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Addressing the Decline of Telemedicine in Orthopedic Sports Medicine Practice: A Cross-sectional Survey of Patient and Physician Perspectives

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Abstract

Background: The objective of this study was to analyze patient and physician perceptions and satisfaction rates of telemedicine visits within an orthopaedic sports medicine practice following the evolution of the COVID-19 pandemic and the availability of vaccines.

Hypothesis/Purpose: This evaluation aimed to discover what aspects of telemedicine visits are efficient or reliable in a sports medicine setting.

Study Design: Cross-Sectional Study

Methods: All patients who completed telemedicine visits with an orthopaedic sports medicine physician at our institution between November 1, 2021, and August 3, 2022, were offered a 15-question Likert scale (1-5/5) survey to complete—a total of 45 patients completed surveys. The study population consisted of 26 (58%) males and 19 (42%) females, averaging 53±21 years old. All telemedicine visits were conducted using live video conferencing hosted through our institution's electronic health record (Epic, Verona, WI, USA) with Vidyo (Hackensack, NJ, USA). Based on survey responses, an ordinal regression model was used to determine the most influential factors related to patient satisfaction, the likelihood of recommending telemedicine, and the likelihood of using telemedicine in the future. Email requests for participation from physicians were sent to all at the Andrews Institute. Twelve physicians responded and completed the consent process and survey.

Results: Satisfaction with the telemedicine visit was affected by five factors: patient age, comfort level with technology, perceived ease of use, whether the patient's questions were addressed, and, lastly, whether or not there was a perceived reduction in care. Most patients were highly satisfied, as 84% were satisfied with their telemedicine visits. Similarly, 83% of physicians found that the inability to perform physical exams on patients hindered proper care for their patients. Most physicians overwhelmingly agreed that implementing telemedicine systems was not easy, along with dissatisfaction with patient outcomes and reviewing images with patients utilizing telemedicine systems.

Conclusion: A growing familiarity with the technology, time and cost savings, and positive patient experiences during the COVID-19 pandemic have established telemedicine services as a staple of modern medical practice. This study demonstrated that even with a near return to normalcy following the availability of COVID-19 vaccines, patients are willing to continue to utilize telemedicine services for their sports medicine visits. However, physician dissatisfaction and lack of thorough examination of patients points to telemedicine being subpar compared to in-person appointments. Although some aspects of telemedicine may be easier to implement in sports medicine practice, in-person examinations cannot be entirely replaced by telemedicine.

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Introduction

Telemedicine can be defined as a set of technologies and services to deliver care at a distance [1]. While telemedicine has been considered a cost-effective and time-efficient mode of healthcare delivery, as of 2019, only 8% of Americans had reported having used a form of telemedicine [1,2]. To maintain social distancing and minimize disease spread of Coronavirus 2019, the implementation of telemedicine into the healthcare setting was rapidly accelerated, with a quaternary academic medical center seeing an increase in telemedicine usage by 8729% from 2019-2020 [3]. With such a significant spike in utilization, studies were performed to assess patient satisfaction within different areas of healthcare. In the first month of the pandemic, telemedicine encounters in a sports medicine clinic were reported to have excellent satisfaction [4].

This study aimed to evaluate the satisfaction and preference for Telemedicine systems among a group of sports medicine physicians and the patients who received their care through telemedicine systems. In the wake of the COVID-19 pandemic, a shift from traditional in-person physician appointments to nearly entirely virtual patient encounters shifted how patient care is given today. One study among orthopedic physicians during the COVID-19 pandemic showed that roughly half of physicians will continue to use Telemedicine to some degree after the COVID-19 pandemic [5]. This shift in patient care has altered how we view traditional medicine, but it may not be suited for all medical specialties. In the post-vaccination era, interest in orthopedic telemedicine visits remains high [6]. However, providing high-quality patient care is still of the utmost importance despite the high interest in telemedicine. This study evaluated the physician's perspective on Telemedicine encounters during the COVID-19 pandemic to understand better the preference for this mode of patient care, its relevance, and the suitability of Telemedicine encounters in a sports medicine setting.

