

Research Article

The Impact of COVID-19 on Patient Preferences in an Orthopaedic Clinic

Dominic S Carreira^{1*}, Logan S Thayer¹, Ryan McGovern², Geoffrey Van Thiel³, Andrew B Wolff⁴, Xavier A Duralde¹, Thomas Harris⁵, Margaret A Sinkler⁶

¹Peachtree Orthopedics, Atlanta, GA, USA

²Texas Health Physicians Group, Dallas, TX, USA

³OrthoIllinois, Chicago, IL, USA

⁴Washington Orthopaedics, Washington, DC, USA

⁵Glendale Memorial Hospital and Health Center, Glendale, CA, USA

⁶Medical College of Georgia, Augusta, GA, USA

*Correspondence author: Dominic S Carreira, Peachtree Orthopedics, Atlanta, GA, USA; Email: Carreira.research@gmail.com

Citation: Carreira DS, et al. The Impact of COVID-19 on Patient Preferences in an Orthopaedic Clinic. J Surg Res Prac. 2023;4(3):1-10.

<https://doi.org/10.46889/JSRP.2023.4302>

Received Date: 20-09-2023

Accepted Date: 09-10-2023

Published Date: 17-10-2023



Copyright: © 2023 by the authors. Submitted for possible open access publication under the terms and conditions of the Creative Commons Attribution (CCBY) license (<https://creativecommons.org/licenses/by/4.0/>).

Abstract

Introduction/Purpose: Patient preferences for physician greeting method and attire are impactful but often overlooked aspects of the patient experience, which may be affected by the COVID-19 pandemic. In addition, the use of telemedicine as an alternative to clinical care has become increasingly relevant to follow social distancing guidelines. This study evaluates the effects of the COVID-19 crisis on patient preferences for an orthopaedic surgeons' attire, greeting and perception of telemedicine during outpatient visits.

Methods: A multi-center collaboration prospectively collected surveys to evaluate patients presenting with an orthopaedic pathology to one of five outpatient orthopaedic clinics in the United States from June 2020 through August 2020. This survey assessed patient opinions regarding physician attire, greeting method and willingness to use telemedicine. A cross-sectional cohort analysis evaluates these preferences and the effect of the COVID-19 pandemic on them.

Results: 412 patients were surveyed. 46% of patients reported preferring a no-contact greeting and 40% of patients stated no preference. 57% of patients reported that COVID-19 affected their preferred greeting. Almost 50% of respondents noted neither like nor dislike regarding physician attire options presented and 89% stated that this preference was not impacted by COVID-19. Although most patients or a family member had not utilized a telemedicine visit (65%), 56% of patients reported a willingness to use telemedicine in the future.

Conclusion: This study highlights the impact of the COVID-19 pandemic on patient preferences. Most patients preferred a no-contact greeting or had no preference, responses that were influenced by the COVID-19 pandemic. COVID-19 did not impact patient preferences for specific doctor attire, but patients favored options including a white coat. A majority of patients expressed willingness to utilize telemedicine.

Keywords: COVID-19; Perception; Attire; Greeting; Telemedicine

Introduction

Patient experiences in a clinical setting are affected by many factors, some that are indirectly associated with the level of care and treatment they receive. Clinical studies demonstrate that improvements to the patient experience yield greater satisfaction, increased adherence to treatment and improved clinical outcomes [1-7]. The novel Coronavirus Disease (COVID-19), declared a global pandemic by the World Health Organization in January 2020, has resulted in new concerns related to the patient experience [8]. The study aims to assess the impact on patient preferences in the orthopaedic outpatient setting related to surgeon

attire, greeting methods and telemedicine.

Before COVID-19, greeting via a handshake was the patient's preferred method of establishing patient-physician rapport in a clinical visit [9-12]. A goal for this study is to assess whether COVID-19 has affected this preference for greeting with physical contact in an orthopaedic clinic. With regards to orthopaedic surgeon attire, several recent studies assess patient preferences and generally found favorable responses to white coats and scrubs, attire options associated with increased perceived credibility [3,13,14]. Telemedicine use has rapidly increased over the last decade and is an increasingly viable option due to technology improvements and increased patient receptiveness [15-18]. A national survey found just over half of patients are willing to participate in telemedicine visits, but may have varied enthusiasm based on age, economics, education or other factors [19]. Based on national guidelines for social distancing and increased public health awareness, it is likely that COVID-19 has affected patient willingness to participate in telemedicine [20]. The purpose of this study is to evaluate that impact of COVID-19 on the patient experience within the orthopaedic clinic by assessing patient opinions regarding greeting method, physician attire and willingness to use telemedicine visits. Furthermore, variations across geographic regions of the United States are assessed.

