

Teledermatology: An Alternative Service Delivery Channel for Outpatient Care During COVID-19 Pandemic in a Tertiary Government Healthcare Facility in Rural Area

Dr Vikrant Kanwar¹, Dr. Puneet Khanduja², Dr. Nisha Salaria³,
Sushila Kumari⁴

¹Assistant Professor, Department of Hospital Administration AIIMS Bilaspur, Himachal Pradesh, India

²Senior Manager and Lead, Health and Nutrition Microsave consulting, New Delhi, India

³Free-lancer Researcher, Himachal Pradesh, India

⁴Nursing Officer, AIIMS, Bilaspur, Himachal Pradesh, India

Corresponding Author: Dr Vikrant Kanwar

DOI: <https://doi.org/10.52403/ijhsr.20231138>

ABSTRACT

Background: The pandemic of coronavirus disease of 2019 (COVID-19) has resulted in massive disruptions and changed the way we live. There has been extensive advocacy for social distancing norms and lockdowns which have largely impacted the outpatient healthcare delivery in hospitals. In recent past, there is a perceived urgent need of shifting from, in person visits to virtual care in the field of tele dermatology. This study reports the implementation and utilization of tele dermatology services during different phases of COVID-19 pandemic.

Materials and Methods: This is a retrospective observational study that identified all in-person and teledermatology outpatient nonprocedural visits in the month of January and March 2020 (before Covid 19), May (during lockdown) and July (after lockdowns) 2020, at a single healthcare academic institution. Tele consult volumes were assessed weekly and consultation patterns were compared.

Results: The results depict sharp 100% fall in physical in person dermatology consultations during lockdown and a complete 100% transitions towards the teledermatology and this trend continue even after lockdown where the tele-dermatology consultations were sought as 30% of total consultations.

Discussion: In a relatively short time frame of 4 weeks during lockdown, a single healthcare center was able to dramatically shift to teledermatology visits to provide outpatient dermatology care and thereafter it becomes new normal way of getting consultation.

Conclusions: This study depicts that teledermatology can be an alternative for outpatient dermatology care while the government delivery systems quickly adapt to new normal. There is a realized potential to expand tele-health services to improve access to healthcare for masses.

Keywords: Teledermatology, Telemedicine, Healthcare, COVID-19

INTRODUCTION

The pandemic of corona virus disease of 2019 (COVID-19) has resulted in massive disruptions and changed the way we live.¹ This has triggered all the stake holders to be very reactive and slightly proactive in their approach especially governments at all

levels across geographies.² There has been extensive advocacy for social distancing norms and imposing large scale lockdowns. This has severely impacted the out-patient healthcare delivery in hospitals, especially the government hospitals.² In a healthcare delivery system like India, there is high

dependence on government hospitals for care owing to socio economic status of populations. The lockdowns and resulting restrictions have nudged the governments and hospitals to think of alternate service delivery mechanisms. There is a perceived urgent need of shifting of in person visits to virtual care particularly in case of outdoor patients and follow up cases. Tele dermatology is one such domain emerging strongly and promisingly with the advent of technology and adoption. This have been facilitated by policy formulations and guidelines issues by the government.

The Ministry of Health and Family Welfare (MoHFW) has issued the Telemedicine Practice Guidelines in partnership with NITI Aayog on March 25, 2020.³ Subsequently, these guidelines been amended a clause in the Medical Council of India Act. This permitted the healthcare professionals to provide virtual or remote health care through audio, video consultations and defining the ways, means of legal prescriptions. Similarly, the United States Congress also passed the Corona virus Preparedness and Response Supplemental Appropriations Act that included provisions to improve access and coverage for telehealth services under broader circumstances.

As per current guidelines, telehealth visits are primarily defined as an interactive audio and video association that permits real time communication between the provider and the patient at home. The platform deployed at the hospital had additional telehealth services which included virtual check-ins (brief synchronous communications) and e-visits (asynchronous patient-initiated communications) through an online portal service being offered. As expected in the case of telehealth modality, the early adoption was found be sluggish in our case as well. The ecosystem triggered by

lockdown, social distancing norms and availability of internet services at last mile along with new regulations resulted in improved the utilization.⁴

This study intends to report the trend of implementation, utilization and rapid adoption of tele dermatology services at rural government medical college in Sub-Himalayan region during COVID-19 pandemic.

