



Research articles

Tele health in the digital era during covid -19 a case study of UttarakhandRupa K Malhotra*¹, Shipra Gupta²¹Graphic Era Deemed to be University Dehradun, Uttarakhand, India²Graphic Era Hill University Dehradun, Uttarakhand, India**ABSTRACT**

Tele-health services area very old facility available, but it never became a forefront technology or option for patients. During Covid 19 lockdown, when all the hospitals OPD and Private Clinics were closed then there was certainly a need for a therapy that could be available, keeping the social distancing in mind. This study on Tele-health is both a primary and secondary data-based study. The first objective of the study is based on a survey of patients and service providers. The other two objectives are studied through secondary data. Options left for chronic patients were explored, their awareness and satisfaction regarding these options were studied if there is a surge in Tele-health services usage, then what strategies should organizations adopt for the continuous use of these services after covid was also studied. The study shows a surge in the usage of Tele-Health services and remote monitoring of patients. Approximately 80% of the patients have cancelled their personal visits to doctors, and patients' satisfaction rate is more than 70%. A survey on service providers was also carried out, and the satisfaction level of doctors in providing Tele-health services were more than 65%. The study reflects that Tele-health services can be a boon for a state like Uttarakhand, where health services are scarce and were treating patients in remote areas is challenging.

Keywords: Tele-health, Remote Monitoring, Virtual Payment, Virtual health, Tele-health satisfaction.

Received - 22-09-2021, Reviewed - 16/10/2021, Revised/ Accepted- 20/11/2021

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INTRODUCTION

During Covid first and second waves, mostly OPD and doctors' clinics were closed, and the pandemic has severely restricted patient visits to the hospitals and clinics. Tele-health was a viable solution at that time for the patients. Tele-health is a very viable option for India, where the number of doctors and other health professionals is less in terms of the percentage of the population. Through the help of Tele-medicine, health services can be provided in the remotest area of India. Now it will depend upon the satisfaction level of patients that whether it can be further used after pandemic [1]. COVID pandemic has increased the usage of Tele-health. The studies say that the Consumer adoption of Tele-health has increased in leaps and bound from 11 percent to 46 percent from 2019 to 2020 only in the US. The health service providing organizations have scaled their offerings and are treating 50 to 175 times the number of patients via Tele-health as compared to before (Ericsson). Before Covid, the total annual earnings of US Tele-health players were \$3 billion, and now it is escalated to be 250 billion dollars. Tele-medicine provides urgent care and instant on-demand Tele-health visits to doctors [1,2].

Tele-health has surged during covid 19.

1. To study changes and need to realize the full potential of Tele-health?
2. To study actions to be taken at the investors, health services and technology, firms 'level for implementation of Tele-medicine.

Transforming behaviour is not very easy and is not inevitable. New requirements are to be generated by the service providers, a new way of communication, access to technology, and knowledge of technology. The outcome of Tele-medicine will be ease, on request care, better patient outcomes, and a competent healthcare system. To improve their future positions, Healthcare players now need to rethink and adapt to a new way of providing services.

Various models are discussed in this study that can be adopted in providing Tele-health services. They have also discussed the strategies to be adopted by the Tele-medicine providers to survive in the long run [3]. As per a study on Tele-medicine's unexpected catalyst, has discussed certain surges in Tele-health usage and reasons for its surge. They have discussed that Tele-medicine is not a new phenomenon, but its potential has been realized during Covid.

Their study is mostly on the taxes and Government norms on taxes [4].

Virtual Care Right

Three Essentials to Transform Chronic Disease Management at Home, has found that chronic health care management is going to be 7 billion dollars industry till 2024. As per the studies, out of 10, 6 patients are suffering with chronic diseases and are positive towards Tele-medicine through mobile, which is also great for any country to manage their patients through these technologies. [5,6]. Disruptions and innovations in tele health care, enabling social distancing and managing patients in the U.S. without exposing them to risk and finding the solutions for the safety of health care providers.