Additionally, this study evaluated telemedicine satisfaction among patients who utilized telemedicine from November 1, 2021, and August 3, 2022, with orthopedic physicians to provide a broader perspective of telemedicine satisfaction specific to sports medicine. Given continued interest contrasted with open opportunities for in-person office visits, it is imperative to evaluate patient satisfaction with telemedicine in a sports medicine context and to provide insight and direction for future practice.

Methods

Our Institutional Review Board (Number 1804824-2, Baptist Health Institutional Review Board) granted approval to perform a survey-based study capturing responses from patients and physicians who completed telemedicine visits at our institution. All patients who completed their visits between November 1, 2021, and August 3, 2022, were administered a 15-question Likert scale (1-5/5) survey (Figure 1). Physicians were given a separate 15-question questionnaire. The variables were calculated on the following scale: 1) strongly agree, 2) agree, 3) neither agree nor disagree, 4) disagree 5) strongly disagree. Participants were sent a text message containing a link to the online survey or contacted by research team members to complete the survey over the phone. Participants completed the survey once. REDCap, a web-based electronic data capture platform, was used to securely and confidentially store all clinical research data collected from the survey responses. All appointments were performed by one of three experienced sports medicine providers. Live video conferencing hosted through our institution's electronic health record (Epic, Verona, WI, USA) with Vidyo (Hackensack, NJ, USA) was utilized in all encounters for the telemedicine services.

1. I am comfortable using technology.
2. Technologically speaking, the telehealth system was easy to use.
3. I was satisfied with my telehealth visit.
4. If you disagreed with the above statement, please describe why you were unsatisfied with your telehealth visit.
5. All of my questions/concerns were addressed during my telehealth visit.
6. If you disagreed with the above statement, please list any questions/concerns that were not answered.
7. Telehealth did not reduce my level of medical care.
8. If you disagreed with the above statement, please describe how your level of medical care was reduced during your telehealth experience.
9. Telehealth can work for routine follow up care.
10. Telehealth can work for any type of follow up care including clearance to return to work or play.
11. I would recommend telehealth to a friend or family member.
12. I would use telehealth again in the future.
13. Please rank the primary factors influencing your choice to use telehealth again in the future from 1-3 with 1 being the most important factor and 3 being the least important factor.
14. If the cost of a telehealth visit was the same as the cost of an in-person office visit which would you prefer?
15. Please provide any additional information you have concerning telehealth at this office.

Figure 1: Fifteen questions were included in the Likert scale questionnaire provided to participants for completion.

Statistical Analysis

Calculations of descriptive statistics (means, standard deviations, minimums, maximums) were performed using the RStudio Team (2020) (RStudio: Integrated Development for R. RStudio, PBC, Boston, MA). The Kruskal-Wallis and Fisher's exact tests were employed to test differences across age and differences among the contingency table data for satisfaction, recommendation, and use in future variables. An ordinal regression model was used to calculate the odds ratios and determine the most influential factors related to patient satisfaction, the likelihood of recommending the telemedicine service, and the likelihood of using telemedicine again.

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Results

A total of 45 patients completed our telemedicine survey. The study population consisted of 26 (58%) males and 19 (42%) females, averaging 53±21 years old. A breakdown of patient demographics and responses to the individual questions are shown in (Table 1). Responses are further broken down according to patient satisfaction, the likelihood of recommending the telemedicine service, and the likelihood of using telemedicine in the future (Tables 2-4). Satisfaction with the telemedicine visit was significantly affected by five factors related to the patient's age, comfort level with technology, the perceived ease of use, whether the patient's questions were addressed, and, lastly, the perceived level of medical care. Older patients were less satisfied with the telemedicine visit. The average age of the most satisfied patients was 41±18 years old compared to the average age of the least satisfied patients, 65±5 years old. Patients who indicated they were comfortable with technology were more likely to be satisfied with their visit. Similarly, patients who felt the telemedicine platform was easy to use were more likely to be satisfied with the visit. Patients who felt their questions were addressed were also more likely to be satisfied with the telemedicine visit. If patients did not perceive a reduction in the level of medical care during the telemedicine visit, they were more likely to be satisfied with their visit. These same factors also significantly affected the likelihood of recommending the telemedicine service and the likelihood of using telemedicine in future scores. The ordinal regression models showed that the most influential factor affecting satisfaction was whether the participant's question was addressed. Patients who do not feel their questions were addressed have a much greater chance of being unsatisfied compared to their counterparts who felt their questions were answered (Odds Ratios (OR) 117, 95% CI 12.65 to 1091.25, p-value <0.001). Whether the participant's questions were addressed was also the most influential factor in determining the likelihood of a participant recommending telemedicine visits. Patients whose questions were unanswered are 29 times more likely not to recommend telemedicine visits (OR 95% CI 6.39 to 131.59, p-value <0.001). The most influential factor for determining future use of the telemedicine platform was whether there was a perceived reduction in the level of

