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# Oral and maxillofacial surgery patient satisfaction with telephone consultations during the COVID-19 pandemic

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## Abstract

Due to the COVID-19 pandemic most oral and maxillofacial surgical (OMFS) units have moved to conducting patient consultations over the telephone. The aim of this study was to assess patients' satisfaction with telephone consultations during the COVID-19 pandemic. A retrospective survey was conducted of OMFS patients at our hospital who had telephone consultations between 1 April - 8 June 2020. The survey was conducted by independent interviewers and used the Generic Medical Interview Satisfaction Scale (G-MISS) along with a previously published additional questionnaire. Variables recorded included age, gender, theme of consultation, grade of clinician, and type of consultation. Statistical analysis was performed to assess for any differences between patient groups. The records of 150 consecutive patients were reviewed and 135 met inclusion criteria. A total of 109 patients completed the survey giving a response rate of 80.74%. The total G-MISS score for satisfaction was high, which indicates a high level of satisfaction among all patients. We found no statistical difference in satisfaction when comparing patients in terms of gender, age, theme of consultation, or level of clinician. A significant difference was found in compliance levels between review and new patients, with review patients demonstrating higher compliance levels ( $p=0.004$ ). Overall, 83.48% of patients said they would be willing to have a telephone consultation in future. The majority of patients in this study reported high levels of satisfaction with telephone consultations. New patients reported lower levels of compliance which may suggest this type of consultation is less suited to telephone consultation.

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## Introduction

A new severe acute respiratory syndrome (SARS) coronavirus (CoV) was identified in Wuhan, China in late 2019 and named SARS-CoV-2. This coronavirus disease 2019 (COVID-19) outbreak arrived in the United Kingdom (UK) at the end of January 2020. By March, the World Health Organization (WHO) had declared COVID-19 a pandemic.<sup>1</sup> The UK government introduced social distancing measures in order to quell the spread of the virus and the UK public

were in 'lockdown' from 23 March 2020.<sup>2</sup> As a result all non-emergent medical appointments were postponed and physical attendance at outpatient clinics significantly reduced. Most oral and maxillofacial surgical (OMFS) units have moved to conducting consultations and reviews over telephone to help ensure that OMFS services continue. The use of telephone consultations is widely reported in general medical practice, commonly in the context of a triaging system for out of hours calls.<sup>3</sup>

However, there is sparse analysis of telephone consultations in secondary care including surgical specialities. At time of writing, we had found no published retrospective studies which reported on patient satisfaction with telephone consultations in OMFS. Due to a high probability

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G-MISS 16		1- Strongly Disagree 2-Disagree 3-Neutral 4-Agree 5- Strongly Agree
Q1	After talking with the doctor, I know just how serious my illness is	
Q2	The doctor told me all I wanted to know about my illness	
Q3	The doctor told me what my illness is	
Q4	After talking with the doctor, I have a good idea of how long it will be before I am well again	
Q5	The doctor seemed to know just what to do for my problem	
Q6	The doctor gave me a poor explanation of my illness	
Q7	The doctor's visit has not at all helped me	
Q8	The doctor seemed to know what he/she was doing	
Q9	The doctor gave me a chance to say what was really on my mind	
Q10	I felt free to talk to this doctor about private matters	
Q11	I felt embarrassed while talking with the doctor	
Q12	The doctor did not allow me to say everything I had wanted about my problems	
Q13	I felt this doctor did not treat me as an equal	
Q14	The doctor seemed warm and friendly to me	
Q15	It may be difficult for me to do exactly what the doctor told me to do	
Q16	I expect that it will be easy for me to follow the doctor's advice	
Additional Survey		1- Strongly Disagree 2-Disagree 3-Neutral 4-Agree 5- Strongly Agree
QA	Was the phone consult as punctual?	
QB	Was the phone consult as convenient?	
QC	Was the phone consult as reassuring as a face to face appointment?	
QD	Did the phone consult afforded the same opportunity to ask questions	
QE	Did the phone consult facilitate the same understanding of information	

Fig. 1. G-MISS Questionnaire and Additional survey.

of prolonged social distancing measures in secondary care, telephone consultations might become more commonplace across all OMFS units. As such, this study aims to assess OMFS patient satisfaction with telephone consultations during the COVID-19 lockdown.