MATERIAL AND METHOD

To cover the study objectives, a Primary study was carried out in three cities of Uttarakhand that is Dehradun, Haridwar and Haldwani. Dehradun and Haridwar are in the Garhwal region of Uttarakhand, and Haldwani is in the Kumaon region of Uttarakhand. A survey was carried out in these cities using the structured questionnaire. Two types of simple questionnaires were developed, one for patients and the other for doctors. The questionnaire was sent to 300 respondents through random sampling, and 50 to 70 doctors were targeted for the survey. The patient questionnaire was created through google forms and was mailed and WhatsApp to various patients who needed health services during the lockdown. The questionnaires' for patients have both dichotomous questions having two responses and questions based on Likert's scale to study satisfaction level. Two hundred fifty-eight responses were received from the patients. For doctor's survey students personally has taken data through the structured questionnaire in these districts. 50 doctors' responses were recorded. Descriptive analysis was done using Microsoft to analyse the data. Secondary data was used to study the other two objectives where research studies on Tele-health and white papers of various organizations were consulted.

RESULT

Figure 1: suggests that there was a change in perception towards Tele-health services from 11 % to 70%.

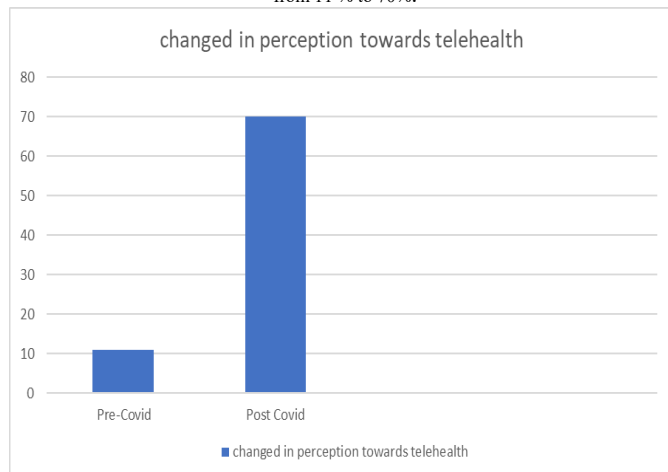


Figure 2: suggests that there was also a change in attitude towards Tele-health services from 22 % to 78%.

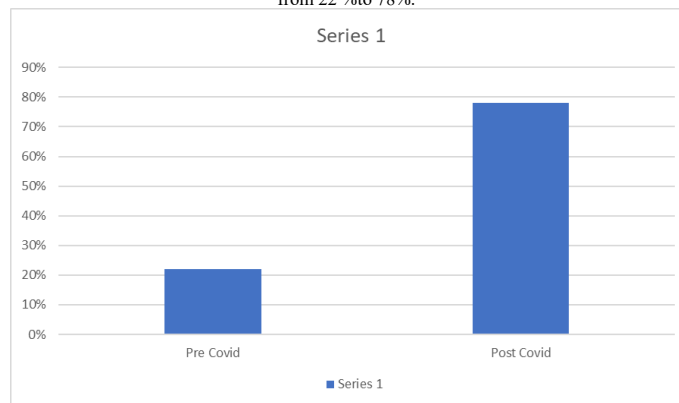


Figure 3: suggests that around 75% of patients have recorded their satisfaction towards Tele-health services.

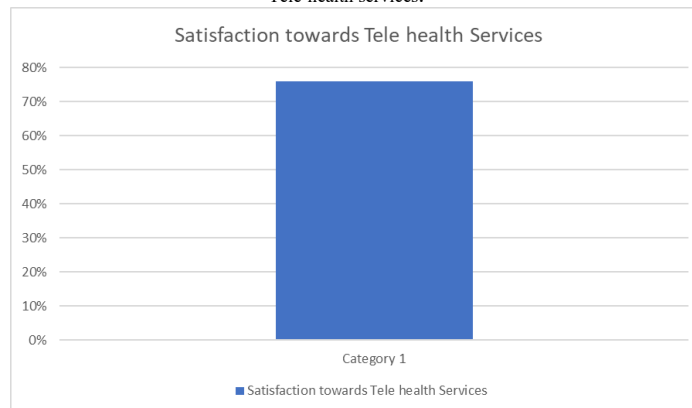


Figure 4: It was observed from figure 4 that pre covid around 50 in-person visits was cancelled, which was increased to 175 during covid

