

Orthopaedic Patient's Persepective and Experience during COVID-19: A Survey at Tertiary Care Centre in India

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Authors' contributions

This work was carried out in collaboration between all authors. Author MS designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Authors AK and RC managed the analyses of the study. Author SV managed the literature searches. All authors read and approved the final manuscript.

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ABSTRACT

Introduction: On 12 March 2020, the World Health Organization declared a pandemic by coronavirus disease-19(COVID-19). Many studies have been done related to impact of COVID-19 on orthopedic patient care and impact on orthopedic residents but none has measured the patient related outcomes in this pandemic time. The main aim of this pilot study is to understand the orthopedic patient's knowledge and understanding about COVID-19 infection and pandemic and their follow up experience and perspective during this pandemic.

Methods: The survey was done from 1st November, 2020 to 31st December, 2020. A questionnaire consisting of 30 questions was prepared for the survey. The questionnaire was filled by patient. The questionnaire was filled at the time of 1st follow-up after discharge from the hospital.

Results: Total 187 patients participated in this questionnaire survey. 112 (59.89%) patients came for follow up on the same day as advised by the doctor. This was significantly associated with patients using private transport (36.9%) for conveyance to visit the hospital on follow up ($p = 0.001$), patients responding that in person follow up visits(31.01%) are justified in scenario of pandemic ($p = 0.029$). 75 (40.1%) patients delayed their follow up. 43 patients delayed their follow up due to fear of pandemic, 19 due to personal reasons, 8 (10.66%) due to financial problems and 5 (6.6%) due to some other miscellaneous reasons.

Conclusion: In general, majority of people were well informed about COVID-19 infection and pandemic but still there is a need to educate patients regarding the false conspiracies in connection with COVID-19 pandemic. People are very much in the state of fear and proper counseling of the patients is necessary.

Keywords: COVID-19; follow-up; orthopedic patients; patient satisfaction; pandemic.

1. INTRODUCTION

On 12 March 2020, the World Health Organization declared a pandemic by coronavirus disease-19 (COVID-19) [1]. The pathogenicity of coronavirus was recognized way back in 1960 when it was identified as a cause of common cold. In the year 2012, a new coronavirus emerged in the Middle East that caused an illness similar to SARS. First case of infection was reported on 13 June, 2012 in Jeddah in Saudi Arabia [2]. Every country has adopted different measures to halt the spread of COVID-19 infection. The government of India implemented strict lockdown on 25th March, 2020. Since COVID-19 outbreak in China, drastic change has been seen in health sector globally. It had a deep impact on orthopaedic residents and patients [3,4]. Many studies have been done related to impact of COVID-19 on orthopedic patient care and impact on orthopedic residents but none has measured the patient related outcomes in this pandemic time. The main aim of this pilot study is to understand the orthopedic patient's knowledge and understanding about COVID-19 infection and pandemic and their follow up experience and perspective during this pandemic which will help in formulating guidelines for the present and future pandemic situation.

2. METHODS

The survey was done from 1st November, 2020 to 31st December, 2020. The main objective of this study was to know the orthopedic patient's knowledge regarding COVID-19 and their experience during hospital stay and follow up in the time of COVID-19 pandemic. This study will help in understanding the problems faced by orthopedic patients and will ultimately help the concerned authorities to formulate appropriate

policies and protocols for safety and comfort of patients. A questionnaire consisting of 30 questions was prepared for the survey. The questionnaire was filled by patient and if patient was not able to read or write then, patients relative was allowed to fill it. The questionnaire was filled at the time of 1st follow-up after discharge from the hospital.

Total 187 patients participated in this questionnaire survey. Out of 187, 110 (58.82%) were males and 77 (41.18%) were females. Mean age of the patients was 43.29 years (range= 19-81, standard deviation=14.34). 132 (70.58%) patients have informed that they know about signs and symptoms of COVID-19. 17 (9.09%) patients gave positive history of coming in contact with a COVID-19 positive patient and out of 17, only 11 patients self isolated themselves. 60 (32.08%) patients were from the city and 127 (67.9%) were from outside the city. 118(63.10%) patients used public transport to visit the hospital and the rest used private conveyance for the same. Mean time of follow up was 27.8 days.

2.1 Statistical Analysis

The data collected from the patient's feedback was calculated as frequencies and percentages. Data was entered in SPSS (Statistical product and service solutions) software for statistical analysis. A two-sided P value < 0.05 was considered as significant.