## Methods

A retrospective patient satisfaction survey was conducted with patients of the OMFS department at our hospital who had telephone consultations between 1 April - 8 June 2020 during the COVID-19 pandemic. The survey was conducted over the telephone to facilitate time efficient data collection. The survey was conducted by independent interviewers who had not interacted with the patients before.

## Sample

Participants were selected from a database of patients who received a telephone consultation between 1 April - 8 June 2020. Inclusion criteria were patients over the age of 18 who had had a telephone consultation carried out by a clinician from the OMFS department. All patients who had a telephone consultation were identified from hospital coding records. A

total of 150 consecutive patients were identified for inclusion in the study.

## Questionnaire

A combination of two surveys were used to record the patients' satisfaction. The first was the Generic Medical Interview Satisfaction Scale (G-MISS).<sup>4</sup> This questionnaire contains sixteen questions, which are structured in three dimensions assessing the patients experience compared to a face to face consultation. These dimensions are 'relief', 'communication' and 'compliance'. The relief dimension assesses the alleviation of illness-related stress, the communication dimension assesses the comfort of communication between the patient and the doctor while the compliance dimension assesses the patient's intent to follow the doctor's advice or instructions. This questionnaire has been previously validated in a large cohort and shown to be reliable for assessing patient satisfaction with general practitioners, medical specialists and surgical specialists.<sup>4</sup> An additional survey (AS), which has been previously published, composed of five questions was given following completion of the G-MISS, to match the domains of communication and relief but to also assess convenience of the telephone consultation<sup>5</sup> (Fig. 1).

All twenty-one questions were answered using a five-point Likert scale, defined from 1 to 5 as ‘strongly disagree,’ ‘disagree,’ ‘neutral,’ ‘agree,’ and ‘strongly agree.’ A cumulative score was calculated for the G-MISS. Cumulative scores were also calculated for the three domains. The relief domain comprised questions 1-8, communication covered questions 9-14 and compliance related to questions 15 and 16. Overall numbers and percentages were calculated for the additional survey.

### Data collection

Telephone interviews were conducted by independent reviewers who had not interacted with the patients previously. Data collected included patients’ demographics such as gender, age, type of consultation (new patient, review), theme of consultation (temporomandibular joint (TMJ), trauma, oncology, cutaneous malignancy, and dentoalveolar) and the level of clinician who conducted the initial phone consultation (SHO, Registrar, Consultant). Following this, the G-MISS and AS were completed along with a final question asking patients if they would be amenable to a telephone consultation in future. All information was compiled in Microsoft® Excel 2010 (Microsoft Corporation).

### Analysis

Cumulative scores for patients and the three dimensions of ‘relief’, ‘compliance’ and ‘communication’ were linearly transformed using the test score transformation method.<sup>6</sup> Each score was linearly transformed into a 0-100 scale with 0 indicating the worst level of satisfaction and 100 the best. Negatively phrased questions were reversed when scored, so that a higher score represented a greater level of satisfaction. Statistical analysis was performed using dedicated statistical software, (SPSS Statistics Version 26, IBM Corp) to compare the three-dimension scores (relief, communication, compliance) and total score between groups. For groups of two, the independent *t*-test was used. For groups of more than two, the analysis of variance test (ANOVA) was used. A *p* value of less than 0.05 was deemed to be statistically significant.

### Results

An initial sample of 150 consecutive patients were selected from departmental records of telephone consultations for the time period, but only 135 met the inclusion criteria (>18 years Fig. 2). A further 26 were excluded due to lack of consent (n=4), inability to make contact (n=4) and incorrect coding (n=18). A total of 109 patients completed this telephone survey giving a response rate of 80.74%. This group was composed of 49 males and 60 females ranging in age from 23 to 99 years and with a mean age of 64.5 years. The majority of consultations - 102 (93.6%) were review appointments while 7 (6.4%) of the consults were new patients.

