






Will Telemedicine Become a Future Preference of People Over In-Person Encounters Going by the Physicians' Perspectives?

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Abstract. Telemedicine is still not seen as a formidable alternative in the making to face-to-face Clinical encounters of Physicians and the patients. Face to face encounters are substantially more assuring and patient-satisfying, though Telemedicine is making in-roads into the conventional medical practice with face-to-face interaction and with technology supporting it. A desire to continue to use the technology in healthcare is highly associated with the satisfaction in quality of the service and the belief that adaptability is important for implementing the technology in healthcare. The paper takes a stock of the current situation about telemedicine and what the future would be, by hearing out the Physicians' perspectives. Interviews with the physicians and the responses to the queries posed to them are recorded to analyze and arrive at the findings on the current status of Telemedicine and what could be its future. In this qualitative narrative analysis, doctors described a quick, iterative uptake of telemedicine and a slowing down of use as the 2019 prevalence of coronavirus sickness fell. Interventions and regulations to support telemedicine for ongoing healthcare delivery and maintain its accessibility for the citizens can be influenced by physician experiences during the pandemic.

Keywords: Telemedicine · Service quality dimensions · physicians' perception · healthcare service

1 Introduction

Telemedicine, as a practice, was not a 'find' during the Covid-19 pandemic. It started decades before, though the Covid-19 pandemic gave it the needed velocity to grow [1]. The safe distance to be maintained, the lock-downs (that prevailed during the pandemic time and made visits to clinics and hospitals a serious challenge) and the incapacity of the potential of the health centres to handle effectively, the huge surge of cases, actually fast-tracked telemedicine to grow at a pace never before experienced. But when the pandemic restrictions were withdrawn and the new normal thereafter dawned, Telemedicine stayed and people started looking at the rationale behind the viable options, for the practice to continue, wherever possible [2, 3].

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S. Jayasingh et al. (Eds.): ICETBM 2023, AEBMR 242, pp. 232–242, 2023.

https://doi.org/10.2991/978-94-6463-162-3_21

“Seeing is believing” is an often repeated marketing adage which has its relevance here. This recent pandemic made clearer on the saying. Whether or not Telemedicine is going to take a lead in the race is again one that the future would unravel. Many hospitals have taken forward move on telemedicine to get more benefits expecting a lot more to serve the coming generation with the advanced technology [4]. Healthcare workers deliver the service efficiently with the use of technology which improves patient well-being and prevention of disease [5]. Telemedicine can become a closer alternative in future to face to face medical encounters. Now it would be too early to say that a situation like that would become a reality. If one looks at the possibility, Telemedicine could be a close challenge to a face-to-face encounter with physicians [6]. Telemedicine allows the resident doctor to discuss the case with the specialist doctors, where the patient need not travel from hospital to hospital this will allow the earlier projection of the disease [7].

Though telemedicine has huge benefits in serving services, the literature review from many studies says that there is still a lack of understanding among doctors regarding the technology and the knowledge skill which is most required for the implementation of the technology in healthcare [13]. As a result, if the use of new technology is supported by those within the field, others will have more confidence in its use, and a more positive attitude will be realized [14]. The service quality (SERVQUAL) model is the approach to processes that are most often utilized [8]. Measuring the level of service a doctor provides in the context of telemedicine platforms is a huge difficulty for patients. It is more challenging to control the quality of services due to their intangibility than it is with industrial goods [9]. [10] investigated how information system quality as a component of service quality influences consumers’ expectations of health information websites and their happiness with those sites. Improved telemedicine doctors’ satisfaction may result from using the SERVQUAL methodology to develop a thorough, multidimensional concept for doctors’ satisfaction. The multidimensional method identifies satisfaction dimensions that would benefit most from targeted adjustments and can therefore give providers more specialised practice advice. The degree to which healthcare practitioners make use of telemedicine technology and related apps could have a big impact on the standard of care and security of the patients. Additionally, it is unknown how this virtual form of contact may affect patients’ participation and resolve to maintain their health [11, 12].

Five factors make up the SERVQUAL model: tangibles (the appearance of physical facilities, equipment, and personnel), reliability (the ability to deliver the promised service dependably and accurately), responsiveness (the willingness to assist customers and provide prompt service), assurance (the knowledge and courtesy of employees and their capacity to inspire trust and confidence), and empathy (the provision of individual care and attention to customers) [15, 16]. But for arguing in favour of Telemedicine, it calls for the matching ability to prove on the Tangibility factor for Telemedicine to earn its winning score on the factors of reliability; assurance; empathy and responsiveness, on which the ‘Face-to-face encounters’ proved their winning strength. Considering the magnitude of the worldwide spread of the Covid-19 virus, telemedicine’s absence, during the pandemic time, would have led to chaos. That way telemedicine took away, at least, a marginal pressure from the ‘Face-to-Face medical encounters’ during the pandemic.

