

CROSS CULTURAL VALIDATION OF WORK PRODUCTIVITY AND ACTIVITY IMPAIRMENT QUESTIONNAIRE IN LUPUS PATIENTS FROM LATIN AMERICA

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INTRODUCTION

The Work Productivity and Activity Impairment (WPAI) questionnaire is an instrument validated to measure impairments in work and activities. However, its validation among SLE patients has not been well established in Latin America. The aim of this study was to perform a cross-cultural validation of WPAI questionnaire in Latin American lupus patients based on patients from the GLADEL cohort.

METHODS

GLADEL 2.0 is an observational cohort of SLE patients ≥18 years old, with or without lupus nephritis (LN). Sociodemographic factors, clinical variables, disease activity (SLEDAI-2K), SLICC/ACR damage index (SDI), Physician’s Global Assessment (PGA) and patient-related outcomes (PROs), as WPAI and Lupus Quality of Life questionnaire (LupusQoL), were assessed at baseline and at 12-month follow-up. WPAI measures absenteeism, presenteeism as well as the impairments in unpaid activity because of health problem. This was measured by indicating the number of days and hours of absence from work, days and hours worked, days when work was difficult, and the degree to which the individual was limited at work (work impairment) during the past 7 days. Scores were measured as percentages of scheduled work hours and productivity at work during workdays. The construct validity of the WPAI was tested by the correlations between the WPAI and the health outcomes (SLEDAI, SDI and LupusQoL). Cronbach’s alpha for each dimension of the questionnaire based on the tetrachoric correlation coefficients of the questions were calculated. Alpha values equal to or greater than 0.40 were considered acceptable (p < 0.05). Statistical analysis identified inconsistencies during convergent and divergent validity of the construct, carried out with correlation matrices. Correlations between WPAI dimensions and LupusQoL dimensions, SLEDAI and SDI were calculated through Pearson’s correlation. The sensitivity to change analysis was performed in patients completing both the baseline (time 0) and 12-month (time 2) WPAI measurements, regardless of any therapeutic intervention. Median and mean change from baseline at month-12 were calculated and its significance was evaluated trough Student’s t-test or Wilcoxon test, as appropriate. P-values <0.05 were considered significative. All analysis were done in R version 4.4.0

RESULTS

Of the 1083 patients included in the cohort, 827 completed the WPAI questionnaire and were evaluated at cohort entry and at 12 months. Of overall patients, 89.6% were female, with a median (IQR) age at diagnosis of 27 (20-36) years and 35 (27-44) years age at cohort entry, 63% were Mestizo ethnicity, with a median formal education of 13 (11-16) years, with low/low-middle socioeconomic status in 41.4% of cases. Forty-one percent of patients had a full-time job, 14.3% part-time, and 14.7% were unemployed because of the disease. At cohort entry, 58% of SLE patients had some degree of renal involvement, median (IQR) SLEDAI was 4 (0-10), cumulative damage measured by SDI was 0 (0-1), 37.4% were classified as moderate PGA and 46.7% severe PGA. Cronbach’s alpha values (95%CI) for each dimension were: Absenteeism 0.53 (0.46-0.59), Presenteeism 0.63 (0.57-0.67), Overall work impairment 0.61 (0.55-0.66), Activity Impairment 0.61 (0.56-0.66). A statistically significant correlation was observed between the WPAI score and disease activity measured by SLEADI (p= < 0.001) (table 1). The assessment of the correlations between WPAI and LupusQoL yielded negative values. Physical health showed moderate to strong negative correlations with absenteeism (-0.32), presenteeism (-0.45), overall work impairment (-0.50) and activity impairment (-0.63). Pain correlated negatively with WPAI domains, particularly presenteeism (-0.49) and activity impairment (-0.56). Emotional health and burden to others also displayed significant negative correlations with presenteeism (-0.46) and overall work impairment (-0.43) (table 1). Table 2 depicts the sensitivity to change from cohort entry to 12-month follow-up for each of the WPAI components.

CONCLUSION

The instrument showed good content validity, with internal consistency of item dimensions and showed a good correlation with disease activity and quality of life in lupus patients. Therefore, the WPAI is a valid questionnaire to assess impairment in paid work and activities of SLE patients in Latin America.

TABLE 1
WPAI domain correlation with SLEDAI and SDI, and correlation matrix with LupusQoL at baseline.

WPAI Lupus v2.0	SLEDAI			SDI		
	Correlation ¹	95% CI	p.value	Correlation ¹	95% CI	p.value
Absenteeism	0.51	0.42;0.58	<0.001	0.05	-0.06;0.15	0.403
Presenteeism	0.42	0.33;0.5	<0.001	0.01	-0.1;0.11	0.932
Overall work impairment	0.51	0.42;0.58	<0.001	0.01	-0.1;0.11	0.912
Activity impairment	0.34	0.28;0.4	<0.001	0.07	-0.01;0.14	0.072

WPAI: Lupus v2.0					LupusQoL domains							
WPAI: Lupus v2.0 LupusQoL domains	Absenteeism	Presenteeism	Overall work impairment	Activity impairment	Physical health	Pain	Planning	Intimate relationships	Burden to others	Emotional health	Body image	Fatigue
Absenteeism	1.000	0.453	0.776	0.448	-0.320	-0.233	-0.301	-0.245	-0.186	-0.199	-0.152	-0.178
Presenteeism		1.000	0.843	0.772	-0.452	-0.493	-0.502	-0.434	-0.374	-0.464	-0.406	-0.449
Overall work impairment			1.000	0.759	-0.502	-0.489	-0.488	-0.403	-0.347	-0.437	-0.363	-0.411
Activity impairment				1.000	-0.630	-0.555	-0.609	-0.461	-0.414	-0.509	-0.448	-0.497
Physical health					1.000	0.754	0.750	0.596	0.580	0.690	0.611	0.659
Pain						1.000	0.669	0.602	0.561	0.681	0.649	0.710
Planning							1.000	0.698	0.592	0.683	0.668	0.624
Intimate relationships								1.000	0.514	0.628	0.613	0.595
Burden to others									1.000	0.718	0.644	0.619
Emotional health										1.000	0.735	0.701
Body image											1.000	0.677
Fatigue												1.000

¹Pearson Correlation. SLEDAI: Systemic Lupus Erythematosus Disease Activity Index; SDI: Systemic Lupus International Collaborating Clinics/American College of Rheumatology Disease Index. WPAI:LUPUS V2.0: Work Productivity and Activity Impairment questionnaire specific for Lupus, version 2.0.

TABLE 2
WPAI:LUPUS V2.0 domains: change from baseline to 12 months.

WPAI: Lupus v2.0	Variable	p value ¹
Absenteeism (n)	210	
Mean (SD)	-0.1 (0.3)	0.001
Median (Q1;Q3)	0 (-0.1;0)	0.001
Presenteeism (n)	221	
Mean (SD)	-0.1 (0.4)	0.001
Median (Q1;Q3)	0 (-0.3;0)	0.001
Overall work impairment (n)	210	
Mean (SD)	-0.2 (0.4)	0.001
Median (Q1;Q3)	0 (-0.4;0)	0.001
Activity impairment (n)	653	
Mean (SD)	-0.1 (0.3)	0.001
Median (Q1;Q3)	0 (-0.3;0.1)	0.001

¹p-value corresponding to Student’s t-test or Wilcoxon test, as appropriate. WPAI:LUPUS V2.0: Work Productivity and Activity Impairment questionnaire specific for Lupus, version 2.0.



POS 0985