

# ASSESSING WORK CAPACITY IN COMBAT-EXPOSED CNLD PATIENTS: THE VALUE OF CLINICAL QUESTIONNAIRES

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**Abstract. Objective.** To develop and validate an integrated prognostic algorithm for assessing work capacity in military personnel with chronic non-specific lung diseases (CNLD), incorporating clinical, psycho-emotional, demographic, and behavioral risk factors.

**Materials and methods.** A total of 197 Ukrainian Armed Forces personnel were examined (mean age:  $38.4 \pm 6.9$  years; 94.2 % male), diagnosed with either chronic obstructive pulmonary disease (COPD) (68.3 %) or bronchial asthma (31.7 %). Validated questionnaires were used: CD-RISC-10, MIES, CAT, mMRC, ESS, WHOQOL-BREF, and SGRQ. A six-minute walk test (6MWT) was also performed. Logistic regression and ROC analysis were applied to construct the predictive model.

**Results.** Low resilience (CD-RISC-10  $< 23$ ) was identified in 42.5 % of respondents; high moral injury scores (MIES  $\geq 30$ ) in 36.7 %. CAT  $> 20$  was observed in 59.2 %, and mMRC  $\geq 2$  in 48.3 % of subjects. Reduced work capacity (6MWT  $< 400$  m) was found in 32.5%, and excessive daytime sleepiness (ESS  $\geq 10$ ) in 27.5 %. A logistic regression model including five predictors (CAT, CD-RISC, MIES, ESS, 6MWT) showed high prognostic performance (AUC = 0.87; 95% CI: 0.80–0.93), with sensitivity of 82 % and specificity of 78 %. A structured risk stratification algorithm was developed to predict functional decline.

**Conclusions.** Military personnel with CNLD exhibit a complex combination of respiratory symptoms, psycho-emotional dysfunction, and reduced quality of life, directly affecting functional capacity. Standardized psychometric and functional scales provide high diagnostic and prognostic value in assessing adaptability. The developed multivariable model enables accurate identification of individuals at risk of reduced work capacity. The proposed algorithm can be integrated into military medical expertise systems to support personalized forecasting and rehabilitation planning under service conditions.

**Key words:** chronic pulmonary diseases, COPD, bronchial asthma, combat stress, functional capacity, military personnel, psycho-emotional status, CD-RISC-10, MIES, CAT, mMRC, ESS, 6-minute walk test, logistic regression, prognostic model.