

# **COVID-19 Pandemic : Knowledge, Beliefs And Fears In Patients With Chronic Inflammatory Rheumatic Diseases In A Developing Country**

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## **Abstract:**

### **Objectives :**

To investigate the knowledge, beliefs and fears of patients with Chronic Inflammatory Rheumatic Diseases (CIRD) in Morocco regarding the Covid-19 pandemic.

### **Methods :**

A cross-sectional study was conducted among patients with rheumatic diseases using a questionnaire providing information on patients and disease characteristics.

The patients' knowledge of the COVID-19 infection was evaluated through the following questions: what are the symptoms, age groups concerned, modes of transmission, how to prevent an infection, what to do in case of suspecting an infection, and what are the vaccination protocols. We also investigated the sources of the patients' information.

We assessed the patients beliefs and fears regarding COVID-19 using 2 criteria: their perception of it being a threat to the public health and their own susceptibility of being infected compared to the general population.

### **Results :**

350 patients had participated in this online survey (mean age of  $46.1 \pm 14.4$ , 68% were women, 15.7% were illiterate, 45.7% were unemployed, rural residence in 11.7% of cases).

The correct answers to the 6 questions of the knowledge section from the questionnaire were 53.4-100% with an average of 90.7%. The mean knowledge score was 5.43/6 (SD:0.48). Most participants (96.6%) correctly identified the age group concerned about the COVID-19 infection. Remarkably 92.3% of the participants recognized 3 clinical features. Furthermore, 97.7% and 72.3% of the sample recognized modes of transmission and disease prevention measures. 87.4% of patients knew the recommended course of action to take if they had a fever or cough and had recently been in contact with an infected individual.

The sources of information on COVID-19 were in descending order from: their rheumatologist (56.6%), personal research (on the internet or other: 43.4%), video broadcasts on national television (28%), and other awareness media (24.2%).

Regarding the patients' beliefs and fears toward COVID-19, 81.7% believed that the pandemic is a serious threat for the public health and 80.6% thought that their CIRD makes them more exposed to the risk of contamination than the general population.

### **Conclusion:**

The results of this survey show a high prevalence of patients' concerns about COVID-19. Moreover, the majority of patients responded correctly on the modes of transmission of COVID-19 and the means of protection from the COVID-19 infection. These results can be explained by the enormous awareness-raising efforts carried out by the Moroccan government.

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## I. Introduction

The outbreak of coronavirus disease in 2019 (COVID-19) was caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection, originating in Wuhan, China, where it emerged in late 2019 [1, 2]. The World Health Organization (WHO) declared a “global emergency” on January 30th, 2020. The disease then began spreading rapidly across the globe in February. The WHO declared COVID-19 a pandemic on March 11th [3]. The first known case of COVID-19 in Morocco was detected on March 2nd, 2020, and the first death attributed to the disease occurred on March 10th, 2020 [4]. This pandemic has important implications for patients with rheumatic diseases since most of them are undergoing various immunosuppressive therapies [5 - 6].

This study aims to investigate the knowledge, beliefs and fears of patients with Chronic Inflammatory Rheumatic Diseases (CIRD) in Morocco regarding the Covid-19 pandemic.

## II. Material and methods

This cross-sectional study was conducted from May 1st to May 30th, 2020 by the Rheumatology Department B at El Ayachi Hospital (national reference structure to manage rheumatic diseases), with the collaboration of the associations AMRAR (Moroccan Association for Research and Social Aid to Rheumatics) and AMP (Moroccan Association for the Fight against Rheumatoid Arthritis).

Participants were Moroccan patients suffering from CIRD (Rheumatoid arthritis (RA), spondyloarthropathies and undifferentiated CIRD).

The survey was approved by the ethics committee of the University Mohammed V, Rabat (Faculty of Medicine and Pharmacy) who waived the requirement for informed consent and was conducted in conformity with the ethical principles of research.

The working group was made up of a panel of experts including 3 senior rheumatologists and 2 residents of rheumatology, an expert on infectious diseases and epidemiology, an expert in sociology in addition to 2 patients suffering from CIRD (1 RA and 1 spondyloarthropathy).

