



**HAL**  
open science

## Is the widely-used score in axial spondyloarthritis, Bath Ankylosing Spondylitis Disease Activity Index, influenced by patients' optimism? A cross-sectional study of 206 patients

Stéphanie Fabre, Anna Molto, Sarah Kreis, Christophe Hudry, Bruno Fautrel, Edouard Pertuiset, Laure Gossec

### ► To cite this version:

Stéphanie Fabre, Anna Molto, Sarah Kreis, Christophe Hudry, Bruno Fautrel, et al.. Is the widely-used score in axial spondyloarthritis, Bath Ankylosing Spondylitis Disease Activity Index, influenced by patients' optimism? A cross-sectional study of 206 patients. *Joint Bone Spine*, 2016, 10.1016/j.jbspin.2016.09.009 . hal-01400053

**HAL Id: hal-01400053**

**<https://hal.sorbonne-universite.fr/hal-01400053>**

Submitted on 23 Nov 2016

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

## Letter

### Is the widely-used score in axial spondyloarthritis, Bath Ankylosing Spondylitis Diseases Activity Index, influenced by patients' optimism? A cross-sectional study of 206 patients

Stephanie Fabre <sup>1,2</sup>, Anna Molto <sup>1,3</sup>, Sarah Kreis <sup>1</sup>,  
Christophe Hudry <sup>5</sup>, Bruno Fautrel <sup>1,4</sup>, Edouard Pertuiset <sup>2</sup>, Laure Gossec <sup>1,4</sup>

#### Affiliations

<sup>1</sup> Sorbonne Universités, UPMC Univ Paris 06, GRC-08, Institut Pierre Louis d'Epidémiologie et de Santé Publique, Paris, France

<sup>2</sup> René Dubos hospital, Rheumatology department, Pontoise, France

<sup>3</sup> Paris Descartes University, Rheumatology Department, Cochin Hospital, AP-HP. INSERM (U1153): Clinical Epidemiology and Biostatistics, PRES Sorbonne Paris-Cité

<sup>4</sup> AP-HP, Pitié Salpêtrière Hospital, Rheumatology department, Paris France

<sup>5</sup> Office-based practice, Paris, France

The guarantors who accept full responsibility for the work and/or the conduct of the study, had access to the data, and controlled the decision to publish are for this paper, Stephanie Fabre and Laure Gossec.

#### CORRESPONDING AUTHOR

Laure GOSSEC

Hôpital Pitié-Salpêtrière, Service de Rhumatologie, Pavillon Benjamin Delessert 2e étage

47-83, boulevard de l'Hôpital - 75013 Paris, France

laure.gossec@aphp.fr

Tel: +33 1 42 17 84 21

Fax : +33 1 42 17 79 59

**Word count:** 500

**Key words:** axial spondyloarthritis, BASDAI, optimism

**Disclosure :** No Conflict of Interest has been declared by the authors.

**Funding:** none

The Bath Ankylosing Spondylitis Disease Activity Index (BASDAI) (1) is widely used to assess disease activity in axial spondyloarthritis (axSpA) and initiate Tumor Necrosis Factor  $\alpha$ -inhibitor therapy (2). However, it is purely patient-reported and may be related to psychological distress (i.e., anxiety/depression) (3), which is an issue when using it to decide on treatment strategies. Dispositional optimism is a stable, trait-like personality characteristic consisting of a general positive mood or attitude about the future (4). Research has linked optimism to lower pain sensitivity and better adjustment to chronic pain (5). It could therefore have an influence on patient-reported outcomes like BASDAI. A cross-sectional study was performed in two hospitals, and one office-based practice in France between September 2013 and February 2014 (6). All patients with definite axSpA according to the Assessment of SpondyloArthritis international Society (ASAS) criteria (7) received a self-report questionnaire including the BASDAI, the French version of the Life Orientation Test-Revised (LOT-R) (8) and the Hospital Anxiety and Depression scale (HADS) used to evaluate respectively optimism and psychological status. Other demographic and medical variables were retrieved from the medical files. In all, 206 patients were included (table 1), 44% of patients were in the 'low', 44% in the 'moderate' and 12% in the 'high level of optimism' category. Optimism was significantly though slightly correlated to BASDAI scores:  $R=-0.15$ ,  $p=0.04$ . However, in the multivariate analysis adjusted on demographic variables and anxiety/depression levels, there was no significant relationship between BASDAI and optimism. A higher BASDAI score was mainly related to male gender ( $\beta=1.41\pm 0.26$ ,  $p>0.0001$ ), depression ( $\beta=0.88\pm 0.43$ ,  $p=0.04$ ) and higher age ( $\beta=0.03\pm 0.01$ ,  $p=0.02$ ). The level of optimism was low to moderate in this axSpA population, similarly to the levels observed in France in low back pain and mixed chronic disease populations (6,9). Although it was significantly though slightly correlated to BASDAI score in univariate analysis, it was not in multivariate analysis. This is consistent with the literature: the disease activity score