Table 1: Patients' Characteristics.

Variables	N=45[1]		
Age	53 (21)	**Return to Work**	
Gender		Strongly Agree	8 (18%)
Male	26 (58%)	Agree	15 (33%)
Female	19 (42%)	Neither Agree nor Disagree	13 (29%)
Comfortable with Tech		Disagree	9 (20%)
Strongly Agree	23 (51%)	**Recommend**	
Agree	21 (47%)	Strongly Agree	17 (38%)
Disagree	1 (2.2%)	Agree	23 (51%)
Telemedicine System Easy		Neither Agree nor Disagree	4 (8.9%)
Strongly Agree	18 (41%)	Disagree	1 (2.2%)
Agree	20 (45%)	**Use Future**	
Neither Agree nor Disagree	6 (14%)	Strongly Agree	19 (42%)
Satisfaction		Agree	21 (47%)
Strongly Agree	18 (41%)	Neither Agree nor Disagree	5 (11%)
Agree	19 (43%)	**Travel Time**	
Neither Agree nor Disagree	7 (16%)	Most Important	18 (50%)
Questions addressed		Just Important	14 (39%)
Strongly Agree	22 (49%)	Least Important	4 (11%)
Agree	18 (40%)	**Convenience**	
Neither Agree nor Disagree	5 (11%)	Most Important	15 (41%)
Telemedicine Not Reduce Care		Just Important	18 (49%)
Strongly Agree	16 (36%)	Least Important	4 (11%)
Agree	21 (48%)	**Threat of Viral Exposure**	
Neither Agree nor Disagree	7 (16%)	Most Important	10 (25%)
Telemedicine Follow-Up Care		Just Important	3 (7.5%)
Strongly Agree	19 (43%)	Least Important	27 (68%)
Agree	21 (48%)	**I would prefer if costs were the same**	
Neither Agree nor Disagree	4 (9.1%)	Strongly Agree	8 (18%)
[1]Mean (SD); n (%)		Agree	9 (20%)
		Neither Agree nor Disagree	12 (27%)
		Disagree	16 (36%)

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Table 2: Satisfaction results.

Satisfaction				
	Strongly Agree, N = 18[1]	**Agree, N = 19[1]**	**Neither Agree nor Disagree, N = 7[1]**	**p-value[2]**
Age	41 (19)	60 (21)	65 (5)	**0.004**
Gender				0.3
Male	11 (61%)	9 (47%)	6 (86%)	
Female	7 (39%)	10 (53%)	1 (14%)	
Comfort Tech				
Strongly Agree	15 (83%)	5 (26%)	2 (29%)	**0.001**
Agree	3 (17%)	13 (68%)	5 (71%)	
Disagree	0 (0%)	1 (5.3%)	0 (0%)	
Telemedicine Easy				
Strongly Agree	16 (89%)	1 (5.3%)	1 (14%)	**<0.001**
Agree	2 (11%)	16 (84%)	2 (29%)	
Neither Agree nor Disagree	0 (0%)	2 (11%)	4 (57%)	
Questions addressed				
Strongly Agree	17 (94%)	4 (21%)	0 (0%)	**<0.001**
Agree	1 (5.6%)	15 (79%)	2 (29%)	
Neither Agree nor Disagree	0 (0%)	0 (0%)	5 (71%)	
Telemedicine Not Reduce Care				
Strongly Agree	12 (71%)	3 (16%)	0 (0%)	**<0.001**
Agree	5 (29%)	14 (74%)	2 (29%)	
Neither Agree nor Disagree	0 (0%)	2 (11%)	5 (71%)	

[1] Mean (SD); n (%)
[2] Kruskal-Wallis rank sum test; Fisher's exact test

Table 3: Recommendation results.

