JSTMU Journal of Shifa Tameer-e-Millat University

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ORIGINAL ARTICLE

Knowledge, attitude and practices study regarding current COVID-19 pandemic in patients presenting to rheumatology clinic of a Tertiary Care Hospital

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[1] Conceptualization, Analysis, drafting
[2] Data collection, Drafting
[3] Data collection, Proof reading
[4] Data collection, Referencing

Article Info.

Conflict of interest: Nil
Funding Sources: Nil

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Cite this article as: *Khaliq T, Shah SA, Saleem S, Quraishi SH. Knowledge, attitude and practices study regarding current COVID-19 pandemic in patients presenting to rheumatology clinic of a tertiary care hospital. JSTMU. 2021; 4(2):100-109.*

A B S T R A C T

Introduction: The most important step in controlling the spread of any communicable disease is to stick to preventive measures and COVID-19 pandemic is no exception. Simple measures like wearing a mask, regular hand hygiene, disinfecting the surfaces can significantly reduce the spread of the disease. Keeping this in mind, a KAP study was performed in the rheumatology unit of a tertiary care hospital of Islamabad. The main idea was to know the level of understanding of rheumatologic patients with respect to COVID-19 pandemic and its preventive measures.

Objective: The objective of the study was to understand the knowledge, attitude and practices of rheumatologic patients towards COVID-19 pandemic.

Methodology: A descriptive cross-sectional study in which consecutive, non-probability sampling technique was used.

Results: There were 37 males and 73 females in the study group, with mean age of 38.75±13.9 years.

The total knowledge score was 17 points. It was found that 12 (10.9%) participants had poor knowledge regarding COVID-19, whereas 27 (24.5%) and 71 (64.5%) had good and excellent knowledge respectively. The total attitude score of study participants 7 points. It was found that 11 (10.0%) participants had poor attitude, whereas 72 (65.5%) and 27 (24.5%) had good and excellent attitude. The total practice score was 11 points. It was calculated that 30 (27.3%) study participants had poor practices regarding COVID-19 prevention, whereas 78 (70.9%) had good practices and only 2 (1.8%) had excellent practices.

Conclusion: Overall, it was noted that KAP of our rheumatologic patients towards COVID-19 infection was reasonable, however, there is always room for improvement.

Keywords: *Attitude, COVID-19, knowledge, pandemic, rheumatology*

Introduction

One of the greatest tragedies the world has faced in recent times is the COVID-19 pandemic. The virus was first detected in the fourth quarter of 2019 in Wuhan, China. It was initially known as "Wuhan Coronavirus".[1] In February 2020, the virus was named COVID-19 virus by the WHO.[2] Information flowing out of China was initially slow and by the time Wuhan went into a lockdown and other countries reacted by banning travel to and from the China, it was already too late.[3] Within weeks, the virus had spread to multiple countries across the globe, making it a pandemic that could rival the scale and impact of the Spanish flu of 1919.[4] The first wave spread quickly to Europe and North

America, and from there, to the rest of the world.[5] The disease exhibits variable symptoms, ranging from mild to severe. Common symptoms are headache, sore throat, nasal congestion, cough, loss of smell and taste, shortness of breath, diarrhea and body aches etc. Around 81% of the patients develop mild while 14% develop severe symptoms.[6] It is not well established how many people are infected by one person but is estimated that about 10-20% of infected people are responsible for the disease spread.[7] The mode of spread is through droplets that pass from one person to another via respiratory route.[8]

Due to its rapid spread, the disease (word omitted) tested the capacity of healthcare systems around the world. Even in developed countries like Italy, Spain, UK and the U.S, hospitals were overwhelmed during the first and second waves of the pandemic, resulting in deficiencies in critical care and many casualties that could have otherwise been prevented.[9] In developing countries like India and Brazil, the impact was tragic. Provision of basic services like oxygen cylinders came under severe stress and critical care was denied even in major cities like New Delhi. India alone witnessed more than 29 million confirmed cases and 367,097 deaths.[10]

The unvaccinated people can protect themselves by wearing a mask, maintaining a distance of 6 feet in public places, avoiding crowded place and washing hands periodically.[11] In countries where the population generally adhered to preventive measures, incidence of infection and deaths was notably low. For example, China and New Zealand, where Governments imposed strict social restrictions and implemented lockdowns where necessary, less than 600 confirmed cases per-one million of population were observed.[12]

