



Factors affecting patient satisfaction with outpatient rheumatology phone visits during the COVID-19 pandemic

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Abstract

The aim was to evaluate patient satisfaction with virtual care, and identify factors associated with level of satisfaction. Surveys were mailed to all patients who had a phone visit at The Ottawa Hospital Rheumatology division. Patients' satisfaction with various aspects of the phone visits was assessed on a 5-point scale and analyzed according to demographic variables using chi-square and regression analyses. Of 2423 surveys mailed, we received 742 responses (31%). Eighty-nine percent of patients were satisfied overall with the phone visit. Statistically significant less satisfaction was seen in patients who spoke to a resident compared to their rheumatologist ($p < 0.001$), were not called on time ($p < 0.001$), had difficulty using a telephone ($p < 0.001$), needed assistance of a second person ($p < 0.01$), or had new consultations (versus routine follow-up, $p = 0.01$), the former 3 factors being significant in a multivariate regression analysis. Rheumatology patients expressed a high level of satisfaction with virtual care; however, areas of improvement were identified. Patients' satisfaction will be important to inform future decisions regarding the sustainability of virtual care. Further research is required to understand the impacts of virtual care on patients'

Key Points

- Patients in rheumatology practice were satisfied with phone visits and preferred this method to in-person visits during the pandemic.
- Speaking directly to the rheumatologist, being phoned on time, and the capability of using the telephone were the major determinants of high patient satisfaction.
- Based on the identified factors, further improvement of the quality of and satisfaction with phone visits can be pursued given that virtual care may continue longer, beyond the pandemic.

Keywords Phone visits · Rheumatology · Virtual care · COVID-19 pandemic · Patient satisfaction

Introduction

The COVID-19 pandemic necessitated an abrupt transition from in-person to virtual medical visits throughout the world [1, 2]. Generally, major protocol changes like this one are preceded by abundant quality improvement research and planning; however, the rapidity of the virus' impact prohibited such a process.

The discipline of rheumatology has been employing digital technology for clinical care for decades; however, it has rarely been considered as standard of care, partially due to inadequate electronic infrastructure and concerns around added work, misdiagnosis, liability, privacy, and reimbursement [3, 4]. Proposed benefits have included improved access to specialist care for patients living in remote areas and patient satisfaction regarding more efficient use of time (considering travel, registration, etc.) and reduced costs (for travel and parking) [5]. Specific to the pandemic period, there is also the added benefit of reducing patients' anxiety around coming in person to hospital. As expected, some studies depict less patient satisfaction regarding physician–patient rapport when compared to in-person visits [6]. Furthermore, the effectiveness of telephone visits with respect to accurate

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diagnosis and disease control is variable among studies [5–10]

Given this pandemic may continue, it is important for rheumatologists to understand the level of satisfaction among their patients. The purpose of this study was to evaluate patient satisfaction with virtual care, and identify factors that may be associated with reduced satisfaction.

Materials and methods

This quality improvement (QI) study was conducted at The Ottawa Hospital, Division of Rheumatology in Ottawa, Canada. Adult patients who had participated in a telephone visit with any of 12 practicing staff rheumatologists from the division between March 16th, 2020 (first day that telephone visits were utilized), and June 19th, 2020, were approached. Patients were identified through a systematic search of electronic medical records. The study was approved by the Ottawa Health Science Network Research Ethics Board (OHSN-REB).

A survey was developed in both French and English, and patients were mailed surveys in their preferred language. The main language used at The Ottawa Hospital is English; however, many of our patients' primary language is French, and some healthcare workers are bilingual. Data pertaining to non-identifying demographic information was collected, including age, rheumatologic diagnosis, ability to communicate in English in clinic, and comfort using a telephone. We also collected patients' ratings (on a 5-point scale) of several aspects of phone visits. The survey was adapted from a 2015 study, and expanded to include questions pertinent to this pandemic [6]. Surveys were distributed by mail. Participants were given the option of returning the survey answers by mail (with a pre-stamped envelope), emailing a scanned copy, or completing it online on the SurveyMonkey® platform. List of statements included in the survey are presented in the Supp App B.

