Perception of Patients on the Waiting List for Total Hip Arthroplasty on the Resumption of Elective Surgeries during the COVID-19 Pandemic

Percepção dos pacientes em lista de espera para artroplastia total do quadril sobre a retomada das cirurgias eletivas durante a pandemia COVID-19

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Abstract

Objective To analyze the profile and perception of patients on the waiting list for total hip arthroplasty (THA) about performing elective surgeries during the COVID-19 pandemic.

Methods From July to November 2021, patients on the THA waiting list were interviewed during outpatient consultations. To compare the groups regarding categorical variables, the Chi-square test or Fisher's exact test was applied, and for quantitative variables the Mann-Whitney test was applied. The results were calculated using the Statistica program version 7.

Results 39 patients answered the questionnaire. The mean age was 58.95 years, with 53.85% male. Approximately 60% expressed concern about contracting or transmitting COVID-19 to their family members after hospitalization for THA. 58.9% of patients felt hampered by the delay in scheduling elective surgeries during the pandemic. 23% lost or had a family member who lost their job during the pandemic, with a statistical difference for the group under 60 years old ($p = 0.04$).

Conclusion Most patients were concerned about becoming infected and exposing family members to COVID-19 after surgery and noted damage due to suspensions and delay in scheduling elective surgeries. The economic impact of the pandemic was revealed by the rate of 23% of respondents who lost or had a family member who lost their job during the pandemic, being higher in patients under 60 years of age ($p = 0.04$).

Keywords

- COVID-19
- elective surgical procedures
- arthroplasty, replacement, hip
- patient perception of surgery

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Resumo

Objetivo Analisar o perfil e a percepção dos pacientes em lista de espera para artroplastia total do quadril (ATQ) sobre a realização das cirurgias eletivas durante a pandemia pela COVID-19.

Métodos De julho a novembro de 2021, foram entrevistados pacientes em lista de espera para ATQ durante consultas ambulatoriais. Para comparar os grupos com relação às variáveis categóricas foi aplicado o Teste Qui-quadrado ou Teste exato de Fisher e para as variáveis quantitativas foi aplicado o teste de Mann-Whitney. Os resultados foram calculados utilizando o programa Statistica versão 7.

Resultados 39 pacientes responderam ao questionário. A média de idade foi de 58,95 anos, sendo 53,85% do sexo masculino. Aproximadamente, 60% manifestaram preocupação em contrair ou transmitir COVID-19 aos seus familiares após internação hospitalar para ATQ. 58,9% dos pacientes sentiram prejudicados pelo atraso no agendamento das cirurgias eletivas durante a pandemia. 23% perderam ou tiveram algum familiar que perdeu o emprego durante a pandemia, havendo diferença estatística para o grupo com menos de 60 anos ($p = 0,04$).

Conclusão A maioria dos pacientes sentiram preocupação em infectar-se e expor familiares à COVID-19 após a cirurgia e notaram prejuízo pelas suspensões e atraso no agendamento de cirurgias eletivas. O impacto econômico da pandemia revelou-se pela taxa de 23% de entrevistados que perderam ou tiveram algum familiar que perdeu seu emprego durante a pandemia, sendo maior nos pacientes menores de 60 anos ($p = 0,04$).

Palavras-chave

- COVID-19
- procedimentos cirúrgicos eletivos
- Artroplastia de quadril
- percepção do paciente sobre a cirurgia

Introduction

Since March 2020, the new coronavirus (COVID-19) pandemic began to interfere with the functioning of the publicly funded health care system – Sistema Único de Saúde (SUS) – in Brazil. With the increase in the occupation of beds in intensive care units, state and municipal governments and public and private health managers have chosen to suspend elective surgeries. This was one of the measures taken to contain transmission, reduce hospitalizations and make beds available for critically ill patients with COVID-19. The economic and social impact of restrictions on elective orthopedic hip surgeries and the perception of patients regarding the resumption of surgeries remain poorly studied in our country.