With the discovery of the vaccine against the virus and mass vaccination, there is a hope that the burden of the disease will significantly reduce in the months to come.[13] It has been noted that certain co-morbidities make the patients more susceptible to poorer outcomes of COVID-19 infection[14] as does the weak immune system like we see in cases of patients suffering from different rheumatologic diseases. The presumed risk of corona virus related complications in this population is so high that different national and international societies for rheumatology have issued guidance for doctors on how to stratify patients suffering from different rheumatologic diseases into low, moderate and high risk groups and what guidance to give to these patients as regards self-isolation and maintaining social distance.[15] Doctors all over the world are highly cognizant of the need for proper counselling of patients in this regard and Pakistani doctors are no exception. Keeping in mind this whole scenario, this KAP study was conducted in the rheumatology unit of a tertiary care hospital of capital city Islamabad. The main idea was to know the level of understanding of our patients with regards to the current COVID-19 pandemic and their adherence to the SOPs laid for the prevention of the spread of the disease.

Methodology

This descriptive cross sectional observational study was conducted in a Rheumatology unit of Federal Government Polyclinic Hospital Islamabad from 15th February 2021 till 15th April 2021.The sample size was 110 which was calculated using WHO calculator taking the prevalence of rheumatic disorders as 5-8% of the whole population with a confidence interval of 95% and standard error of 5%. All patients suffering from different autoimmune rheumatologic diseases presenting to rheumatology OPD or admitted in Rheumatology ward were included in the study. The data was collected after taking an informed consent from the patients.

The questionnaire had three components containing questions related to Knowledge, Attitude and Practices about COVID-19 pandemic. IBM SPSS (version 23.0) software was used for data entry and analysis. Descriptive statistics were presented as frequency and percentage for qualitative variables, while mean and standard deviation was used for quantitative variables. The knowledge, attitude and practice mean scores were compared between different groups using independent samples T-test. Multivariate analysis was done for significant predictors to draw association with knowledge, attitude and practices in terms of odds ratio, 95% confidence interval and p-value. A p-value of ≤0.05 was considered statistically significant.

Results

There were 37 (33.6%) males and 73 (66.4%) females in the study group, with mean age of 38.75±13.9 years and an age range of 13-70 years. There were 20 (18.2%) participants with no education, 71 (64.5%) were

undergraduates while 19 (17.3%) were graduates. Out of one hundred and ten participants, 44 (40.0%) belonged to low socioeconomic group whereas 66 (60.0%) had middle socioeconomic status. In terms of employment, about 39 (35.5%) participants were working, 55 (50.0%) were non-working and there were 16 (14.5%) students. Rheumatoid arthritis was the most common disease condition affecting around 77 (70.0%) of the participants, followed by systemic lupus erythematosus 8 (7.3%). Regarding drug treatment, methotrexate was the most commonly used drug in 63 (57.3%) patients, followed by leflunomide 13 (11.8%) and sulfasalazine 12 (10.9%). There were 10 (9.1%) patients on biological Disease Modifying Anti-Rheumatic Drugs, and 51 (46.4%) were on steroids. In terms of COVID-19 infection, only 2 (1.8%) patients had a history of COVID-19 infection. The sociodemographic characteristics of study population are summarized in Table 1.

The mean knowledge score of study participants was 12.2±1.8, from a maximum of 17 points. It was found that 12 (10.9%) participants had poor knowledge regarding COVID-19, whereas 27 (24.5%) and 71 (64.5%) had good and excellent knowledge respectively as shown in Figure 1. There were 88 (80.0%) participants who agreed that COVID-19 exists, while remaining 22 (20.0%) were in denial. Fever was the most common symptom of COVID-19 as reported by 42 (38.2%) participants followed by fatigue/malaise 21 (19.1%) as shown in Figure 2. Around 48 (43.6%) agreed that there is no pertinent treatment for COVID-19, while 34 (30.9%) disagreed and 28 (25.5%) were not sure. Majority of the participants, 110 (90.1%), were aware of correct route of infection transmission. Almost all of the participants (99.0%) reported that wearing mask when leaving home can prevent spread of infection in general population, similarly 97.3% were aware that by avoiding going to crowded places the infection transmission can be stopped. Detailed responses of COVID-19 knowledge are given in Table 2.