Future Use				
	Strongly Agree, N = 191	**Agree, N = 211**	**Neither Agree nor Disagree, N = 51**	**p-value[2]**
Age	41 (18)	61 (21)	67 (7)	**0.001**
Gender				0.5
Male	10 (53%)	14 (67%)	2 (40%)	
Female	9 (47%)	7 (33%)	3 (60%)	
Comfort Tech				
Strongly Agree	16 (84%)	4 (19%)	3 (60%)	**<0.001**
Agree	3 (16%)	16 (76%)	2 (40%)	
Disagree	0 (0%)	1 (4.8%)	0 (0%)	
Telemedicine Easy				
Strongly Agree	14 (74%)	4 (20%)	0 (0%)	**<0.001**
Agree	4 (21%)	14 (70%)	2 (40%)	
Neither Agree nor Disagree	1 (5.3%)	2 (10%)	3 (60%)	
Questions addressed				
Strongly Agree	17 (89%)	4 (19%)	1 (20%)	**<0.001**
Agree	2 (11%)	15 (71%)	1 (20%)	
Neither Agree nor Disagree	0 (0%)	2 (9.5%)	3 (60%)	

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Telemedicine Not Reduce Care				
Strongly Agree	14 (74%)	2 (10%)	0 (0%)	**<0.001**
Agree	5 (26%)	15 (75%)	1 (20%)	
Neither Agree nor Disagree	0 (0%)	3 (15%)	4 (80%)	
[1]Mean (SD); n (%) [2]Kruskal-Wallis rank sum test; Fisher's exact test				

Table 4: Future Use Results.

	Future Use			
	Strongly Agree, N = 191	**Agree, N = 211**	**Neither Agree nor Disagree, N = 51**	**p-value[2]**
Age	41 (18)	61 (21)	67 (7)	**0.001**
Gender				0.5
Male	10 (53%)	14 (67%)	2 (40%)	
Female	9 (47%)	7 (33%)	3 (60%)	
Comfort Tech				
Strongly Agree	16 (84%)	4 (19%)	3 (60%)	**<0.001**
Agree	3 (16%)	16 (76%)	2 (40%)	
Disagree	0 (0%)	1 (4.8%)	0 (0%)	
Telemedicine Easy				
Strongly Agree	14 (74%)	4 (20%)	0 (0%)	**<0.001**
Agree	4 (21%)	14 (70%)	2 (40%)	
Neither Agree nor Disagree	1 (5.3%)	2 (10%)	3 (60%)	
Questions addressed				
Strongly Agree	17 (89%)	4 (19%)	1 (20%)	**<0.001**
Agree	2 (11%)	15 (71%)	1 (20%)	
Neither Agree nor Disagree	0 (0%)	2 (9.5%)	3 (60%)	
Telemedicine Not Reduce Care				
Strongly Agree	14 (74%)	2 (10%)	0 (0%)	**<0.001**
Agree	5 (26%)	15 (75%)	1 (20%)	
Neither Agree nor Disagree	0 (0%)	3 (15%)	4 (80%)	
[1]Mean (SD); n (%) [2]Kruskal-Wallis rank sum test; Fisher's exact test				

medical care. Patients who did not perceive a reduction in the level of medical care were 25 times more likely to use or participate in telemedicine visits again in the future (OR 95% CI 6.03 to 106.54, p-value <0.001).

