Attitudes and Behaviors of Patients With Rheumatic Diseases During the Early Stages of the COVID-19 Outbreak

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Earl Silverman (ES):

I'm Earl Silverman, Editor-in-Chief of The Journal of Rheumatology. I hope everyone is doing well and staying healthy during the pandemic.

Today, I am pleased to have Dr. Margaret Ma and Dr. Manjari Lahiri from the National University of Singapore.

Drs. Ma and Lahiri, along with co-authors Drs. Sen Hee Tay, Peter P.M. Cheung, Amelia Santosa, Yiong Huak Chan, James W.L. Yip, and Anselm Mak, wrote the article entitled, “Attitudes and Behaviors of Patients With Rheumatic Diseases During the Early Stages of the COVID-19 Outbreak,” which is available now on The Journal’s website at irheum.org.

Drs. Ma and Lahiri, I want to thank you for writing the article, and for agreeing to discussing this topic, especially with the time difference between Canada and Singapore.

So, we'll move right along. And either one or both, you let me know can answer any of the questions.

So, what do you think are the most important lessons to be learned from the early time with COVID-19, as in many countries, we’re now hitting a second way.

Margaret Ma (MM): Ok, so maybe I should take the lead on this one. Like the paper’s entitled, the early phases, although at the time we did the study, we didn't realize how early phases will be, because there’s been quite a prolonged process.

Essentially, it was late February and early March when realized that COVID was really going to be hanging around. We wanted to send out a survey to all of our rheumatology patients to assess the attitudes of the pandemic and how their behaviors have changed.

So we sent a survey out by SMS, in an anonymized fashion, to all of the patients that attended our service within the previous year. I think the first thing I learned pretty quickly is that, from a personal point of view, is that how quickly things can be done during something like a COVID pandemic. Because it was COVID-related, everything was expedited and we were be able to get ethics approval within 1 week, which was unheard of. We were super impressed with that, even with Singapore efficiency.

And from the patient's point of view as well, they were very engaged because this is obviously something close to all their hearts, and we managed to get over 2200 replies within just 2 weeks. We were very pleased with those results.
So that’s what I learned, just from a researcher’s point of view. From the actual study itself, obviously all our patients from the service were worried about catching COVID and worried about going out, and worried that either that the disease can increase the risk of catching COVID, but also that the medication could increase the risk of catching COVID.

But we just decided that our patients actually very well behaved in general, and only tiny proportion of patients did actually reduce or stop their treatment. Most actually stayed on treatment, which I thought was fascinating. Even though they were worried, they still carried and were compliant according to the survey.

What the other interesting finding I thought was the attitudes toward face masks, which has become increasingly controversial as the pandemic has evolved. During March, when we sent out this survey, so despite the government at the time discouraging the use of face masks when patients are well, nearly 50% of patients, the reply to this database, they admitted to wearing a face mask even when they were feeling well.

And as obviously the pandemic has gone on, this is now in stark contrast to the rest of the world where there seems to be more of an anti-mask movement in a significant proportion of the population despite now face masks being recommended/mandated in some areas and are suddenly highly recommended worldwide.

The last thing I wanted to highlight in terms of the study is that we wanted to use an unbiased approach to analyzing this data. We used the latent class analysis to deploy clusters of patients that behaved in similar ways. By using latent class analysis, we were able to actually group patients into three groups.

One of these groups, which we named C3, would be the most worried about catching COVID, and their behaviors were that they contacted the healthcare workers more, but also they were more likely to reduce treatment as well because of their worries.

And then the sociodemographics of the population is that these were more women, more rates of unemployment, and they belong to the non-Chinese ethnic minorities.

With this study, we were able to highlight a group of patients that perhaps needed more support. I think those are the salient points of the study that I thought were important.

**Manjari Lahiri (ML):** I’ll just add on to the actual the method of the survey. It was a time where you actually discouraging patients to come to hospital and canceling appointments. Just the method of doing the survey, like Margaret mentioned, we did an SMS survey. So a text message went out over the course of the day, so over the course of a few hours, we sent 5000 text messages.

