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The Patient Expectations on Teledentistry in the New Normal

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Abstract – Through teledentistry, the dentists and the patient can meet virtually to evaluate their conditions, present treatment plans, offer dental education like maintaining oral health during this time of the pandemic, prescribe medication, meet for pre-operative and post-operative appointments, and maintain electronic health records across long distances. To evaluate the efficiency and viability of the program, this research intends to direct future dental professionals to merge their online services by looking at existing statistics and data. To guarantee that patients will receive satisfying results from their healthcare consultations, whether in the new normal or for other future conditions, the research is produced to serve as a reference for future procedures that can assist reduce the danger of the pandemic. Understanding the patient's viewpoint on utilizing teledentistry to observe and determine if it may help access dental care challenges in pandemic situations is important for understanding the study's value. The study determined the expectations of patients on teledentistry in the new normal, more specifically, it presented the demographic profile of the patients, in terms of their age, sex, college course, number of years being a patient, and their possible reason for consultation. It determined the expectations of patients when demographic variables were grouped. A quantitative research design was used to determine patients' expectations of teledentistry in the new normal. Findings showed that the patients agree with the expectations of teledentistry in the new normal. When grouped according to profile variable, the differences in the respondents' expectations were interpreted to be not significant in terms of sex, age, college course, prior experiences with teledentistry, number of years being a patient, and chief complaint.

Keywords – patient expectation, teledentistry, new normal

INTRODUCTION

The process of networking, sharing digital information, remote consultations, workup, and analysis is made possible by a branch of telemedicine known as "Teledentistry (TD)." Teledentistry is the use of communication technology, such as audio and video contact, to deliver dental care services such as consultation, diagnosis, and patient education remotely. Through teledentistry, the dentists and the patient can meet virtually to evaluate their conditions, present treatment plans, offer dental education like maintaining oral health during this time of the pandemic, prescribe medication, meet for pre-operative and post-operative appointments, and maintain electronic health records across long distances. A similar concept of an application that has been found in Teledentistry, is the process of information-based distant communication between the oral health care provider and dental patient. Teledentistry, a system of communication involving video and audio feedback,

gathers clinical information from dental patients and is a comparable use of this concept in the field of dentistry [1].

In the Philippines, Teledentistry is already employed during the new normal period in Antipolo, which offers free consultations for the citizens in the city. As for the CALABARZON region, the program is a part of the O-HI-DOC program initiated by the Department of Health which launched on September 3. 2020, which attends to the needs of the public and serves with consultations and referral systems. O-HI-DOC program stands for Oral Health Initiative Dental Online Consultation, which aims to answer to the needs of the patients during the pandemic period, which had numerous surges in the year 2020 and 2021 in the country. According to the news article "DOH INITIATES O-HI DOC TELEDENTISTRY IN CALABARZON" [2] which was published in the city bulletin, the program had 43 registries, where 17 were given referrals and 2 consultations, and 24 with

pending cases. With this program, it is evident that there are patients served even under the strict conditions brought by the protocols of the coronavirus pandemic. This program can be likened to Konsulta.MD is a popular telemedical program that received a 256% rise in consultations during the pandemic.

Approximately 41.8% of dentists believe that Teledentistry can improve access to specialists in rural and underserved areas communities for their dental requirements. The majority 74.9 % agreed that Teledentistry is accessible to quarantined patients. According to the majority of dentists 80.3%, oral health maintenance, and post-treatment follow-up are the best options. Around 43.7 % of dentists believe it will help reduce costs for dental practices, while 37.7 % are unsure. Roughly the same in these difficult times of Covid-19, approximately 49.2% believe it will ease the financial burden on dentists. The majority of people believe 56.3% During the Covid-19 pandemic, the majority of dentists 54.6% were not practicing Teledentistry, and 68.3 % of dentists had never practiced Teledentistry. The majority of dentists 49.2% agreed that they will continue to practice Teledentistry after Covid-19 [3].

Patients in long-term care facilities, rural communities, and places with a scarcity of dental professionals can get care due to teledentistry, which facilitates the delivery of oral health services without regard to time or physical constraints.

