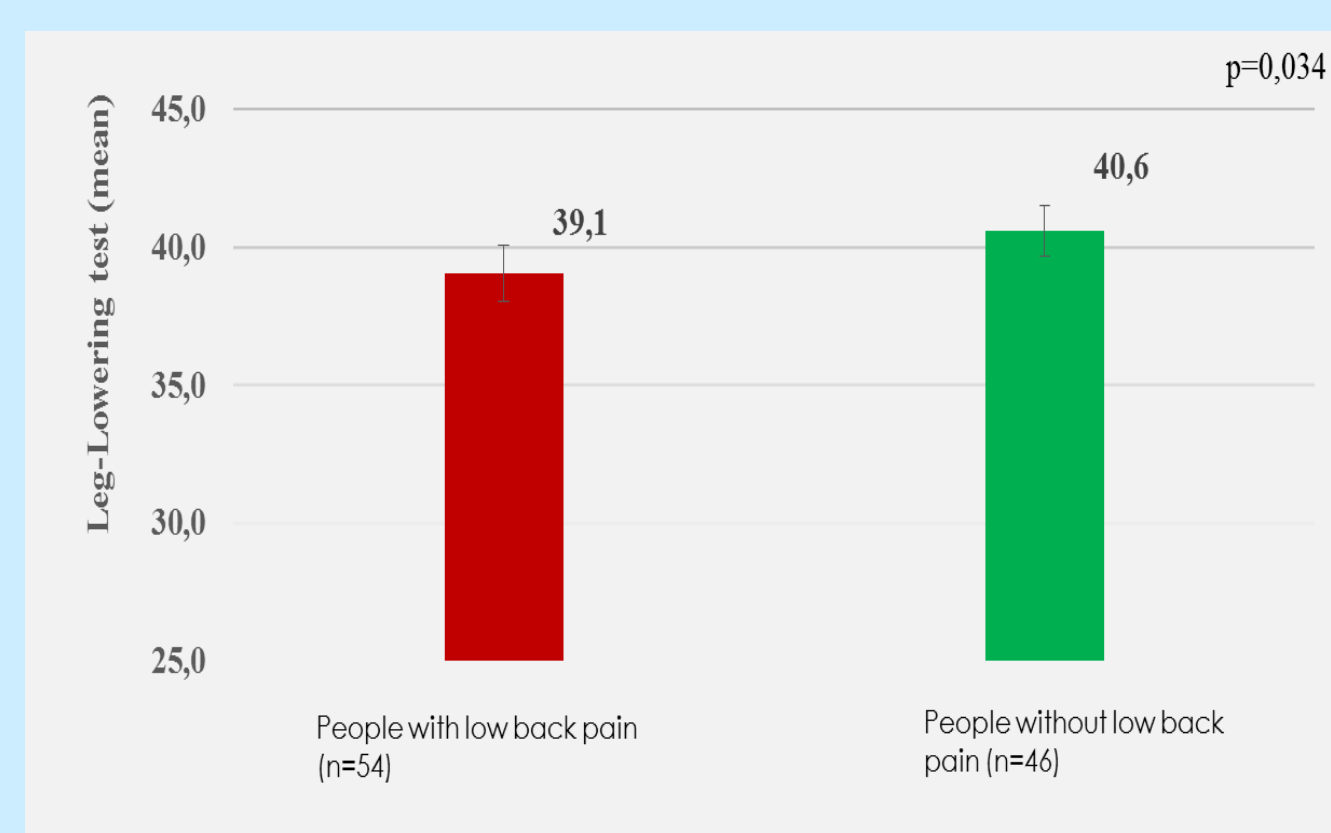


Figure 2.