This was to be done in the context of data security with all the privacy maintained, and in Singapore, our healthcare system is actually cut off from the internet. We have internet separations. We kind of had to surmount the internet separation, get the survey out, get them to do this survey, and populate the results in a hybrid Cloud in the back.
We're very grateful to the academics informatics office for helping us with this, which they managed to do in pretty short notice. So literally, from the conception of the idea to actually getting ethics approval, to doing the survey, I think it was the fastest study we’ve ever one within a couple of weeks.

ES: I was impressed by the speed and how you get it done so quickly, but it was Singapore, so it didn't surprise me.

So, next question, in the article you stated, you did a survey before Singapore had its locked down. Do you have any information at all about beliefs since the lockdown now, which many months later with potentially — certainly, I haven't heard about Singapore, but many other parts of the world — the second wave is now coming?

ML: Singapore is actually doing quite well, but I think we were quite lucky and quite fortuitous to do the survey early on where we could actually gauge the behavior and attitudes, because soon after that, a lot of rules came in.

So at that time that Margaret mentioned, face masks were actually discouraged, and yet a lot of patients and people were wearing them. Now face masks are mandated, so you can’t step out of the house without wearing a face mask. So, you have to wear one, you don't have a choice.

For a time, there was something from the circuit breaker, which is similar to the lockdowns in other places, so in April and May, there was a lockdown, so social interaction was not allowed. Travel is still strongly discouraged, so there was a travel advisory.

So we were able to survey patients at a time when they chose not to travel and chose not to go out and socialize. Whereas now, I think a lot of the behaviors are driven by the rules.

The other thing, of course, that happens that time has gone by where I think, in general as a population, much less worried, because it’s less of an unknown; at that time it was a new disease. Singapore bore the early brunt of it before the US and Europe were affected.

We had it quite bad in those days in March and April, but things have settled down, so people are more familiar with it, and the situation is in Singapore is now very, very controlled even post now, so we are having single digit and even zero cases today of local transmission.

ES: Doing very well!

ML: Yeah, very well. It's been in the single digits in all of October, and we've had at least a few days when there are zero local transmission cases.

So, I think, in general, for at least the patient perspective, patient part of it, not socially as there’s still lots of restrictions, but for the patient point of view coming for consults, I think patients are much less worried and much more willing to come in now.
We had noticed that perhaps patients are more conscientious of keeping their appointments. There used to be patients who missed their appointments and want to reschedule, whereas they’re a little bit more health conscious, perhaps desirous of this new vaccination. A lot of patients decline vaccinations for the flu and pneumonia, and now patients are a bit more willing to accept vaccinations, so a bit of a positive impact.

**MM:** Because of so many new restrictions as mandated by the government certainly, behaviors are somewhat formulaic, and so if we were to do the survey now, I think we would definitely get different answers, but I don’t think, perhaps, it would be voluntary from the patient’s point of view.

**ES:** Of course. It’s very interesting that I read from your article that only 7.4% of your patients actually sought advice about COVID-19 from healthcare professionals.

Do you think that it was on our side that we could have done a better job as physicians, or healthcare professionals as a whole, not just physicians, allied health care professionals, of getting the word out as we sought or did we just leave it to the government, or did we just not know, certainly, at that point then, we didn’t want to give unknown advice and it looks stupid or whatever. Nobody really knew what to do.

**MM:** Yeah, you’re right. So, I think at that time, we were looking at the literature that was barely any guidance on many international societies on what to do. And we were very much looking at government for advice on just general behavior, general prevention, on the spread of disease. And yet, it is a small amount, just 7.4%.

I guess it can be interpreted in 2 ways. It could be interpreted that actually they felt well informed enough not to contact us perhaps, if you want to look at it from the optimistic point of view.

But, obviously, it could be that it didn’t have to contact us, and we certainly could always do better. And since our study had started, the chapter of rheumatologists in Singapore that Dr. Manjari is the chair of, they did actually published guidance online regarding COVID for rheumatology patients. So that was one online resource. Obviously, you have to actively go and look for that, but we could certainly be more active in approaching patients as well.

And our study did highlight the profile of patients that perhaps we should be prioritizing and trying to reach out to, to try to alleviate some of their worries. Now everyone is using Telehealth, telemedicine, so that would be a great way to suddenly contact patients that had some more reluctance to come hospital.

**ML:** I think it’s a bit of a while to get onto the Telehealth platform. It wasn’t something we routinely did. Initially, the best reaction was to cancel appointments, postpone them, but then you realize that you actually can see a patient virtually.
So certainly, if next time there is a need, we probably don’t need to cancel and can actually still see our patients without them having to come into the hospital.