By acquiring increased capabilities with technological support, Telemedicine could gain ground and better acceptance.

2 Research Questions

The paper takes stock of the current situation by hearing out the Physicians' perspectives, as to where telemedicine stand vis-à-vis the face-to-face encounters, and its expected future. Based on the aim of the study few questions are encountered.

The categorization of queries is done as below:

1. What are all the physician's perspectives on Telemedicine?
2. How do the physicians' views on Telemedicine in COVID times?
3. What are the challenges perceived by Physicians in practising Telemedicine?
4. How were the attitudes of Physicians toward telemedicine?

3 Methodology

The respondents of the study are the physicians who involved in telemedicine consultation irrespective of the department. The reason for targeting the physician are acceptance of physician are most important for the usage of technology in future. Between October and November 2022, we conducted in-depth interviews with doctors involved with consulting services using telemedicine at a private multispecialty in Chennai. To record the physicians' responses to the questions posed to them on the factors of reliability, tangibility, assurance, empathy and responsiveness which collectively ensure Service quality in Telemedicine practice, semi-formal interviews were conducted with 12 physicians, with a common questionnaire to hear out their responses to the questions on each of the factors [17]. Collating the information with the verbatim responses of the physicians, coding was done to arrive at a narrative analysis, which was organized and analyzed for the conclusive findings derived from the sample chosen. The interview was held on 3 different dates keeping the questionnaire common for all of them. The study was approved by the Publication Guidelines and Monitoring Committee (PGMC) of Sri Ramachandra Institute of Higher Education and Research (Deemed to be University) Chennai, India where the waiver for ethical clearance was granted because all the data drawn from the published articles.

4 Results and Discussions

Information relevant to different criteria were drawn through interviews and recorded under different heads, which answered queries related to the dimensions chosen for study in the paper to arrive at the conclusive results. Responses of physicians were to the questions on tangibility, reliability, assurance, empathy & responsiveness. The responses, on study, were not found to be direct answers to the dimensions mentioned, but the data obtained throw light on these factors indirectly and obliquely, but logically leading to the needed criteria based findings. The list of responses based on the research questions are listed below:

1. Physicians perspectives on Telemedicine

10 out of 12, 95% of the respondents' hospitals had adopted a telemedicine in their facility. 2 out of 12, around 8%, were not aware of the practice in the hospital. 33%, i.e. 1 out of 12 physicians had ever tried telemedicine system, around 44% - 2 out of 12 used once in a way, 11.6% - 4 in 12 of them used Telemedicine more than once in a month; and 10% - 1 out of 12 did practice more often. 52% - around 5 out of 12 responding physicians said they were satisfied with the system.

From the responses drawn above, we can understand that there was an open mind to practice Telemedicine and the physicians also did adopt the practice in their facility. Small percentage (50%) of physicians tried once in a way and the rest practiced more often. The views expressed are positive in nature. Positivity emerges from belief and trust that pre-exist.

2. Physicians' views on Telemedicine in COVID times

Of the 12 respondents - 6 respondents (60%) said they have the suitable facility for handling Telemedicine during prevalence of Covid-19. Around 6 of them were readily agreeing to practice telemedicine during the pandemic time. The responses above indicate that there was total acceptance to Telemedicine during pandemic, obviously. The acceptance indicates scope and possibility in the practice of Telemedicine. Responses to emergency, though it appears, increased the percentage of people practicing Telemedicine, it may not be a hearty acceptance, but fact remains that Telemedicine, pre-existed the pandemic, physicians knew about it, and they were convinced about the usage with the limitations that it posed. Here again the behaviour of the physicians indicated that Telemedicine is a developing phenomenon with better professional skills and technology support favouring the system of practice. The responses indicate the pathway for attaining the important dimensions for Service Quality - Reliability & Assurance.

3. Challenges perceived by the Physicians in practicing Telemedicine

Interview recordings revealed that the major concerns in the use of telemedicine were: Difficulty in handling "in-person physical examination" which was the opinion of 8 out of 12 physicians - around 76%; Inability to communicate with patients well was from 3 in 12 of them - 23%; 4 out of 12 said the system is unstable and hence the difficulty in carrying out telemedicine system; 23%, 5 in 12 physicians felt unsure (lack of assurance) of medical safety for the patient.

The responses were appreciable and appeared to help the future of Telemedicine. The shortcomings mentioned were indicative of the fact that there was a need to focus attention on two important factors, circumventing the problems on account of which, Telemedicine, would have a greater acceptance than what it is now. The shortcomings mentioned were directly influencing "Reliability" & "Assurance". The utterances were more correction-oriented than outright dismissal of the concept of Telemedicine - which for obvious positive reasons, the physicians did not do.