There is no study in Brazil that estimates the damage resulting from the stoppage of elective surgeries in the country. However, data from the American Hospital Association estimate that, in that country, losses to hospitals and health services could reach the mark of 202 billion dollars.[1] More than half of Americans reported a decrease in income since the pandemic began, and the unemployment rate has risen sharply.[2]

The social impact of suspending surgeries is directly related to the reduction in patients' quality of life. 100 patients awaiting orthopedic surgery, of whom 70 were scheduled for primary arthroplasty or revision arthroplasty of the hip or knee were interviewed at University College London Hospital. Their results indicated that approximately 90% would like to undergo the procedure as soon as possible.[3] This reflects the deterioration in the quality of life of patients living with osteoarthritis of the knee and hip.[4] Among patients on the waiting list for total hip arthroplasty (THA), it was observed that 33% consider their quality of life worse than death, in addition to there being an association between time on the waiting list and loss of quality of life.[5]

The patients' perception of the possibility of resuming activities is an important factor that requires further studies. In the United States, there are data demonstrating that men would be more interested in performing elective surgeries more quickly than women, after the removal of restrictions due to COVID-19. And most respondents are concerned about contracting the virus while hospitalized for surgery, as well as exposing their family members to the virus.[6]

Due to the scarcity of data that may reflect the local reality on the effects of postponing elective surgeries and patients' expectations, this study sought to study the profile of patients on the waiting list for total hip arthroplasty and their perception of the pandemic and the impact it has on their lives.

Material and methods

This study was approved by the Research Ethics Committee of our Institution and inserted in the Brazil Platform (CAAE-47957921.7.0000.0020) and the informed consent form was provided and signed by the research participants.

From July to November 2021, thirty-nine patients on the waiting list for total hip arthroplasty (THA) at a university hospital were assessed using a questionnaire prior to surgery. The questionnaire was applied during an outpatient consultation by a specialist in hip surgery (Appendix 1).

Patients over 18 years of age with an indication for THA were included. Patients awaiting THA surgery due to fracture of the proximal femur were excluded from the study.

The collected data were summarized with the preparation of frequency tables and contingency tables. To compare the groups with regard to categorical variables, the Chi-square test or Fisher's exact test was applied, for quantitative variables the Mann-Whitney test was applied. The results were calculated using the Statistica program version 7.

Results

A total of 39 patients answered the questionnaire. The patients were, on average, 58.95 years old (ranging from 26 to 93 years old), with just over half being male (53.85%). More than 75% of patients had an income of less than three minimum wages per family member. ►**Table 1** represents the demographic profile of the studied sample.

Approximately 60% of patients expressed concern about contracting COVID-19 or exposing their family to the coronavirus after hospitalization for THA. There was no difference between groups by age or sex regarding concern about COVID-19 infection during hospitalization for surgery. The presence of comorbidities also did not influence the responses ($p = 0.29$). There was a statistical difference between the proportion of vaccinated individuals between age groups, being greater in patients over 60 years of age ($p = 0.004$). However, complete vaccination did not confer less concern about COVID-19 infection ($p = 0.24$).

Patients were asked about their perception of the severity of the symptoms they could manifest in case of COVID-19 infection (no symptoms, with mild symptoms, with moderate symptoms without risk of death and moderate with risk of death). More than 70% of respondents believe that if they become infected with COVID-19, they will only experience mild symptoms. Considering patients over 60 years old, the belief that they would only have mild symptoms was 68.75%. There was no significant difference in responses when comparing age groups ($p = 0.45$).

Table 1 Demographic profile of the sample

Characteristics	N	%
Sex		
Male	21	53.85
Female	18	46.15
Age range (years)		
18-39	2	6.02
40-49	6	15.38
50-59	15	38.46
60-69	5	12.82
>70	11	28.21
Civil status		
Married	28	71.79
Single	3	7.69
Widower	5	12.82
Divorced	3	7.69
Race		
White	34	87.18
Black	3	7.69
Brown/Mestizos	2	5.13
Minimum wages per person in the family		
Up to 1	16	41.03
1-3	14	35.90
3-6	4	10.26
6-10	4	10.26
>10	1	2.56
Number of people living in the same household		
1	4	10.26%
2	15	38.46%
3	13	33.33%
4 or more	7	17.95%
Lives with or cares for people over 60		
No	31	81.58%
Yes	7	18.42%
Works or lives with someone who works in essential services		
No	26	66.67%
Yes	13	33.33%
Job loss in the pandemic (patient or family member)		
No	30	76.92%
Yes	9	23.08%
Receive sick pay		
No	29	74.36%
Yes	10	25.64%
Complete immunization for COVID		
No	21	53.85%
Yes	18	46.15%
Comorbidities		
Obesity	12	30.77%
Diabetes Mellitus	11	28.21%
Systemic Arterial Hypertension	26	66.67%
Smoking	5	12.82%
Alcoholism	1	2.56%

Font: Authors' data.

