

CONTRIBUTIONS OF PAIN INTENSITY AND DISABILITY CHANGES TO GLOBAL PERCEIVED EFFECT AFTER PHYSIOTHERAPY IN CHRONIC LOW BACK PAIN PATIENTS

Diogo Pires^{1,2}, Eduardo B. Cruz^{2,3}, Carla Nunes^{1,2}

¹NOVA National School of Public Health, Public Health Research Centre, Universidade NOVA de Lisboa; ²Comprehensive Health Research Center (CHRC); ³Instituto Politécnico de Setúbal - Escola Superior de Saúde; Corresponding author: piresdiogo.af@gmail.com

INTRODUCTION

Pain intensity and disability are two domains frequently used to assess the response to physiotherapy in chronic low back pain (CLBP) patients. However, growing evidence has emerged supporting that these two domains are not sufficient when patients' perspective about meaningful benefits of interventions is considered. At this point, there is a lack of quantitative studies analyzing the relationship between pain and disability changes with global patients' perceptions of improvement. This knowledge may contribute to clarify the extent to which the pain and disability domains are sufficient (or not) to analyze the effectiveness of physiotherapy considering the patients' perspective of improvement.

PURPOSE

The aim of this study was to determine the contributions of pain intensity and disability changes to global perceived effect in CLBP patients undergoing physiotherapy.

MATERIALS AND METHODS

A prospective cohort study comprised 182 CLBP patients (>12 weeks' duration) referred to physiotherapy was conducted. All participants were assessed at baseline and immediately after intervention. Study flowchart is described in Figure 1.

Outcome measures used included: Numeric Pain Rating Scale (NPRS: 0-10); Quebec Back Pain Disability Scale (QBPD: 0-100); and Global Perceived Effect Scale (GPES: -5 to 5). Spearman correlation coefficient was used to quantify the association between GPE scores after intervention and pain intensity and disability changes (absolute and percentage) during the intervention. Linear regression analysis was conducted to investigate the influence of changes in pain intensity and disability (independent variables) in relation to GPES scores (dependent variable). The R² was used to quantify the variance in the dependent variable (GPES) attributable to pain and disability variance.