A total of 12 physicians completed the physician questionnaire. All telemedicine factors were scored based on the number of responses in each Likert scale category. The scoring was assigned: Strongly Disagree = -2 points, Somewhat Disagree = -1 point, Neutral = 0 points, Somewhat Agree = 1 point, Strongly Agree = 2 points. Figure 2 presents the questionnaire results graphically. The results were sorted to list the highest-scoring (more positive/important) factors on top and the lowest-scoring (more negative/less important) factors at the bottom. All neutral responses were removed from the results graphic to prevent skewing. The physicians rated image review (20 points) and telemedicine system implementation (18 points) as the most favorable facts associated with telemedicine practices. Additionally, physicians reported establishing new patients (11 points) and patient outcomes (11 points) as positive factors related to telemedicine practices. Table 5 presents the favorable aspects of telemedicine identified by the physician participants.

The most negative or unfavorable factors of telemedicine identified through this survey were injury evaluation (-14 points) and the overall quality of care provided through telemedicine (-7 points). Additional factors that were ranked negatively by physicians were communication (-6 points) and patient instruction (-1). All telemedicine factors (n=12) were scored based on the number of responses in each category (n=5) of the Likert scale.

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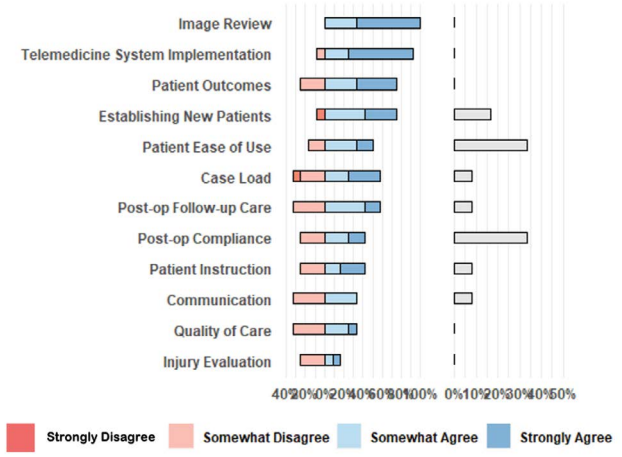

Figure 2 : Physicians' responses on Likert-scale questionnaire.

Table 5: Physicians identified favorable factors of telemedicine.

Positive Factor	Score
Image Review	20
Telemedicine System Implementation	18
Establishing New Patients	11
Patient Outcomes	11
Case Load	6
Patient Ease of Use	6
Post-op Follow-up Care	5
Post-op Compliance	4
Patient Instruction	-1
Communication	-6
Quality of Care	-7
Injury Evaluation	-14

Free-response questions from physicians were qualitatively coded and assessed in 3 general categories: Challenges, Benefits, and Improvements. The free responses were further coded into more specific physicians' responses and tabulated from the highest count of free responses to the lowest count of free responses. Two main themes emerged from the challenges of telemedicine qualitative data. Most physician participants (10/12) reported conducting physical exams as a challenge faced during telemedicine practices. Technology also emerged as a challenge, with 3/12 physicians reporting this as a challenge.

The physician participants reported five categories of benefits to telemedicine through qualitative responses. Most frequently, the physicians reported less travel for patients (7/12) and easier follow-up with patients (6/12) as benefits. Imaging review and pre-op evaluation were also reported as a telemedicine benefit (2/12). One physician reported evaluating minimal-risk cases as a benefit of telemedicine.

Tactics to improve current telemedicine practices were gathered from the 12 physician participants. Most participants who responded to this question (4/8) noted that telemedicine technology such as FaceTime and WhatsApp required improvement. Additionally, two physicians proposed an increase in consistency between telemedicine platforms. One physician stated a need for an increase in remote capabilities, and another proposed an increase in out-of-state compensation for telemedicine practices. Table 7 summarizes these results.

Table 6: Qualitative Results: Physician identified telemedicine benefits.

Theme	Count
Less travel for patients	7
Easier to follow up	6
Pre-op evaluation	2
Imaging review	2
Evaluating minimal risk cases	1

Table 7: Qualitative Results: Physician identified telemedicine improvement tactics.