Nearly 75% stated that their pain score is 8 or more and that they had been waiting for total hip replacement surgery for more than 12 months. Approximately 60% of respondents feel harmed by the delay in surgery.

More than 80% of the participants stated that they would feel comfortable with undergoing the surgery within one month, after approval of elective surgeries by the competent bodies.

They were asked which place or situation in the hospital they were most concerned about the risk of being contaminated by COVID-19. More than 60% of the participants stated that admission and the waiting room are the most worrisome environments, with the hospitalization room and post-operative recovery area in second place, contact with the assistant teams in third and, lastly, the operating room.

When asked whether the risk of contamination is higher or lower during hospitalization compared to daily activities, about 40% responded that there is a higher risk in the hospital. The risk was considered lower in the hospital environment for 39% and equal for 21%. There was no significant difference between age groups regarding this proportion ($p = 0.55$).

More than 23% of respondents lost their jobs during the pandemic or had a family member who became unemployed. There was a significant difference between age groups ($p = 0.04$), with younger people (less than 60 years old) presenting significantly more cases of job loss. On the other hand, the younger group benefited from income supplementation through government programs such as sick pay ($p = 0.002$).

More than 85% of respondents would like the first outpatient consultation after surgery to be face-to-face, while the rest would opt for telemedicine. There was no significant difference between the age groups regarding this proportion ($p = 0.28$).

Discussion

The average age of the studied population, 58.95 years, was within the expected range, considering the prevalence of coxarthrosis in the adult population. The hypotheses that the presence of more comorbidities, incomplete vaccination for COVID-19, higher age group and female gender would be associated with greater fear of contracting COVID-19 when hospitalized for total hip arthroplasty was not confirmed after statistical analysis.

Females were more concerned about the risk of COVID-19 infection (64.71% versus 52.38% of males) and 58.82% of females were afraid of exposing their family members to the COVID-19 virus after the hospitalization. Although we did not find statistical significance for this difference between genders in our population, the findings confirm the results of another study in which this concern is more prevalent in women.[6] The average of patients who are concerned about contracting COVID-19 during hospitalization (57.9%) is similar to data from surveys carried out in other countries, where the rate was 61% and 53%.[3,6,7]

It was expected that patients over 60 years of age would be more concerned about contracting COVID-19 or fear of developing more severe symptoms due to general knowledge about the epidemiology of the disease. However, there was no significant difference in responses when comparing the age groups ($p = 0.45$). 68.75% of the elderly believe that if they were infected, they would evolve with the mild form of the disease, which did not differ significantly from respondents aged less than 60 years (72.73%).

There was no statistically significant difference when patients answered whether they considered the hospital a place with a higher risk of exposure and contamination to COVID-19 when compared to daily activities. This finding may reflect the diversity of the population's exposure level, considering that patients who are more restricted to the home environment, who do not use public transport or do not work outside the home, would be less exposed. On the other hand, patients with a routine of more contact with other people at work, with neighbors, family members would be more likely to become infected and considered the hospital to be safer. Assessing this perception of patients was important because in periods when the government is free to perform the procedure, most patients who canceled their surgery mentioned concerns about contracting COVID-19 as the main reason. Therefore, patients who consider the hospital as a place with a higher risk of transmitting COVID-19 are subject to canceling their surgeries.[7]

Most patients (58.9%) felt that the delay in having their total hip arthroplasty surgery had been delayed. This finding reinforces the loss of quality of life that patients with hip arthrosis suffer.[4]

Ho et al.[7] found an association between patients' agreement to undergo elective orthopedic surgery and the perception that their situation was serious or getting worse. In our study, we did not find an association between greater pain intensity and the prevalence of agreeing to undergo surgery in less than 30 days after the application of the questionnaire. Considering that trust in hospitals and in the health system is a necessary factor to undergo elective surgery,[7] it is possible that the caution in waiting more than 30 days for the procedure was due to the understanding that the collapse of public health, in the country, did not provide the ideal time for hospitalization. During the study, the country suffered from a lack of infirmary and intensive care beds in public and private hospitals.