MATERIALS AND METHODS

This descriptive study was conducted at a tertiary government healthcare academic institution of North India. It is an 802 bedded hospital with 14 specialties and 10 super-specialties. The telemedicine infrastructure was placed in April 2020 after the country wide lockdowns were enforced in the last week of March, 2020. A software prescribed by the Government of India was used to provide realtime tele-consultations at this center. The care providers were the senior consultants of the Dermatology department of the institute. The tele-dermatology consultations were given twice a week (Fridays and Saturdays). To draw comparative analysis and inferences encompassing dynamic situations, we analyzed the data for the months of January 2020, March 2020, May 2020 and July 2020. The months were selected, to establish a comparability as there were no Covid 19 cases in the month of January and physical OPDs were functional in full steam. There was a lockdown period starting March through May. In July 2020, there were relaxation in the lockdown and routine in person visits were also started in the hospital. The Tele-consulting volumes were assessed for 2 days of week i.e Fridays and Saturdays, across these 3 months and consultation patterns were compared and analyzed. The Descriptive analysis of OPDs was carried out to see time trend relations.

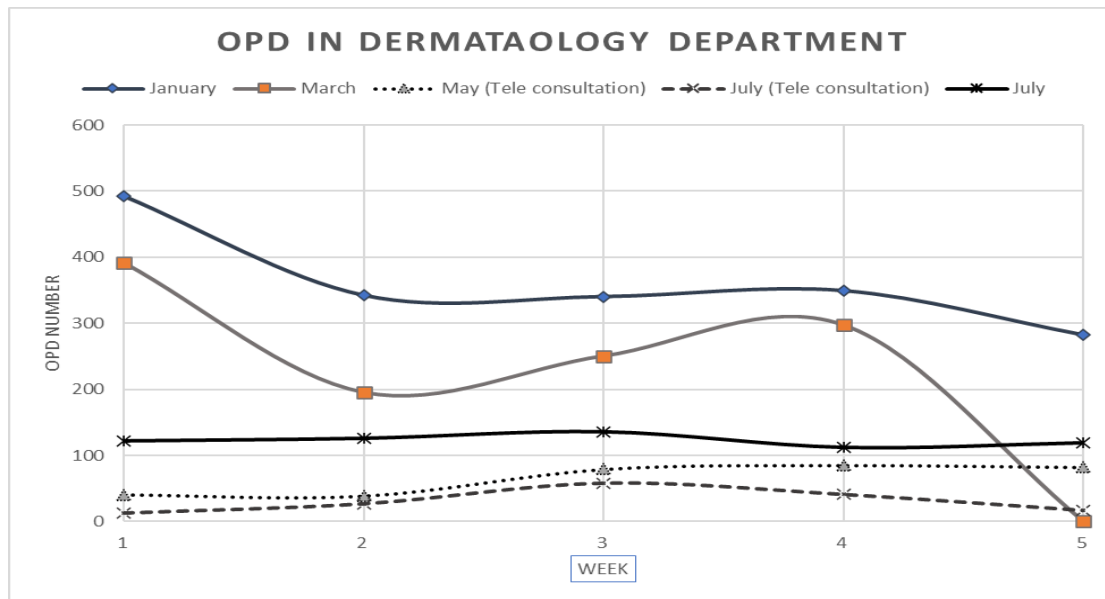


Figure 1: OPD trend in dermatology Department.

RESULTS

A descriptive study was performed to assess the impact on dermatology OPD services during the lockdown. Adoption of tele-dermatology platform by the patients was observed. The patterns of consultations were compared across pre-covid months i.e., Jan, March 2020; one-week lockdown in March; during complete lockdown i.e., May 2020 and after lifting the lockdown, in July 2020. The routine dermatology consultations during pre-Covid 19 era were in the range of (250 to 450 for 2 days) in a week. All the consultations were physical in person visits to seek care. When lockdown was imposed in last week of March, the consultations which were in person only, steeply declined to zero. The tele-medicine set up was installed in 3rd week of April. Interestingly, the patients started availing tele-consultations services and there was a rise in number of OPDs in the month of May which was in the range of 40 to 80. The month of May was the period of complete lockdown and services offered were only in the form of tele-consultations. After the lockdown was lifted partially, in the month of June, the in-person visits again started to pick up with tele-consultations being availed steadily.

DISCUSSION

Tele-medicine provides healthcare services from a remote distance without need of physical contact with patient. It needs application of information and communicating technologies. In covid-19 pandemic, it had emerged as a great boon in healthcare system while minimizing the transmission of infection to both healthcare providers and patients. In dermatology; apart from history, the diagnosis being more visual dependent; is well suited for teledermatology.⁵ Its relevance become more significant in region like Himachal Pradesh which is dominated by lie in high rugged terrain, criss crossed by flowing rivers and their tributaries. In such region, transportation become extremely difficult due to blockage of roads in snowy winters and add to wastage of time and expenditure while reaching health care facility.