The mean attitude score of study participants was calculated to be 4.8±1.0, from a maximum of 7 points. It was found that 11 (10.0%) participants had poor attitude, whereas 72 (65.5%) and 27 (24.5%) had good and excellent attitude regarding COVID-19 pandemic. Majority of the participants, 100 (90.9%), were aware of the fact that unnecessary visits to the hospital should be avoided during COVID-19 pandemic. The monthly income of 67 (60.9%) got affected due to lockdown. Half of the participants, 58 (52.7%), reported that stress due to COVID-19 situation has mostly affected their lives, followed by financial issues 23 (20.9%) and lack of social life 19 (17.3%). It was reported by 50 (45.5%) participants that they will get vaccinated for COVID-19- if government would offer it as shown in Table 3.

The mean practice score of study participants was found to be 6.7±1.5, from a maximum of 11 points. It was calculated that 30 (27.3%) study participants had poor practices regarding COVID-19 prevention, whereas 78 (70.9%) had good practices and only 2 (1.8%) had excellent practices. Majority of the participants, 104 (94.5%) reported that they wear masks whenever they go outside and 85 (77.3%) maintains social distance of six feet. Around 38 (34.5%) participants were still going to crowded places like mosques, markets, weddings etc. during lockdown. Half of the participants, 48 (43.6%) thought that those with symptoms of COVID-19 should immediately report to the hospital while other half 53 (48.2%) said that they should isolate themselves at home. Majority of the participants, 94 (85.5%), were avoiding shaking hands with people during COVID-19 pandemic as shown in Table 4.

Univariate analysis of knowledge and practices score revealed no significant association with sociodemographic characteristics including age, gender, education, employment and socioeconomic status. In context of attitude score, significant relationship was found with education level and socioeconomic status as shown in Table 4. Participants with higher level of education had a better attitude score (p=0.036), similarly those with better socioeconomic status had a better attitude as compared to those with low socioeconomic status (p=0.018). A significant correlation was found between knowledge and practice score, which means that those with good knowledge of COVID-19 were more likely to follow good practices for preventing spread of COVID-19 where the coefficient of correlation was calculated to be 0.3 (r=0.3, p=0.002) as shown in Figure 3.

Score revealed no significant association with sociodemographic characteristics including age, gender, education, employment and socioeconomic status. But a significant correlation was found between knowledge and practice score, which means that those with good

knowledge of COVID-19 were more likely to follow good practices for preventing spread of COVID-19 (r=0.3, p=0.002) as shown in Figure 3.

Table 1: Sociodemographic and clinical characteristics of study population (n=110)

Sociodemographic & clinical characteristics	Frequency/Percentage N (%)	
Age in years (mean±SD)	38.75±13.9	
Age range	13 – 70	
Gender	Male	37 (33.6%)
	Female	73 (66.4%)
Education level	Illiterate	20 (18.2%)
	Undergraduate	71 (64.5%)
	Graduate	19 (17.3%)
Socioeconomic status	Low	44 (40.0%)
	Middle	66 (60.0%)
Working status	Students	16 (14.5%)
	Employed	39 (35.5%)
	Unemployed	55 (50.0%)
Diagnosis	Rheumatoid Arthritis	77 (70.0%)
	Systemic Lupus Erythematosus	8 (7.3%)
	Gout	3 (2.7%)
	Ankylosing Spondylitis	5 (4.5%)
	Enthesitis related JIA	8 (7.3%)
	APLS	6 (5.5%)
	Dermatomyositis	3 (2.7%)
Treatment	Methotrexate	63 (57.3%)
	Sulfasalazine	12 (10.9%)
	Leflunomide	13 (11.8%)
	Hydroxychloroquin	7 (6.4%)
	Secukinumab	3 (2.7%)
	Mycophenolate mofetil	6 (5.5%)
	Eternacept	6 (5.5%)
Biological DMARDs	Yes	10 (9.1%)
	No	100 (90.9%)
Steroids	Yes	51 (46.4%)
	No	59(53.6%)
History of COVID-19 infection	Yes	2 (1.8%)
	No	108 (98.2%)

