

# Patients' acceptance of their medication: Results from a French multi-diseases study with patient online community using the ACCEPtance by the Patients of their Treatment (ACCEPT®) questionnaire

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## Objectives

According to the World Health Organization, about 50% of patients with chronic diseases do not strictly follow their prescriptions of long-term treatments in developed countries. These lacks of adherence and persistence can be major barriers to treatment efficiency in real world, for many chronic diseases. The concept of acceptance is based on patients' perception of the treatment they are taking and the subsequent balance between the perceived treatment-related benefits and harms/constraints. Measuring patients' acceptance of their medication is likely to help better understand and predict patients' behaviour towards their treatment. The generic ACCEPtance by the Patients of their Treatment (ACCEPT) questionnaire<sup>1,2</sup> was developed to measure patients' acceptance of their medication.

The objective of this study was to evaluate for a variety of chronic diseases the level of patients' acceptance of their medication in real life using a patient online community.

## Methods

This was an observational, cross-sectional study conducted through the Carenity platform from May to September 2014.

The Carenity platform is a European online patient community created in 2011 in which both patients and relatives of patients, concerned by a chronic disease can share their experience, find basic tools for health follow-up and contribute to medical research.

In this study, all patients connecting to the platform were invited to complete an anonymous online questionnaire including questions about demographics, chronic disease and treatment, and the 25-item ACCEPT questionnaire. The ACCEPT questionnaire includes 6 multi-item acceptance dimensions (Medication Inconvenience, Long-term Treatment, Regimen Constraints, Side Effects, Effectiveness and General), and one single-item acceptance dimension (Numerous Medications). Scores range from 0 to 100 for multi-item dimensions with higher score indicating greater acceptance. The single item dimension score is kept as the original 3-point response scale common to all items ("I don't find this easy to accept"; "I find this easy to accept"; "No" for patients not bothered by the subject addressed in the item).

Patients included in the present analysis were adult French patients, suffering from any chronic diseases and currently receiving a treatment for this disease. In addition, patients had to have completed at least one item of the ACCEPT questionnaire.

Descriptive statistics were used to describe the patient population and the ACCEPT scores. Pearson correlations between the Acceptance/General dimension and each of the other dimensions were calculated. Diseases with at least 30 patients were analysed individually, while other diseases were grouped together.

## Results

### Analysis population (Figure 1 and Table 1)

- Among the 4193 patients included in the analysis, more than 270 chronic diseases were represented, among which 19 including more than 30 patients.