Methods

Patients

A multi-center collaboration of 5 orthopaedic surgeons prospectively collected data from June 2020 through August 2020. The study utilized a single survey (administered in paper or online format) to evaluate patients at five outpatient orthopaedic clinics located in either the Northeast, Midwest, South or West United States. All participants were 18 years or older, informed and consented. Exclusion criteria included patients unwilling to consent or who presented with a non-orthopaedic pathology. Institutional Review Board approval for pre-hoc collection and storage of agreed upon de-identified clinical data points was granted at each center.

Procedures

A retrospective, cross-sectional cohort study was performed to assess orthopaedic patient preferences and to determine the effect of COVID-19 on these preferences. Data for the study was stored in a de-identified fashion compliant with HIPAA privacy standards. The survey included in this study was created by the corresponding author and approved by all providers (Table 1). Surveys were administered in the waiting room prior to appointment and collected the following information: patient age, geographic region, sex, education level, importance of doctor's appearance, preference for doctor's attire, telehealth preference, greeting preference and preference changes related to COVID-19. Demonstrations of doctor attire options were presented to each patient in a lineup of photos and included: jacket coat and tie; white coat and scrubs; white coat and tie; white coat without tie and surgical scrubs only (Fig. 1).

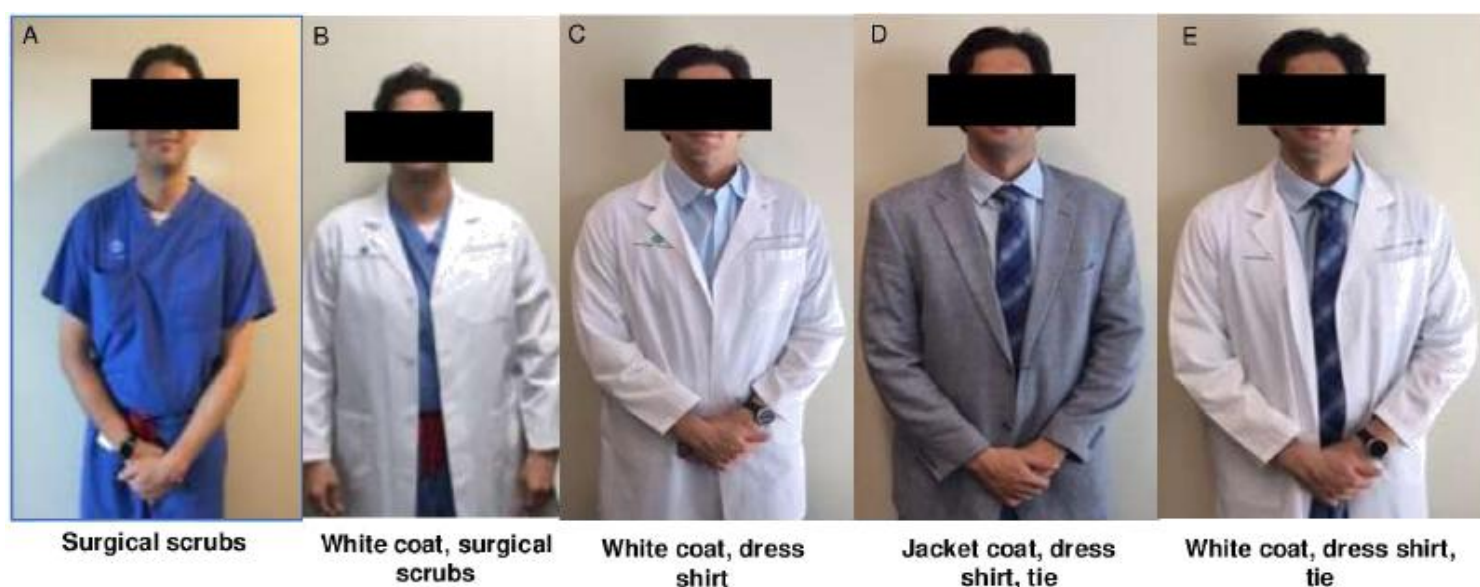


Figure 1: Procedure for cross-sectional cohort study.

