

Orthopaedic OPD clinic changed during COVID-19 with Teleconsultation presenting The Good, the Bad and the Ugly aspects: Perspective from a developing country

Abstract

The orthopaedic clinics and departments during the COVID pandemic have endured a phase of uncertainty. The healthcare provider and recipient have been affected alike. Surgeons have faced innumerable challenges in providing adequate support and guidance to recipient for an effective orthopaedic management.

The traditional orthopaedic outpatient clinics are a lively entity. The patient presents with varied degrees of debilitation associated with either an injury or a pathological disease entity. The outpatient presentation includes disablement aggravated due to old age, degenerative disease process or an unresolved painful joint pathology. Routinely, clinics have high occupancy and are crowded with distressed disabled patients. The recipients have profound need for assistance in clinics due to either the temporary disablement or permanent disability during their outpatient management and care.

Teleconsultation has emerged as a safer and viable option for maintaining doctor-patient communication and providing solutions to their medical problems. The positive impact on the health care functioning has been undeniable. The good has been associated with bad and ugly aspects related to teleconsultation or telemedicine for both the healthcare provider and the recipient. The positive impact of an easy availability for a healthcare guidance is over-shadowed by the negative aspect involving the legal issues in its usage with additional vulnerability for abuse and misuse of available data during a teleconsultation. They are important factors for advocating telehealth in future.

The surgeon's need to follow the established guidelines for the virtual outpatient clinic. The orthopaedic surgeon's awareness of the nuances of teleconsultation will empower them to practice safe and effective management. Their focus should remain to provide the patient centric services for the well-being of the recipient.

Keywords:

Covid-19; Teleconsultation; Orthopaedics; OPD; Outpatient practice; Coronavirus; Surgical clinic; Fracture clinic; Telemedicine; Virtual OPD;

INTRODUCTION:

Dynamics of healthcare in India are skewed as in most of the developing countries. There has been a paucity of allopathic doctors (1:10926 population) against the recommended World Health Organization's minimum criteria for allopathic doctors of 1:1000 population [1,2]. There has been tremendous pressure on the already deficit health care system in India and it could be felt even more during the COVID-19 pandemic with limited resources and infrastructure [1,3].

Ever-since the pandemic affected the normal social interactions of the society, the healthcare has been adopting and innovating to find the effective ways to remain connected to the patient so as to provide them with relevant guidance and management strategies. Telemedicine (TM) was in a nascent stage in pre COVID-19 era and it was under critical evaluation as a means for providing the clinical care [4]. TM in Covid-19 era has emerged as an alternate viable option, presently adopted for regular visits, follow-up visits or in the management of non-emergency orthopaedic cases [5,6].

The orthopaedic outpatient clinic (OPD) have evolved from a regular clinic to a COVID appropriate or virtual OPD. We present a brief about the OPD's functional aspects. TM has emerged as an integral part of the daily OPD practice in COVID-19 era. We reviewed the literature and present our perspective on the positive impact, the negative outcomes and the unwarranted ugly issues involved with a virtual orthopaedic OPD. We also assess its impact on the health-care provider (HCP) and the recipient.

REGULAR ORTHOPAEDIC OPD:

In the pre-COVID period, there were myriad ways of conducting a regular traditional orthopaedic OPD in developing countries. Generally based on personal observation, the government and corporate or private institutions orthopaedic OPD's are managed by multiple orthopaedic specialists in addition to super specialists, paramedics and trained staff along with the general duty assistants. The essential requirements have been multiple OPD chambers involving either a hall setting or smaller multiple cubicles along with a waiting and registration area. Additionally, associated with a plaster room, dresser area and physiotherapy room with assistants, subordinates and support staff to assist in the management of the outdoor orthopaedic patient. The OPD's are generally crowded since an orthopaedic patient needs to be assisted. The patient may have an associated temporary handicap or a permanent disability furthermore requiring mobility support devices and personnel for managing one's routine daily activities. The OPD in corporate or private institutions may be better spaced-out based on the available infrastructure. An additional advantage in corporate institutions has been to keep the flow of patients better organised and streamlined with an appointment-based consultation. However, in general the orthopaedic patient requirements remain similar to government setup, in terms of supportive manpower and mobility devices. The usual operating protocol in pre-COVID OPD followed a close contact between the HCP and the recipient. Also, the HCP has multiple interactions with the recipient as one has to address issues of physical evaluation, radiological assessment, dressing or plaster application or rehabilitation training in the OPD.