In Himachal Pradesh, 90 % of population belongs to rural community with literacy rate more than 80 %. So, with advent of proper technology and infrastructure and prevailing Covid crisis, in a relatively short time frame, there was a substantial shift towards teledermatology care, to provide outpatient dermatology services. This study highlights the ability for a medical system in public sector to rapidly adjust to circumstances and shift virtually all care to

telehealth-based delivery. The results presented here show that during the lockdown, the tele dermatology acted as the only medium of getting consultations. After the lockdown was relaxed, it was still being availed establishing the new normal of getting the medical advice. The study indicates towards the acceptance and adoption of teledermatology. It establishes that in one way, there is sharp increase of 100% teleconsults during lockdown whereas on other way, there is 30 % share of total consultations (in-person and virtual). This modality can be very beneficial especially in follow up cases where diagnosis is already established and patient just need consultation regarding dose adjustment/change in medicines. This could mark beginning of new technology driven healthcare service by the government public sector institutions.⁶

Realtime teledermatology was the practice at this center, it has an advantage of live videoconferencing used for consultation so patient can directly ask question to treating doctor and lesion can be viewed from various angles. However, bounding to location with fast internet and appropriate equipments at both ends with scheduled appointments are limitation of real time conferencing. These shortcomings can be managed by incorporating store and forward technology of teledermatology and making it hybrid one.

As far as the diagnostic accuracy is concerned, few studies have established the concordance rate of as high as 90 % with respect to face-to-face visit and American Telemedicine Association also reported high diagnostic concordance among teledermatologists.^{7,8}

The study had limitations of having data from a single site only. We don't have data around provider and patient satisfaction score. Moreover, this study does contain any comparison between physical OPD or teledermatology in terms of accuracy of diagnosis and quality of care.

CONCLUSIONS

This study depicts that teledermatology can be an alternative for outpatient dermatology care. The government institutions have the capability to adapt to the new normal and can continue to provide healthcare services to the needy ones. The increased utilization of tele-dermatology during this crisis indicates towards the beneficiary acceptance as well. With improvement in technology, equipment's and literacy, there is a realized potential to expand tele-health services to improve access through virtual health care in the future beyond pandemics.

Declaration by Authors

Acknowledgement: None

Source of Funding: None

Conflict of Interest: The authors declare no conflict of interest.

REFERENCES

1. Kanwar V, Novel approaches to combat the impact of COVID-19. Healthcare radius. Jul 2020
<https://www.healthcareradius.in/management/26521-novel-approaches-to-combat-the-impact-of-covid-19>.
2. Keesara S, Jonas A, Schulman K. Covid-19 and health care's digital revolution. N Engl J Med 2020;382: e82.
3. Board of Governors in supersession of the Medical Council of India. *Telemedicine practice guidelines*. 1st ed. India BoG-MCI. India, 2020.
4. Krishnan G, Kanwar V, Bhatnagar T, Uthayakumaran N. m-Health: A Critical Analysis of Awareness, Perception, and Attitude of Healthcare Among Providers in Himachal Pradesh, North India. *Telemed and eHealt*.2016;22:75-688.
5. Pala P, Bergler-Czop BS, Gwizdź JM. Teledermatology: idea, benefits and risks of modern age—a systematic review based on melanoma. *Adv in Dermatol and Allergol*. 2020; 37:159.
6. Pasquali P, Sonthalia S, Moreno-Ramirez D, Sharma P, Agrawal M, Gupta S, et al. Teledermatology and its current perspective. *Ind Dermatol Onl J* 2020; 11:12-20.
7. Piccolo D, Smolle J, Wolf IH, Peris K, Hofmann-Wellenhof R, Dell'Eva G et al. Face-to-face diagnosis vs telediagnosis of

- pigmented skin tumors: a teledermoscopic study. *Arch Dermatol* 1999; 135: 1467-71.
8. Arzberger E, Curiel-Lewandrowski C, Blum A, Chubisov D, Oakley A, Rademaker M, et al. Teledermoscopy in high-risk melanoma patients: a comparative study of face-to-face and teledermatology visits. *Acta Derm Venereol* 2016; 96: 779-83.

How to cite this article: Vikrant Kanwar, Puneet Khanduja, Nisha Salaria, Sushila Kumari. Teledermatology: an alternative service delivery channel for outpatient care during COVID-19 pandemic in a tertiary government healthcare facility in rural area. *Int J Health Sci Res.* 2023; 13(11):317-321. DOI: [10.52403/ijhsr.20231138](https://doi.org/10.52403/ijhsr.20231138)