### Figure 1. Patient disposition

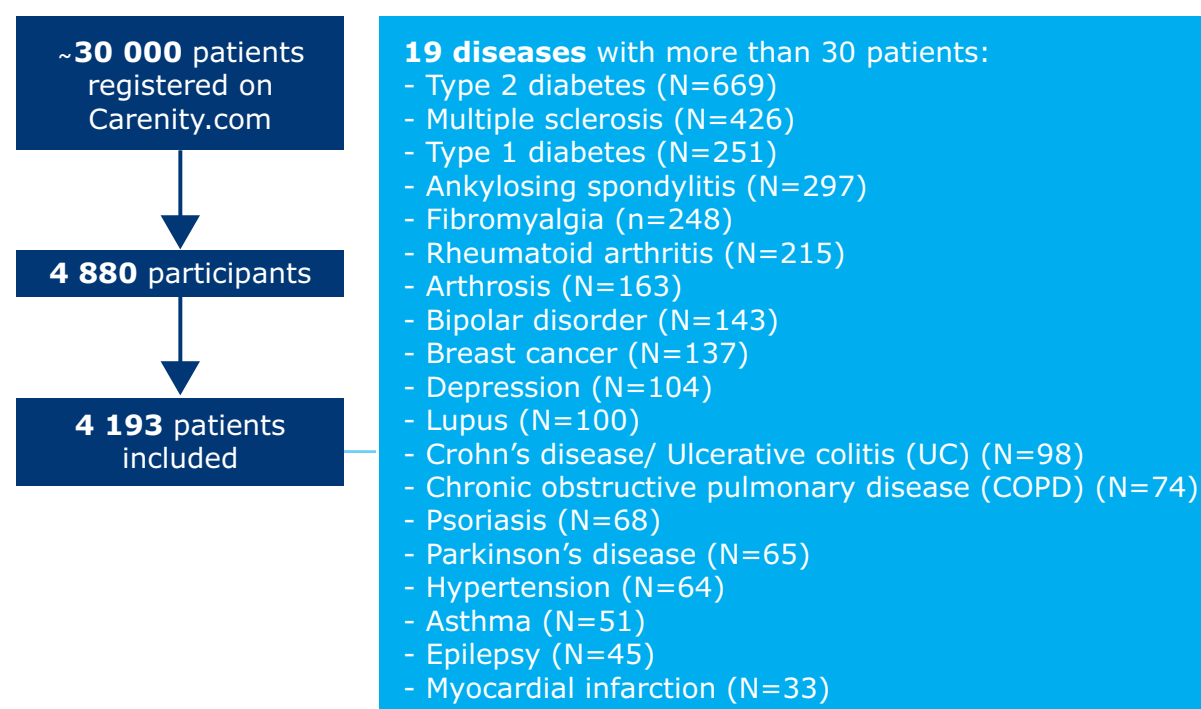


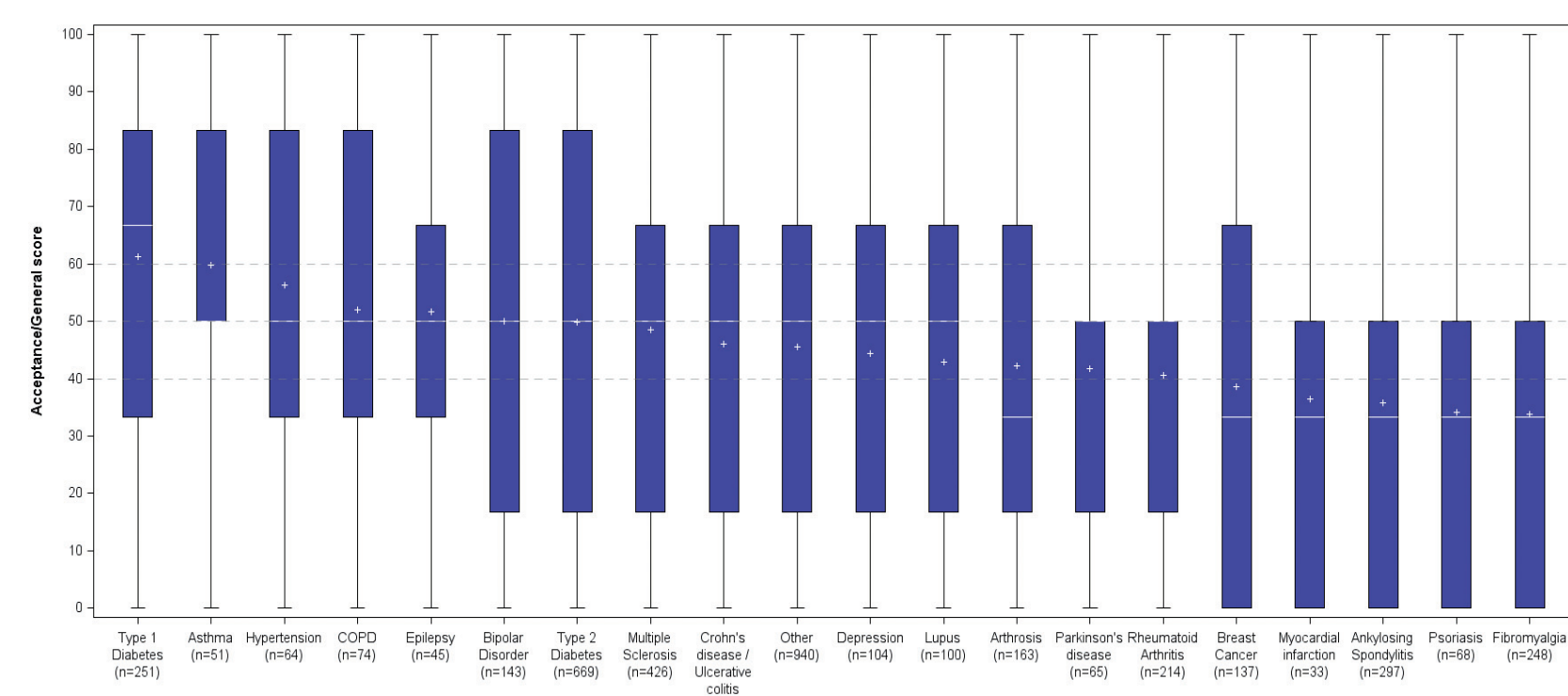
Table 1. Description of the patient population (N=4193)

		Total	Minimum	Maximum
Age (years)	Mean (SD)	52.8 (12.9)		
	Median (Q1 - Q3)	54.0 (44.0 - 62.5)	41.3 (Crohn / UC)	62.2 (Type 2 diabetes)
	Min - Max	18.1 - 89.3		
Gender (%)	Female	71.0	46.9 (Type 2 diabetes)	100 (Breast cancer)
Occupational status (%)	Working	46.2	24.6 (Parkinson)	71.0 (Lupus)
	Unemployed	23.8		
	Retired	30.1		
Time since diagnosis (years)	Mean (SD)	10.7 (10.9)		
	Median (Q1 - Q3)	7.0 (3.0 - 15.0)	2.0 (Breast cancer; infarction)	20.0 (Asthma)
	Min - Max	0.0 - 72.0		

