

# Supplementary Material: for ‘*The EmoPain(at)Home Dataset and Pain Level and Activity Recognition for People with Chronic Pain in Their Homes*’

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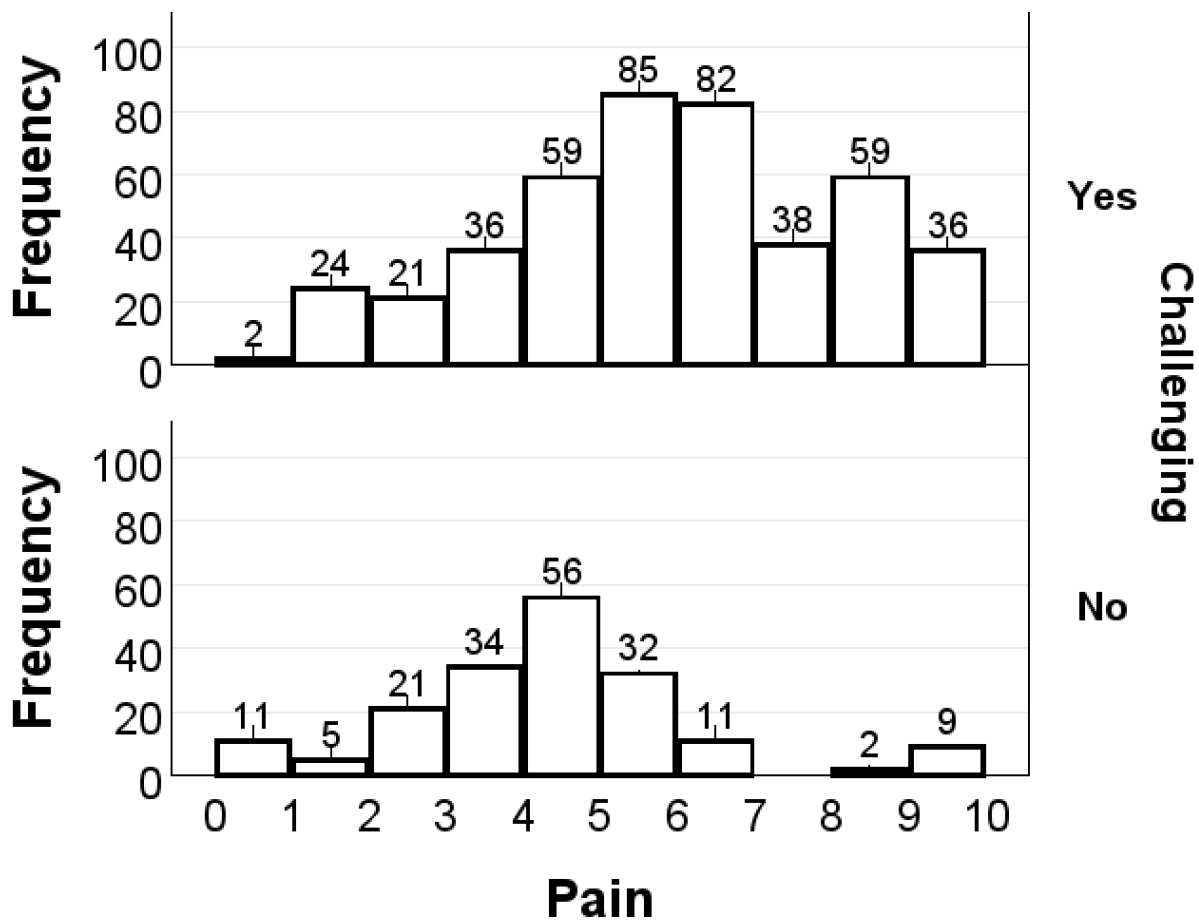


Fig. 1. Distribution of pain intensities. The number at the top of each data column corresponds to the data label (i.e. frequency) for the given data bin.