To evaluate the efficiency and viability of the program, this research intends to direct future dental professionals to merge their online services by looking at existing statistics and data. To guarantee that patients will receive satisfying results from their healthcare consultations, whether in the new normal or for other future conditions, the research is produced to serve as a reference for future procedures that can assist reduce the danger of the pandemic. Understanding the patient's viewpoint on utilizing teledentistry to observe and determine if it may help access dental care challenges in pandemic situations is important for understanding the study's value.

OBJECTIVES OF THE STUDY

The study determined the expectations of patients on teledentistry in the new normal, more specifically, it presented the demographic profile of the patients, in terms of their age, sex, college course, number of years being a patient, and their possible reason for consultation. It determined the expectations of patients when demographic variables were grouped.

MATERIALS AND METHODS

A quantitative research design was used to determine patients' expectations of teledentistry in the new normal. The goal of quantitative research design is to identify the proportion of individuals who feel a particular way. It employs huge sample sizes and places emphasis on the number of replies as opposed to the aim of qualitative research, which is to get more specialized or emotional knowledge [4].

The target participants of this study were 100 respondents, which are patients aged 25 years old and above, with experiences with prior dental appointments, and those who may have not yet experienced teledentistry before the pandemic in Batangas. The convenience sampling method was used and is a non-probability sampling method where units are selected for inclusion in the sample because they are the easiest for the researcher to access. This may be as a result of close proximity geographically, availability at a specific moment, or willingness to take part in the study. Convenience sampling, sometimes known as accidental sampling, is a non-random sampling technique [5].

This study used a questionnaire that was adapted and modified from the following instruments:

Knowledge and Awareness of Teledentistry among Dentists and General Population during Covid-19 Pandemic – A Cross-Sectional Study [3], with a Cronbach Alpha score is 0.87, indicating strong dependability. An organized online self-explanatory questionnaire with an attached consent form was created. Through several social messaging applications and social media, the questionnaire link was provided as Google e-forms. After giving informed consent, participants were automatically forwarded to the study details, fetching the link and clicking it. The demographic information was filled in when they agreed to take the survey.

Satisfaction Level of the Oral Medicine Patients Using Teledentistry During the COVID-19 Pandemic: A Factor Analysis, by Athma et al., [6]), with a Cronbach Alpha result of 0.83 and a reliability item of 0.95 with a separation of 4.49. The factor analysis shows two components that contribute to satisfaction, namely, components of convenience and communication. One hundred percent of the subjects were in the satisfied and very satisfied categories. The

Cronbach's alpha shows that the conclusion of the study was reliable for the respondents.

Dentists' Self-perception on Teledentistry: The Changing Landscape Driven by Technological Booming in the 21st Century by Alsharif et al., [7], which has a Cronbach Result of 0.85 for the whole sample and 0.85 and 0.90 for males and females, respectively.

These questionnaires contained questions of the patient's expectations in telemedicine during the new normal. The instrument consists of two parts:

Part 1- includes the demographic profile of the respondent in terms of their sex, age, college course, number of years being a patient, and their possible reason for consultation.

Part 2- involves assessing the patient's expectations of the different services and benefits of teledentistry.

After having the adapted and modified instruments, the researchers prepared a questionnaire that addressed the research study's problem at hand and conducted a pre-survey for reliability purposes by distributing the questionnaires through Google Forms platform to 30 individuals. Cronbach alpha test was done and had a result of 0.955 that remarks excellent for the validity and reliability of the survey questionnaire. The researchers believed that this procedure was the most suited tool in terms of data gathering. After establishing the questionnaire, the researchers sought the approval of the panelist and statistician regarding the validity of the constructed questionnaire.

Upon the approval of the questionnaire, the researchers issued a letter for permission to administer the study which was signed by the research adviser and the department dean. Following this, the researchers also issued a consent letter to Google Forms platform and to create an online survey, which was sent via Facebook Messenger and other online means. The acquired data was then statistically handled by the statistician after the data collection from the respondents was completed.