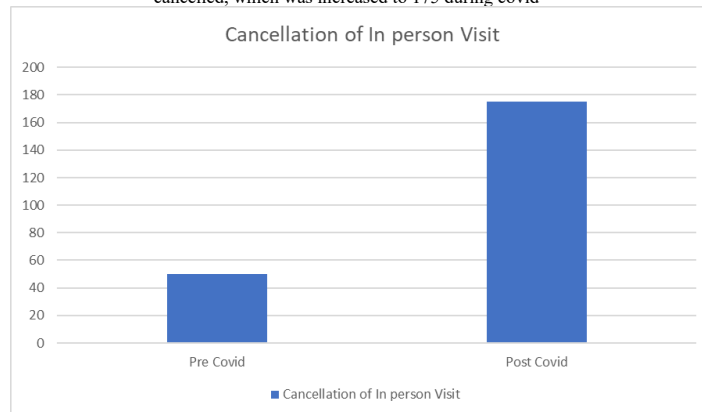
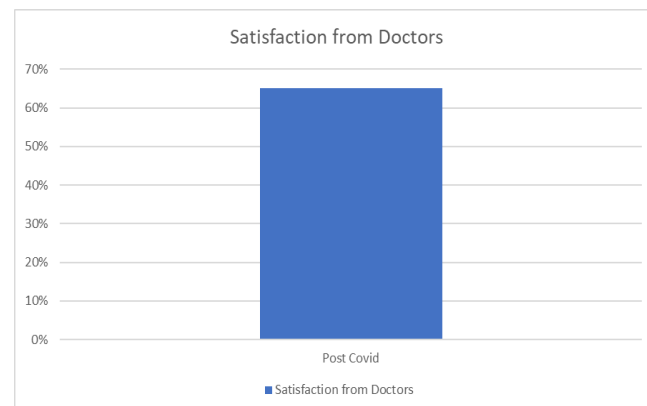


Figure 5: It was observed from figure 5 that post covid around 65 % of doctors have shown satisfaction in treating patients with the help of Tele-health.



Tele-health has surged under covid-19

Virtual health care delivery systems will surge till the pandemic concern is there or more people are vaccinated. During this time, online health care needs to be more deeply embedded into health care systems as the consumers' choices and perceptions for health care access evolve [7]. However, challenges for service providers will remain. The concerns of Tele-health service providers are data security, an amalgamation of workflow, therapy effectiveness compared with a personal visit, and the future for repayment through health insurance. There is a gap between consumers' perception and interest in Tele-health as studies show that 70 % are interested, and actual usage is only 46 percent. There is a lack of awareness among the patients regarding the type of health services available online; they need to be more educated on the type of health care and insurance services available online. These factors are responsible for the gap [8,9].

Tele-health and virtual care

Research reflects that there can be five models for online-enabled health care and capitalize on healthcare possibilities. These are based on offering an urgent visit to creating Omni channels models of virtual care, which involves the main part of the healthcare delivery system [10]. They include:

Model 1

On-demand virtual urgent care is the most common, on-demand emergency health care with unknown providers to address emergent needs, which is an alternative to visiting OPDs or Doctor clinics.

Model 2

Online visits with an established provider are an omni channel care model that enforces a combination of Tele-health and personal care with a definite health provider, which improves consumer ease, admittance, and steadiness of care for consults that do not require physical exams or concurrent procedures. Such visits can be for primary care or some speciality care. In Addition to virtual visits, this model enables doctors to manage patients remotely from their clinics through remote patient monitoring systems, online therapeutics, and coaching.