Question	Response Breakdown					
Q1. Overall, how important is your doctor’s appearance in the office to you?	Not important at all 8.5% (35)	Slightly important 20.6% (85)	Important 35.7% (147)	Very Important 23.8% (98)	Extremely Important 11.2% (46)	No Response 0.2% (1)
Q2. Overall, how important is your doctor’s style of clothing to you?	Not important at all 28.9% (119)	Slightly important 33.0% (136)	Important 26.9% (111)	Very Important 8.0% (33)	Extremely Important 2.7% (11)	No Response 0.5% (2)
Q3. Did you or a family member use a video telehealth conference from January 2020 to May 2020?	Yes 35.0% (144)	No 64.6% (266)	No Response 0.5% (2)			
Q4. Currently, how willing are you to consider telehealth videoconferencing for future visit?	Very unwilling 3.2% (13)	Unwilling 8.5% (35)	Neutral 30.6% (126)	Willing 37.6% (155)	Very Willing 18.2% (75)	No Response 1.9% (8)
Q5. Currently, between a handshake or a greeting without physical contact, which do you prefer?	Strongly prefer handshake 6.1% (25)	Slightly prefer handshake 4.4% (18)	No preference 39.6% (163)	Slightly prefer no contact 22.6% (93)	Strongly prefer no contact 23.1% (95)	No Response 4.4% (18)
Q6. Did your preferences for preferred greeting by your doctor changes as a result of the coronavirus pandemic?	Yes 56.6% (233)	No 41.5% (171)	No response 1.9% (8)			
Doctor’s Attire Options						
Q7. Surgical Scrubs	Dislike extremely 1.9% (8)	Dislike very much 5.3% (22)	Neither like nor dislike 57.8% (238)	Like very much 22.1% (91)	Like extremely 10.2% (42)	No Response 2.7% (11)
Q8. White coat, surgical scrubs	Dislike extremely 1.5% (6)	Dislike very much 4.6% (19)	Neither like nor dislike 53.4% (220)	Like very much 30.3% (125)	Like extremely 7.3% (30)	No Response 2.9% (12)
Q9. White coat, dress shirt	Dislike extremely 0.5% (2)	Dislike very much 2.4% (10)	Neither like nor dislike 51.0% (210)	Like very much 35.4% (146)	Like extremely 7.8% (32)	No Response 2.9% (12)
Q10. Jacket coat, dress shirt, tie	Dislike extremely 6.3% (26)	Dislike very much 14.1% (58)	Neither like nor dislike 59.0% (243)	Like very much 12.9% (53)	Like extremely 4.9% (20)	No Response 2.9% (12)
Q11. White coat, dress shirt, tie	Dislike extremely 1.2% (5)	Dislike very much 2.7% (11)	Neither like nor dislike 49.8% (205)	Like very much 29.6% (122)	Like extremely 14.1% (58)	No Response 2.7% (11)

Q12. Did your preferences for preferred attire by your doctor change as a result of the pandemic?	Yes 2.7% (11)	No 89.1% (367)	No Response 5.8% (24)			
---	---------------------	-------------------	--------------------------------	--	--	--

Table 1: Survey questions and responses.

Statistical Analysis

Descriptive analysis for demographics and patient preferences was performed. Comparisons between responses were analyzed using t-tests or chi-square tests between 4 different geographic regions as well as 3 different age groups (≤ 25 years, 26-50 and > 50). Spearman's correlation compared the importance of doctor's appearance and preference for doctor's attire. Cronbach's alpha established reliability of the patient's responses. All statistical analysis was performed with an a-priori alpha set of $p < .05$. Data was analyzed using a common statistical software program (IBM SPSS Statistics, Version 25, Armonk, NY).

Results

Patients

A total of 412 (218 Female, 190 Male and 4 who chose not to identify) patients participated in this study range of 18 to 81 years and an average age of 45.0 ± 15.6 (mean $\pm$ SD). The geographic distribution of these patients included 154 (37%) from the Midwest, 119 (29%) from the South, 89 (22%) from the Northeast and 50 (12%) patients from the West. Most patients were college educated, with 141 (34%) patients having a college degree, 123 (30%) patients having a graduate degree or higher and 100 (24%) patients with some level of college credits. A comprehensive reporting of patient responses for each question is presented in Table 1.

Greeting Preferences

A total of 188 patients (46%) slightly or strongly preferred a no contact greeting, while 163 patients (40%) had no preference of the 188 patients that preferred no contact, 93 patients (22%) slightly preferred no contact and 95 (23%) strongly preferred no contact. Furthermore, 233 patients (57%) responded that their preference for greeting had been affected by the COVID-19 pandemic. From those 233 patients whose greeting preference had been affected, 214 patients (92%) either favored no contact (73%) or expressed no preference (19%).

Attire Preferences

For questions related to specific doctor's attire (Q7-Q11), there was a 50% - 59% response of "neither like nor dislike" for each of the 5 options ($p < .001$). Almost one-third of patients reported liking (very much or extremely) 4 of the 5 options including: 133 (32%) patients liking Q7 scrubs, 155 (37%) patients liking Q8 white coat with scrubs, 178 (43%) patients liking Q9 white coat with dress shirt and 180 (44%) patients liking Q11 white coat with dress shirt and tie. Although not significant, only 73 patients (17%) reported liking the Q10 jacket coat, dress shirt and tie, while 84 patients (20%) reported disliking that attire.