Relationship between lumbar motor control (leg lowering test) and low back pain

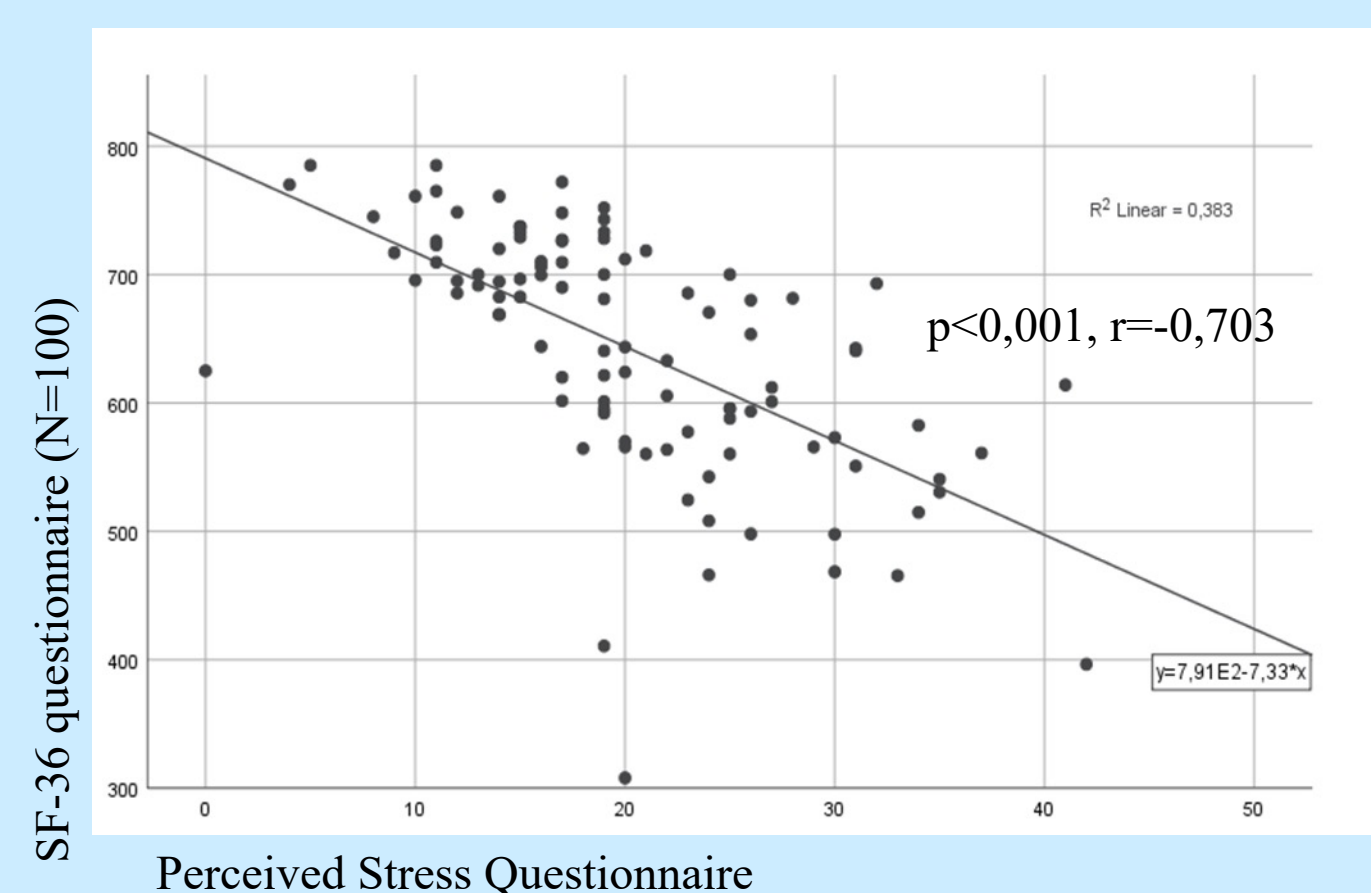


Figure 4.