## III. Questionnaire:

The questionnaire consisted of binary or multiple-choice questions providing information on three sections:

1. Patients and disease characteristics: Demographic variables included age, gender, marital status, education, profession, residence (urban or rural) and health insurance. Disease characteristics included type of CIRD (RA, spondyloarthropathy, others), duration, current treatment and comorbidities.
2. Risk perception: Risk perception of COVID-19 was assessed using 2 criteria that explored participant's perception of COVID-19 being a threat to the public health and their own susceptibility of being infected compared to the general population.
3. COVID-19 related knowledge: this section was evaluated through 6 questions: 2 questions regarding clinical presentations and age groups that can be affected, 2 questions about modes of transmission and self-reported preventive behaviors, 1 question regarding the patient's approach in case of suspicion of infection by COVID-19 and 1 question regarding vaccination. Patients were asked to check off the correct suggestions. We also investigated the sources of the patients' information.

### Statistics:

Statistical Analysis System IBM SPSS Statistics V20.0.0 was used to analyze the survey data.

The qualitative variables were expressed as frequencies. Quantitative values were expressed as mean and standard deviation (SD) or median (interquartile lower, upper).

Qualitative values were analyzed by the chi2 test. Quantitative values were analyzed by the student test when measures were normally distributed or by the nonparametric test (Mann–Whitney U) when measures were not normally distributed (Kolmogorov–Smirnov test was used to test normality).

## IV. Results

### Patients and disease characteristics

We received answers from 350 patients (female sex of 68%, mean age of  $46.1 \pm 14.4$  years) suffering from CIRD (RA (62.3%), spondyloarthropathies (34.3%), and undifferentiated CIRD (3.4%)) treated with conventional Disease-modifying anti-rheumatic drugs (cDMARDs) and biologic Disease-modifying anti-rheumatic drugs (bDMARDs) in respectively 67.4% and 30.6% of cases. Corticosteroids and nonsteroidal anti-inflammatory drugs (NSAIDs) intake was noted in 39.1 and 33.7% of patients.

Table 1 summarizes patients and diseases characteristics.

### Concerns about COVID-19

Regarding the patients concerns toward COVID-19, 81.7% of patients believed that the pandemic is a serious threat to the public health and 80.6% thought that their CIRD makes them more exposed to the risk of contamination than the general population.

### Knowledge about COVID-19

The sources of information on COVID-19 were in descending order from: their rheumatologist (56.6%), personal research (on the internet or other, 43.4%), video broadcasts on national television (28%), other awareness media (24.2%).

Table 2 and 3 summarize knowledge about COVID-19 and means of protection used by patients against COVID-19.

The correct answers to the 6 questions of the knowledge section from the questionnaire were 53.4-100% with an average of 90.7%. The mean knowledge score was 5.43/6 (SD:0.48). Most participants (96.6%) correctly identified the age group concerned about the COVID-19 infection. Remarkably 92.3% of the participants recognized 3 clinical features. Furthermore, 97.7% and 72.3% of the sample recognized modes of transmission and disease prevention measures. 87.4% of patients knew the recommended course of action to take if they had a fever or cough and had recently been in contact with an infected individual.

## V. Discussion

This study illustrates the attitudes of Moroccan patients suffering from CIRD during the COVID-19 crisis.

The results of this survey show a high degree of patients' concerns about COVID-19, since 4 out of 5 patients believed that the pandemic was a serious threat to public health and thought that they were subjected to the risk of contracting the infection more than the general population.

The concerns of the patients are understandable but incorrect in the light of current knowledge. Indeed, recent studies suggest that patients with rheumatic diseases have a risk of infection with SARS-CoV-2 similar to that of the general population [7,8,9].

The majority of patients answered correctly on the mode of transmission and the means of protection from COVID-19. These results can be explained by the enormous awareness-raising efforts carried out by the Moroccan government.