The researchers utilized frequency and percentage to the demographic profile of the patients, such as age, sex, college course, prior experiences with Teledentistry, number of years being a patient and the chief complaint for the possible reason for consultation as responses regarding teledentistry. Weighted Mean – for calculating the perception of the respondents and the average responses with regards to their perception in Teledentistry. A Likert Scale (Strongly Agree – 4, Agree – 3, Disagree – 2, Strongly Disagree – 1) was used to measure the expectations of the patients that used teledentistry. For the tallying and interpretations, a weighted mean of 3.5 – 4 will indicate strongly agree, 2.5 – 3.49 will yield an indication of agree, 1.5 – 2.49 indicates disagree, and finally, 1 – 1.49 indicates strongly disagree as the interpretation.

Informed consent was signed by the patients who used teledentistry as a tool for consultation with regards to their expectations whose data are involved in this study. The respondents have the right to either participate or refuse if they wish not to provide any additional information. The data to be collected and analyzed will only be used for academic purposes.

RESULTS AND DISCUSSION

Table 1. Frequency Table for the Respondent's Demographic Profile
n= 100

	f	%
Sex		
Male	49	49
Female	51	51
Age		
25 – 29 years old	50	50
30 years old and above	50	50
College Course		
Non paramedical	86	86
Paramedical	14	14
Prior Experience with Teledentistry		
No experience	83	83
Have experience	17	17
Number of Years being a patient		
Below 5 years	33	33
5 years and above	67	67
Chief Complaint		
General Inquiry	8	8
Appointment clarification	18	18
Pain	21	21
Restoration	12	12
Extraction	8	8
Denture or construction of appliances	8	8

Table 1 presents the demographic profile in terms of the respondents' sex, age, college course, their prior experience with Teledentistry program, the number of their years being a patient, and their general chief complaint. In terms of the age of the respondents, the results have shown an almost equal distribution, with the female respondents gaining the slight advantage

with the frequency of 51 (51%), and male respondents with the frequency of 49 (49%.). In the age section of the table, an equal distribution was observed, with both the younger patients, 25-29 years old, and older respondents, 30 years old and above, averaging at an equal 50% distribution. These results can be compared to the study of Maqsood [8] in a study which evaluated the impact of the teledentistry, in which the respondents showed almost close percentages in the distribution of respondents, with the females closely surpassing the male respondents. In the college course, the number of those who undertook a non-paramedical course outnumbered those that took medical courses in college, with 86% of the respondents being in the non-medical field, and 14 percent being health allied workers.

For the chief complaint, or the possible reason why the patient might consider teledentistry, the top answer was pain consultation, 21 percent answering, and appointment clarifications being second, with a percentage of 18, restoration procedures and inquiries came third with 12 percent, general inquiry, extraction, and fabrication of prosthetics or dentures came equal in the tally with the three options receiving 8% in the data. The result of the chief complaint section can be supported by various studies such as one done by Subhan [9] which stated that in the existing COVID-19 paradigm, teledentistry is oriented on "dental triage," the treatment of pain or infection, the delivery of dental care through remote consultation, and the planning and scheduling of conclusive dental treatment, thus, resulting in more people focusing on the pain control management of their consultations. Appointment clarifications are also a top choice as the lessening of unnecessary visits are one of the enticing qualities of the Teledentistry program as stated by Rahman [10] in where additional crowding and travel expenses were deterrent factors in patient accommodations, especially in the pandemic period. General inquiry can also be compared in Rahman's analysis in which a dental clinic's services and rates can be acquired without the hassle of personal visits. Prosthodontics, extraction and other fabrication of appliances also has a recognizable value, albeit, not as high as the other items. Almazrooa et al., [11]) study has stated that the data they have gathered has concluded that prosthodontics can be significant in teledentistry as the number of specialists available in certain locations may affect the value and demand of patients, which can attract those who are considering teledentistry to consult and push through

with their procedures with the assistance of the program.