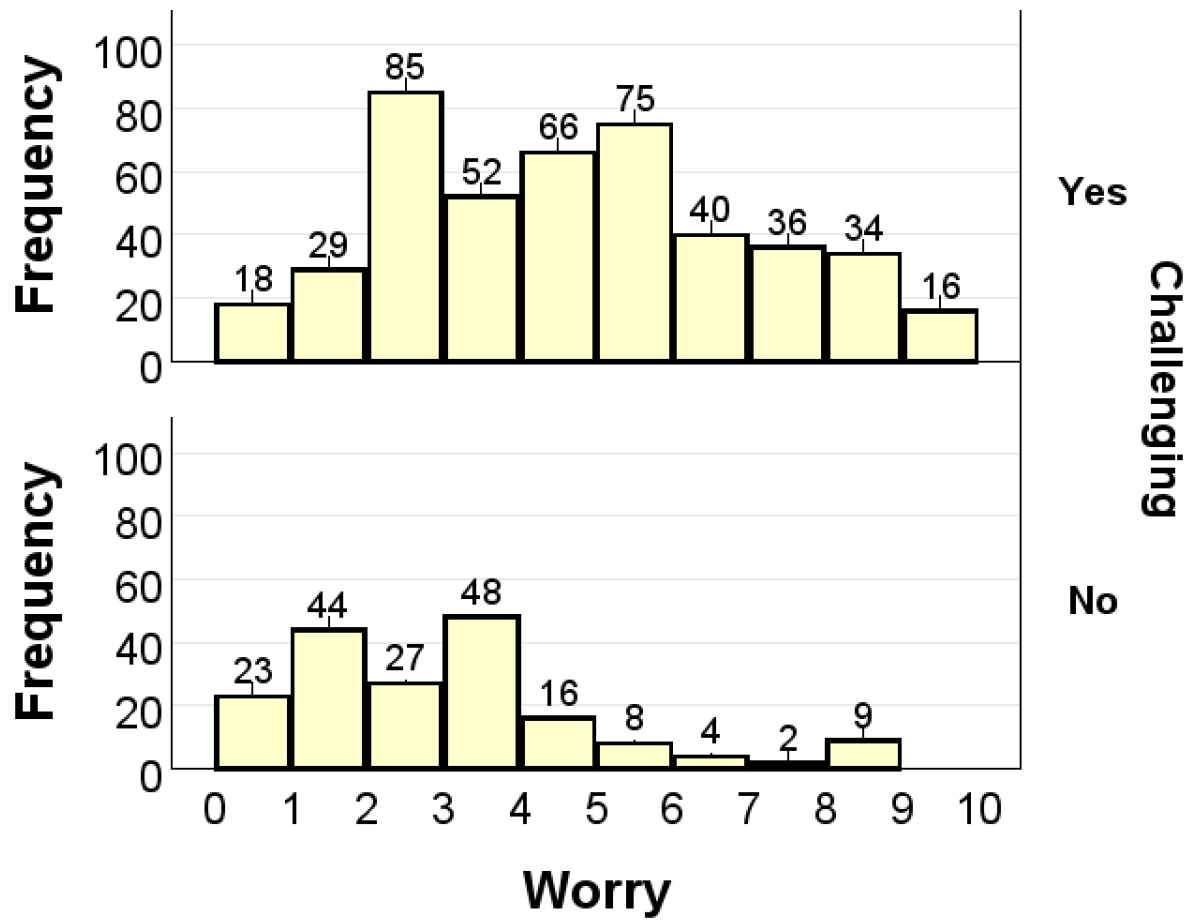


Fig. 2. Distribution of worry intensities. The number at the top of each data column corresponds to the data label (i.e. frequency) for the given data bin.