If patients entered more than one rheumatologic diagnosis, all autoimmune diagnoses were included for analysis, and non-autoimmune diagnoses (such as osteoarthritis) were not. However, if patients entered only non-autoimmune diagnosis, such as arthritis (A), osteoarthritis (OA), crystal arthritis (CA), or fibromyalgia (FM), only *one* diagnosis was included, using the following hierarchy: CA > OA > A > FM. For example, if systemic lupus erythematosus (SLE) was listed along with OA and FM, only SLE was recorded for that patient.

Descriptive statistics and chi-square analysis were applied for associations between categorical variables. For analysis, "strongly agree" and "agree" responses were grouped together as "overall satisfied," and "strongly disagree" and "disagree" responses were grouped as "overall not satisfied." Linear regression adjusting for clinically and statistically

significant confounding variables was used to explore predictive factors of patient satisfaction. The final multivariable logistic regression model for predicting patient satisfaction included the following covariates: preferred language (English vs French), the need for a second person during the visit, being comfortable using a phone, physician spoken to (resident vs staff), and being called on time. Statistical analysis was performed using SPSS (version 22.0, IBM® corp., Armonk, NY, USA).

Results

Surveys were mailed on August 31st, 2020. As of October 26th, 742 responses were returned (31%). Fifteen participants were excluded (participants denying having had phone visits, denying having spoken to a physician, having been sent a survey in incorrect language, or having been recently deceased).

Of the 742 respondents (Table 1), 70% were > 60 years old and 72% were female. The most common diagnoses were rheumatoid arthritis (RA, 41%), SLE (11.7%), psoriatic arthritis (PsA, 10.6%), and vasculitis (10.4%). Among all visits, 4% were new consultations. Nine percent were somewhat or very uncomfortable using a telephone for a rheumatology appointment. Eight percent of patients stated they spoke with a resident *and* their rheumatologist, 17% spoke with a resident only, and the remaining 75% spoke directly to their staff rheumatologist. Seventeen percent needed an in-person visit following the phone visit.

Satisfaction was generally rated very high (Fig. 1). Eighty-nine percent of patients agreed or strongly agreed that they were satisfied overall with the phone visit, and 55% stated they would prefer to have some virtual visits after the COVID-19 period. Only 28% felt they would have preferred to be seen in-person despite the risk of COVID-19. Patients generally felt that the phone visit saved them time and money.

Less satisfaction was seen in patients who had difficulty using a telephone compared to those who were moderately or very capable (58% vs 80% vs 92%, $p < 0.001$), generally needed assistance of a second person at clinic visits (79% vs 90%, $p < 0.01$), spoke to a resident compared to their rheumatologist (86% vs 91%, $p < 0.001$), had a new consultation compared to routine follow-up (72% vs 91%, $p = 0.01$), or stated they were not called approximately on time (74% vs 91%, $p < 0.001$) (Table 2). Underlying diagnosis or age category did not affect satisfaction. There was a trend towards OA patients preferring an in-person visit (Supp figure 1-2) though this did not meet statistical significance.

In multivariate analysis, speaking directly to their rheumatologist ($p = 0.003$; OR (95%CI) 5.097 (1.727–15.039)), being phoned on time ($p = 0.001$; 13.116 (2.935–58.615)),

