



## OBJECTIVES

Patient-Reported Outcomes Measurement Information System Global Health (PROMIS-GH) is a generic health status questionnaire that provides measures of global physical health (GPH) and global mental health (GMH) (Table 1). This study aimed to explore the psychometric properties of the Hungarian version of PROMIS-GH.



## METHODS

In November 2020, 1700 members of the Hungarian adult general population completed an online cross-sectional survey including PROMIS-GH. Psychometric properties were tested by confirmatory (CFA) and bifactor analyses as well as item response theory analysis. Unidimensionality (root mean square error of approximation [RMSEA]<0.06, comparative fit index [CFI]>0.95, Tucker-Lewis index [TLI]>0.95, standardized root mean squared residual [SRMR]<0.08, explained common variance [ECV]>0.70, Omega Hierarchical>0.70), local independence (residual correlations<|0.20|), monotonicity (coefficient H>0.30) and model fit with graded response model (GRM,  $S-\chi^2$ ,  $p>0.001$ ) were analysed. Measurement invariance was tested by differential item functioning for gender, age, education, region, employment, place of residence, marital status, and income groups. Spearman's correlations with SF-36 subscales and composites were examined to test convergent validity.

**Table 1**  
Items of PROMIS Global Health

GPH	GMH
<b>Physical Health</b> Global03	<b>Quality of Life</b> Global02
<b>Physical Function</b> Global06	<b>Mental Health</b> Global04
<b>Pain</b> Global07	<b>Social Discretionary</b> Global05
<b>Fatigue</b> Global08	<b>Emotional Problems</b> Global10

According to Hays et al.<sup>1</sup>, Global01 (General Health) and Global09 (Social Roles) items do not belong to any of the subscales.

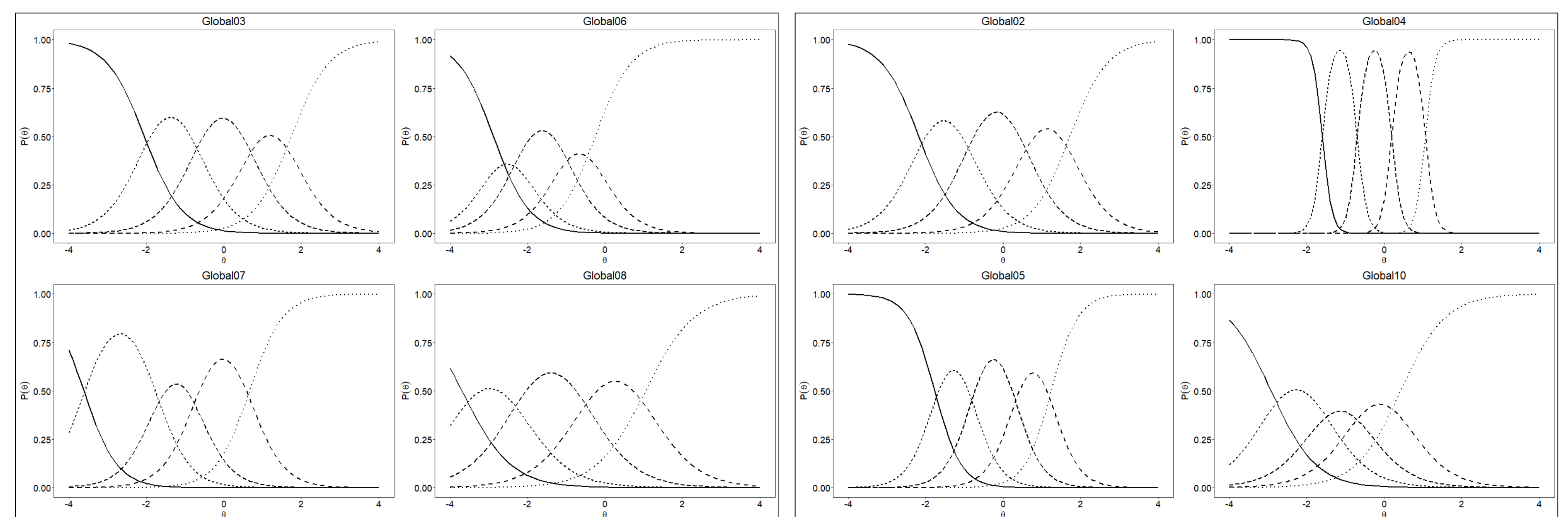


## RESULTS

Unidimensionality was confirmed by CFA (GPH: CFI=0.993, TLI=0.978, SRMR=0.039; GMH: CFI=0.999, TLI=0.997, SRMR=0.025) except for the RMSEA statistic (GPH: 0.114; GMH: 0.071). While ECV exceeded the cut-off value for both subscales (GPH: 0.72, GMH: 0.78), Omega Hierarchical value was sufficient only for GMH (0.73; GPH: 0.66). Local dependence was not detected (all residual correlations<|0.20|). For monotonicity, H coefficients were well above the cut-off value for the two subscales (GPH: 0.53; GMH: 0.64). Both GPH and GMH fitted the GRM model (GPH: RMSEA=0.008; GMH: RMSEA=0.012). Five of eight items showed misfit to the GRM model ( $p<0.001$ ). Item characteristic curves of the eight items are displayed in Figure 1. We found no measurement invariance. PROMIS-GH subscales showed moderate-to-strong correlations ( $r_s=0.56-0.83$ ,  $p<0.001$ ) with SF-36 composites (Figure 2).