Table 2. Patients Expectations on Teledentistry in the new normal
n= 100

Patients Expectations on Teledentistry	Mean	Interpretation	Rank
The patients will feel			
1. Comfortable about telling the dentists about their illness	3.62	Strongly Agree	1
2. More convenient to go to online consultation as their dentist's location is in a far location	3.22	Agree	12
3. More comfortable because online consultations cut down the chances of appointment cancellations	3.28	Agree	10.5
4. Comfortable asking questions to the doctor in an online setting	3.36	Agree	9
5. Like the dentist will deliver optimum care and service	3.15	Agree	13
6. Confident that the dentist provides adequate diagnostic information	3.06	Agree	14
7. That teledentistry is helpful in the monitoring of their own condition	3.28	Agree	10.5
8. That it is a sufficient alternative for those in distant or rural locations	3.44	Agree	6
9. That it improves interaction and communication with the dentist	3.43	Agree	7
10. That the dentist will respect and value their privacy	3.51	Strongly Agree	2.5
11. That they will be given an accurate reading of laboratory results such as radiographs	3.05	Agree	15
12. That their online consultations will help their cost reduction	3.50	Strongly Agree	4
13. More economical about online consultations from a financial point of view	3.47	Agree	5
14. That making a referral for other dentists will be more efficient	3.41	Agree	8
15. That it will save time and convenience by elimination excessive clinical visits	3.51	Strongly Agree	2.5
Composite Mean	**3.35**	**Agree**	

Legend: 1.00 -1.49 (Strongly Disagree), 1.50 – 2.49 (Disagree), 2.50 – 3.49 (Agree), 3.50 –4.00 (Strongly Agree)

Table 2 shows the expectation of the respondents in terms of teledentistry which they mostly agreed. Among the listed items, the highest in rank is their strong agreement on being comfortable in telling the dentists about their illness (3.62), that the dentist will respect and value their privacy (3.51) and that it will save time and convenience by elimination excessive clinical visits (3.51).

The patient will feel more at ease telling the dentist through teledentistry about their illness because a dental consultation is a non-invasive visit with your dentist where you may discuss any issues you're experiencing, concerns you may have, and treatment alternatives. This is also the moment to discuss any concerns you may have about receiving dental work done. Because of the non-face-to-face contact, which makes them feel more at ease and gives them more confidence to speak up about their condition, patients—especially those who are ashamed of it—find it simple to express their feelings to the dentist. Rahmi et al. [12] provided evidence to support this statement by noting that patients find it easier to complain to their doctors about their illnesses, which was also strongly supported by the patients. The confidentiality and privacy of patient data are critical aspects of the dentist-

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patient relationship and core ethical standards in medicine, the patient is comfortable telling about her information and everything that he or she feels towards his or her condition because someone who has developed a level of trust with an ongoing relationship with their dentist that they feel confident that their pieces of information are in good hands. Alkhalifah et al. [7] also stated that dentists have an ethical obligation to maintain discretion and protect patient information. The protection of patient privacy is important for their well-being and builds trust in doctor-patient relationships. They also feel that it will save time and convenience because it facilitates access for patients who can't go immediately to a hospital or clinic especially the elderly who are physically unable to go quickly to the dentist. They can immediately get relief from pain, soreness, or other problems, and also lowers the expense of treating the patient in person. A study by Jampani et al. [13] stated that teledentistry has the potential to increase accessibility, enhance oral healthcare delivery, and lower expenses.

Also, they agree that more economical about online consultations from a financial point of view, teledentistry is helpful in the monitoring of their condition (3.28), that it is a sufficient alternative for those in distant or rural locations (3.44), and that it improves interaction and communication with the dentist (3.43).

Teledentistry helps monitor their condition because it allows patients and dentists to meet in real-time immediately without being in the same location. Maqsood et al. [8] study got more than two-thirds of the participants also agreed with the same statement that the majority of the participants agreed that it is a useful tool for patient education. Jampani et al [13] also stated that the fastest and least expensive solution to reducing the health gap between rural and urban areas may be through teledentistry. Teledentistry can aid in bringing specialized healthcare to the most distant regions of the globe, especially in light of the enormous advancements made in the field of information and communication technology. In teledentistry, an online consultation is when a dentist examines a patient online and recommends a dental clinic or hospital where the patient can see a dentist in person. It is crucial to encourage consultation with the least amount of diagnostic information required for each patient's condition, such as choosing the best dental specialized department [14].