The three options that included a white coat (Q8, Q9 and Q11) demonstrated the highest responses of "liking" and lowest responses of "disliking" in comparison to non-white coat options (Q7 and Q10). The Q9 white coat with dress shirt and Q11 white coat with dress shirt and tie were regarded as the most well-liked (43% and 44%, respectively) and least disliked (3% and 4%, respectively). Additionally, 89% of patients responded that their dress preference had not changed following the COVID-19 pandemic. Responses to doctor attire questions are demonstrated in Fig. 2.

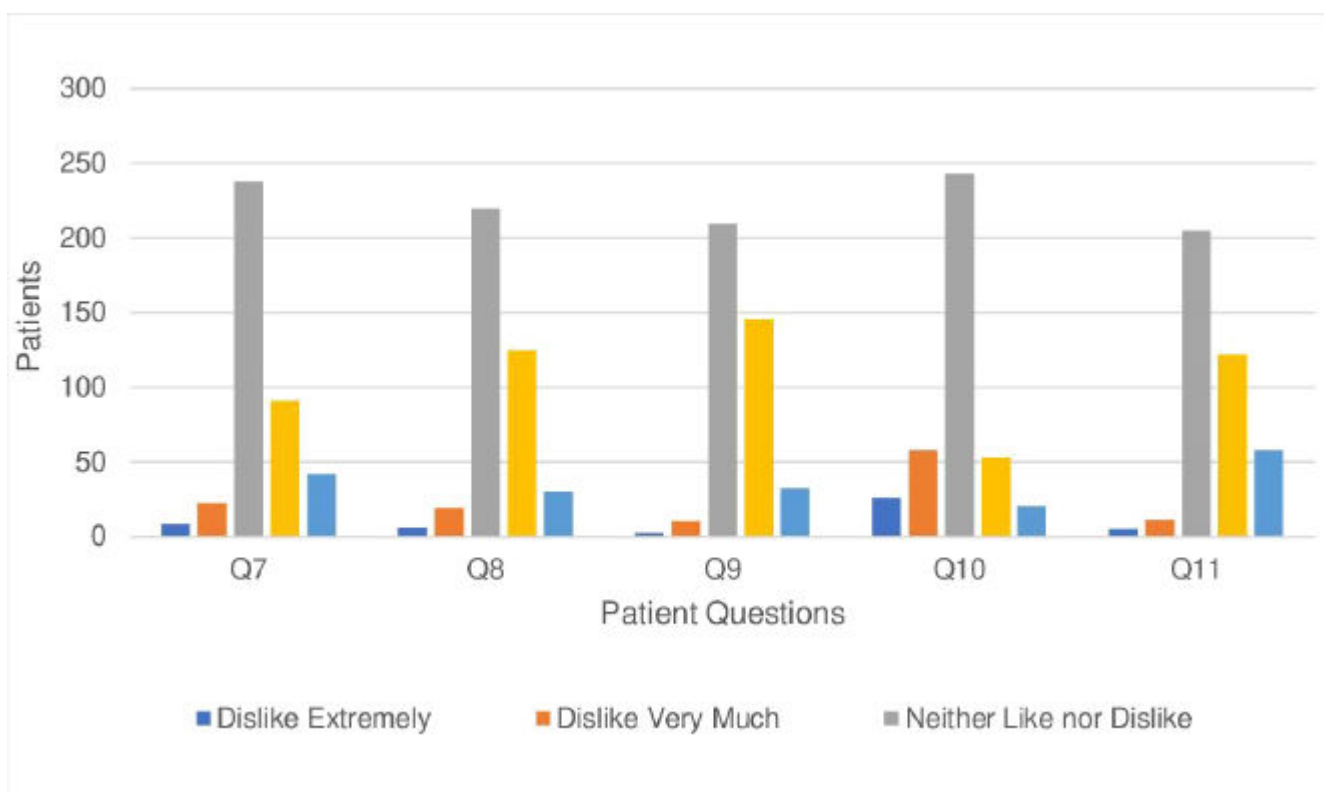


Figure 2: Demonstration of responses to doctor attire questions.

Telemedicine Usage

Almost two-thirds (n=266, 65%) of patients reported that they or a family member had not utilized a video telehealth conference from January 2020 to May 2020, though 230 (56%) patients reported that they would be willing or very willing to do so in the future. Of the 266 patients without recent telemedicine experience, 133 patients (50%) reported willingness to use in the future. For the 144 patients that had utilized telehealth, 96 (67%) reported willingness.