COVID-19 ERA PHYSICAL ORTHOPAEDIC OPD:

In COVID-19 era, the orthopaedic clinics in the hospitals have adopted the necessary COVID-19 appropriate behaviour. The need of the hour was to reduce the unnecessary healthcare visits and explore alternatives for face-to-face triage and OPD visits. Use of One patient- One attendant norm with social distancing for a regular physical OPD was advocated [7]. In our personal experience during COVID-19 era, the "Six S" needed for an effective OPD included (1) Space segregation, (2) Screening of patient, attendant & staff, (3) Seating with social distancing measures, (4) Sanitization & disinfection, (5) Safety gears and (6) Staff management.

The OPD management starts with the registration of a patient [7]. The "e-registration" can be promoted, practiced and implemented amongst the educated class with a provision for telephonic or spot registration for the uneducated class. The purpose was to minimize physical appointments and do a planned scheduling of OPD visits [7]. The help desk should be instructed for thermal screening of the patients and attendants. The protocol to inquire CCCATTTT- Contact, Containment, Cough, Appointment booking, Temperature, Travel, Trouble can be followed [7]. The OPD staff should be reduced in numbers with regular rotation system and re-allotment so as to maintain their health and mental status. Quarantine facility and frequent breaks in duty should be provided to the staff.

The infrastructure can be modified with installation of sanitized transparent barrier, sheets or ceilings to separate the doctor sitting area from the patient sitting and examination area. The waiting area in an OPD should have spaced out seating arrangements [7]. OPD hall should have ventilation of more than six air changes per hour and minimum hourly averaged ventilation rates of more than forty liters per sec per patient with an adequate number of windows and exhaust fans [7]. Rooms should be disinfected after every patient with one percent hypochlorite solution; especially the furniture like patient seat and examination couch which comes in direct patient contact. The use of face masks, cover gowns and hand sanitiser as routine protection have been identified and implemented in routine OPD practice [3]. Couches should be covered with waterproof sheets which can be disinfected easily [7].

The OPD chamber requirements normally are for a separate assessment and procedure room. A separate follow-up OPD chamber for dressing, suture removal and plaster application should be developed [3]. The use of a plaster cutting cast oscillating saw is not considered an aerosol generating device if used safely [7]. Removable splints, plaster slab and braces are preferred to avoid plaster cutting saw usage. Guidance states that for both COVID positive and COVID unknown the plaster technician should wear mask which are fluid resistant type, single-use apron and gloves & protective eyewear.

Cover OPD computer with transparent plastic sheets preferably to allow easy disinfection [7]. Use of e-prescription/ digital investigation reports/digital payments should be preferred to reduce visits. Give one stop treatment, minimal follow up visits and avoid inter-departmental referrals, if possible. Minimize investigations and follow-up radiographs. They may be advised only when one expects that it may have a drastic impact on patient's management. Shift image intensifier to OPD to avoid visits to radiology department. Use videos or online rehabilitation tools for patient training and management.

TELECONSULTATION AND VIRTUAL OPD:

The pandemic had affected the world with its unprecedented and unique challenges. Virtual OPD has been an innovative method of communication during the pandemic. TC provides with its very own "the Good, the Bad and the Ugly" aspects for the HCP and the recipient.

The good issues of TC have been an easy availability and better reach of clinical care with economic viability and high recipient satisfaction rate [4,8]. TC avoids any direct contact or exposure during COVID-19 for HCP and recipient⁷. TC has been rewarding in providing medical consultations to inaccessible remote areas with poor transport facilities and vulnerable physically challenged patient group [9]. Over-crowding of the regular OPD can be minimised with TC [10]. TC can provide important information on selfcare for an orthopaedic patient and can also channelize the medical management of orthopaedic issues which can be resolved without physical assessment [10]. TC has been effective in virtual follow up for low risk surgical category procedures [6]. TC allows follow up evaluation of operated cases, providing the inputs on physiotherapy or home-based exercises programmes and guidance for the need to consult for physical examination [9]. TC has been effective for the pre-operative assessment with relatively similar outcomes as with an in-person consultation. Though for the paediatric age group, preference have been for an in-person consultation for reasonable assessment [6]. TC allows scheduling of OPD consults as per the provider's own personal choice in relation to timing and duration from the safe confines of either home or clinic cubicle. TM has also been contemplated as a useful tool for the assessment, follow-up and management of orthopaedic joint replacement patient group with the help and use of web-based assessment tools to a reasonably accurate guidance [6].