Model 3

This model is virtual office visits than to some pathological lab for testing or immunization, followed by again virtual check-ups.

Model 4

Virtual check-up followed by online visits, remote monitoring, and tools to engage digital patients to provide services remotely, such as, patient occupational therapy, physio therapy sessions and speech therapy sessions.

Model 5

Tech-enabled home medication administration by providing training and education allows patients to receive infusible and

injectable drugs at home. Monitoring of patients is done online, along with home transportation of the therapeutics.

Figure 6: Tele-medicine and % of reduction in the burden of Health Care Infrastructure

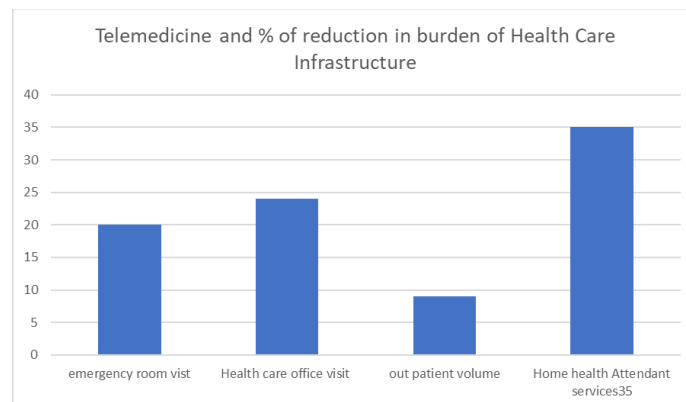


Figure 6 shows that, if the above-discussed models are followed, then 20 percent in emergency room visits, 23 percent in health care office visits, 9 percent in Outpatients and 35 percent in home health dependent services can be reduced. In the health care industry, in 2020, around 250 billion dollars rupees were spent, which can be directed to Tele-health services. Tele-health provides an alternative during Covid and provides an alternative.

DISCUSSION

Processes and procedures for Tele-health

The potential of Tele-health not be realized with a lack of innovations in health care models, Health care Infrastructure, efforts by healthcare stakeholders and adoption of new technologies [11].

1. Use of virtual urgent care and A I is required to build flexible systems to address the needs of patients. Active and personalized engagement by both the health provider and patient is required for enhanced customer experience and satisfaction.
2. Capabilities and systems are needed for a more continuous exchange of information and sufficient patient data to be transferred between stakeholders. In Addition, self-administered kits (for example, oximeters, BP machines) must be made available so that patients monitor their vitals at home [12].
3. Virtualize home care services will require augmented access to and use of monitoring devices remotely customized to specific diseases. Providers may be taught to use these devices in their care plans.
4. Tech-enabled home medication administration can be considered, and processes and tools can be educated to the patient.

CONCLUSION

In Tele health care, integration of online health care and virtual health solutions fetches healthcare in the home, growing the ease for patients to take care when they need it and the likelihood that they will take better care of themselves. Tele-health can also make care more efficient and economical. The research believes that Tele-health services can be a new phenomenon in health care if,

overall a consumer-integrated front door is developed along with segmenting the population-based on diseases and home-based diagnostics and equipment can be administered. Building the competencies of the service providers is needed. Outcomes scaling of Tele-medicine is required to advocate it to the patient and further improve its scope. New models and technologies are required to serve the bottom of the pyramid.

ACKNOWLEDGEMENT

The authors are grateful to the management of Graphic Era Deemed to be University and Graphic Era Hill University Dehradun for providing all necessary facilities.

FUNDING - None

CONFLICT OF INTEREST - None

ETHICAL APPROVAL - Not required

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How to cite this article

Rupa K Malhotra, Shipra Gupta, 2021. Tele health in the digital era during covid -19 a case study of Uttarakhand. Jour. of Med. P'ceutical & Allied. Sci. V 10 - S 2, 2016, P- 109-112. doi: 10.22270/jmpas.2021.V10S2.2016