Table 1 Patient demographics and background information about phone visits

Patient factors	N (%)
Age category, <i>n</i> = 735	
18–30 yrs	15 (2)
31–40 yrs	25 (3)
41–50 yrs	48 (7)
51–60 yrs	125 (17)
61–70 yrs	231 (31)
71–80 yrs	221 (30)
> 80 yrs	70 (9)
Sex, <i>n</i> = 741	
Male	205 (28)
Female	529 (72)
Diagnosis, <i>n</i> = 528	
Rheumatoid arthritis	217 (41)
Systemic lupus erythematosus	62 (12)
Psoriatic arthritis	56 (11)
Vasculitis	55 (10)
Polymyalgia rheumatica	30 (6)
Osteoporosis	29 (4)
Systemic sclerosis	17 (3)
Osteoarthritis	17 (3)
Ankylosing spondylitis	16 (3)
Myositis	14 (3)
Sjogren’s syndrome	10 (2)
Gout	5 (1)
Primary language used in clinic visits, <i>n</i> = 701	
English	576 (82)
French	125 (18)
Comfort level with communication in English, <i>n</i> = 736	
Very comfortable	597 (81)
Somewhat comfortable	75 (10)
Somewhat uncomfortable	35 (5)
Very uncomfortable	29 (4)
Capability using a telephone, <i>n</i> = 735	
Very capable	615 (84)
Somewhat capable	89 (12)
Very limited capability	31 (4)
Need of a second person at clinic visits, <i>n</i> = 739	
Yes	106 (14)
No	633 (86)
If ‘yes’ to previous question, was this person present at virtual visit, <i>n</i> = 103	
Yes	73 (71)
No	30 (29)
Nature of virtual visit, <i>n</i> = 700	
New consultation	29 (4)
Routine follow-up	629 (90)
Urgent follow-up	42 (6)
With which doctor did you speak virtually, <i>n</i> = 715	
My rheumatologist directly	532 (74)

Table 1 (continued)

Patient factors	N (%)
Resident	124 (17)
Both	59 (8)
How many virtual visits since March 2020, <i>n</i> = 718	
1	536 (75)
2	136 (19)
3	28 (4)
> 3	18 (3)
Following telephone visit, invited for in-person visit, <i>n</i> = 724	
Yes	125 (17)
No	599 (83)

and capability using a telephone ($p = 0.004$) (very capable vs not capable $p = 0.001$; 25.562 (3.784–172.664); somewhat capable vs not capable $p = 0.019$; 13.925 (1.548–125.221)) were associated with better participant satisfaction (Supp App A).

Discussion

In this study, we demonstrated that patients were overall satisfied with telephone visits, and over 50% stated they would prefer to have virtual visits after the COVID-19 period. Lower satisfaction was associated with poor capability using a telephone, requiring assistance of a second person at clinic visits, speaking to a resident, having a new consultation, and not being called on time. To our knowledge, this is the largest patient satisfaction study during the COVID-19 period, and showed a high satisfaction rate. Our findings also suggest that virtual care may not be ideal for specific populations such as patients with special needs.

Patient satisfaction with virtual visits observed in our study was comparable to or slightly higher than other recent studies conducted during the COVID-19 pandemic. An international online survey study with 429 responses demonstrated 74% agreement with having visits virtually compared to in-person, and 71% were satisfied with the visit overall [11]—comparable to 72% and 89%, respectively, in our study. In another study, 175 connective tissue disease patients were invited to answer questions by phone; 78% reported openness to having some visits virtually following resolution of the pandemic, similar to 74% in our cohort [12]. In this study, patients with lower level of education preferred in-person visits. Finally, a study of 359 patients who had a virtual visit (48% video) reported that 74% were satisfied with the visit; satisfaction was correlated with having a video component and not requiring a language interpreter [13].

