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EXPLORING THE VALUE OF TELECONSULTATION POST-COVID-19

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Abstract

The COVID-19 outbreak accelerated the digital transformation of numerous services, including healthcare. As a result, increasing number of online platforms has been created to meet the needs of patients. Teleconsultation has proved helpful in ensuring accessibility to medical care during the pandemic, but it is questionable if it will be an effective healthcare service even after the pandemic. The main goal of this study is to assess how far the patients are willing to make teleconsultation in the post-pandemic period by examining the perceptions of the patients. The study uses quantitative method of data collection by circulating a structured questionnaire to the patients using the convenience sampling method. A total of 170 samples have been collected. The findings from this research will help us gain a greater appreciation for the potential positive and negative aspects of teleconsultation as a healthcare service following COVID-19, which can guide the development and betterment of telemedicine programs for the benefit of both patients and medical professionals.

Keywords: Telemedicine, Teleconsultation, Post-pandemic, Utilization.

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INTRODUCTION:

India's healthcare industry has grown significantly including both employment as well as income. Due to improved facilities, accessibility, and rising investment by both public and private entities, the Indian healthcare industry is expanding quickly. A pretty modern idea, telemedicine enables patients to consult doctors via videoconference using a variety of communication methods. In addition to supporting the three A's of Affordable, Authorized, and Accessible healthcare, the remote assessment of the patient, digital prescription of medications, and virtual patient care are also paving the way for the six P's of healthcare which includes - Personal, Primary, Preventive, Precision, Proactive, and Predictive healthcare. The idea of telemedicine has evolved considerably since ISRO's Telemedicine Pilot Project in 2001, which has grown substantially during the pandemic is expected to continue expanding enormously in the years to come. Quick interchange of medical information, prompt counsel, and last-mile contact with patients are a few drivers for its rapid growth.

The COVID-19 disease has left a significant effect on the medical facilities. One of the biggest developments was the dramatically increased use of telemedicine as patients and doctors attempted to minimize in-person contact to prevent the spread of the infection. Telemedicine was used prior to the pandemic, but during the first few months of the pandemic, its utilization quadrupled. Telemedicine improves patient accessibility while lowering the risk of virus exposure for both patients and providers. Yet, using telemedicine also presents a number of difficulties for doctors and patients alike. Nonetheless, adopting technology can have negative implications as well, leading to moral and legal concerns such data breach, incorrect diagnoses, patient legal protection, and others. Physicians are

generally resistant to change, and there is debate concerning the efficacy of telediagnosis.

Another driving factor of online healthcare is remote patient management, and this is creating enormous business potential. It is subset of home care telehealth that enables patients to use mobile medical equipments and advanced technology to collect their own health data such as vital signs, weight, blood pressure, and heart rate and transmit it to the physicians. Despite the difficulties in providing treatment during the pandemic, telemedicine certainly has improved healthcare accessibility. Yet, there has been debate about telemedicine's clinical value as a result of its continuous use and growing acceptance. Telemedicine is a potent force that can reduce travel times and improve interaction among patients and doctors, and it ought to be utilized more frequently in the future to assist people who really need it in receiving high-quality healthcare services.

LITERATURE REVIEW:

(El Naamani et al., 2022) Telemedicine has a number of benefits as well as problems. Telemedicine has received good praise from doctors and patients, who think it could play a significant role in the future provision of healthcare in underserved areas^[4]. (Chen et al., 2022) Theoretical framework has been expanded of the Theory of Planned Behaviour (TPB) and Technology Acceptance Model (TAM) to examine adoption of sustained telemedicine usage in the post-COVID-19 era. Governments should use these findings to drive future health policy formulation and encourage participation in the on-going usage of telemedicine^[2]. (Singh et al., 2022) Post pandemic decline in teleconsultation utilization has been analyzed using fishbone diagram which identified the causes as follows: socioeconomic issues, cultural issues, security issues, regulations/

payment issues and quality related issues [12].

(Kaundinya & Agrawal, 2022) There is a strong likelihood that telemedicine will remain in healthcare systems; according to a McKinsey research, telemedicine might account for more than \$250 billion, or 20% of current US health care spending. While there was a significant increase in telemedicine visits in April 2020, the number has decreased after that, according to a different Commonwealth Fund report [6]. (Upadhyay et al., 2023) Virtual care has long been a part of the healthcare industry, and right now its presence and growth look more viable even in post-pandemic settings. The expansion of telemedicine is an example of how the digital age is changing health care systems. This growth is helping to establish telemedicine as the norm in the new normal [15].

(Zhou et al., 2023) The introduction of telemedicine has significantly altered how the medical system makes operational decisions. In reality, telemedicine acceptance has not yet reached the anticipated level [16]. (Kim & Han, 2023) Research models were developed to compare the factors that influence telemedicine acceptance in baby boomers. The structural model test demonstrates that telemedicine and wearable medical technology must be beneficial, informative, and cost-effective in order to be accepted [7]. (Mariani et al., 2023) A big hurdle still emerges from technological issues. Virtual visits are likely to continue beyond the pandemic because of the promising outcomes of this method of providing medical treatment, as well as the increased investment of financial, technological, and social resources in this area [8]. (Baudier et al., 2021) The development of teleconsultation acceptance may potentially be better understood through a longitudinal research (for example, after the pandemic) was one of their limitations [1].