Theme	Count
Improve telemedicine technology (ex: FaceTime and WhatsApp use)	4
Increase consistency between telemedicine platforms	2
Provide out-of-state compensation	1
Increase remote capabilities	1

Discussion

At the peak of the COVID-19 pandemic, telemedicine services reached unprecedented utilization, with institutions reporting a significant increase in telemedicine visits [7]. Orthopaedic sports medicine patient perceptions and satisfaction rates with the virtual platform were positive at the onset of the pandemic [8]. This study focused on patient and physician perceptions and experiences as the COVID-19 pandemic evolved following the availability of vaccines. Most patients in this study were highly satisfied with the care they received during their telemedicine visits, as 84% of patients agreed they were satisfied with their visit. The remaining 16% of patients were indifferent regarding their satisfaction with the visit. This provides evidence that most patients approve of the implementation of telemedicine services in outpatient orthopaedic care. Tilmon et al. similarly used a survey-based study to evaluate patient satisfaction and experience with telemedicine in an orthopaedic sports medicine clinic. They compared survey results from patients who had a telemedicine visit to those from patients who had an in-person visit. Contrary to early public perception that virtual visits would be inferior to in-person visits, the overall composite satisfaction was similar between the two types of visits [9]. Since the onset of the pandemic, multiple

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studies have demonstrated high levels of patient satisfaction with telemedicine in orthopaedics, including a systemic review of 14 prior studies [3,6,10]. In fact, some research indicates that patient satisfaction with telemedicine visits even exceeds that of in-person visits. One study evaluating the experience of arthroplasty patients demonstrated higher satisfaction with telemedicine visits than in-office visits [11]. In addition to overall satisfaction with telemedicine visits, our study revealed strong support for continued use of telemedicine even after a return to normalcy following the COVID-19 pandemic, with 89% of patients agreeing that they would schedule telemedicine visits in the future. The capabilities for effective telemedicine visits likely existed before the pandemic; however, the pressures created by the coronavirus have accelerated their adaptation and integration into modern orthopaedic practice. This environment, coupled with the growing familiarity of patients and providers with audiovisual communication technology, personal laptop computers, smartphones, and tablets, has facilitated the increasing utilization of telemedicine services [12,13].

Patients also reported significant time savings by scheduling telemedicine visits. Patients seen at our institution are estimated to commute between 30 minutes to 1 hour to arrive at our clinical sites, wait 10 to 20 minutes to be seen by clinic staff, and spend 10 to 20 minutes face-to-face time with the provider. When these times are compared to the average duration of a telemedicine visit, 10 to 20 minutes, nearly 2 hours may be saved per patient. In previous studies demonstrating similar time savings with telemedicine, patient satisfaction remained equal to or better than in-office visits. Within our patient population, a significant number of patients reported requiring time off from work for in-office visits. Kane et al. evaluated the role of telemedicine as a platform for postoperative visits for patients who had undergone rotator cuff repair surgery [14]. They found that telemedicine visits were less time-consuming for patients and providers and required less time off work for both patients and caregivers [14]. Although not directly tied to the cost of health care, these time savings can reduce the attributed societal costs. Prada et al. analyzed the effect of telemedicine on efficiency and wait times [15]. They found that wait times for orthopaedic referrals decreased on average from 201 days to 40 days, indicating that telemedicine visits permit orthopaedic surgeons to maximize their efficiency and see more patients [15].

Another equally important benefit of telemedicine services for patients and providers is cost savings. Higgins et al. [16] investigated whether a mobile app could reduce the need for in-person visits and examined the cost differences between app-based and conventional follow-up for postoperative anterior cruciate ligament reconstruction patients [16]. On average, patients in the app group spent $211 (Canadian dollars) less than their counterparts in the conventional follow-up group over six weeks. They found no differences in satisfaction, convenience, complication rates, or clinical outcome measures between the groups [16]. This represents one of the unique strengths of telemedicine services and should continue to be evaluated as a means of reducing costs within our burdened healthcare system. This cost-saving element is essential to resource-limited clinics. Telemedicine visits can improve efficiency by targeting specific visit types, such as new patient visits or postoperative visits, decreasing the overall in-person patient traffic.

This study was not without limitations. Patients were subject to recall bias as the online survey was not administered immediately following the conclusion of the appointment. Additionally, using the Likert scale is associated with increased central tendency response bias. Therefore, a reduction in responses to scale extremes likely occurred.