Statistical Analysis

Chi-square analysis evaluated differences in patient preferences for the four represented regions of the United States and is presented in Table 2. When stratified by region, statistically significant differences were noted for seven questions. The data stratified by region is presented in Table 3. Related to contact at the time of greeting, the northeast and south regions (61 and 69%, respectively) showed a stronger preference towards a no contact greeting when compared to the midwest and west (34 and 47%). Regarding whether preferences were affected by COVID-19, the south demonstrated the largest effect on greeting (Q6: 71%) and the west demonstrated the largest effect on doctor attire (Q12: 8.5%). Additionally, the west showed a majority preference towards surgical scrubs (52%), white coat with scrubs (56%) and white coat, dress shirt and tie (53%). The other regions did not have preferences over 50% for these categories. The west had the largest dislike for any category of attire for white coat, dress shirt and tie (12.3%). Even with the differences in attire across the regions, when combined a majority of our patients reported no preference (50-59%). Breakdown of the statistically significant responses by region is available in Table 2.

Chi-square analysis for patient preferences was evaluated for three age groups (≤ 25 years, 26-50 years and > 50 years), also presented in Table 2. Of the 12 questions administered only two demonstrated a statistically significant difference between the three age groups, Q1 and Q2. A spearman's rank order correlation determined the relationship between patient reported preferences for the importance of the doctor's appearance (Q1) and the reported preferences for doctor's attire (Q2) and found a strong, positive correlation ($r_s(411) = .140$, $p = .004$). Another spearman's rank order correlation compared the patient preferences for doctor's attire with Q7-Q11, producing a strong, positive correlation ($p \leq .001$). A Cronbach's alpha was calculated ($\alpha = .744$) to establish the reliability of those patient responses and demonstrated a high level of internal consistency and reliability.

Patient Preferences	By Regional	By Age Group
---------------------	-------------	--------------

	Distribution (p-value)	(p-value)
Q1. Overall, how important is your doctor's appearance in the office to you?	.802	.022*
Q2. Overall, how important is your doctor's style of clothing to you?	.061	.027*
Q3. Did you or a family member use a video telehealth conference from January 2020 to May 2020?	<.001*	.141
Q4. Currently, how willing are you to consider telehealth videoconferencing for future visit?	.225	.492
Q5. Currently, between a handshake or a greeting without physical contact, which do you prefer?	.001*	.420
Q6. Did your preferences for preferred greeting by your doctor changes as a result of the coronavirus pandemic?	<.001*	.566
Q7. Surgical Scrubs	.001*	.636
Q8. White coat, surgical scrubs	<.001*	.448
Q9. White coat, dress shirt	.064	.703
Q10. Jacket coat, dress shirt, tie	.059	.915
Q11. White coat, dress shirt, tie	.042*	.178
Q12. Did your preferences for preferred attire by your doctor change as a result of the pandemic?	<.001*	.373
* Significant at p<.05		

Table 2: Chi-square analysis for regional distribution and age group of patient preferences.

Question	Response Breakdown				
Q1. Prior telemedicine use?	Yes	No			
MW	25.2%	74.8%			
NE	59.4%	40.6%			
S	40.2%	59.8%			
W	30.6%	69.4%			
Q2. Handshake or no contact?	Strongly	Slightly	No	Slightly	Strongly
	prefer	prefer	preference	prefer no	prefer no
	handshake	handshake		contact	contact
MW	8.9%	7.6%	49.3%	22.2%	12.0%
NE	4.7%	2.4%	31.8%	21.2%	40.0%
S	6.2%	6.2%	18.6%	30.9%	38.1%
W	6.7%	2.2%	44.4%	28.9%	17.8%
Q3. COVID affect greeting	Yes	No			
preference?					
MW	42.0%	58.0%			
NE	75.0%	25.0%			
S	71.1%	28.9%			
W	57.8%	42.2%			
Doctor's Attire Options					
Q4. Surgical scrubs	Dislike	Dislike	Neither like	Like very	Like
	extremely	very much	nor dislike	much	extremely
MW	2.0%	9.1%	61.0%	19.5%	8.4%
NE	1.1%	9.7%	67.7%	19.4%	2.1%
S	1.1%	1.1%	56.8%	30.5%	10.5%
W	4.0%	2.0%	42.0%	30.0%	22.0%

Q5. White coat, scrubs	Dislike	Dislike	Neither like	Like very	Like
	extremely	very much	nor dislike	much	extremely
MW	1.9%	5.9%	65.4%	20.9%	5.9%
NE	1.1%	3.2%	59.1%	35.5%	1.1%
S	0.0%	5.3%	49.5%	36.8%	8.4%
W	4.0%	8.0%	32.0%	42%	14%
Q6. White coat, dress shirt, tie	Dislike	Dislike	Neither like	Like very	Like
	extremely	very much	nor dislike	much	extremely
MW	0.6%	1.3%	54.0%	32.0%	12%
NE	1.1%	4.3%	49.5%	36.6%	8.6%
S	1.1%	2.1%	49.5%	30.5%	16.8%
W	4.1%	8.2%	34.7%	28.6%	24.5%
Q7. COVID affect attire preference?	Yes	No			
MW	0.7%	99.3%			
NE	2.2%	97.8%			
S	3.2%	96.8%			
W	8.5%	91.5%			

Table 3: Survey responses by region.