### Level of acceptance (Figure 2 and Table 2)

- None of the diseases was observed to have an extremely high mean acceptance score (mean Acceptance/General score <65 for all diseases).
- For each disease, there were patients reporting the highest possible (100) and lowest possible (0) Acceptance/General score.
- The diseases can be organised into three groups according to their mean level of Acceptance/General score:
  - Mean score > 50: Type 1 diabetes, Asthma, Hypertension, COPD, Epilepsy
  - Mean score 40-50: Bipolar disorder, Type 2 diabetes, Multiple sclerosis, Crohn's disease / UC, Depression, Lupus, Arthritis, Parkinson's disease, Rheumatoid arthritis
  - Mean score <40: Breast cancer, Myocardial infarction, Ankylosing spondylitis, Psoriasis, Fibromyalgia

Figure 2. Acceptance/General score for each disease



Box = interquartile (Q3-Q1); + = mean; - = median; upper and lower bars = observed max - min values. Boxplots are ranked based on mean Acceptance/General score.

Table 2. Description of ACCEPT item responses and dimension mean scores

Items		Three diseases with worst level of acceptance*		Three diseases with best level of acceptance*	
Medication preparation	Type 1 diabetes	18		Hypertension	2
	Epilepsy	13		Arthritis	3
	Psoriasis	13		Asthma	4
Administration mode	Type 1 diabetes	32		Hypertension	0
	Multiple sclerosis	27		Parkinson's disease	3
	Ankylosing spondylitis	24		Depression	4
Medication form	Type 1 diabetes	26		Hypertension	0
	Multiple sclerosis	24		Lupus	3
	Crohn's disease / UC	21		Myocardial infarction	3
Special storage conditions for journeys	Type 1 diabetes	39		Breast cancer	1
	Ankylosing spondylitis	33		Depression	1
	Multiple sclerosis	22		Lupus	1
Medication being taking discreetly	Asthma	24		Hypertension	0
	Ankylosing spondylitis	23		Arthritis	3
	Psoriasis	21		Breast cancer	5
Acceptance/ Medication Inconvenience Dimension	Type 1 diabetes	59.9 (29.3)		Hypertension	96.3 ( 7.8)
	Ankylosing spondylitis	67.6 (28.6)		Depression	91.3 (16.9)
	Multiple sclerosis	69.7 (31.8)		Asthma	90.7 (16.1)
Taking medication for a long time in the past	Myocardial infarction	49		Hypertension	11
	Depression	48		Type 2 diabetes	21
	Lupus	45		Multiple sclerosis	23
Taking medication for a long time in the future	Ankylosing spondylitis	58		Hypertension	23
	Bipolar disorder	57		Arthritis	34
	Lupus	57		Type 2 diabetes	36
Becoming part of normal routine	Fibromyalgia	19		Arthritis	6
	Myocardial infarction	18		Asthma	6
	Lupus	17		Epilepsy	7
Acceptance/ Long-Term Treatment Dimension	Lupus	46.3 (25.6)		Hypertension	61.3 (19.8)
	Fibromyalgia	47.4 (25.1)		Multiple sclerosis	57.8 (26.1)
	Parkinson's disease	47.4 (25.9)		Arthritis	56.1 (23.5)
Remembering to take medication	Parkinson's disease	39		Arthritis	17
	Lupus	38		Hypertension	17
	Bipolar disorder	37		Depression	17
Having to find time to collect medication	Depression	25		Arthritis	8
	Myocardial infarction	24		Psoriasis	12
	Type 1 diabetes	24		Type 2 diabetes	12
Having to remember to take medication with oneself	Type 1 diabetes	37		Psoriasis	7
	Parkinson's disease	31		Arthritis	14
	Lupus	30		Breast cancer	17
Always having medication on oneself	Type 1 diabetes	38		Psoriasis	7
	Parkinson's disease	26		Hypertension	9
	Lupus	23		Arthritis	10
Finding the frequency	Parkinson's disease	39		Hypertension	9
	Type 1 diabetes	34		Arthritis	12
	Fibromyalgia	29		Epilepsy	16
Acceptance/ Regimen Constraints Dimension	Type 1 diabetes	52.9 (34.9)		Arthritis	76.7 (26.6)
	Parkinson's disease	56.8 (33.8)		Hypertension	73.4 (26.5)
	Lupus	60.2 (31.9)		Psoriasis	71.8 (23.8)
Numerous Medication item	Myocardial infarction	54.5		Psoriasis	11.8
	Fibromyalgia	52.4		Hypertension	20.3
	Rheumatoid arthritis	45.1		Multiple sclerosis	20.7
Any side effects	Breast cancer	76		Hypertension	22
	Myocardial infarction	67		Psoriasis	27
	Bipolar disorder	64		COPD	27
Unpleasant side effects	Breast cancer	74		Hypertension	22
	Bipolar disorder	66		Psoriasis	27
	Parkinson's disease	62		COPD	27
Disabling side effects	Breast cancer	66		Hypertension	16
	Bipolar disorder	56		Psoriasis	19
	Fibromyalgia	50		COPD	22
Taking extra medication due to side effects	Breast cancer	37		Hypertension	2
	Ankylosing spondylitis	29		Type 1 diabetes	7
	Rheumatoid arthritis	28		Epilepsy	9
Risk of serious side effects	Ankylosing spondylitis	58		Hypertension	8
	Lupus	53		COPD	11
	Rheumatoid arthritis	53		Arthritis	12
Side Effects Dimension	Breast cancer	35.4 (29.8)		Hypertension	81.4 (26.7)
	Ankylosing spondylitis	41.2 (33.5)		COPD	77.8 (32.0)
	Rheumatoid arthritis	44.5 (34.9)		Psoriasis	74.6 (31.9)
Effective medication	Psoriasis	29		COPD	4
	Ankylosing spondylitis	27		Hypertension	6
	Fibromyalgia	25		Breast cancer	7
Medication protecting enough	Ankylosing spondylitis	25		Myocardial infarction	3
	Parkinson's disease	25		Breast cancer	5
	Psoriasis	22		Hypertension	6
Rapid effect of medication	Ankylosing spondylitis	49		Hypertension	11
	Fibromyalgia	49		Type 1 diabetes	12
	Psoriasis	47		Type 2 diabetes	16
Acceptance/ Effectiveness Dimension	Breast cancer	37.7 (34.6)		Type 1 diabetes	79.8 (29.8)
	Myocardial infarction	51.0 (36.5)		Hypertension	77.6 (31.3)
	Ankylosing spondylitis	52.5 (38.4)		Asthma	75.2 (32.9)