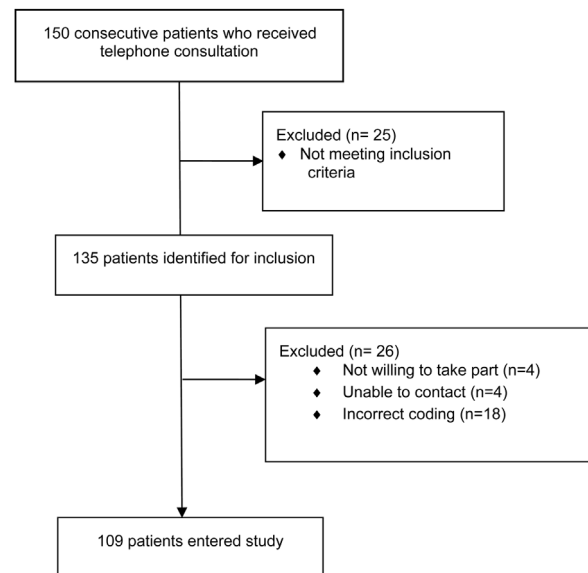


Fig. 2. Flowchart for telephone consultation study.

Table 1

Patient demographics and type of consultation (n=109) data are No. (%) unless otherwise stated.

Variable	Patients
Age groups:	
18-23	1 (0.9)
24-32	4 (3.7)
33-46	13 (11.9)
47-74	60 (55)
>75	31 (28.4)
Mean (SD) age (years)	64.5 (13.3)
Age range (years)	23-99
Sex:	
Male	49 (45)
Female	60 (55)
Type of Consultation:	
New patient	7 (6.4)
Review	102 (93.6)
Theme:	
Temporomandibular joint	5 (4.6)
Oncology	41 (37.6)
Oral medicine	43 (39.5)
Dentoalveolar	8 (7.3)
Trauma	6 (5.5)
Cutaneous malignancy	6 (5.5)

Just under forty percent of all appointments dealt with oral medicine patients while the next largest group was oncology 41 (37.6%) (Table 1).

The total mean (SD) G-MISS score for satisfaction was high at 82.12 (7.96) indicating a high level of satisfaction among all patients. Total satisfaction levels among males and females was quite similar and no differences were found to be statistically significant across total, relief, communication, and compliance between genders (Table 2).

With regard to age, the 18-23 age group had the highest reported satisfaction while patients aged 47-74 had the lowest. However, this difference was not statistically significant.

Table 2

Comparisons of G-MISS score and dimension scores according to patient characteristics and consultation characteristics (n=109). Data are mean (SD).

Variable	Total G-MISS	Relief	Communication	Compliance
Total	82.12 (7.96)	80.71 (10.71)	85.59 (8.36)	77.41 (14.28)
Gender:				
Male	82.14 (7.32)	80.87 (9.41)	84.86 (8.27)	79.08 (14.52)
Female	82.11 (8.51)	80.57 (11.74)	86.18 (8.45)	76.04 (14.05)
<i>t</i> -test	0.983	0.887	0.416	0.271
Age:				
18-23	85.93 (0)	84.37 (0)	87.5 (0)	87.5 (0)
24-32	85.54 (9.23)	87.5 (6.75)	86.46 (12.44)	75 (20.41)
33-46	81.73 (9.59)	79.47 (12.41)	85.25 (9.41)	79.81 (17.33)
47-74	81.33 (8.21)	79.32 (11.36)	85.55 (8.24)	76.67 (14.82)
>75	83.26 (6.74)	82.86 (8.76)	85.61 (8.18)	77.82 (11.51)
ANOVA	0.699	0.393	0.998	0.888
Theme:				
TMJ	88.44 (7.04)	87.5 (4.94)	90.83 (9.18)	85 (10.46)
Oral medicine	82.52 (7.46)	79.58 (11.83)	87.21 (6.39)	80.23 (13.42)
Oncology	80.26 (8.18)	79.72 (10.32)	83.02 (9.24)	74.08 (13.80)
Trauma	78.64 (9.36)	78.65 (12.08)	81.94 (6.27)	68.75 (17.23)
Dentoalveolar	84.57 (6.04)	82.81 (5.76)	89.06 (7.69)	78.13 (14.56)
Cutaneous malignancy	86.97 (8.07)	89.06 (8.55)	86.11 (11.07)	81.25 (18.96)
ANOVA	0.082	0.219	0.072	0.155
Clinician level:				
SHO	80.64 (10.11)	77.43 (15.02)	87.5 (7.69)	72.91 (16.18)
Registrar	81.94 (6.49)	81.01 (8.13)	85.03 (6.56)	76.38 (14.01)
Consultant	82.62 (7.92)	81.49 (10.22)	85.28 (9.21)	79.10 (13.73)
ANOVA	0.647	0.361	0.569	0.246
Type of Consultation:				
New patient	76.56 (14.98)	73.21 (18.99)	85.71 (12.70)	62.5 (21.65)
Review	82.51 (7.22)	81.21 (9.85)	85.58 (8.07)	78.43 (13.18)
ANOVA	0.056	0.055	0.967	0.004