2.2 Inclusion Criteria

Only those patients with age of 18 years or more were included in the survey who have undergone any surgical procedure during the pandemic after the lockdown was imposed in the country and have come for follow up. Patients who have

undergone any surgical procedure before the lockdown and came for follow-up after 1st November were not included in the study.

3. RESULTS

112(59.89%) patients came for follow up on the same day as advised by the doctor. This was significantly associated with patients using private transport (36.9%) for conveyance to visit the hospital on follow up ($p = 0.001$), patients responding that in person follow up visits (31.01%) are justified in scenario of pandemic ($p = 0.029$). 75 (40.1%) patients delayed their follow up. 43 (57.3%) patients delayed their follow up due to fear of pandemic, 19 (25.33%) due to personal reasons, 8 (10.66%) due to financial problems and 5(6.6%) due to some other miscellaneous reasons (Fig. 1). This delay in follow up was significantly associated with patients diagnosed with COVID-19 (7.48%) ($p = 0.034$) and also with patients considering COVID-19 as a serious disease ($p = 0.021$) (Table 1). When asked about the seriousness of COVID-19 disease, 93(49.7%) patients felt that it's a fatal disease, 39(20.8%) patients felt that it's a very serious disease and may require hospitalization, 32(17.11%) patients felt that it's a serious disease but it doesn't require hospitalization, 8(4.2%) patients felt that it's not a serious disease(mild like flu) and 15(8.02%) patients felt that it doesn't exist (Fig. 2). 22 (11.76%) patients believed that COVID-19 pandemic is a hoax. 67(35.82%) patients were anxious about getting infected with COVID-19 only, 47(25.13%) were worried about their orthopaedic injury/pathology only and 73(39.03%) patients were worried about both. 153(81.81%) patients have worn masks on their way to and in the hospital, 125(66.84%) used hand sanitizer and 135(72.19%) practiced social distancing on their way to and in the hospital to prevent themselves from getting infected with COVID-19. 89(47.59%) patients were of the opinion that despite the various measures taken, the caretaker/attendant/ they themselves were at a risk of contracting COVID-19 on their way to hospital and 104(55.61%) patients felt the same risk in the hospital.

63(33.6%) patients expressed that they felt safe with respect to COVID-19 pandemic while coming to hospital for follow up visits. 71 (37.9%) patients replied in the favor of in-person visits in comparison to telemedicine, 98 (52.4%) favored

telemedicine and only 18 (9.62%) felt that both have equal benefits to the patient. 58(31.01%) patients responded that follow up visits are justified in scenario of pandemic, 90(48.12%) responded against it and 39(20.85%) patients felt that it depends upon the number of regional cases of COVID-19. 59 (31.5%) patients thought of delaying follow up visit due to fear of contracting COVID-19. 62 (33.15%) patients stated that this COVID-19 pandemic has affected their course of treatment in some way. 36 (19.25%) patients were reluctant for surgical procedure at first due to fear of contracting COVID-19. On the scale of 1-5 with 1 being very dissatisfied and 5 being very satisfied, 53 (28.34%) patients were very satisfied(5), 42 (22.45%) were satisfied(4), 31 (16.57%) were neither satisfied nor dissatisfied (3), 27 (14.43%) patients were dissatisfied (2) and 34(18.18%) were very dissatisfied with measures taken by hospital administration to prevent spread of COVID-19 (Fig. 3). The satisfaction of patients was significantly associated with follow up on the same day as advised by the doctor ($p = 0.019$) When asked about their reason for dissatisfaction, 31 (16.5%) patients were dissatisfied due to delaying in appointments, 13 (6.95%) due to inadequate precautions, 6 (3.2%) due to too much precautions and 11 (5.8%) due to long waiting time. 134 (71.65%) patients responded that the precautions taken by the hospital were justified. 72 (38.5%) patients expressed that they would prefer their subsequent visit to be in-person, 94(50.26%) opted for telemedicine and 21 (11.22%) patients had no particular preference. 111 (59.35%) patients responded that they would prefer future minor follow up care like suture removal, antiseptic dressings etc. in a nearby government health facility instead of our tertiary care institution until pandemic subsides.

4. DISCUSSION

This study is the first of its kind, investigating perspectives and experiences of orthopedic patients in the setting of COVID-19 pandemic. The survey was conducted among 187 patients from 1st July, 2020 to 30th September, 2020 who have undergone any surgical procedure since lockdown. Our study focused on orthopedic patients so that required changes can be made in order to provide better facilities to the patients in ongoing pandemic and help in formulating policies for future emergency situations.