Table 2: Frequency/percentage of responses by the study participants for knowledge questions (n=110)

Sr.	Knowledge Questions	Frequency	Percentage
1.	Does COVID-19 pandemic exist?		
	• Yes	88	80.0%
	• No	22	20.0%
2.	There is no treatment for COVID-19?		
	• Yes	48	43.6%
	• No	34	30.9%
	• Not sure	28	25.5%
3.	ALL the patients have serious disease?		
	• Yes	30	27.3%
	• No	58	52.7%
	• Not sure	22	20.0%
4.	Who are prone to COVID-19 infection?		
	• People of all age groups	63	57.3%
	• Children and old people	35	31.8%
	• People with pre-existing illnesses	12	10.9%
5.	What is the main transmission route of COVID-19?		
	• Water	5	4.5%
	• Respiratory droplets	56	50.9%
	• Infected fomites	27	24.5%
	• Close contact	17	15.5%
	• Not sure	5	4.5%
6.	Does it spread by touching the clothes or fomites of infected person?		
	• Yes	89	80.9%
	• No	16	14.5%
	• Not sure	5	4.5%
7.	Does every infected person need hospitalization and oxygen?		
	• Yes	36	32.7%
	• No	68	61.8%
	• Not sure	6	5.5%
8.	Can a person stay asymptomatic after catching COVID-19 infection?		
	• Yes	41	37.3%
	• No	51	46.4%
	• Not sure	18	16.4%
9.	Does wearing a mask prevent the general population from its spread?		
	• Yes	109	99.1%
	• No	0	0%
	• Not sure	1	0.9%
10.	To prevent the spread of infection avoiding crowded places is necessary?		
	• Yes	107	97.3%
	• No	3	2.7%
11.	Isolating the infected person and treating them helps prevent further people getting the infection?		
	• Yes	97	88.2%
	• No	9	8.2%
	• Not sure	4	3.6%

12.	Contacts of infected persons should be isolated for how many days?		
	• 10 days	6	5.5%
	• 14 days	87	79.1%
	• Not sure	17	15.5%
13.	Does washing hands, using mask and observing social distancing decrease the spread?		
	• Yes	108	98.2%
	• No	2	1.8%
14.	Are you at a greater risk of having COVID-19 infection because of your disease?		
	• Yes	53	48.2%
	• No	39	35.5%
	• Not sure	18	16.4%
15.	Was there any difficulty in getting the medication you are on because of COVID-19?		
	• Yes	25	22.7%
	• No	85	77.3%
16.	Do you think your medications make you more prone to have the disease?		
	• Yes	2	1.8%
	• No	1	0.9%
	• Not sure	107	97.3%

Table 3: Frequency/percentage of responses by the study participants for attitude questions (n=110)

Sr.	Attitude Questions	Frequency	Percentage
1.	Should people avoid unnecessary visits to the hospitals?		
	• Yes	100	90.9%
	• No	10	9.1%
2.	How has it impacted your life?		
	• Financially	23	20.9%
	• Lack of social life	19	17.3%
	• Compromised studies	10	9.1%
	• Stress	58	52.7%
3.	Has your monthly income been affected by the COVID-19 pandemic?		
	• Yes	67	60.9%
	• No	39	35.5%
	• Not sure	4	3.6%
4.	Do you think lockdown is good to prevent spread of COVID-19 infection?		
	• Yes	85	77.3%
	• No	21	19.1%
	• Not sure	4	3.6%
5.	Are Pakistanis more immune to COVID-19 infection?		
	• Yes	82	74.5%
	• No	14	12.7%
	• Not sure	14	12.7%
6.	Pakistan is in a good position to contain COVID-19 pandemic?		
	• Yes	89	80.9%
	• No	12	10.9%
	• Not sure	9	8.2%
7.	If offered, will you get yourself vaccinated against COVID-19?		
	• Yes	50	45.5%
	• No	47	42.7%
	• Not sure	13	11.8%

Table 4: Frequency/percentage of responses by the study participants for practices questions (n=110)