These are the ANOVA and T tests used to compare the values. The test results are discussed in the Methods- analysis section

No statistically significant differences were found between groups when assessing the independent dimensions.

When examining the different types of consultation, there was a ten-point difference in mean (SD) satisfaction score between trauma: 78.64 (9.36) and TMJ patients: 88.44 (7.04), this difference was not statistically significant. The cutaneous malignancy group reported the third highest satisfaction score closely followed by the dentoalveolar group. Trauma patients felt least relieved after the consultation however no significant results were found in these groups.

Consultations carried out by a consultant demonstrated highest overall mean (SD) satisfaction: 82.62 (7.92) followed by registrar: 81.94 (6.49) and SHO: 80.64 (10.11) however no differences among overall scores or dimension scores were significant.

When comparing new patients to reviews, review patients demonstrated the highest scores in satisfaction overall and in levels of relief. A significant difference was found in compliance levels between review and new patients with review patients demonstrating higher mean (SD) compliance levels: 78.43 (13.18) ( $p=0.004$ ).

A high proportion of patients agreed that telephone consultations were as punctual as face to face, while 83.48% found telephone consultation to be as convenient. Over half of patients felt as reassured as with a face to face consultation, with 19.26% feeling less reassured in comparison with

a normal consultation. Over ninety percent of patients felt as able to ask questions and 94.49% understood the information given just as easily. Overall, 83.48% of patients said they would be willing to have a telephone consultation in future. The eighteen patients who were not willing to use telephone consultations in future were all over the age of 33. Four patients were aged between 33-46, ten were aged between 47-74 and four were over the age of 75 (Table 3).

### Discussion

SARS-CoV-2 is highly contagious and associated with considerable morbidity and mortality.<sup>7</sup> The UK governments, move to 'lockdown' the population has forced the National Health Service (NHS) to rapidly adapt to the changing needs of the population. Telephone and video consultations have been utilised by all specialties to try to maintain clinical contact with their follow up patients and ensure their services continue to run.<sup>8</sup>

The NHS has recognised the huge increase in telemedicine across all specialties as a result of COVID-19 and as a result has released new information governance guidance for the use of telemedicine.<sup>9</sup> However telephone consultations are not a new entity in healthcare, with some of the first telephone consultations reported as early as 1897.<sup>10</sup> Prior to COVID-19, many specialties in secondary care had already

Table 3  
Responses to additional survey as overall percentages (n=109). Data are no. (%).

Variable	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
As punctual	3 (2.75)	5 (4.58)	6 (5.50)	64 (58.71)	31 (28.44)
As convenient	2 (1.83)	2 (1.83)	14 (12.84)	59 (54.12)	32 (29.36)
Felt as reassured	5 (4.58)	16 (14.68)	30 (27.52)	42 (38.53)	16 (14.68)
Able to ask questions	1 (0.92)	4 (3.67)	5 (4.58)	66 (60.55)	33 (30.28)
Understood the information	0	0	6 (5.50)	44 (40.37)	59 (54.12)
Willing to have telephone consult again:					
Yes	91 (83.48)				
No	18 (16.51)				

embraced telemedicine as a part of their routine outpatients' service. One study carried out by a rheumatology service concluded that telephone consultations were very acceptable to patients,<sup>11</sup> while another study, comprising patients with a wide variety of respiratory conditions, concluded that almost one third of the outpatients would be suitable for telephone consultations.<sup>12</sup> Similarly, specialties like general practice, respiratory medicine, colorectal surgery, and vascular surgery have used telephone clinics and assessed their patients satisfaction with them for many years.<sup>13–16</sup>