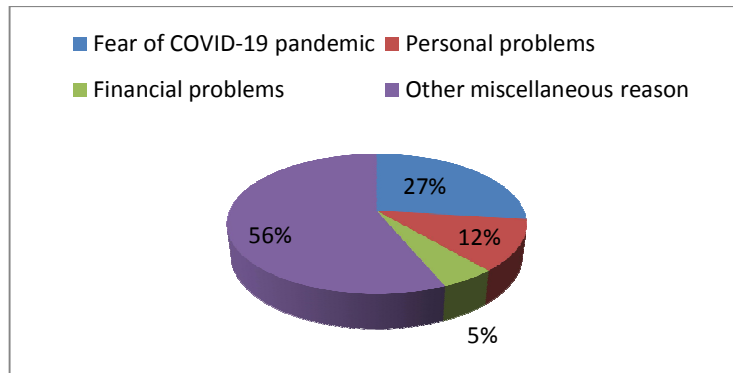


Fig 1. Reasons for delay in follow up visit

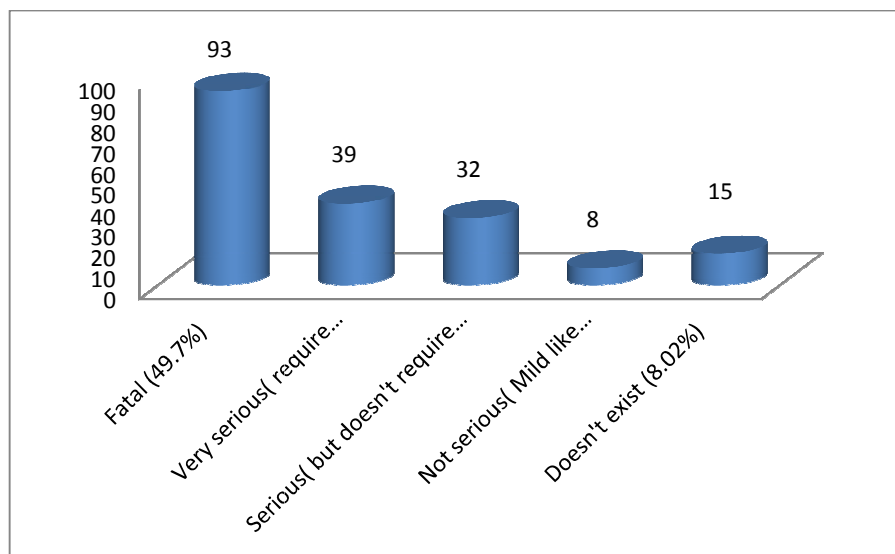


Fig. 2. Patient's perception of COVID-19 in terms of seriousness

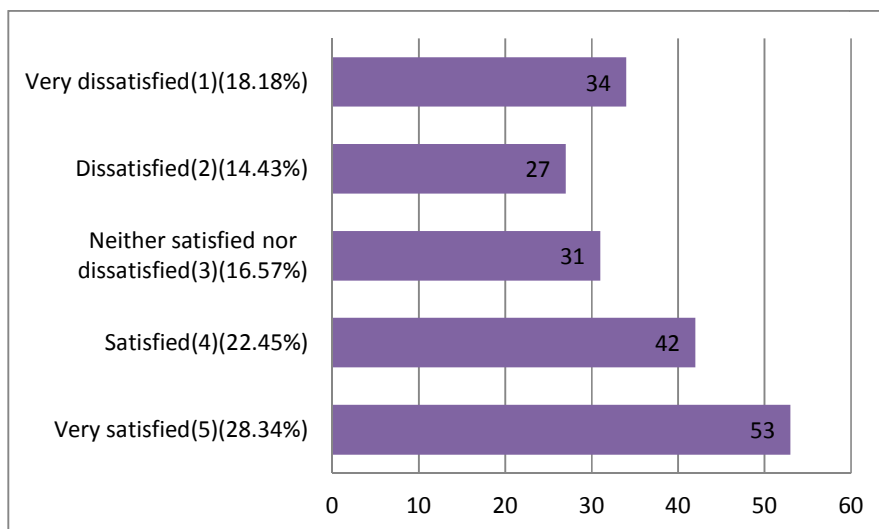


Fig. 3. Patient satisfaction with respect to preventive measures taken by hospital administration