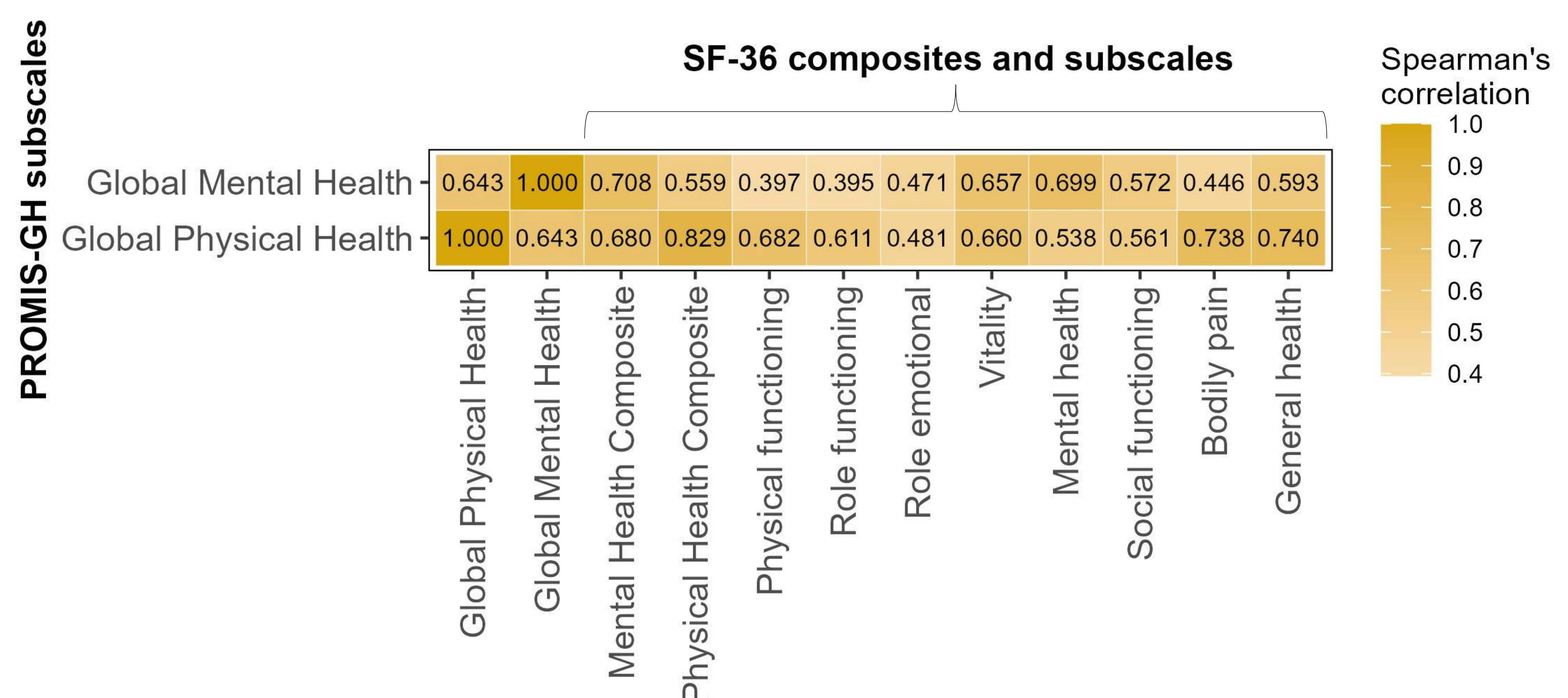
**Figure 1**

Item characteristic curves of items of the Global Physical Health and Global Mental Health subscales



**Figure 2**

Convergent validity of PROMIS Global Health subscales with SF-36 composites and subscales



$p<0.001$  for all correlation coefficients.



## CONCLUSIONS

PROMIS-GH showed satisfactory psychometric properties in Hungary, however further studies with different patient populations and testing other measurement properties (e.g. test-retest reliability, responsiveness) are recommended.

### References:

1. Hays, R. D., Bjorner, J. B., Revicki, D. A., Spritzer, K. L., & Cella, D. (2009). Development of physical and mental health summary scores from the patient-reported outcomes measurement information system (PROMIS) global items. *Quality of Life Research*, 18(7), 873-880.

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