Telemedicine has been discussed in the specialty of OMFS previously,<sup>17–20</sup> however it was assessed in terms of its benefit to the service rather than the quality of the service provided to patients and their satisfaction as a result. A recent paper assessed patients and clinicians acceptance of the 'concept' of a virtual clinic but it didn't assess patients' satisfaction with those who had used a telephone clinic.<sup>21</sup> There is likely to be a move towards more telemedicine consultations in future and we felt it was important to assess satisfaction from the patients' perspective and to identify any issues.

The GMISS survey<sup>4</sup> is a valid and reliable tool for assessing patients' satisfaction after healthcare interactions. The validation process for the questionnaire involved 2055 patients across general practices, medical specialties, and surgical specialties (including OMFS). Its multidimensional structure relies on item response theory and assesses different areas of a patient's experience. The original G-MISS validation study assessed patients from both primary and secondary care and demonstrated higher relief scores with secondary care consults. We showed similar higher levels of relief when comparing with the surgical specialty scores. We did however demonstrate higher levels of relief, communication, and compliance among the genders.

Overall our results show similar dimensions scores to that of the surgical specialties in the G-MISS study.

At the beginning of our study period our department implemented a new clinic outcome form (COF) to code each patient who had a telephone consultation. These new COFs were then compiled into a database, from which we selected our patients. The 18 patients who were excluded due to incorrect coding were wrongly included in the database without having this COF completed. We think that this was likely due to the transition phase of a new process being implemented. After

the introduction of the new COF, all patients with a COF were correctly coded.

Telephone consultations were well received by our study group and most, 91 (83.48%), were happy to keep using telephone consultations for future appointments. This is reassuring given the potential for a move to telemedicine. Of the 18 patients who were unwilling to have a future phone consultation, the majority (n=17) were oncology/oral medicine patients. This subgroup was used to regular face to face reviews for visual inspection of lesions being monitored or clinical examination to ensure no recurrences. All 18 of the dissatisfied patients were subsequently rebooked for a face to face appointment. Our patients' acceptance of telephone consultations compares favourably to other published studies. Beaver et al<sup>15</sup> report an acceptance rate of 62% among colorectal patients while our cohort had an acceptance rate of 83.48%. Similarly, our acceptance rate is in keeping with patient acceptance rates of 84% published in another study on the topic.<sup>22</sup>

Our study showed relatively small differences in overall satisfaction score, which indicates general applicability of telephone consultations. There was a slight increased difference between new and review patients overall which was not statistically significant, however there was a statistically significant difference in the compliance score. These results may indicate that new patients might be less amenable to telephone consultations. However, our study included seven new patients, compared with 102 reviews, so the results should be interpreted with caution.

This study has some limitations. Firstly, our sample size was modest, and this limited some of the statistical analyses, however, the high response rate lends validity to the results. Another consideration is possible reporting bias from our subjects, as the questionnaire was carried out via telephone. Patients were not anonymous and may feel uncomfortable reporting poor satisfaction verbally. A postal survey could help reduce this however may lead to a lower response rate. Also due to time constraints it was not an option for this study. The time delay between initial phone consultation and our survey could have led to patients struggling to remember their emotions and thoughts which immediately followed their first telephone consultation. A larger prospective study may help to counteract some of these limitations and is recommended



to enable further analysis of this topic. A larger sample size may also allow for more variation in the age groups.

## Conclusion

In general, the majority of patients in this study reported high levels of satisfaction with telephone consultations. No statistical difference was found when comparing patients in terms of gender, age, theme of consultation, or level of clinician carrying out the consultation. Interestingly, new patients reported lower levels of compliance which was statistically significant. This may make new patient consultations less amenable to the medium of telephone consultation. A larger prospective study may help to counteract some of the limitations of this study and is recommended to enable further analysis of this topic as it likely to be part of modern future OMFS practice.

## Conflict of interest

We have no conflicts of interest.

## Ethics statement/confirmation of patients' permission

Not applicable.

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