Discussion

This study of 412 patients evaluates the impact of the COVID-19 public health crisis on various aspects of the patient experience in an outpatient orthopaedic clinic.

Greeting Preferences

The majority of our patients (86%) surveyed between June and August 2020 were either opposed to or indifferent to receiving a handshake greeting from their orthopaedic surgeon, a trend which represents a diversion from reports before COVID-19. Golz, et al., published findings from surveys administered in 2019, showing that a majority of patients considered handshakes to be “moderately important” in outpatient orthopaedic care [9]. This is consistent with studies across several medical disciplines, including surgical specialties, general medicine and military family medicine [10-12]. Our study demonstrates a dramatic change in patient preferences, a change likely driven by increased public health awareness based on state and national shutdowns and social distancing guidelines [8]. As the first study to demonstrate that patient greeting preference has been affected significantly by COVID-19 (57%), we believe that this finding has important implications for clinical encounters. The psychological impact of the COVID-19 pandemic on patient public health awareness may have resulted in actionable shifts in patient expectations for clinical encounters. Whether these changes will be transient or have a more permanent effect is to be determined. In any case, this study suggests that patient greeting preferences is a potentially important factor to building rapport in the orthopaedic visit that should not be overlooked. Especially during periods of increased public health concern, such as rebound waves of the COVID-19 pandemic, non-contact greetings can be adopted by orthopaedic surgeons in the outpatient clinic setting due to the overwhelming preference shift away from handshakes. This approach to non-contact clinical greetings may even merit consideration during more routine periods of public health awareness, such as the annual “flu” seasons or “back-to-school” periods for pediatric patients; further research into related areas (such as mask-wearing preferences) would also be appropriate. Future studies based on this information could evaluate the impact of contactless greetings with patients. In 2014, Sklansky, et al., proposed banning handshakes in the medical setting as a means of reducing pathogenic spread and propose alternatives including open-hand wave, right hand-over-heart, bow, namaste and salaam sign [21]. To our knowledge, the effectiveness of these greetings in establishing physician-patient rapport has never been studied. When considering greeting method, religious and cultural factors must be taken into account. Berry, et al., emphasizes how greeting methods vary widely from culture to culture and can influence our social behavior [22]. Additional research into alternative greeting methods in the context of medicine could assess this topic further.

Attire Preferences

Most patients in our study indicated no preference for the offered attire options (50-59%). The three attire options which included a white coat in the outfit were rated the most positively overall which is consistent with previous reports [3,6,9,10]. Petrilli, et al., reported a preference for formal attire with a white coat for non-surgical physicians and a preference of scrubs for surgeons [6]. An orthopaedic-specific study by Jennings, et al., associated white coats with higher physician credibility and increased patient confidence that surgery will be successful [3]. Formal wear (suit jacket, dress shirt, tie) has higher levels of patient dislike across several reports [3,13,14]. Therefore, the results from our study provide evidence that white coats are an effective clinical tool that should be regularly used to build trust and rapport with orthopaedic patients. Patients in our study also largely reported that their attire preference was not affected by the COVID-19 pandemic (89%). Prior studies regarding physician attire have focused on the potential to carry pathogens between patients via doctor attire. White coats, long sleeved attire and neckties have produced concerns related to transmissible disease [23-25]. Studies have shown that increased patient education on the risks of pathogen spread associated with certain attire affects patient attire preferences. In 2011, a study reported that patients were much less likely to prefer white coats or ties after reading a statement about microbial contamination in those clothing options [26]. Interestingly, patients in our study generally expressed no preference, but responded positively to white coats. This may be explained by a lack of patient education related to potential pathogen exposure. Especially in light of the pandemic, we suspect that patient preferences will evolve as patients become more educated about the potential transmission of disease through clothing. It is reasonable to consider scrubs and to avoid formal wear (e.g., suit jacket, dress shirt, tie) due to its lower patient-reported preference.