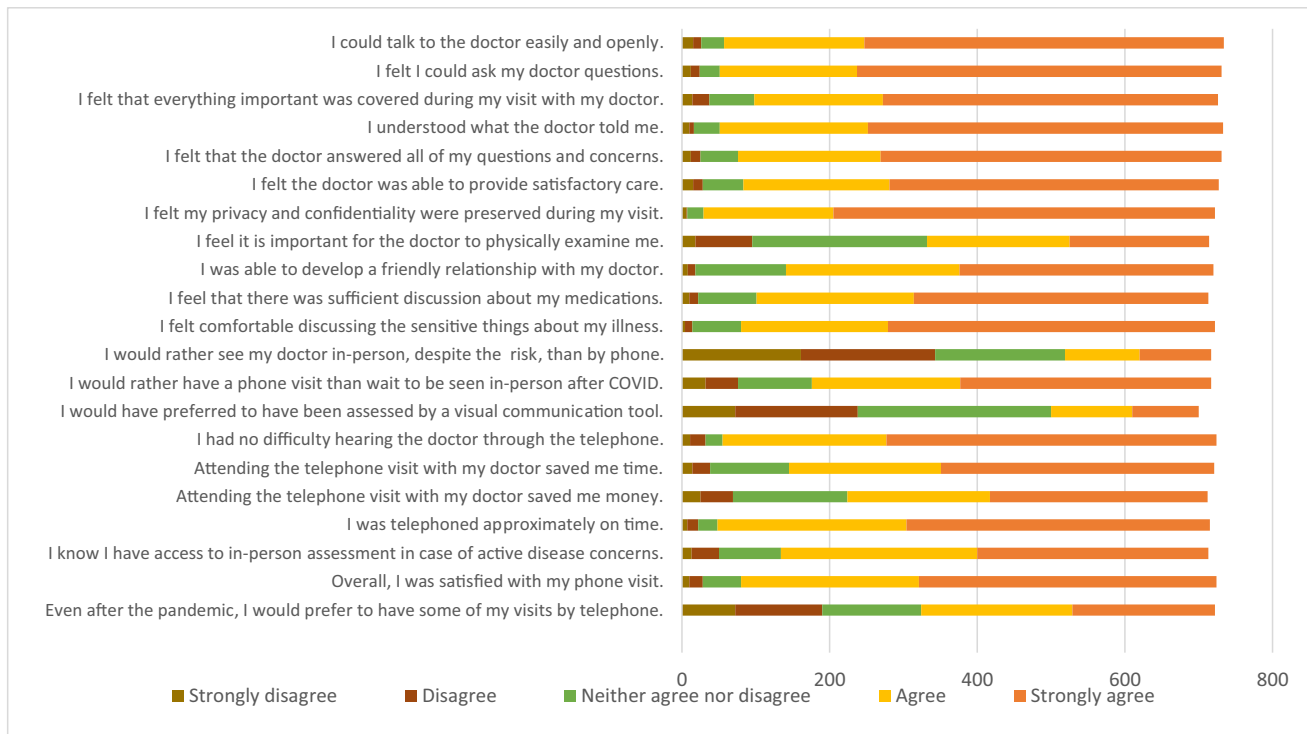


Fig. 1 Patient satisfaction with various aspects of the phone visit. The numbers along the x-axis refer to the number of patients who responded. The statements included in this figure are abbreviated; please see Appendix 2 for the complete statements included in the survey

The aforementioned factors associated with lower satisfaction have identified avenues towards improving patient satisfaction with rheumatology care via virtual platforms. Providing a time window for the phone visit might help temper expectations. Patients could be asked by their provider about their capability using a telephone and whether they need assistance from a support person, and in-person visits could be scheduled for those who do. New consultations could be booked in-person by default.

Additionally, we found that participants preferred to speak directly to a staff rheumatologist. Traditionally, when visits are in-person, staff rheumatologists see all patients after trainees complete their independent assessment; however, with virtual visits, 17% of patients did not see or speak directly with their rheumatologist. Despite the lower comparative satisfaction, satisfaction was still 86%. These findings align with a recent study demonstrating high satisfaction with residents in an outpatient surgical clinic ($\geq 87\%$ among different variables), albeit still lower compared to that with staff [14]. A similar trend was also observed in a study of 288 internal medicine ambulatory clinic patients [15]. In contrast, a Canadian study of 211 patients in an outpatient gastroenterology clinic reported no difference in patient satisfaction between those who saw a resident and attending and those who saw an attending alone, after adjustment in multivariate analysis [16]. Explanations that have

been suggested for lower satisfaction with residents include residents' inferior bedside communication and clinical knowledge, patients' misunderstanding of the role of residents, and prolonged visits when seeing a resident followed by a staff [14, 15]. It is unclear whether this in turn could have a negative impact on trainee experience. Further studies are needed to evaluate this.

Strengths of this study include the large sample size and the breadth of patient factors that were included in the survey. The single-center design allowed us to adapt the survey to our patient population (language considerations) and use the data to guide practical changes to the conduct of visits at our center; however, this may sacrifice generalizability.