Correlation between stress level and quality of life

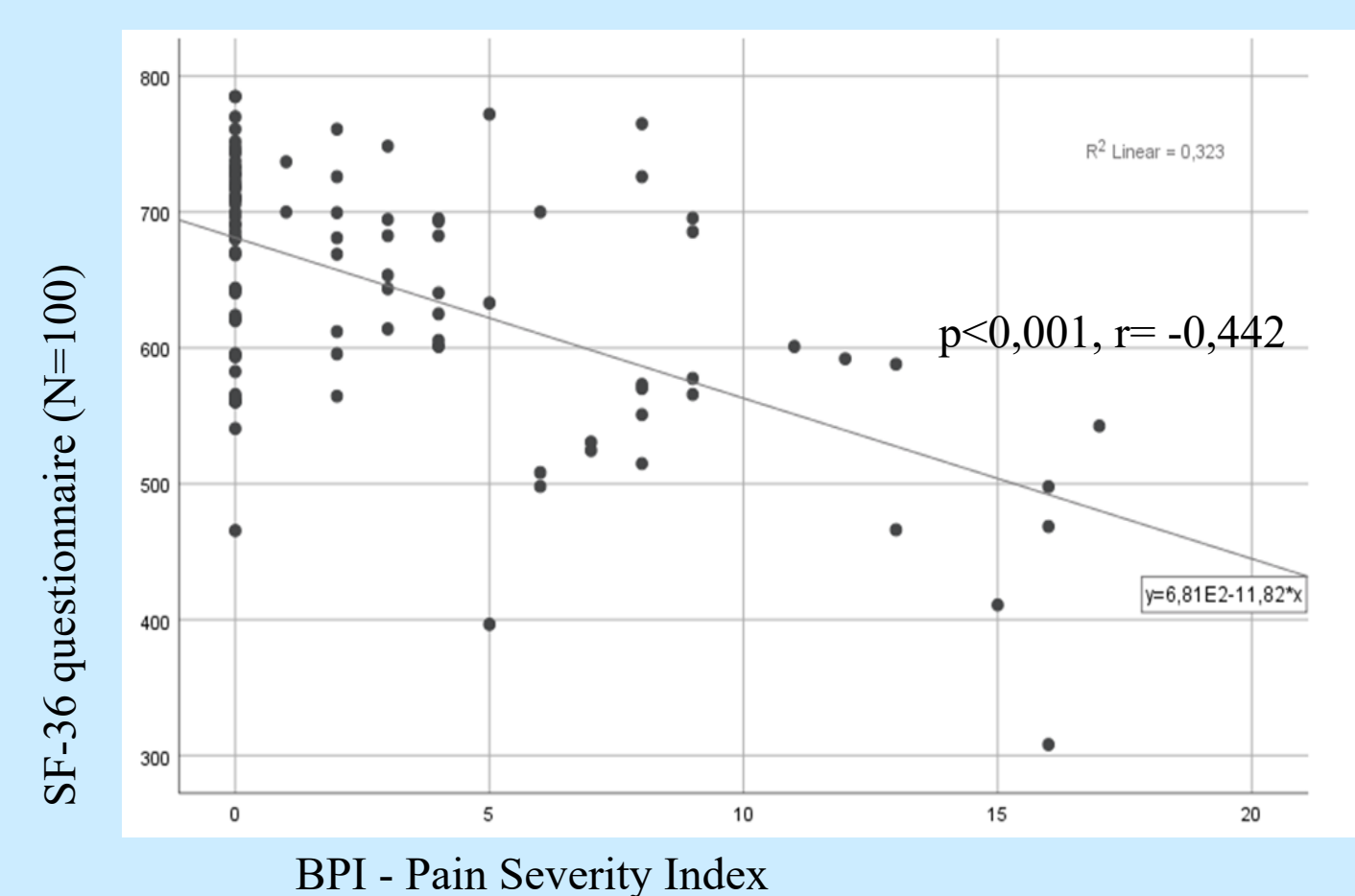


Figure 3.