Telemedicine Usage

COVID-19 recommendations for orthopaedic providers published in June 2020 focus on minimizing in-person patient contact and maximizing telemedicine visits [15-17]. Rockwell, et al., propose that treatment of low-acuity patients should shift to telemedicine to minimize exposure and Morgan, et al., emphasize deferral of patients with nonacute conditions [15-17]. Over a third of respondents from our orthopaedic clinics had a recent experience with telemedicine. A majority (56%) of our patients reported that they would be willing to consider telehealth for an orthopaedic visit in the future, although only 35% had prior experience, a response that is concordant with a nationwide study in 2017 that found just over half of respondents willing [19]. Of those with prior experience, two-thirds of the patients in our orthopaedic clinics expressed willingness to use telemedicine again. Results from the current study and others consistently demonstrate that it is possible for orthopedic providers to effectively utilize telemedicine for patient care, so it should be routinely offered where appropriate. However, not all patients will be interested and those factors need be taken into account. A study from Norway in 2019 found that orthopaedic telemedicine patients reported similar satisfaction ratings to in-person visits and 86% of telemedicine patients preferred to follow up with another telemedicine visit [27]. A similar study in 2019 found comparable satisfaction ratings for pediatric patients [28]. From all patients responding related to the use of telemedicine, one-third to one-half of patients were unwilling to use telemedicine, for reasons currently unknown. Since we surveyed in-person patients instead of telemedicine patients, it is likely that these different patient populations predispose to differences in enthusiasm for teleconsultation. It is also possible that in-person patients view telemedicine less enthusiastically due to concerns over effective physical examination or aversion to technology [29]. Further studies may be helpful to understand and optimize the telemedicine experience for patients.

Regional Variation

Regional differences are noted in some orthopaedic patient preferences. Patients in the northeast and south were more likely to prefer a no-contact greeting and more likely to report that COVID-19 affected their preferred greeting. This trend may be explained by the higher prevalence of COVID-19 in those regions during the initial phases of the pandemic [30]. With regards to surgeon attire, a white coat with dress shirt and tie was among the most positively rated options by patients overall, but patients in the west responded much more negatively compared to other regions, a result that contradicts findings from the Petrilli, et al., study, which found that west patients preferred white coat with formal attire more than midwestern or northeastern patients [6]. A much higher proportion of our west patients reported COVID-19 affected their attire preferences than the overall average (8.5% versus 2.7%), which suggests that COVID-19 may have contributed to this inconsistency in regional attire preferences between studies. The cause of this shift is unclear; future studies could assess these regional variations further. This study does have limitations. While each region was accessed, there were only one or two clinic sites per region. Additionally, unequal distribution of survey responses across regions (range: 50-154) may have affected the total percentages mentioned. As the study was administered during a single visit, no follow up questions or clarifications could be asked of the participants. The clinical

study sites were primarily in urban and suburban areas, which were more affected by COVID-19 than rural areas; thus, these results largely do not reflect the preferences of rural patients [30].

Conclusion

The COVID-19 public health crisis has had a significant impact on the method through which patients wish to be greeted. Physicians should strive to implement a no-contact greeting method during the current pandemic. Patients largely indicate no preference in attire for their orthopaedic surgeons, but rated options with white coats the most positively. 56% of patients expressed future interest in telemedicine visits.

Acknowledgments

We would like to thank Daniel Shaw BS for revision input. The authors declare that there is no conflict-of-interest present or funds received for the execution of this study. The results of this study are presented clearly, honestly and without fabrication, falsification or inappropriate data manipulation.

Conflict of Interest

The authors have no conflict of interest to declare.

References

1. Aitken SA, Tinning CG, Gupta S, Medlock G, Wood AM, Aitken MA. The importance of the orthopaedic doctors' appearance: a cross-regional questionnaire based study. *Surgeon*. 2014;12(1):40-6.
2. Graham B, Endacott R, Smith JE, Latour JM. 'They do not care how much you know until they know how much you care': a qualitative meta-synthesis of patient experience in the emergency department. *Emerg Med J*. 2019;36(6):355-63.
3. Jennings JD, Ciaravino SG, Ramsey FV, Haydel C. Physicians' attire influences patients' perceptions in the urban outpatient orthopaedic surgery setting. *Clin Orthop Relat Res*. 2016;474(9):1908-18.
4. Kneeland PP, Burden M. Web Exclusives. Annals for hospitalists inpatient notes - patient experience as a health care value domain in hospitals. *Ann Intern Med*. 2018;168(6):Ho2-3.
5. Lands VW, Malige A, Nwachuku CO, Matullo KS. The Effect of an orthopedic hand surgeon's attire on patient confidence and trust. *Hand (NY)*. 2019;14(5):675-83.
6. Petrilli CM, Saint S, Jennings JJ. Understanding patient preference for physician attire: a cross-sectional observational study of 10 academic medical centres in the USA. *BMJ Open*. 2018;8(5):e021239.
7. Stein SM, Shah SS, Carcich A. A novel approach to improving patient experience in orthopedics. *Am J Med Qual*. 2017;32(6):655-60.
8. Ducharme J. World Health Organization declares COVID-19 a 'pandemic.' here's what that means. *Time USA*. 2020. [Last accessed on October 10, 2023]
<https://time.com/5791661/who-coronavirus-pandemic-declaration/>
9. Golz A, Kim A, Murphy M, Salazar D. Patient attitudes and preferences for orthopaedic surgeon greetings. *J Am Acad Orthop Surg*. 2020;32(3):126-31.
10. Makoul G, Zick A, Green M. An evidence-based perspective on greetings in medical encounters. *Arch Intern Med*. 2007;167(11):1172-6.
11. Davis RL, Wiggins MN, Mercado CC, O'Sullivan PS. Defining the core competency of professionalism based on the patient's perception. *Clin Exp Ophthalmol*. 2007;35(1):51-4.
12. Laird JE, Tolentino JC, Gray C. Patient greeting preferences for themselves and their providers in a military family medicine clinic. *Mil Med*. 2013;178(10):1111-4.
13. Rehman SU, Nietert PJ, Cope DW, Kilpatrick AO. What to wear today? Effect of doctor's attire on the trust and confidence of patients. *Am J Med*. 2005;118(11):1279-86.
14. Lozic S, Aravena PC, Martinez N, Proboste C, Pinto N, Albornoz G, et al. The impact of the orthopedic surgeons' attire on patient preferences. *Rev Med Chil*. 2017;145(8):987-95.
15. Farrell S, Schaeffer EK, Mulpuri K. Recommendations for the care of pediatric orthopaedic patients during the COVID-19 Pandemic. *J Am Acad Orthop Surg*. 2020;28(11):e477-86.
16. Morgan C, Ahluwalia AK, Aframian A, Li L, Sun SNM. The impact of the novel coronavirus on trauma and orthopaedics in