\*For items: Percentage of patients answering "I don't find this easy to accept"  
For dimension: Mean score (SD)

### Link between general acceptance and acceptance-related features (Table 3)

- For all diseases, acceptance/General dimension was mostly correlated with Acceptance /Effectiveness dimension for all diseases.
- For some diseases, Acceptance/General dimension was also strongly correlated with other dimension, in particular Acceptance/ Side effects.

Table 3. Correlations between the Acceptance/General dimension and other ACCEPT dimensions

Disease	N	ACCEPT Acceptance scores				
		Medication Inconvenience	Long-term Treatment	Regimen Constraints	Side Effects	Effectiveness
Epilepsy	45	0.20	0.20	0.09	0.26	0.40
Lupus	100	0.02	0.31	0.21	0.38	0.41
Depression	104	0.12	0.18	0.19	0.32	0.47
Breast cancer	137	-0.06	0.26	0.22	0.35	0.48
Multiple sclerosis	426	0.29	0.28	0.26	0.34	0.50
Arthritis	163	0.02	0.27	0.24	0.32	0.50
Type 2 Diabetes	669	0.18	0.23	0.25	0.37	0.52
Others	942	0.15	0.20	0.20	0.36	0.52
Ankylosing spondylitis	297	0.10	0.16	0.24	0.35	0.59
Type 1 Diabetes	251	0.20	0.28	0.34	0.23	0.65
Crohn's disease/ UC	98	0.13	0.32	0.36	0.36	0.65
COPD	74	0.14	0.33	0.23	0.22	0.67
Rheumatoid arthritis	215	0.02	0.26	0.22	0.39	0.68
Psoriasis	68	0.26	0.14	0.11	0.28	0.69
Fibromyalgia	248	0.19	0.21	0.24	0.44	0.63
Bipolar disorder	143	0.19	0.29	0.10	0.41	0.63
Parkinson's disease	65	0.26	0.30	0.45	0.49	0.69
Hypertension	64	0.04	0.26	0.36	0.51	0.70
Asthma	51	0.11	0.43	0.14	0.51	0.71
Myocardial infarction	33	0.06	0.45	0.22	0.65	0.71

Pearson correlation coefficients, in white <0.20; in grey 0.20-0.39; in blue 0.40-0.59; in purple 0.60-0.79

## Conclusions

This study is the first of its kind to collect data about patient acceptance toward their treatment in real life for a variety of chronic diseases with the ACCEPT questionnaire.

These data shall be of major interest to help evaluating and interpreting level of acceptance in future studies. They shall give clear indications of where are the current unmet needs and priorities of patients, for each of the studied diseases.

## References

- Marant C et al. Patient. 2012;5:239-249.
- Arnould B et al. ISPOR 16<sup>th</sup> Annual European Congress, Dublin, Ireland, 2-6 November 2013.