

# Concurrent validity of the Portuguese version of the Brief physical activity assessment tool

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## Background

- Physical activity (PA) is an important health enhancing behaviour and should be routinely assessed in clinical practice to identify insufficiently active people.
- Activity monitors provide objective assessment of free-living PA, however, they are too expensive to be used in resource-constrained clinical settings.
- Several PA questionnaires have been validated to the European Portuguese language. However, most questionnaires are too long, hence unfeasible for use in clinical practice.

## Aims

- To explore the relationship between the European Portuguese version of a short PA questionnaire, the Brief Physical Activity Assessment Tool (Brief-PA tool), and the International Physical Activity Questionnaire short form<sup>2</sup> (IPAQ-sf, already validated for Portugal).
- To explore the test-retest reliability of the Brief-PA tool.

## Methods

### Procedures:

- Linguistic adaptation of the Brief-PA tool<sup>1</sup> to the Portuguese language was first conducted (Fig. 1).
- 86 healthy volunteers (53♀; 49.5±18.1yrs) completed the Brief-PA tool and the IPAQ-sf<sup>2</sup> (T1).
- A sub-sample of 56 volunteers (37♀, 43.1±18.1yrs) completed the Brief-PA tool one week later (T2).

### Statistical analysis:

- Spearman's rank correlation coefficient ( $\rho$ ) was used to assess correlations between the Brief-PA total score and the IPAQ-sf (MET-min/week);
- %<sub>agreement</sub> and Cohen's kappa were used to assess agreement between categorical scores obtained from the measures ('sufficiently'/'insufficiently' active) and test-retest reliability of the Brief-PA tool.

Questionário Breve de Avaliação da Atividade Física	
(A) Quantas vezes por semana costuma realizar 20 minutos de atividade física intensa que o faz suar ou ficar ofegante? (por exemplo, jogging, levantamento de pesos, cavar, aeróbica ou andar de bicicleta a um ritmo rápido)?	
3 vezes/semana	[ ] (4)
1 a 2 vezes/semana	[ ] (2)
Nenhuma	[ ] (0)
(B) Quantas vezes por semana costuma realizar 30 minutos de atividade física moderada ou caminhada que aumenta a sua frequência cardíaca ou o faz respirar com mais dificuldade que o normal? (por exemplo, cortar a relva, transportar cargas leves, andar de bicicleta a um ritmo regular, ou jogar ténis em duplas)?	
> 5 vezes/semana	[ ] (4)
3 a 4 vezes/semana	[ ] (2)
1 a 2 vezes/semana	[ ] (1)
Nenhuma	[ ] (0)

Fig. 1: Portuguese version of the Brief-PA tool.<sup>1</sup> Scores (in brackets) are summed to provide a total score (range 0-8), to identify 'sufficiently' (total score ≥4) or 'insufficiently' (total score 0-3) active patients.

## Results

- A significant correlation was found between the Brief-PA tool and the IPAQ-sf ( $\rho=0.721$ ,  $p<0.001$ , Fig. 2).
- The Brief-PA tool identified 34.9% (n=30) sufficiently active participants in the total sample while the IPAQ-sf identified 59.3% (n=51, Table 1).
- Agreement between the Brief-PA tool and the IPAQ-sf was moderate (%<sub>agreement</sub>=70.9%; Cohen's kappa=0.450,  $p<0.001$ , Table 1).
- Test-retest reliability of the Brief-PA tool was substantial (%<sub>agreement</sub>=89.3%, kappa=0.755,  $p<0.001$ , Table 2).