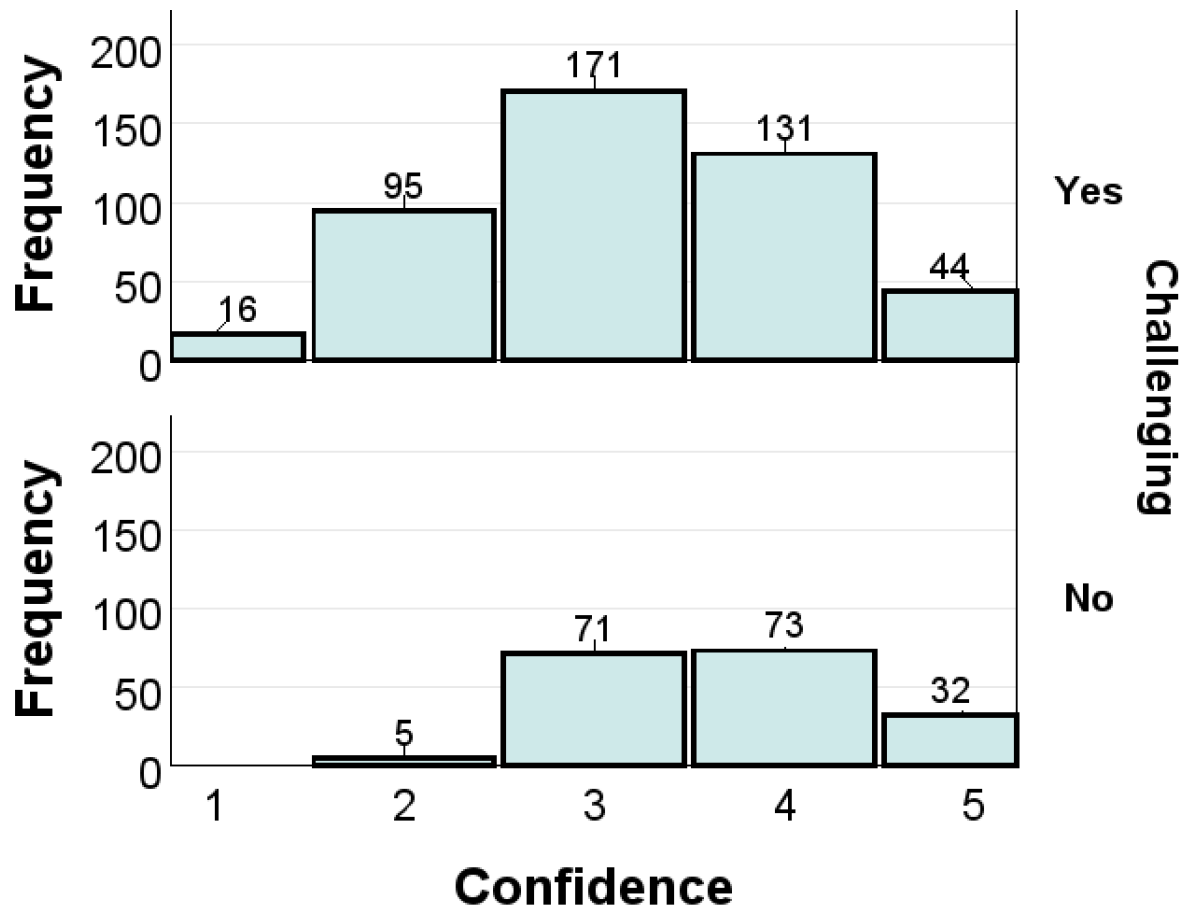


Fig. 3. Distribution of confidence intensities. The number at the top of each data column corresponds to the data label (i.e. frequency) for the given data bin.