4. Attitudes of Physicians toward telemedicine

While the Physicians' attitudes concerning telemedicine were positive - around 87%, 11 in 12 of the responding physicians showed a willingness to adopt telemedicine. 8% which is 2 out of 12 expressed their unwillingness to practice telemedicine; 4 of the total were indecisive. The main reasons for physicians to adopt telemedicine were the convenience that the patients had in it which was 6 out 12, i.e., 49.1%; due to optimization of medical resources 3 in 12 - 27%; due to improving the standard of medical care - 4 in 12 which is 14.0%.

The physician's responses indicated that their attitudes were patient-oriented and ready to embrace newer possibilities such as Telemedicine, which reflected empathy and the considered efforts reflected responsiveness, since they were outgoing and accommodating though limitations existed. They could visualize a road-map (though goal-oriented travel was needed) and had confidence that motivated them, which reflected their focus on attaining Reliability and Assurance factors, which were possible according to them.

The overall conclusions that could be drawn, from the interview-based and responses data drawn from the physicians, are that Telemedicine, as a practice adaptable since quite convincing, the expected results in terms of Reliability, Assurance, Empathy & Responsiveness, are attainable by working on the solutions which hover around Professional Skills (oriented to Telemedicine) and Technology (user-orientedness), which include training in usage and also bringing in user-friendly solutions attainable by enhanced and application-oriented changes required in the technology (IT, Tele-communications and Video-Conferencing). Even such changes are modifiable as could be seen from the current level of Technology. Professional skills mentioned are skills to use technology and Soft skills and appealingly enhance able communication skills. With the up-gradation and application related changes in Technology and training and orientation to step up the personal level skills of Physicians as professionals, Telemedicine could be seen as a closely viable alternative to In-Person encounters with physicians, for health issues of people. So the travel to attain the needed levels in Telemedicine practice has to be continued for reaching the fulfilment levels. That will be the time when physicians could throw options to people seeking medical help either an "In-Person appointment" or a "Telemedicine appointment". Understanding from the Physician's perspectives, it is not long before we could achieve a level of total satisfaction in Telemedicine with reliability, assurance, empathy & responsiveness - tangible enough to give a positive and assertive nod to Telemedicine. Table 1 depict the conclusiveness (based on the interview responses) that could be drawn on Telemedicine on the lines mentioned above.

4.1 Qualitative Observations and Conclusions Based on the Service Quality Dimensions from Table 1

The interviews with the 12 physicians to hear out their perspectives on different dimensions that go to deliver Service quality of Telemedicine through a common questionnaire bring before the readers the current status of Telemedicine. The rationale and the perspectives of the physicians are not always direct answers but indirect and oblique references which lead to answers for the dimensions. The 14 answers and the percentage of the

Table 1. Physicians perception on Telemedicine based on interview responses

Sl.No.	Data culled out	Means	Reflection	Positive or Negative factor working for Against Telemedicine	Relevance to Quality Dimension
01	10 out of 12, 95% of the respondents' hospitals had adopted a telemedicine in their facility.	Awareness & Importance	Visibility & Readiness to adopt (High)	Positive (High)	Assurance (Medium)
02	33%, i.e. 3 out of 12 physicians had never tried telemedicine system,	Not Practiced	No Opportunity	Negative (low)	
03	Around 44% - 3 out of 12 used once in a way	Practicing	Need felt & Prepared for Adoption & Practice		
04	11.6% - 1 in 12 of them used Telemedicine more than once in a month;	Practicing	Need felt & Prepared for Adoption & Practice	Positive & growing	
05	10% - 2 out of 12 did practice more often.	Practicing	Need felt & Prepared for Adoption & Practice		
06	52% - around 7 out of 12 responding physicians said they were satisfied with the system.	Satisfaction in the System & Practice	Practiced and Satisfied	Positive & growing	Assurance (High)

(continued)

Table 1. (continued)

SI.No.	Data culled out	Means	Reflection	Positive or Negative factor working for Against Telemedicine	Relevance to Quality Dimension
07	Of the 12 respondents - 3 respondents (60%) said they have the suitable facility for handling Telemedicine during prevalence of Covid-19.	Planned, prepared and ready to practice	Interest & Willingness to practice considering the importance	Positive & growing	
08	Difficulty in handling "in-person physical examination 9 out of 12 physicians - around 76%	Low possibility for Physical Examination	Important need not fulfilled	Negative (high)	Reliability low
09	Inability to communicate with patients well was from 4 in 12 of them - 23%;	Considerable percentage of physicians are not able to communicate well with patients	Important need not fulfilled for some	Negative (low)	
10	5 out of 12 said the system is unstable and hence difficulty in carrying out telemedicine system	Instability in the system visible and needs correction	Confidence currently Low	Negative (low)	Reliability low currently