OBJECTIVES:

This study aims to assess the growing trend of teleconsultation that can help to improve access to healthcare services. It also aids in evaluating the long-term impact of teleconsultation in the near future and its effectiveness in delivering healthcare services. Teleconsultation has the potential to improve the quality of healthcare services by enabling faster and more efficient diagnosis and treatment.

LIMITATIONS:

The main limitation of this study is that the response bias affects the outcomes, which are based on the perceptions and views of the respondents. Other limitations are the data is collected from a generalized population and there was only a short duration for collecting the data for the study.

RESEARCH METHODOLOGY:

The research study is based on a quantitative approach in which the primary data has been collected through circulating structured questionnaires digitally to the general population to assess the value of teleconsultation in the post-pandemic period and in the future as well. A review of the literature was also carried out to determine typical telemedicine concerns. The questionnaire consists of two parts – 1st part consists of general questions regarding their socio-demographic characteristics while the 2nd part aimed to study the readiness and uptake of teleconsultation in the future, containing likert scale type of questions. The data has been collected from February 20, 2023 to March 5, 2023 and recorded 170 responses by using convenience sampling method. Descriptive analysis (Frequency distribution), Cross Tabulations with Chi square analysis and Correlation analysis has been done for the collected data using SPSS Software to interpret the results.

DATA ANALYSIS AND RESULTS:**DESCRIPTIVE STATISTICS:**

As shown in Table 1, majority of the respondents were male (N=95), between the ages of 40 to 60 years (N=36), working in a private sector (N=40) whose monthly family income level is Rs.2 lakhs to Rs.3 lakhs (N=30) residing in a semi-urban area (N=47). The complete details regarding the socio-demographic characteristics are presented in the **Table 1**.

Information	Categories	N=170	Percentage
Age	Less than 20 years	25	14.7%
	20 to 40 years	70	41.2%
	40 to 60 years	40	23.25%
	60 to 80 years	28	16.5%
	Above 80 years	7	4.1%
Gender	Male	95	55.9%
	Female	75	44.1%
Occupation	Student	49	28.8%
	Government Sector	22	12.9%
	Private Sector	52	30.6%
	Business	23	13.5%
	Home maker/ Retired	24	14.2%
Monthly family income level	Less than Rs.50,000	34	20%
	Rs.50,000 to Rs.1 lakh	31	18.2%
	Rs.1 lakh to Rs.2 lakhs	31	18.2%
	Rs.2 lakhs to Rs.3 lakhs	41	24.1%
	More than Rs.3 lakhs	33	19.4%
Location	Urban	77	45.3%
	Semi-urban	65	38.2%
	Rural	28	16.5%

Table 1 Socio-demographic characteristics of the respondents

Table 2 represents the frequency (N=170) and the percentage of the variables related to patients' perception regarding teleconsultation and their readiness to use teleconsultation in the post pandemic period. After analysing the data, it can be recognised that majority of the respondents were willing to use teleconsultation as much as possible even after the COVID-19 pandemic.

Table 2 Frequency and percentage of the perception of the respondents

Variables	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Teleconsultation services provide convenient mode of healthcare delivery	92 54.1%	48 28.2%	26 15.3%	4 2.4%	-
Teleconsultation reduces the waiting time as well as saves the travelling time	107 62.9%	54 31.8%	9 5.3%	-	-
Teleconsultation gives access to more physicians across the world	101 59.4%	59 34.7%	10 5.9%	-	-
Fear of misdiagnosis makes you to reject teleconsultation services	16 9.4%	32 22.9%	31 18.2%	54 31.8%	30 17.6%
Privacy, confidentiality & technological issues may cause problems in teleconsultation services	15 8.8%	44 25.9%	30 17.6%	57 33.5%	24 14.1%
Patients should be given the option for teleconsultation when scheduling appointments	92 54.1%	55 32.4%	20 11.8%	3 1.8%	-
Teleconsultation could take the place of in-person consultations in the near future	88 51.8%	46 27.1%	26 15.3%	5 2.9%	5 2.9%
Cost involved for teleconsultation is worth the investment	39 22.9%	72 42.4%	34 20%	20 11.8%	5 2.9%
You feel comfortable with using teleconsultation services in the future	81 47.6%	48 28.2%	35 20.6%	6 3.5%	-

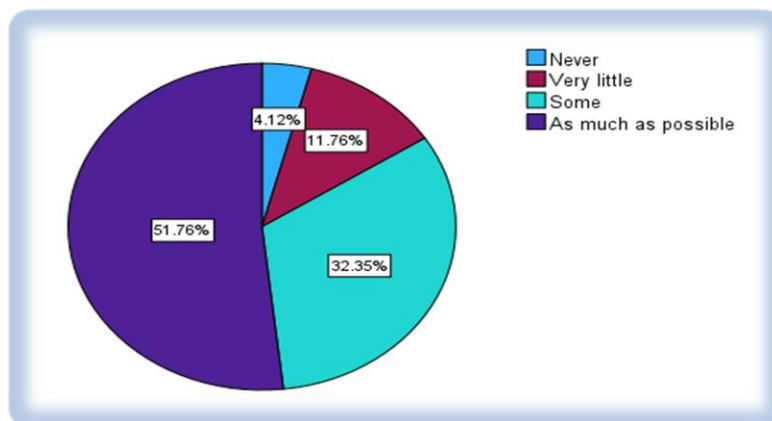


Chart 1

Chart 1 depicts the number of teleconsultations the respondents prefer in the post-pandemic period, which shows that majority of the respondents are willing to make teleconsultations even after the pandemic has ended.