**ES:** Yeah, I mean, this is just an aside, I think one of the things that have certainly come up in North America is, according to the physicians I speak to, is that telehealth isn't so bad. We can do a lot via telehealth with rheumatology patients and maybe we don't have to see them in-person quite so often as we do so.

There might be something good about this for our patients too.

**MM:** Manjari and I, today, were just discussing the behaviors of clinicians and how COVID has changed our attitudes and our beliefs, as well, and that telehealth is something, certainly, that we're all embracing now, and it’s very acceptable.

**ML:** Policy as well. We wouldn't have been reimbursed for televisits previously, whereas now we are.

**ES:** That's a big thing, and that's what's going to change — telehealth will survive if governments and insurers and other countries can keep on reimbursing. We shall see.

So, Table 3 in your paper was comparing patients into 2 groups where it was a connective tissue disease (CTD), inflammatory arthritis using immunosuppressives in those who didn't fit into the category.

To summarize, for people who haven't read the article, what were the important differences you believe were between these groups?

**ML:** Maybe I'll just clarify. So in Table 3, we have the whole cohort first, so all of our patients, which is 2200+ patients. And the second part of it is the subset of patients who had either inflammatory/CTD or were on immunosuppressants, so that's about 1500. So it isn't really 2 groups, it’s a whole cohort and then a subset. In general, not very different.

So we did a latent class analysis separately for the whole cohort first and then for the subset, and patients clustered into 3 groups, depending on what answers they gave in the survey. So the more anxious ones tended to go out less, wore face masks more, even when it wasn’t encouraged, but also tended to, sort of, default on their medicines or be less inclined to getting vaccinations. And then there was the less anxious group, which were not into those kinds of behaviors.

Interestingly, the thing that distinguished the groups was not what disease they had, it wasn't like patients with lupus were more anxious than patients without, for instance. It was the sociodemographic, so it was women, those who were from an ethnic minority — Chinese is the majority ethnicity in Singapore — so, the non-Chinese ethnic minority, and those who are unemployed, were the ones who tended to cluster in cluster 3.
In the subset analysis of those with inflammatory disease or CTD, where we thought this question would be even more pertinent because these are the patients were on immunosuppression or who might think because of the condition, they’re more sort of susceptible to severe disease, it was pretty much the same, except that we did see a little bit of a difference between the inflammatory arthritis and the CTD groups.

So in CTD group, they tend to be less in cluster 3 and more in cluster 1—sorry, the other way around—they were more anxious, whereas the inflammatory arthritis group tended to cluster more towards the less anxious cluster 1 group in that subset. Overall, it was pretty similar, that is, women, unemployed, and ethnic minorities.

**ES:** I found that really interesting, that the disease, per se, whether what we would’ve considered higher risk, didn’t seem to matter by attitudes.

**ML:** And the knowledge with things like osteoarthritis and osteoporosis really wouldn’t think would put people at risk, but they pretty much would be the same as someone with lupus and on immunosuppression.

**ES:** Yeah, I thought that was very interesting.

And so, finally, as we conclude, did I miss anything? Anything you’d like to add for the people who haven’t read or encourage them to read your article?

**MM:** Obviously, we encourage everyone to read the article. It was a brief report so I think we’ve covered most of the points on this.

**ES:** Ok, so I want to thank you both. It was an excellent article and I thank you for agreeing to speak with me.

I encourage everyone to please read the full-length article, “Attitudes and Behaviors of Patients With Rheumatic Diseases During the Early Stages of the COVID-19 Outbreak” by Drs. Margaret Ma, Sen Hee Tay, Peter P.M. Cheung, Amelia Santosa, Yiong Huak Chan, James W.L. Yip, Anselm Mak, and Manjari Lahiri, as well as other articles about SARS-CoV-2 infection and COVID-19 and its effects and implications for rheumatologists and rheumatology practice at [www.jrheum.org/covid19](http://www.jrheum.org/covid19).

If you have any comments or questions, please let us know either via Twitter @jrheum or e-mail us at manuscripts@jrheum.com.

Thank you all for joining me and everybody stay healthy. Thank you Dr. Ma and Lahiri again.

**ML:** Thank you very much.