Correlation between perceived pain and quality of life

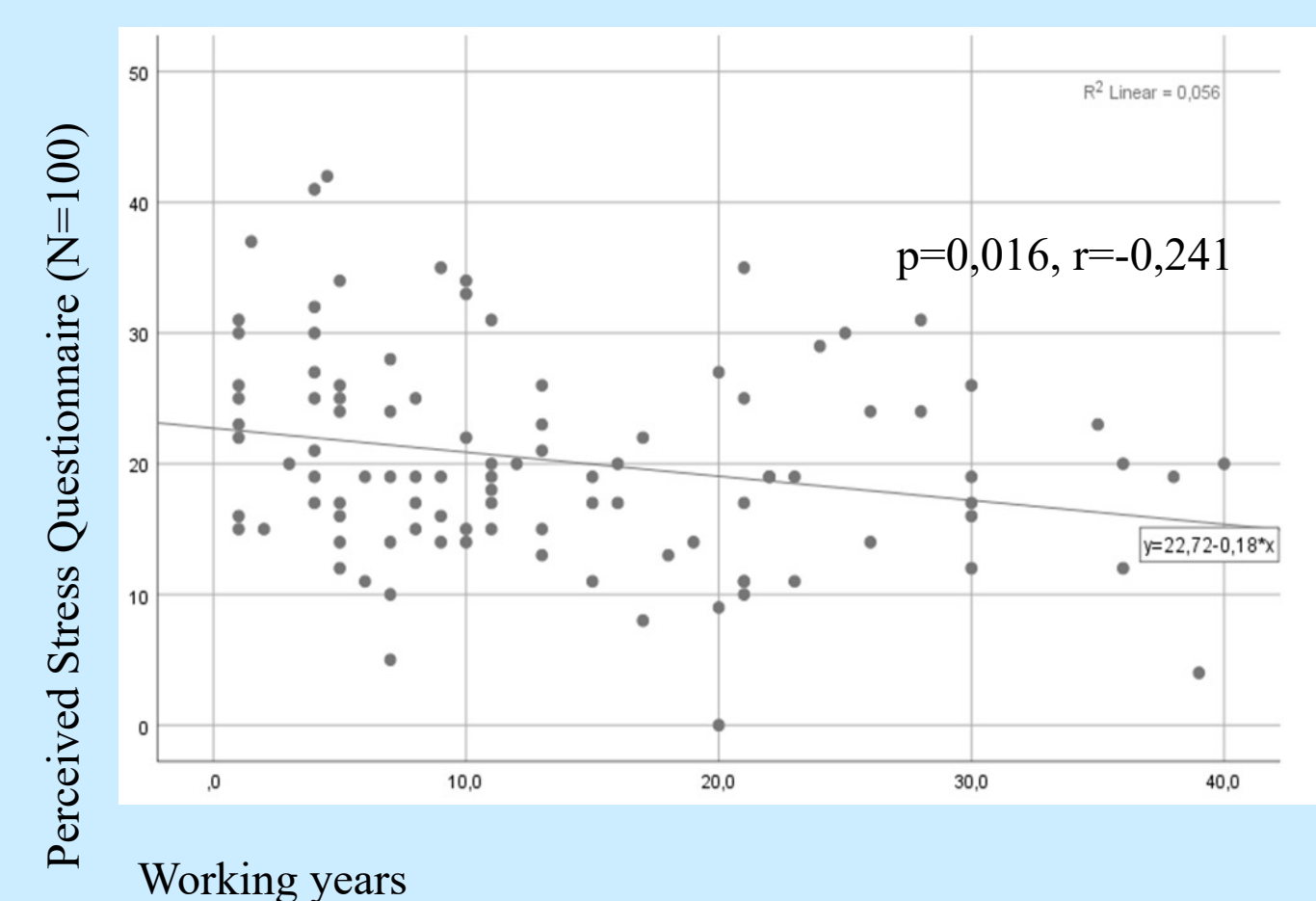


Figure 5.

Correlation between working years and stress level

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