132 patients responded that they are aware of the signs and symptoms of COVID-19 and its mode of spread. This reflects the impact of news and the wide reach of information on various social media platforms. Few patients considered that COVID-19 pandemic is a hoax. Though majority of people are aware about the COVID-19, few still believed that this pandemic is a hoax despite of the awareness programs by the government. The results were similar to one of the surveys conducted in United States in which 13% of people were of the view that COVID-19 is a hoax [5]. Increase in conspiracy theories during emergency situations like a pandemic is not a new phenomenon [6]. The conspiracy beliefs may give people a sense of control in this out of control situation [7]. Efforts are needed at rural level to aware people about mode of spread and complications of COVID-19. 67 patients were anxious about getting infected with COVID-19 only, 4 were worried about their orthopedic injury/pathology only and 73 patients were worried about both. In one of the studies done in India, it was seen that majority of the people were mostly afraid of COVID-19 [8]. In our survey, 153 patients used masks, 125 used hand sanitizer and 135 practiced social distancing as safety measures while their hospital stay to prevent themselves from getting infected with COVID-19. This reflects that majority of people were aware of the required measures needed to be taken to prevent spread of COVID-19. Fortunately, very less number of patients has confirmed that they have been diagnosed with COVID-19 which again can be explained by the preventive efforts taken by the patients themselves. 17 patients gave positive history of coming in contact with a COVID-19 positive patient and out of 17, 11 patients self isolated themselves after that which also contributed to less number of patients coming out to be COVID-19 positive.

Hospital setup is considered as a potential source of infection and people are always hesitant to visit any health care facility especially in the time of pandemic like this. In our study,

more than one-third of patients have delayed their follow up and majority of them delayed it due to fear of COVID-19 pandemic. This can also be explained on the basis of the data collected in our survey i.e. about two-third of the patients were currently residing outside the city and they have to travel a long distance for their follow-up visit. So they are exposed to the transmission risk related to public transport as well as in hospital premises. Follow up on the same day as advised was significantly associated with patients using private transport as conveyance for follow up visits. In present scenario, telemedicine is considered as a safe and effective method of providing essential health care services [9]. Many studies have been published regarding utilization of telemedicine in the field of orthopedics [10-15]. In our study when we asked the patients that if given the opportunity, will they opt for follow-up using telemedicine, 94 patients responded positively in favor of it and half of the respondents were of the opinion that in person visits are not better than telemedicine in any way. So telemedicine should be given priority in every health care centre for better postoperative care and results. Approximately one-fifth of the patients included in our survey informed that they have refused to give consent for surgical procedure at first and was only willing to give their consent for conservative management option. Though later on after proper counseling by the doctors regarding COVID-19 and complications related to conservative management option, the patients agreed to give their consent for operative procedure. The COVID-19 has a significant impact on healthcare facilities. Elective procedures were postponed globally [16-18]. Orthopedic residents were redeployed in the COVID-19 care wards. Only emergency cases were treated surgically and that too in the limited capacity due to decreased workforce available. So this in turn led to delay in surgeries and significantly affected patient care. In our study nearly one-third patients stated that this COVID-19 pandemic has affected their course of treatment in some way.

Table 1. Association between different variables and their significance

Variables	P value
Diagnosed with covid-19 AND Delay in follow up	0.034
Seriousness of COVID-19 disease AND Delay in follow up	0.021
Private transport for conveyance AND Follow up on same day	0.001
In person follow up visits are justified in scenario of pandemic AND Follow up on same day	0.029
Satisfied with precautions taken by hospital administration to prevent spread of COVID-19 AND Follow up on same day	0.019

Our hospital has taken various initiatives to tackle the ongoing pandemic situation. A separate area in our hospital has been assigned to manage suspected and confirmed COVID-19 positive cases. Mandatory COVID-19 testing of every patient undergoing any surgical procedure was done. Limited number of attendants was allowed with a patient to minimize the spread of COVID-19 infection. We asked the patients about the satisfaction level using five-point likert scale with 5 being very satisfied, 4 being satisfied, 3 being neither satisfied nor dissatisfied, 2 being dissatisfied and 1 being very dissatisfied. Majority of the dissatisfied patients pointed out the reason to be delay in appointments and inadequate preventive measures implemented by the hospital. The satisfaction of the patients was significantly associated with follow up on same day as advised. So majority of patients were happy with the facilities provided to them with respect to COVID-19 pandemic still some measures need to be taken by the concerned authorities to provide better facilities, prevent the spread of COVID-19 and in turn increasing the percentage of patients coming for follow up visits on the appropriate time without delay. Fortunately a large number of patients were taking this pandemic situation seriously and knew that COVID-19 is a fatal disease.