After the first wave of COVID-19 in England, the desire of patients to have their total hip replacement performed during the pandemic was evaluated. 94.7% of patients wanted to undergo surgery as soon as possible.[3] On the other hand, our study showed that 81.58% of patients wanted to undergo surgery in less than 30 days. The difference found can be explained by several factors. The questionnaires applied in our study were initially applied when there was still a ban on elective surgeries due to the large number of new cases, deaths and hospitalizations due to COVID-19 in the country. It is also possible that the difference is due to the fact that we do not have the same perioperative care protocol that could reduce intra-hospital contamination, such as the requirement of negative PCR tests for COVID-19 and preoperative isolation lasting 14 days; in addition to not informing that the hospital was being considered a "COVID-free zone",

in which suspected or confirmed cases of COVID-19 were not seen or treated.

At our institution, patients undergoing hip arthroplasty are hospitalized and most are discharged on the second postoperative day. In other services there is the possibility of hospital discharge within 24 hours. It is possible to suggest that the estimate of staying longer in the hospital, where there may be patients hospitalized for COVID-19, in the postoperative period may negatively influence the desire to operate as soon as possible due to the fear of being contaminated or becoming ill during hospitalization.

In the second and third quarters of 2021, unemployment in Brazil reached rates of 14.9 and 14.2%, according to data from the Brazilian Institute of Geography and Statistics (IBGE).[8] The economic impact was mainly reflected in the 23.08% of patients who lost their jobs or family members during the pandemic, especially for the group under 60 years old ($p = 0.04$).

Despite the fear of contracting COVID-19, 85% of patients would like the first postoperative consultation to be face-to-face instead of telemedicine. The data may be related to the difficulty of accessing the internet and lack of the ability to make effective use of electronic devices. Even if there were no such difficulties, it is possible that the desire to have the physical examination, assessment of the surgical wound and removal of stitches performed in the first postoperative consultation led most to prefer a face-to-face consultation.

Conclusion

The study evaluated the perception of patients on the waiting list for total hip arthroplasty during the COVID-19 pandemic. Most patients felt hampered by cancellations and delays of elective surgeries and concerns about becoming infected or exposing family members to COVID-19 after surgery. The economic impact of the pandemic was revealed by the rate of 23% of respondents who lost or had a family member who lost their jobs during the pandemic, being higher in patients younger than 60 years ($p = 0.04$).

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Conflict of interests
The authors declare no conflict of interest.

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Appendix 1–Questionnaire: Perception of patients on the waiting list for elective surgeries at the University Hospital Cajuru

Name:
Age:
How old are you?
a) between 18 and 30 years old
b) between 30 and 39 years old
c) between 40 and 49 years old
d) between 50 and 59 years old
e) between 60 and 69 years old
f) 70 year old or more

Sex:
a) Male
b) Female
c) Prefer not to answer

In which health macro-region do you live in the State of Paraná?
a) East (includes the metropolitan region of Curitiba and Paranaguá)
b) Campos Gerais (includes Ponta Grossa, Irati, União da Vitória, Telêmaco Borba)
c) Center-South (includes Guarapuava and Pato Branco)
d) West (includes Francisco Beltrão, Foz do Iguaçu, Cascavel, Toledo
e) Northwest (includes Campo Mourão, Umuarama, Cianorte, Paranavaí, Maringá)
f) North (Apucarana, Londrina, Cornélio Procópio, Jacarezinho, Ivaiporã)
g) Another state

What is your Civil Status?
a) Single
b) Married
c) Divorced
d) Widowed

What ethnic group do you identify with?
a) White
b) Black
c) Yellow
d) Indigenous
e) Brown/Mestizo

Adding your income with the income of the people who live with you, what is, approximately, the monthly family income per person?
a) Up to 1 minimum wage (up to R$ 1100.00)
b) From 1 to 3 minimum wages (from R$ 1100.01 to R$ 3300.00)
c) From 3 to 6 minimum wages (from R$ 3300.01 to R$ 6600.00)
d) From 6 to 10 minimum wages (from R$ 6600.01 to 11000.10)
e) More than 10 minimum wages (above BRL 11,000.10)

Is the main source of family income due to your work?
a) Yes
b) No

How many people live in the same household as you?
a) I live alone
b) 2
c) 3
d) 4 or more

Do you live with or care for people over 60?
a) Yes
b) No

Do you or someone who lives with you work in services considered essential?
a) Yes
b) No