TABLE I  
CORRELATIONS OF EXTRACTED FEATURES WITH PAIN

Variable	Joint	Timescale	Correlation	
			Data in PP	Extended data
Speed	trunk	Segment	-0.11 (NS)	-0.047 (NS)
	thigh		-0.10 (NS)	-0.061 (NS)
	upper arm		-0.093 (NS)	-0.022 (NS)
	lower leg		-0.13 (NS)	-0.093 (NS)
	forearm		-0.038 (NS)	-0.005 (NS)
	hip		-0.012 (NS)	0.045 (NS)
	trunk	Activity	-0.15	-0.11
	thigh		-0.24*	-0.11 (NS)
	upper arm		-0.14	-0.04 (NS)
	lower leg		-0.25*	-0.12
forearm	-0.057 (NS)		-0.043 (NS)	
hip	-0.056 (NS)	0.023 (NS)		
Jerk	trunk	Segment	-0.30**	-0.13
	thigh		-0.083 (NS)	0.031 (NS)
	upper arm		-0.28*	-0.068 (NS)
	lower leg		-0.24*	-0.13
	forearm		-0.18	0.002 (NS)
	hip		-0.009 (NS)	0.064 (NS)
	trunk	Activity	-0.36**	-0.16
	thigh		-0.14	0.02 (NS)
	upper arm		-0.33**	-0.12
	lower leg		-0.32**	-0.19*
forearm	-0.20		-0.009 (NS)	
hip	-0.055 (NS)	0.056 (NS)		
Energy	trunk	Segment	-0.15	-0.11
	thigh		-0.09 (NS)	-0.064 (NS)
	upper arm		-0.13 (NS)	-0.067 (NS)
	lower leg		-0.11 (NS)	-0.086 (NS)
	forearm		-0.066 (NS)	-0.023 (NS)
	hip		-0.007 (NS)	0.034 (NS)
	trunk	Activity	-0.26**	-0.2*
	thigh		-0.26**	-0.13
	upper arm		-0.22	-0.14
	lower leg		-0.27**	-0.14
forearm	-0.067 (NS)		-0.049 (NS)	
hip	-0.027 (NS)	0.025 (NS)		
Amount of movement	trunk	Segment	-0.11 (NS)	-0.047 (NS)
	thigh		-0.10 (NS)	-0.061 (NS)
	upper arm		-0.093 (NS)	-0.022 (NS)
	lower leg		-0.13 (NS)	-0.093 (NS)
	forearm		-0.038 (NS)	-0.005 (NS)
	hip		-0.012 (NS)	0.045 (NS)
	trunk	Activity	-0.15	-0.071 (NS)
	thigh		-0.24*	-0.11
	upper arm		-0.14	-0.042 (NS)
	lower leg		-0.25*	-0.12
forearm	-0.056 (NS)		-0.042 (NS)	
hip	-0.056 (NS)	0.023 (NS)		
Minimum distance to the forearm	trunk	Segment	-0.27**	-0.19*
	thigh		0.035 (NS)	0.031 (NS)
	lower leg		0.045 (NS)	0.079 (NS)
	hip	-0.098 (NS)	0.04 (NS)	
	trunk	Activity	-0.34**	-0.25**
	thigh		-0.16	-0.19*
lower leg	-0.10 (NS)		-0.031 (NS)	
hip	-0.21	-0.042 (NS)		
Range of motion	trunk-hip-lowerleg	Segment	-0.063 (NS)	-0.065 (NS)
	hip-thigh-lowerleg		-0.12 (NS)	-0.073 (NS)
	trunk-hip-lowerleg	Activity	0.15 (NS)	0.015 (NS)
	hip-thigh-lowerleg		-0.038 (NS)	-0.070 (NS)

PP - Olugbade, R. Buono, A. Williams, S. D. O. Garcia, N. Gold, C. Holloway, and N. Bianchi-Berthouze, "Emopain (at) home: Dataset and automatic assessment within functional activity for chronic pain rehabilitation," in *Int. Conf. Affect. Comput. Intell. Interact.*, 2022, pp. 1–8.

NS - no significance at  $p = 0.05$ .

\* - significance with Bonferroni correction at  $p < 0.05$ .

\*\* - significance with Bonferroni correction at  $p < 0.01$ .

Otherwise - significance without Bonferroni correction ( $p = 0.05$ ).