Sr.	Practices Questions	Frequency	Percentage
1.	Do you use mask when you go out?		
	• Yes	104	94.5%
	• No	5	4.5%
	• Sometimes	1	0.9%
2.	Do you maintain social distance of six feet?		
	• Yes	85	77.3%
	• No	24	21.8%
	• Sometimes	1	0.9%
3.	Have you stopped taking your medicines because of fear of the COVID-19?		
	• Yes	5	4.5%
	• No	105	95.5%
4.	Do you still go to crowded places?		
	• Yes	38	34.5%
	• No	72	65.5%
	If yes, then where? (n=38)		
	• Mosque	16	42.1%
	• Wedding	6	15.7%
	• Market	11	28.9%
	• Visiting relative	5	13.1%
5.	Do you wash your hands frequently now?		
	• Yes	102	92.7%
	• No	5	31.8%
	• Not sure	3	22.7%
6.	How frequently do you wash your hands?		
	• Every 2 hours	50	45.5%
	• Every 4 hours	35	31.8%
	• Only after using the toilet	25	22.7%

7.	If someone has symptoms, what should they do? • Isolate themselves at home • Wear mask and do normal activities • They should go to hospital	 53 9 48	 48.2% 8.2% 43.6%
8.	Do you touch your face and eyes with unwashed hands after touching any surface outside home? • Yes • No • Not sure	 17 86 7	 15.5% 78.2% 6.4%
9.	For you the most common barrier for using protective measures is? • Social stigma • Lack of resources • Inaccessibility of protective measures • There is no protective role of these measures in spread of disease	 36 49 16 9	 32.7% 44.5% 14.5% 8.2%
10.	Are you keeping food reserves at home? • Yes • No	 40 70	 36.4% 63.6%
11.	In recent days have you avoided shaking hands with people? • Yes • No	 94 16	 85.5% 14.5%

Univariate analysis of knowledge and practices score revealed no significant association with sociodemographic characteristics including age, gender, education, employment and socioeconomic status. In context of attitude score, significant relationship was found with education level and socioeconomic status as shown in Table 5. Participants with higher level of education had a better attitude score (p=0.036), similarly those with better socioeconomic status had a better attitude as compared to those with low socioeconomic status (p=0.018).

A significant correlation was found between knowledge and practice score, which means that those with good knowledge of COVID-19 were more likely to follow good practices for preventing spread of COVID-19 where the coefficient of correlation was calculated to be 0.3 (r=0.3, p=0.002) as shown in Figure 3.

Table 5: Association of knowledge, attitude and practice scores with sociodemographic characteristics

Sociodemographic characters	Knowledge Score			P value
	Poor (<10)	Good (10-12)	Excellent (13-17)	
Gender • Male • Female	 5 (41.7%) 7 (58.3%)	 7 (25.9%) 20 (74.1%)	 25 (35.2%) 46 (64.8%)	0.564
Education level • Illiterate • Undergraduate • Graduate	 3 (25.0%) 7 (58.3%) 2 (16.7%)	 3 (11.1%) 20 (74.1%) 4 (14.8%)	 14 (19.7%) 44 (62.0%) 13 (18.3%)	0.771
Socioeconomic status • Low • Middle	 6 (50.0%) 6 (50.0%)	 13 (48.1%) 14 (51.9%)	 25 (35.2%) 46 (64.8%)	0.382
	Attitude Score			p
	Poor	Good	Excellent	
Gender • Male • Female	 2 (18.2%) 9 (81.8%)	 22 (30.6%) 50 (69.4%)	 13 (48.1%) 14 (51.9%)	0.133
Education level • Illiterate • Undergraduate • Graduate	 0 (0%) 8 (72.7%) 3 (27.3%)	 10 (13.9%) 50 (69.4%) 12 (16.7%)	 10 (37.0%) 13 (48.1%) 4 (14.8%)	0.036
Socioeconomic status • Low • Middle	 3 (27.3%) 8 (72.7%)	 24 (33.3%) 48 (66.7%)	 17 (63.0%) 10 (37.0%)	0.018

	Practice Score			p
	Poor	Good	Excellent	
Gender • Male • Female	 14 (46.7%) 16 (53.3%)	 23 (29.5%) 55 (70.5%)	 0 (0%) 2 (100.0%)	0.142
Education level • Illiterate • Undergraduate • Graduate	 5 (16.7%) 19 (63.3%) 6 (20.0%)	 14 (17.9%) 51 (65.4%) 13 (16.7%)	 1 (50.0%) 1 (50.0%) 0 (0%)	0.786
Socioeconomic status • Low • Middle	 15 (50.0%) 15 (50.0%)	 28 (35.9%) 50 (64.1%)	 1 (50.0%) 1 (50.0%)	0.391

Figure 1: Scores of knowledge, attitude and practices.