(DAS) was not correlated with the level of optimism in a population of recent onset rheumatoid arthritis patients (10) and optimism was reported to be positively correlated to mental Health Related Quality of Life (HRQoL) in axSpA but not to physical HRQoL (6), suggesting it would not influence the interpretation of physical scores like BASDAI. A higher BASDAI score was correlated to depression, as reported previously (3). Unlike optimism, depression is a variable psychological state and might therefore be more impacted by the course of the disease. It is also possible that this association reflects a common underlying biological process. The association of a higher BASDAI score with male gender and age was not found consistently in previous studies (3,11). In conclusion, optimism was not associated to BASDAI scores, confirming the validity of BASDAI. However, the influence of other psychological elements like depression should be taken into account. Measurement of disease activity in SpA is complex and more work is needed on the best ways to analyse it, including more objective parameters, like the recently-developed ASDAS (12).

1. Garrett S, Jenkinson T, Kennedy LG, et al. A new approach to defining disease status in ankylosing spondylitis: the Bath Ankylosing Spondylitis Disease Activity Index. *J Rheumatol*. 1994;21:2286–91.

2. Van der Heijde D, Sieper J, Maksymowych WP, Dougados M, Burgos-Vargas R, Landewé R, et al. Assessment of SpondyloArthritis international Society. 2010 Update of the international ASAS recommendations for the use of anti-TNF agents in patients with axial spondyloarthritis. *Ann Rheum Dis*. 2011;70:905-8.

3. Martindale J, Smith J, Sutton CJ, Grennan D, Goodacre L, Goodacre JA. Disease and psychological status in ankylosing spondylitis. *Rheumatology* 2006;45:1288-93.

4. Scheier MF, Carver CS: Effects of optimism on psychological and physical well-being: Theoretical overview and empirical update. *Cognitive Therapy and Research* 1992;16:201-28.

5. Goodin BR, Bulls HW. Optimism and the experience of pain: benefits of seeing the glass

as half full. *Current Pain & Headache Reports* 2013;17:1-9.

6. Kreis S, Molto A, Bailly F, Dadoun S, Fabre S, Rein C et al. Relationship between optimism and quality of life in patients with two chronic rheumatic diseases: axial spondyloarthritis and chronic low back pain. A cross sectional study of 288 patients. *Health Qual Life Outcomes* 2015;13:78.

7. Rudwaleit M, van der Heijde D, Landewé R, Listing J, Akkoc N, Brandt J, et al. The development of Assessment of SpondyloArthritis international Society classification criteria for axial spondyloarthritis (part II): validation and final selection, *Ann Rheum Dis*. 2009;68:777-83.

8. Trottier C, Mageau G, Trudel P, Halliwell WR. Validation of the Canadian-French version of Life Orientation Test-Revised. *Canadian Journal of Behavioural Science* 2008;40:238-43.

9. Kepka S, Baumann C, Anota A, Buron G, Spitz E, Auquier P et al. The relationship between traits optimism and anxiety and health-related quality of life in patients hospitalized for chronic diseases: data from the SATISQOL study. *Health Qual Life Outcomes* 2013;11:134.

10. Heimans L, Wevers-de Boer KVC, Visser K, Runday HK, Steup-Beekman GM, van Oosterhout M, et al. The relationship between disease activity and depressive symptoms severity and optimism-results from the IMPROVED study. *Clin Rheumatol* 2013;32:1751-57

11. Webers C, Essers I, Ramiro S, Stolwijk C, Landewé R, van der Heijde D et al. Gender-attributable differences in outcome of ankylosing spondylitis: long-term results from the Outcome in Ankylosing Spondylitis International Study. *Rheumatology* 2016;55:419-28.

12. Lukas C, Landewé R, Sieper J, Dougados M, Davis J, Braun J, et al.. Development of an ASAS-endorsed disease activity score (ASDAS) in patients with ankylosing spondylitis. *Ann Rheum Dis* 2009;68:18-24.

**Table1.** Characteristics of 206 axSpA patients

	All patients, N= 206
Age, mean (SD)	46.3 (11.7)
Gender, males, N (%)	101 (49.0)
Disease duration in yrs, mean (SD)	15.5 (10.8)
BASDAI (0-10), mean (SD)	3.8 (2.0)
TNF $\alpha$ inhibitor, N (%)	138 (68.3)
Definite anxiety, N (%) <sup>1</sup>	54 (26.2)
Definite depression, N (%) <sup>2</sup>	25 (12.1)
Optimism level, mean (SD) <sup>3</sup>	13.7 (4.3)

SD : standard deviation

<sup>1</sup> Definite anxiety: HADS anxiety score $\geq$ 11

<sup>2</sup> Definite depression: HADS depression score $\geq$ 11

<sup>3</sup> Evaluated through the LOT-R score