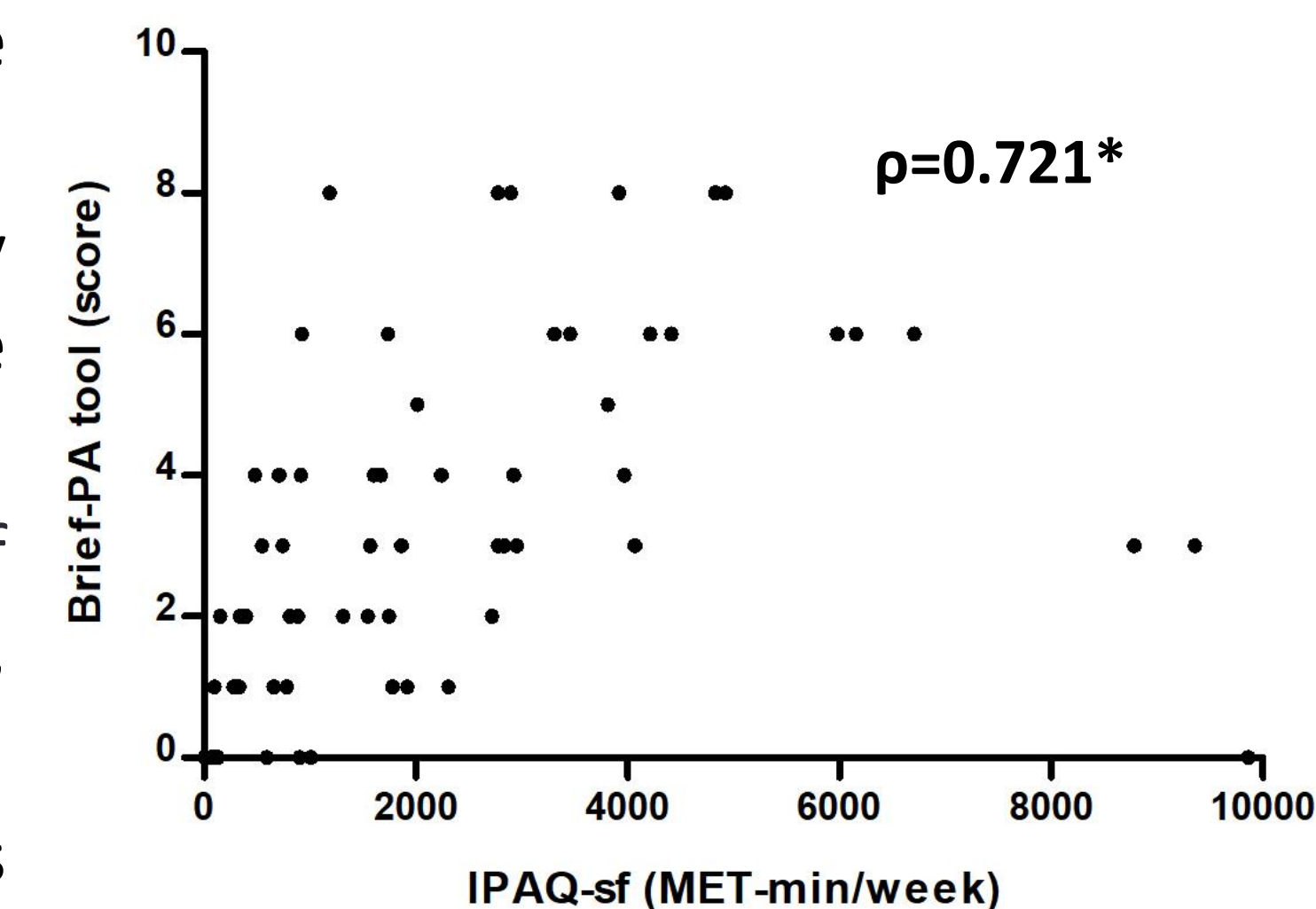


Fig. 2: Correlation between the Brief-PA tool scores and the IPAQ results (MET-min/week) (n=86).

Table 1. Comparison of 'sufficiently' and 'insufficiently' active patients according to the Brief-PA tool and the IPAQ-sf (n=86).

Brief-PA tool	Active	IPAQ-sf		% <sub>agreement</sub>	Kappa (95% CI)
		Active	Inactive		
Active	28	2	70.9%	0.450 (0.287 to 0.613)	
Inactive	23	33			

Table 2. Comparison of 'sufficiently' and 'insufficiently' active patients according to the Brief-PA tool collected in T1 and T2 (n=56).

Brief-PA tool (T1)	Active	Brief-PA tool (T2)		% <sub>agreement</sub>	Kappa (95% CI)
		Active	Inactive		
Active	15	2	89.3%	0.755 (0.571 to 0.939)	
Inactive	4	35			

## Conclusion

- The Brief-PA tool seems to be valid and reliable for assessing PA in the Portuguese adult population, although the agreement with the IPAQ-sf was only moderate.
- Further research assessing the validity of the Brief-PA tool with objective measures is needed.