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Letter to the Editor

Physical activity and quality of life of patients with rheumatoid arthritis at the time of COVID-19 lockdown: an online patient survey



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It has been well established that physical activity (PA) has a positive impact on patients affected by rheumatoid arthritis (RA) [1]. However, the prolonged lockdown triggered by COVID-19 from March to May 2020 has dramatically decreased opportunities for PA in France. This study aimed to describe and measure the impact of this lockdown on PA practice, quality of life, and relationships with rheumatologists of patients affected by RA.

The study was conducted on <http://www.carentity.com>, a global online patient community where chronic illness patients can share their experience and get health information. Volunteer patients can also contribute to medical research by participating in online studies. RA patients were invited to answer an online questionnaire from May, 25th to June, 15th 2020. Patients gave consent online at

the beginning of the study to confirm their participation. Statistical analyses were performed using chi-squared tests to analyze differences between categorical variables. In the overall study, RA activity level was defined by the number of symptoms and the discomfort caused.

Carentity.com has 698 patients actively involved in its RA community, of whom 204 (29%) participated (86% women, mean age 54 years, 84% diagnosed more than 3 years ago).

The proportion of patients engaged in PA plummeted during lockdown: from 74% to 42% for active mobility, from 22% to 11% for moderate-intensity sports and from 16% to 6% for high-intensity sports (Table 1). During the lockdown, 50% of patients significantly decreased the amount of PA they did, 57% reduced the frequency, and 48% reduced the intensity ($p < 0.05$, significant decrease compared to patients who increased/ remained stable PA during lockdown). To maintain PA, most patients reported using a specific method, which was mainly digital (online exercise videos, computer applications, etc.).

Twenty-one percent reported a negative impact of the lockdown on treatment intake. In addition, 30% of patients reported disease flares during lockdown vs. 20% of patients who experienced flares before lockdown ($p < 0.05$).

The more active their RA was during lockdown, the greater the impact was on quality-of-life indicators (Table 2). Regarding medical appointments, 64% of patients felt the need to consult their rheumatologist during the lockdown, but 9% failed to do so, and 14% preferred to delay consultation. Of the 40% of patients

Table 1
Impact of the lockdown on the types of physical activity in which patients were engaged.

	Before lockdown	During lockdown	Neither
Active mobility (e.g. walking, biking, etc.)	74%	42%*	23%
Domestic activities (e.g. housework, gardening, etc.)	82%	77%	8%
Physical activities in a professional or academic setting	24%	6%*	75%
Moderate-intensity sports (e.g. yoga, tai chi, Pilates, dance, etc.)	22%	11%*	72%
High-intensity sports (e.g. tennis, fast running, aerobics, etc.)	16%	6%*	81%

Percentage of patients engaged in each type of PA before and during lockdown.

* Significantly lower than before lockdown (chi-squared test, p -value < 0.05).

Table 2
Patient-reported impact level on several quality of life indicators reported by level of "disease activity".

	N	Sleep quality	Joint mobility	Fatigue	Pain	Morale	Stress
In remission**	15	0.0	0.0	0.0	0.0	-1.0	-1.0
Low activity**	51	-1.0	0.0	0.0	0.0	0.0	0.0
Moderate activity**	76	-2.0*	-1.0	-2.0*	-3.0*	-1.0	-1.0
Flare-up**	62	-3.0*	-4.0*	-3.0*	-4.0*	-2.0	-2.5*

Answers of RA to the question: "How did you feel each of the following indicators were impacted during lockdown?". Evaluated on a scale from -5 (maximal deterioration) to 5 (maximal improvement). The median score is captured for each level of RA activity for each quality-of-life indicator.

* Significantly worse than patients in remission (t -test, p -value < 0.05).

** In remission = No activity, no symptoms. Low activity = Presence of some symptoms but little discomfort experienced. Moderate activity = Presence of symptoms causing moderate discomfort. Flare-up = Many symptoms leading to severe discomfort.