On the other hand, the patients' feeling toward teledentistry was placed lowest in terms of their trust in receiving an accurate reading of laboratory data, such as radiographs (3.05), confidence that the dentist provides adequate diagnostic information (3.06), and the dentist will deliver optimum care and service (3.15).

The low agreement here may be due to the patient's preference for the more traditional reading of laboratory results that they can physically witness. When using teledentistry in certain clinical situations, it may not be possible to do thorough investigations, which may leave uncertainty about the diagnostic accuracy; as a result, it may still be necessary to make an in-person diagnosis with the patient. In contrast, teledentistry has shown excellent accuracy in diagnosing dental pathology in the study by Queyroux [15]. According to the study by Islam et al. [14], online teledentistry consultations can also be used to diagnose certain diseases (assuming the diagnosis is made correctly), notify patients of the diagnosis, instruct them on how to use over-the-counter medications specifically, prescribe, and more.

Table 3.
Differences in the Respondents' Expectations when grouped according to Profile

	Expectations		
	t/F	p-value	Interpretation
Sex	.786	.434	Not Significant
Age	1.388	.168	Not Significant
College Course	.276	.783	Not Significant
Prior experience with Teledentistry	-1.018	.311	Not Significant
Number of years of being a patient	.722	.472	Not Significant
Chief Complaint	1.005	.419	Not Significant

LegendDifference is significant at 0.05 alpha level

Table 3 shows the differences in respondents' expectations when grouped according to their sex, age, college course, prior experience with Telentistry, number of years being a patient, and chief complaint. The respondents' expectations do not show any significant difference when compared according to the given demographic profile. This indicates that the obtained p-value when grouped by Sex (.434) with a t/F value of .786, Age (.168) with a t/F of 1.388, College Course (.783) with the t/F of .276, Prior experience with teledentistry (.311) with t/F of -1.1018, Number of years of being a patient (.472) with t/F of .722 and Chief complaint (.419) with a t/F of 1.005 and does not influence the expectations of the respondents of this study.

Strongly agree were items such as comfortable about telling the dentists about their illness was ranked first (3.62), followed that it will save time and convenience by eliminating excessive clinical visits (3.51), that the dentist will respect and value their

privacy (3.51) and least agree with that they will be given an accurate reading of laboratory results such as radiographs, This suggests that patients expectations on teledentistry are more or less the same when it comes to sex, age, college course, prior experience with teledentistry, number of years of being a patient and chief complaint. This can be comparable to the study done by Alabdullah [16] which assessed the behavioral intention use of teledentistry of his respondents that was concluded that there are no significant differences based on their sex, age, or degree before dental school.

CONCLUSION AND RECOMMENDATION

Stated herein were the conclusions drawn from the findings of this research.

Most of the respondents were from ages 25-29 and 30 and above, female, non-paramedical college course, no experience in teledentistry, 5 years and above being a patient, and pain as the chief complaint. The patients agree with the expectations of teledentistry in the new normal. When grouped according to profile variable, the differences in the respondents' expectations were interpreted to be not significant in terms of sex, age, college course, prior experiences with teledentistry, number of years being a patient, and chief complaint.

Given the findings and conclusions derived from the study, the following recommendations are offered: Online articles or literature can be provided by health care educators to dental patients to expand their knowledge regarding the capabilities of Teledentistry as a program, so that they may consider different aspects of dental care as their primary concern for consultations. Additional methods such as online literature and advertisements can be provided to ensure that more people can be informed about the services associated with Teledentistry.

Programs and methods such as distributing informative pamphlets by dental practitioners in their private practices and advertising their use of the program could be done to further educate and encourage the patients to utilize teledentistry.

Lastly, future researchers may conduct and expand this similar study with different settings to study the unexplored variables of the expectations and possible improvements to the Teledentistry program. Different settings such as sampling from rural areas and those from underprivileged communities can bring out more recommendations and explore the feasibility of using Teledentistry as a viable alternative in different situations.

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