(continued)

Table 1. (continued)

Sl.No.	Data culled out	Means	Reflection	Positive or Negative factor working for Against Telemedicine	Relevance to Quality Dimension
11	23%, 4 in 12 physicians felt unsure (lack of assurance) of medical safety for patient	More improvement needed and Standard operating procedures to be more stringent	Confidence currently Low	Negative (low)	Reliability low currently
12	87%, 11 in 12 of the responding - physicians showed willingness to adopt telemedicine. The main reasons was the convenience that the patients had in it	Physicians, per se, are ready to adopt	Readiness/Preparedness	Positive (high)	Assurance
13	6 out 12, i.e., 49.1%, due to optimization of medical resources	Developing Technology and Resources in medical field	Growing Confidence	Positive (medium)	Reliability growing
14	4 in 12 - 27%; due to improving the standard of medical care	Standard operating procedures	Growing Confidence	Positive (medium)	Reliability growing

total physicians who answered in favour or against are recorded and shown in the table indicating references to the quality dimensions, which are shown in the last column.

The Responses indicated under Sl. Nos. 1–5 when studied in depth indicate that assurance as one dimension. Service Quality is visible at a medium level. The level indicates the strong/weak nature of the attribute.

The medium level indicates that there is still much to be done to raise the level to 'high'. The current level perceived by the physicians is to improve, though it is already positive. Similarly the perceptions and their references made under Sl. Nos. 6 & 7, by the physicians, indicate that they are positive about 'Assurance'. And the level of magnitude is 'High', which speaks about total satisfaction in terms of the dimension 'Assurance', though the sub-dimension it refers to is only one of the attributes that lead to 'Assurance'

Similarly, the sub-dimensions which lead to Reliability are shown in poor light under Sl. Nos. 8 - 11. And the references made are about vital attributes that lead to Reliability. Hence the score pulls down the importance of Telemedicine, as the physicians (not all) see negative factors which pull down the Reliability score about Telemedicine. The remarks indicate that Telemedicine has to pull in its favour the technological support and make the outcomes doubly positive in comparison to the current levels. Again the dimensions are seen working positively in favour of Reliability & Assurance levels regarding Telemedicine. While under Sl. No.12, the assurance levels are seen as high, under Sl. Nos. 13 & 14, the Reliability levels are seen as medium and there are definite possibilities for the situation to improve largely with the support of infrastructure and other factors which need correction

Further the responses shown under the Sl. Nos. 8 & 9 also lead to indicate the other two dimensions Responsiveness & Empathy. The perspectives of Physicians recorded are on the negative side and show that Telemedicine has a lot to do with these two dimensions also. The responses recorded clearly say that by turning these two conditions positively, Telemedicine would score on all 4 service quality features. When these features become increasingly visible and could be felt, Telemedicine would turn the tables in its favour. So it is not the end of the road, but the responses which are negative now should turn positive, which may be difficult to achieve, but not impossible. And there is clarity and commitment, it would not be long, before which we could achieve these two dimensions also. And strikingly, the improvements needed are in the Infrastructure area, which is not a difficult or long time to achieve.

So to summarize now on all the recorded perspectives of the physicians on Telemedicine, it may look 'as not having achieved the accepted levels', but indications are that the future could lead to the levels of achievements on all the FOUR dimensions, which spells a good future for Telemedicine.

5 Conclusion

The paper covers study, collection, organization and analysis of data to arrive at the findings in regard to Telemedicine - on the topic chosen. The study was done, through interviews held with 12 physicians employing a common questionnaire to seek responses, and recording the excerpts on the aspects of Service Quality from them. It is found from the studies and the findings thereof that acceptance for Telemedicine is already good, majority of the hospital facilities are either geared up or prepared for adopting Telemedicine.

Patients are willing to avail the option whole-heartedly and even the physicians have no reservations in practicing Telemedicine. While Telemedicine is progressively moving forward and being accepted as a viable option, there are limitations which need to be addressed. The Limitations are both on the Physicians side and also on the Technology. It is noted from the study that Physicians have to be exclusively given training to handle Telemedicine with standard operating procedures to be followed, apart from imparting Technology handling skills, when they will be able to practice Telemedicine with needed confidence to deliver Service Quality through the features - Tangibility, Reliability, Assurance, Empathy & Responsiveness. Hence Telemedicine is a viable option building its strength to be more reliable, assuring, responsive, empathetic having tangibility that would enhance confidence in patients.

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