It is important to consider study limitations. The majority of the responders were > 60 years old, limiting the generalizability of our findings to younger patients. Apart from patient satisfaction, other outcomes from virtual care require investigation such as impact on clinical outcomes, utilization of healthcare resources, and physicians' perspectives. Thus, a second study is planned including > 400 participants at this same center that will evaluate long-term clinical outcomes and follow-up satisfaction after an extended period of virtual visits. Finally, the small number of patients who were dissatisfied inherently limited statistical analysis.

In summary, patients were overall satisfied with phone visits. Lower satisfaction was associated with poor

Table 2 Overall patient satisfaction, and the preference for future virtual visits following resolution of the pandemic, according to various sub-groups

	Overall satisfied, <i>n</i> (%)				Future virtual, <i>n</i> (%)			
	No*	Neutral	Yes*	<i>P</i> -value	No	Neutral	Yes	<i>P</i> -value
Age category (yrs)								
18–30	2 (13)	0	13 (87)	0.131	4 (27)	5 (33)	6 (40)	0.364
31–40	2 (8)	1 (4)	22 (88)		6 (24)	6 (24)	13 (52)	
41–50	5 (10)	3 (6)	40 (83)		14 (29)	11 (23)	23 (48)	
51–60	2 (2)	4 (3)	119 (95)		26 (21)	17 (14)	81 (65)	
61–70	8 (4)	18 (8)	205 (89)		66 (30)	35 (16)	119 (54)	
71–80	9 (4)	21 (10)	191 (86)		68 (31)	41 (19)	109 (50)	
> 80	3 (4)	5 (7)	62 (89)		20 (29)	11 (16)	37(54)	
Total	31 (4)	52 (7)	652 (89)		204(28)	126 (18)	388 (54)	
Language								
English	23 (4)	38 (7)	515 (89)	0.918	154 (27)	103 (18)	307 (54)	0.445
French	6 (5)	8 (6)	111 (89)		40 (33)	19 (16)	63 (52)	
Capability using a telephone								
Very capable	20 (3)	31 (5)	564 (92)	0.000	134 (22)	110 (18)	358 (60)	0.000
Somewhat capable	6 (7)	12 (14)	71 (80)		49 (56)	15 (17)	23 (26)	
Very limited capability	5 (16)	8 (26)	18 (58)		19 (63)	1 (3)	10 (33)	
Need of a second person at visits								
Yes	9 (9)	13 (12)	84 (79)	0.004	36 (36)	13 (13)	52 (52)	0.154
No	20 (4)	39 (6)	571 (90)		169 (27)	113 (18)	339 (55)	
Doctor spoken to								
My rheumatologist directly	12 (2)	34 (6)	486 (91)	0.005	140 (27)	97 (19)	283 (54)	0.571
Resident	10 (8)	8 (7)	106 (86)		38 (31)	19 (15)	67 (54)	
Nature of visit								
New consultation	4 (14)	4 (14)	21 (72)	0.01	12 (41)	2 (7)	15 (52)	0.139
Routine follow-up	22 (4)	37 (4)	570 (91)		160 (26)	116 (19)	339 (55)	
Urgent follow-up	2 (4.8)	5 (11.9)	35 (83.3)		15 (36.6)	5 (12.2)	21 (51.2)	
Telephoned approximately on time								
Disagree	6 (26)	0	17 (74)	0.000	9 (41)	2 (9)	11 (50)	0.552
Neutral	3 (12)	8 (31)	15 (58)		9 (35)	4 (15)	13 (50)	
Agree	17 (3)	43 (6)	607 (91)		181 (27)	118 (18)	365 (55)	

*Patients who selected “strongly agree” or “agree” were combined into the “yes” category, and patients who selected “strongly disagree” or “disagree” were combined into the “no” category

capability using a telephone, speaking to a resident instead of staff, not being called on time, having a new consultation, and requiring assistance of a second person at clinic visits. The results of this study provide insight on aspects of virtual care that can be improved in hopes of maximizing the patient experience and quality of care delivered.

Supplementary Information The online version contains supplementary material available at <https://doi.org/10.1007/s10067-022-06182-3>.

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Declarations

Disclosures None.

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