CROSS TABULATIONS WITH CHI SQUARE ANALYSIS:

Age & Number of teleconsultations you could prefer in the post-pandemic period

		Number of teleconsultations you could prefer in the post-pandemic period				Total
		Never	Very little	Some	As much as possible	
Age	Less than 20 years	2	3	14	6	25
	20 to 40 years	4	15	28	23	70
	40 to 60 years	0	2	8	30	40
	60 to 80 years	1	0	4	23	28
	Above 80 years	0	0	1	6	7
Total		7	20	55	88	170

Table 3

From **Table 3**, it is understood that 30 respondents of the age group 40 to 60 years prefer to use teleconsultation as much as possible, and 28 respondents of the age group 20 to 40 years prefer to make some teleconsultation encounters in the post-pandemic period.

An attempt was made to check the association between age and the number of teleconsultations the respondents prefer in the post-pandemic period using Chi square analysis. The hypotheses are as follows: Null hypothesis

(**H₀**): There is no association between age and the number of teleconsultations the respondents prefer in the post-pandemic period. Alternate hypothesis (**H₁**): There is an association between age and the number of teleconsultations the respondents prefer in the post-pandemic period. The results shows that the significance value ($p=0.001$) is less than 0.05, hence we reject null hypothesis and accept the alternate hypothesis which denotes that there is an association between the two variables.

KARL PEARSON CORRELATION ANALYSIS:

Correlation analysis is a statistical technique employed in order to determine whether or if there is a relationship between two variables or datasets and how significant that relationship could be.

1. This study tries to test the relationship between patient's comfortableness to use teleconsultation and the number of teleconsultation they could prefer in the post pandemic period. The hypotheses are as follows: Null hypothesis (H_0): There is no significant relationship between patient's comfortableness to use teleconsultation and the number of teleconsultation they could prefer in the post pandemic period. Alternate hypothesis (H_1): There is a significant relationship between patient's comfortableness to use teleconsultation and the number of teleconsultation they could prefer in the post pandemic period. The result shows that 'r' value is positive and correlation is significant at the 0.01 level (2-tailed), hence we reject null hypothesis and accept the alternate hypothesis. Since $r=0.749$, there is a strong positive correlation between the two variables. As the patients' feel more comfortable towards using teleconsultation services, the number of teleconsultation encounters may also increase.

2. Another study tries to test the relationship between patient's fear of misdiagnosis and the number of teleconsultation they could prefer in the post pandemic period. The hypotheses are as follows: Null hypothesis (H_0): There is no significant relationship between patient's fear of misdiagnosis and the number of teleconsultation they could prefer in the post pandemic period. Alternate hypothesis (H_1): There is a significant relationship between patient's fear of misdiagnosis and the number of teleconsultation they could prefer in the post pandemic period. The result shows

that 'r' value is negative and correlation is significant at the 0.01 level (2-tailed), hence we reject null hypothesis and accept the alternate hypothesis. Since $r=-0.564$, there is a moderate negative correlation between the two variables. As the patients' fear about misdiagnosis during teleconsultations, their number of teleconsultation encounters may decrease.

DISCUSSION:

Even after COVID-19, telemedicine ought to continue to be integrated systematically because its perks vastly surpass its drawbacks. After these analyses, we can understand that utilization of teleconsultation services, one of the segments of telemedicine, has exponentially increased due to COVID-19 and is going to be continued to use throughout the world in the upcoming years too. Even though the respondents' perception of teleconsultation is mostly positive, there are some restraining factors that cause them to reconsider using teleconsultation in the post-pandemic era. The two main factors are fear of being misdiagnosed by the physicians as there is an absence of direct examination of the patients and the other factor is related to privacy, confidentiality, and technological issues. Hence, these limitations have to be addressed by improving the technology for the benefit of patients as well as healthcare providers.

CONCLUSION:

Telemedicine has turned into a leading force in the healthcare industry that the world is noticing today. People affirm that it could eventually play a significant role in providing healthcare to underserved areas. Healthcare institutions need to avail the most of this healthcare delivery to widen the reach of patients with the utmost quality of treatment while tackling its downsides. Overall, while teleconsultation may not be suitable for all medical situations, the evidence suggests that it has

an important role to play in the future of healthcare. As such, it is important that healthcare providers and policymakers work together to ensure that the necessary infrastructure and support is in place to enable the widespread adoption of teleconsultation as a key component of post-COVID-19 healthcare.

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