Have you or anyone in your family lost their job during the pandemic?
a) Yes
b) No

Do you receive sick pay?
a) Yes
b) No

Are you immunized for COVID with the vaccine (at least three weeks after the second dose of vaccine for two-dose vaccines)?
a) Yes
b) No

How often do you need someone to help you read or interpret your doctor's instructions, pamphlets, or other written materials?
a) Never
b) Rarely
c) Sometimes
d) Most of the time
e) Always

In general, would you say your health is:
a) Excellent
b) Very good
c) Good
d) Bad
e) Very bad

Check below if you have any of the health problems listed below (more than one answer can be ticked):
a) Systemic Arterial Hypertension (High Blood Pressure)
b) Diabetes mellitus
c) Smoking
d) Alcoholism
e) Obesity (body mass index greater than 30)

Which surgery are you waiting for
a) Total hip arthroplasty
b) Revision of total hip arthroplasty

Do you have an indication for surgery on one side only or on both hips?
a) One side only
b) On both sides

From zero to 10, with zero being no pain and 10 being excessive pain, what grade would you give to your pain?
How do you feel about the delay of your surgery?
a) Very impaired
b) Slightly impaired
c) I do not feel harmed or benefited
d) Little benefited
e) Much benefited

How long have you been waiting to perform the surgery?
a) Less than 6 months
b) Between 6 months and 1 year
c) Between 1 and 2 years
d) More than 2 years

The surgery will be performed by:
a) Sistema único de saúde (SUS) – publicly funded health care system
b) Health plan
c) Private

How worried are you about getting infected by the coronavirus?
a) I'm not worried
b) Very little worried
c) I'm a little worried
d) I am very worried

How concerned are you about the risk of exposing your family to COVID-19 after your surgery?
a) I'm not worried
b) Very little worried
c) I'm a little worried
d) I am very worried

The biggest concern of contracting COVID-19 is due to (choose one answer):
a) Yourself
b) Your spouse
c) Family
d) I do not feel worried about contracting COVID-19

Do you believe that if you have COVID-19 infection you will have serious symptoms?
a) No symptoms
b) Mild symptoms
c) More severe symptoms but without risk of death
d) Severe symptoms at risk of death

Once the resumption of elective surgeries is cleared, when would you feel comfortable undergoing the proposed surgery?
a) 1 month
b) Between 1 and 3 months
c) Between 3 and 6 months
d) More than 6 months

If there was the possibility of having your surgery performed earlier, during the pandemic period, would you hire a health plan or have the surgery privately if you had financial conditions?
a) Yes
b) No
c) Not applicable (my surgery will be by health plan or private)

Even if your surgery is performed via a health plan or private, there may be some delay in authorizing your surgery. Would you be willing to pay an extra fee to have your surgery performed sooner?
a) Yes
b) No
c) Not applicable (my surgery will be done by SUS)

What part of the surgery process are you most concerned about getting COVID-19?
a) Admission and waiting room
b) Operating room

c) Post-surgical recovery area and hospitalization room
d) Contact with the assistant teams

Do you believe that the risk of you contracting Covid 19 in the hospital during hospitalization is?
a) Much higher than in my day-to-day activities
b) A little higher than in my day-to-day activities
c) Same as the risk in my day-to-day activities
d) Less than in my day-to-day activities
e) Much lower than in my day-to-day activities

How would you prefer the first outpatient visit after surgery to be?
a) In person
b) Telemedicine (consultation via video call)

To be filled by the doctor:
If the patient is awaiting primary Total Hip Arthroplasty surgery, what is the classification of arthrosis according to Tonnis?
a) Grade 0–No signs of osteoarthritis
b) Grade I – Increased sclerosis, slight decrease in joint space, without loss/slight loss of sphericity of the femoral head
c) Grade II – Small cysts, moderate decrease in joint space, moderate loss of head sphericity
d) Grade III – Cysts of large dimensions, marked reduction of joint space, marked deformity of the head.

If the patient is waiting for a Hip Arthroplasty Revision surgery, what is the reason for the indication?
a) Periprosthetic fracture
b) Femoral osteolysis
c) Acetabular osteolysis
d) Femoral and acetabular osteolysis
e) Infection
f) Wear of the tribological pair
g) Recurrent dislocation
h) Others