A growing familiarity with the technology, time and cost savings, and positive patient experiences with telemedicine during the COVID-19 pandemic have established telemedicine services as a staple of the modern orthopaedic sports medicine practice. This survey-based study has demonstrated that even with a near return to normalcy following the availability of COVID-19 vaccines, patients are willing to continue to utilize telemedicine services for their sports medicine healthcare needs. The high level of patient satisfaction and identification of factors most likely to influence the continued utilization of telemedicine services serve as evidence for the further development of these services and continued investigation into the quantification of cost and time savings accompanying telemedicine visits in a sports medicine practice.

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Disclosures

The authors have no relevant conflicts to disclose regarding this research.

References

1. Bashshur RL, Goldberg MA: The origins of telemedicine and e-Health. Telemed J E Health 20 (2014): 190-191.

2. Atanda A, Pelton M, Fabricant PD, et al. Telemedicine utilisation in a paediatric sports medicine practice: decreased cost and wait times with increased satisfaction.

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DOI:10.26502/josm.511500197

Journal of ISAKOS: Joint Disorders & Orthopaedic Sports Medicine 3 (2018): 94-97.

3. Ramaswamy A, Yu M, Drangsholt S, et al. Patient Satisfaction with Telemedicine During the COVID-19 Pandemic: Retrospective Cohort Study. J Med Internet Res 22 (2020): e20786.
4. Greif DN, Shallop BJ, Rizzo MG, et al. Telehealth in an Orthopedic Sports Medicine Clinic: The First 100 Patients. Telemed J E Health 27 (2021): 1275-1281.
5. Kolin DA, Carroll KM, Plancher K, et al. Perspective of Attending Physicians on the Use of Telemedicine in an Outpatient Arthroplasty Setting During the COVID-19 Pandemic. HSS J 17 (2021): 31-35.
6. Henry TW, Fletcher D, Vaccaro AR, et al. Evaluating Patient Interest in Orthopedic Telehealth Services Beyond the COVID-19 Pandemic. Cureus 13 (2021): e16523.
7. Wosik J, Fudim M, Cameron B, et al. Telehealth transformation: COVID-19 and the rise of virtual care. J Am Med Inform Assoc 27 (2020): 957-962.
8. Kirby DJ, Fried JW, Buchalter DB, et al. Patient and Physician Satisfaction with Telehealth During the COVID-19 Pandemic: Sports Medicine Perspective. Telemedicine and e-Health 27 (2021): 1151-1159.
9. Tilmon JC, Farooq H, Metzger CM, et al. Telehealth in Orthopedic Sports Medicine: A Survey Study on Patient Satisfaction and Experience. Telemed J E Health (2022).
10. Petersen W, Karpinski K, Backhaus L, et al. A systematic review about telemedicine in orthopedics. Arch Orthop Trauma Surg 141 (2021): 1731-1739.
11. Windsor EN, Sharma AK, Gkiatas I, et al. An Overview of Telehealth in Total Joint Arthroplasty. Hss j 17 (2021): 51-58.
12. Rao SS, Loeb AE, Amin RM, et al. Establishing Telemedicine in an Academic Total Joint Arthroplasty Practice: Needs and Opportunities Highlighted by the COVID-19 Pandemic. Arthroplast Today 6 (2020): 617-622.
13. Makhni MC, Riew GJ, Sumathipala MG. Telemedicine in Orthopaedic Surgery: Challenges and Opportunities. J Bone Joint Surg Am 102 (2020): 1109-1115.
14. Kane LT, Thakar O, Jamgochian G, et al. The role of telehealth as a platform for postoperative visits following rotator cuff repair: a prospective, randomized controlled trial. J Shoulder Elbow Surg 29 (2020): 775-783.
15. Prada C, Izquierdo N, Traipe R, et al. Results of a New Telemedicine Strategy in Traumatology and Orthopedics. Telemed J E Health 26 (2020): 665-670.
16. Higgins J, Chang J, Hoit G, et al. Conventional Follow-up Versus Mobile Application Home Monitoring for Postoperative Anterior Cruciate Ligament Reconstruction Patients: A Randomized Controlled Trial. Arthroscopy 36 (2020): 1906-1916.

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