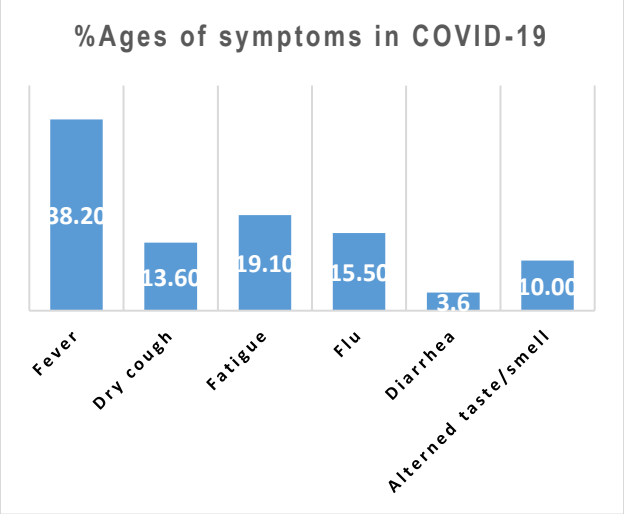

Figure 2: Awareness of COVID-19 symptoms reported by study participants (n=110).

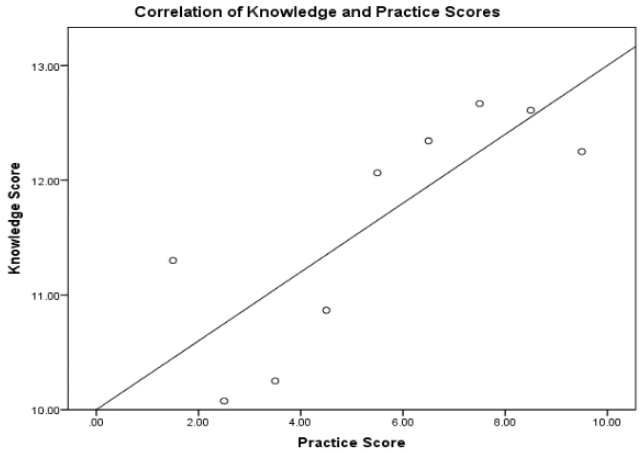

Figure 3: Relationship of knowledge and practice score.

Discussion

As clinicians, we know that the age-old adage of 'prevention is better than cure' will remain true for all times. Doctors can play a major role in spreading awareness about prevention of communicable diseases. Effective communications skills can ensure that patients get a fair idea about the disease and different measures to prevent its spread. Many studies [16] carried out during this pandemic showed that immunosuppressed patients and those patients suffering from rheumatologic diseases are more likely to get COVID-19 infection and more likely to succumb to its complications including death.[17] Therefore, it was important to get an idea about the beliefs of our rheumatologic patients regarding current pandemic and their attitude towards its prevention.

In our study we found that our patients had acceptable knowledge about the COVID-19 symptoms and preventive measures i.e., 64.5% had an excellent knowledge, 24.5% had good and 10.9% had poor knowledge. A similar survey done recently by Ladiwala et al. among Pakistani population showed that the study population had adequate knowledge about COVID-19 (93.3%) [18] which is parallel to the knowledge assessed in our study (89% - total of good and excellent knowledge). This is also in accordance with the results of a study done on rheumatic disease patients in Tanzania [19] and a similar one done in Nepal in 2020 in which >90% had knowledge about the route of transmission, clinical features and also preventive methods.[20]

It was noted that 48.2% of our sample thought that their rheumatic disease puts them at a higher risk for COVID-19 compared to 31.5% rheumatic disease patients in Nepal who knew they were at risk. On the contrary, a mere 1.8% of our study population while 18.9% of the Nepalese cohort thought that their medication predisposed them to develop the disease.