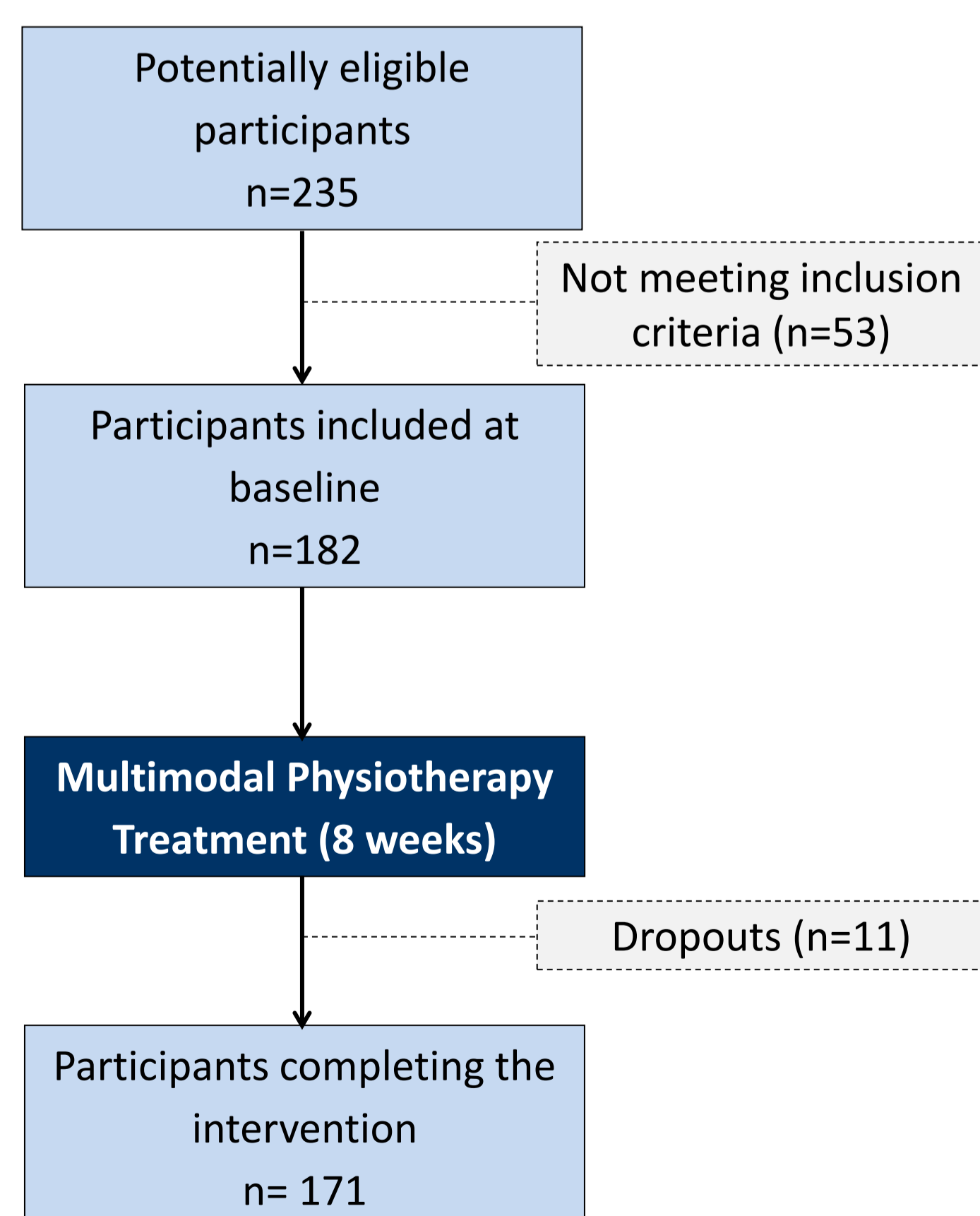


Figure 1

RESULTS

Of the 182 participants recruited, 171 completed the assessment after intervention. Table 1 describes the baseline characteristics of all participants assessed at baseline. The mean scores for changes in pain and disability measures as well as GPES mean scores after the intervention are presented in Table 2.

	GPES Scores	Absolute Changes		Percentage Changes	
		Pain	Disability	Pain	Disability
Post-intervention	3.02±1.30	2.56±2.48	13.63±16.90	41.73±45.82	36.03±38.99

	Absolute Changes		Percentage Changes	
	Pain	Disability	Pain	Disability
Post-intervention GPES scores	0.48	0.55	0.58	0.60

*All correlations were significant (p<0.01)

Variables	n (%)
Age*	48.02±10.53
BMI (kg/m ²)*	26.18±4.28
Gender [N (%)]	
Male	36 (19.7%)
Female	147 (80.3%)
Educational level [n (%)]	
Primary/Basic education	74 (40.4%)
High school/ College	109 (59.6%)
Working status [n (%)]	
Employed	152 (83.1%)
Not Active	31 (16.9%)
Duration of pain [n (%)]	
3–24 months	58 (31.7%)
>24 months	125 (68.3%)
Pain Irradiation [n (%)]	
Yes	121 (66.1%)
No	61 (33.3%)
Medication [n (%)]	
Yes	85 (46.4%)
No	98 (53.6%)
Pain Intensity (0-10 NPRS)*	5.86±1.88
Disability (0-100 QBPDs)*	36.54±17.78
* (mean ± SD);	

Moderate, but significant correlations (p<0.01) were found between GPES scores and both pain intensity (r=0.48; r=0.58) and disability changes (r=0.55; r=0.60) (Table 3). The results of linear regression models showed that changes in pain intensity (β=0.27; β=0.30; p<0.001) and disability (β=0.37; β=0.44; p<0.001) were independent contributors to GPES scores. Together, pain intensity and disability changes explained 29.1% (absolute changes) and 36.2% (percentage changes) of the variance in patients' global perceived effect (GPES).

CONCLUSION

Changes in pain intensity and disability are important factors to explain the patients' global perceived effect after physiotherapy intervention. Despite its importance, a large proportion of the variance in GPES scores could not be attributed to these two outcome domains. The influence of others domains should be analyzed in future studies in order to extend the number of domains used to assess the success of physiotherapy in CLBP patients.

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