- the UK. *Br J Hosp Med*. 2020;81(4):1-6.
17. Rockwell KL, Gilroy AS. Incorporating telemedicine as part of COVID-19 outbreak response systems. *Am J Manag Care*. 2020;26(4):147-8.
 18. Waller M, Stotler C. Telemedicine: a Primer. *Curr Allergy Asthma Rep*. 2018;18(10):54.
 19. Welch BM, Harvey J, O'Connell NS, McElligott JT. Patient preferences for direct-to-consumer telemedicine services: a nationwide survey. *BMC Health Serv Res*. 2017;17(1):784.
 20. Centers for Disease Control and Prevention. Coronavirus Disease 2019 (COVID-19). CDC. 2020. [Last accessed on October 10, 2023]
<https://www.cdc.gov/coronavirus/2019-ncov/faq.html>.
 21. Sklansky M, Nadkarni N, Ramirez-Avila L. Banning the handshake from the health care setting. *Jama*. 2014;311(24):2477-8.
 22. Berry JW, Poortinga YH, Segall MH, Dasen PR. Cross-cultural psychology - research and applications. 2nd ed. New York City (NY): Cambridge University Press; 2002:53.
 23. Gaspard P, Eschbach E, Gunther D, Gayet S, Bertrand X, Talon D. Methicillin-resistant *Staphylococcus aureus* contamination of healthcare workers' uniforms in long-term care facilities. *J Hosp Infect*. 2009;71(2):170-5.
 24. Munoz-Price LS, Arheart KL, Mills JP. Associations between bacterial contamination of health care workers' hands and contamination of white coats and scrubs. *Am J Infect Control*. 2012;40(9):e245-8.
 25. Lopez PJ, Ron O, Parthasarathy P, Soothill J, Spitz L. Bacterial counts from hospital doctors' ties are higher than those from shirts. *Am J Infect Control*. 2009;37(1):79-80.
 26. Hueston WJ, Carek SM. Patients' preference for physician attire: a survey of patients in family medicine training practices. *Fam Med*. 2011;43(9):643-7.
 27. Buvik A, Bugge E, Knutsen G, Smabrekke A, Wilsgaard T. Patient reported outcomes with remote orthopaedic consultations by telemedicine: A randomised controlled trial. *J Telemed Telecare*. 2019;25(8):451-9.
 28. Sinha N, Cornell M, Wheatley B, Munley N, Seeley M. Looking through a different lens: patient satisfaction with telemedicine in delivering pediatric fracture care. *J Am Acad Orthop Surg Glob Res Rev*. 2019;3(9):e100.
 29. Call VR, Erickson LD, Dailey NK. Attitudes toward telemedicine in urban, rural and highly rural communities. *Telemed J E Health*. 2015;21(8):644-51.
 30. Centers for Disease Control and Prevention. CDC COVID Data Tracker. CDC. 2020.

Journal of Surgery Research and Practice



Publish your work in this journal

Journal of Surgery Research and Practice is an international, peer-reviewed, open access journal publishing original research, reports, editorials, reviews and commentaries. All aspects of surgery health maintenance, preventative measures and disease treatment interventions are addressed within the journal. Medical surgeons and other researchers are invited to submit their work in the journal. The manuscript submission system is online and journal follows a fair peer-review practices.

Submit your manuscript here: <https://athenaeumpub.com/submit-manuscript/>