These reassuring data have been communicated to patients to reassure them and to reduce their fear of contracting more than the normal population of serious and fatal forms of COVID. However, it is our duty to protect our patients from possible COVID-19 infection. Barrier measures and mandatory wearing of masks should be continued. This was well developed by the French High Health Authority (HAS) [10].

## VI. Conclusion

The results of this survey show a high prevalence of patients' concerns about COVID-19. Moreover, the majority of patients responded correctly on the modes of transmission of COVID-19 and the means of protection from the COVID-19 infection. These results can be explained by the enormous awareness-raising efforts carried out by the Moroccan government.

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**Conflict of interest:** the authors have declared no conflicts of interest

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**Table 1: Patients and disease characteristics**

Patients and disease characteristics		N=350	
Age (Years)*	46,1 ± 14,4 [14 - 89]		
Sex	Female/Male (%)		68/32
<b>CIRD</b>			
	RA (%)		62.3
	Spondyloarthropathies (%)		34.3
	Undifferentiated CIRD (%)		3.4
Disease Duration (years)*	10 (4 ; 15)		
<b>Current treatment (s) (%)</b>			
	NSAIDs		33.7
	Corticosteroids		39.1
	CDMARDs		67.4
	BDMARDs		30.6

**CIRD** : Chronic Inflammatory Rheumatic Disease

**RA**: Rheumatoid arthritis

**NSAIDs**: non-steroidal anti-inflammatory drugs

**cDMARDs**: conventional Disease-modifying anti-rheumatic drugs

**bDMARDs**: biologic Disease-modifying anti-rheumatic drugs

\*Expressed by medians and quartil

**Table 2 : Patient Knowledge of COVID-19**

Questions		N = 350
<b>What age groups can be affected by Coronavirus? (%)</b>		
	Children (only)	0
	Young adults (only)	0
	Old persons (only)	3.1
	All	96.9
<b>What are the symptoms of coronavirus ? (%)</b>		
	Nosebleed	14.9
	Cough	94
	Fever	98.3
	Constipation	4.9
	Respiratory distress	96
	Frequent urination	1.4
	Articular and/or muscle pain	53.4
<b>What are the main ways people are currently infected with the coronavirus? (%)</b>		
	Fecal contaminants in drinking water	5.7
	Mosquito bites	2.9
	Droplets of saliva that land in the mouth or nose of people nearby when an infected person sneezes or coughs	98.6
	Touching surfaces on which saliva of infected persons is dispersed and then touching the eyes or nose with the hands	97.7
<b>Is there any vaccine currently available which protects against Covid-19? (%)</b>		
	Yes	4
	No	64
	I don't know	32
<b>Have you received any information or instructions regarding CIRD and Covid-19? (%)</b>		
	Yes/ No	52/ 48
<b>If so, by what means? (%)</b>		<b>N = 182</b>

	Your rheumatologist	56.6
	Awareness Video	24.2
	Personal research (on the internet or other)	43.4
	National television channels	28
	Other	7.7

CIRD : Chronic Inflammatory Rheumatic Disease

**Table 3 : Means of protection used by patients against COVID-19**

Questions	N = 350
<b>Which of the following actions do you take to avoid contamination with the coronavirus? (%)</b>	
Containment compliance	98.3
Wear a face mask when leaving the house.	94.3
Get vaccinated against pneumonia	2
Gargle mouthwash	19.7
Wash hands regularly with soap and water	95.4
Use of hydroalcoholic gels	83.7
Observe the safety distance ( $\geq 1$ m) when coming into contact with people	92.9
Taking antibiotics	1.7
Avoid touching your eyes, nose and mouth with unwashed hands	88.3
Rinse the nose regularly with saline solution	10.6
Use of traditional or herbal remedies (eating garlic, use of cloves ... etc.)	18
<b>In case of having a fever or cough or being recently in contact with a Covid patient, what do you do? (%)</b>	
Going to your doctor, by taxi or public transport	2
Get someone to drive you to the emergency	4.3
Rest and take a fever medicine, then call your doctor if you still feel sick after 2-3 days	6.3
Isolate yourself in your room, put on a mask to protect your family and call national number for Covid 141 or the toll-free number 080 100 4747	87.4