It was interesting to note that 20% of our patients did not believe in the existence of this pandemic and many of them considered it a propaganda. Of the people who believed in its presence, around one third (31%) of them believed there was no cure for the illness and once contracted it proves to be fatal. This belief definitely needs to be changed as this can lead to a feeling of doom in patients and might lead them to not seek medical attention when needed and thus avoid unnecessary morbidity and mortality. As for the domain of attitude in our study population, we found that in total 90% of the patients had good and excellent attitude regarding COVID-19 pandemic, similar findings i.e., 71% had a positive attitude towards COVID-19 in the Nepalese cohort.[20] Majority of the participants believed that the measures taken by the government were good enough to curtail the spread of the pandemic in Pakistan.

Practicing the preventive measures appropriately has been one way to stop the spread of the virus among the masses. It was noted that in our study population around 38 (34.5%) participants were still going to crowded places like mosques, markets, weddings etc. during lockdown. It was noted that even at the peak of third wave patients were still going to religious congregations clearly indicative of their religious inclination. Overall, one third of the study population was found to have good and excellent preventive practices. This observation is similar to statistics from other under developed countries like Ethiopia where poor practices were observed in 47.3% while 25.9% of study participants had good practice. Only 38.1 % of their study population avoided going to crowded places.[21] Statistics form developed countries show better scores for practices probably as a result of better literacy rate and understanding of ways through which the disease spreads. A study conducted in Netherland on 979 patients with rheumatic diseases compared to 414 healthy controls, found that patients with rheumatic diseases followed the isolation measures twice strictly compared to the healthy controls.[22]

This pandemic has certainly caused financial burden on people around the globe, our local population is no different in this regard. Almost two thirds of the patients (61%) responded that they have encountered decrease in their income. The COVID-19 Global Rheumatology Alliance Patient Experience Survey carried out in over 90 countries throughout the world, found that there was an increase in the unemployment, nearly one third of the 9300 total respondents had a decrease in full-time employment, which ultimately affected the financial status of the patients.[23]

This study did not show any strong association between socioeconomic background of patients and their KAP score but similar studies in USA,[24] Malaysia [25] and China [26] showed that the socioeconomic background of the patients did affect their KAP score, higher socioeconomic status of the population was associated with better knowledge and practices. The reason we did not find any association for this could be that the majority of the patients coming to the Rheumatology clinic belong to Islamabad or its suburbs. Being from the capital city and because of strict implementation of COVID-19 SOPs in this region, has perhaps led to better understanding of the patients towards the COVID-19 pandemic and has resulted in fewer number of affected patients in the city.

One other aspect that needs attention in particular is the impact of COVID-19 on the mental health of general population and in particular on patients with rheumatic diseases who are already in a lot of mental stress because of chronic nature of their disease and the morbidity

associated with it. Almost 53% of the patients in our study responded that they were experiencing mental stress because of this pandemic, a finding consistent with the result of a study done in Italy in patients with rheumatic diseases showed that 44.2 % patients had shown some worsening in their mental wellbeing ever since the pandemic began.[27] Similar findings were observed in India where 64% of the rheumatic disease patients had some degree of mental stress.[28]

At the time that this survey was being conducted, there was intense research going on in the world regarding development of effective vaccine against COVID-19 virus. Even though the long-term effects of vaccine are yet to be seen, as of now, it is strongly emphasized that people from all walks of life get themselves vaccinated. Our study clearly indicated that patient's attitude towards vaccination needed to be changed. Only less than half (46%) of the patients said that given the option for vaccination they would consider it. It is important to note, however, that this survey was conducted when vaccination facility had not been opened for general public and only frontline workers were being vaccinated so understandably there was some reservation on part of patients. It needs to be seen whether this attitude changes once mass vaccination is opened.

Conclusion

Overall, it was noted that KAP of our local rheumatologic patients towards COVID-19 infection was reasonable, however, it must be kept in mind that this was primarily carried out in an urban population and hence, results might not be representative of the opinions of rural population. Hence, more studies need to be carried out to get a clearer picture. The devastating effects that the third wave of this pandemic has had in our neighboring country India, clearly shows that we still need to keep our guards high and at no cost should we neglect the laid down SOPs for the disease.

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