This study has notably few limitations. Firstly, being a cross sectional study we were able to assess the situation in a single point of time and not the emerging trend. Secondly, the participants in this study were only from single tertiary care center, so they may not represent adequately the beliefs of the patients across the nation.

5. CONCLUSION

In general, majority of people were well informed about COVID-19 infection and pandemic but still there is a need to educate patients regarding the false conspiracies in connection with COVID-19 pandemic. Patients were reluctant to visit hospital and delaying their follow-up which ultimately affects the outcome of surgery so role of telemedicine should not be ignored especially in the times of crisis. People are very much in the state of fear and proper counseling of the patients is necessary so that they should not ignore the adverse outcomes related to the orthopedic injury/pathology they are suffering from. More studies are required to better understand the orthopedic patient's perspective during COVID-19.

CONSENT

In this study, Verbal consent was taken from all patients.

ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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QUESTIONNAIRE

DIAGNOSIS-

1. AGE-
2. SEX-
3. Mean time of follow up (# of days)
4. Follow up on same day as advised yes/no
5. Reason for delay: fear of pandemic/ personal/ financial/ others
6. Do you believe that COVID-19 pandemic is real? Yes / No it is a hoax
7. DO YOU KNOW ABOUT SIGN AND SYMPTOMS OF COVID-19 AND HOW IT SPREADS?
YES/ NO
8. HAVE YOU ever BEEN DIAGNOSED WITH COVID-19?
YES/NO
9. ANY DIRECT CONTACT HISTORY WITH A covid 19 patient?
YES/NO
10. IF YES, DID YOU SELF ISOLATED YOURSELF AFTER KNOWING ABOUT IT?
YES/NO
11. CURRENT place of residence RESIDENCE-
A) WITHIN THE CITY
B) OUTSIDE THE CITY
12. What kind of transport have you used to come to the hospital? Public/private
13. Have you worn a face mask on your way to and in the hospital ? yes / no
14. Have you observed hand sanitisation on your way to and in the hospital ? yes / no
15. Have you observed social distancing on your way to and in the hospital ? yes/ no
16. Do you think, despite the above measures, that you / caretaker/ attendant is at a risk of contracting COVID-19 on the way to the hospital yes/ no
17. In the hospital yes/ no
18. Do you feel safe w.r.t. COVID-19 pandemic while coming to the hospital for follow up visit? Yes /no
19. Do you think that in-person visits are better than telemedicine in any way yes/no/same
20. Do you think in person follow up visits are justified in scenario of pandemic: Yes/ no/ maybe depending on the number of regional cases
21. YOU ARE MORE ANXIOUS ABOUT
A) GETTING INFECTED WITH COVID-19?
B) YOUR ORTHOPAEDIC INJURY/PATHOLOGY
C) BOTH, cannot ignore orthopaedic management although there is risk of contracting infection
22. HAVE YOU thought of delaying YOUR FOLLOW up visit DUE TO FEAR OF CONTRACTING COVID-19? YES/NO
23. DO YOU THINK THIS COVID-19 PANDEMIC HAS AFFECTED YOUR COURSE OF TREATMENT IN ANY WAY?
YES/NO
24. At initial admission due to injury/ pathology were YOU reluctant FOR SURGICAL PROCEDURE due DUE TO FEAR OF CONTRACTING COVID-19? YES/NO
25. ON THE SCALE OF 1-5, HOW MUCH ARE YOU SATISFIED WITH Precautions TAKEN BY HOSPITAL ADMINISTRATION TO PREVENT SPREAD OF COVID-19?
A) 1 extremely dissatisfied B) 2 not satisfied C) 3 satisfied D) 4 very E) 5 extremely
26. Reason for dissatisfaction? Delaying in appointment / inadequate precautions / too many precautions / long waiting time
27. According to you are the precautions taken by the hospital justified? Yes / no
28. According to you how serious is COVID-19 disease? Fatal/ very serious; may require hospitalization but not fatal/ serious but does not require hospitalization / not serious; mild flu like / does not exist
29. How would you prefer your subsequent visits? In-person/ tele/ no preference; depends on doctor

30. Would you prefer future minor follow up care like suture removal, ASD etc. in a nearby government health facility instead of our tertiary care institution until the pandemic subsides?
Yes / no

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