The bad issues of TC have been the poor adoption of TM in developing countries with wide difference in rural and urban settings of the community at large [11]. In developing countries, there are areas with significant lack of awareness and high implementation costs denying the rapid infrastructure development for virtual OPD [6,11]. The prerequisite for an effective TC has been a robust administrative team with a bankable infrastructure which is mostly lacking due to financial constraints [6]. There are issues of good audio or video quality with inadequate lightning compounding the effectiveness of a TC due to poor network or broadband speed [11]. The virtual interaction lacks physical examination, has poor perceived benefit of virtual care and financial viability may be a hindrance [4]. The financially challenged groups cannot afford quality smartphones and internet connectivity so as to maintain adequate communication [11]. Poor educational and technological literacy rates in developing countries are other compounding factors for the rapid development of TC

[11]. The access to multiple channels of communication for an effective TC can be a hindrance [6]. The sharing of personal information and the medical records during a TC have susceptibility for misuse and hence, HCP and recipient needs protective laws and administrative guidelines to keep the TC ethical and maintain data confidentiality and privacy to curb the menace linked to social interactions. Privacy issues and trust factors are the other issues of serious concern [9]. The financial implication for a virtual OPD as compared to a regular OPD has been an area of debate, dissent and discord. Hence, the virtual OPD in developing countries are generally considered as an obligation by the HCP to the recipients to guide them regarding the treatment and follow-up.

The ugly issues of TC have been the medicolegal liability and implied restrictions based on a set pattern of rules and regulations [4,6]. There has been a fickle line of demarcation between a consultation being deemed appropriate according to medical ethics and inappropriateness on part of the HCP or the patient. There have been reports of unusual incidences related to abuse either verbal or sexual misconduct during a virtual consult where the HCP of opposite gender have been targeted by the recipient [12]. There remains an undefined level of vulnerability for harassment of HCP by an unscrupulous and unauthenticated recipient. The HCP may be subject to social media trolling which may garner negative feedbacks from the consumers and lead to mental distress. Stalking of HCP on social media is a genuine threat. TC has unanswered and unprotected issues related to recipient consent taking, proper clinical record keeping, data hacking and cybersecurity vulnerability with compromised privacy of the personal medical records [6]. Fraud and inappropriate insurance amount pay-outs for TC are issues gaining importance. The lack of concrete legal background presently to safeguard the HCP and recipients have hampered the progressive use and growth of TC [13]. The TC was granted a legal framework as an "emergency provision" during the COVID-19 pandemic [13]. The authenticity and the admissibility during times of normalcy remains an enigma for HCP.

DISCUSSION:

There has been an apprehension amongst the HCP and recipient regarding the infection transmissibility in the COVID-19 era pandemic, posing unique challenges in the conduction of the regular orthopaedic OPD. To mitigate the concerns, there has been a shift in focus from a regular orthopaedic OPD to a TC OPD to avoid overcrowding in OPD's [9]. The feasibility of maintaining the follow up and achieving high satisfaction rates amongst the respondents has been reported extensively [9].

COVID-19 pandemic has debunked the myths related to TM. The need of the hour during COVID-19 pandemic was to establish a link between the HCP and the recipient to remain connected and approachable. The governments have allowed the use of TM within the legal ambit and defined protocols. There has been an increasing widespread usage of TC in the developing countries too. Many newer avenues have been embarked upon for the future use of TM for both the HCP and the recipient [6]. TM has emerged as an "evil necessity" beyond its present utility during the COVID-19 pandemic.

The improved audio-visual communication technology has revolutionised the ways of inter-personal connectivity and interactions in the COVID-19 era. The need for continuous upgradation of the systems and technology, refinement of TM regulations and widespread utility adoption of TC for patients and HCP's have become a necessity [4]. The medical records need to be computerised and made digitally available for easy access to the records in near future scenario of health-care management. The evolving models of virtual OPD should therefore be discussed.

The financial implications on orthopaedic practice during the pandemic have been immense. The OPD practice has been affected in COVID-19 era and the practice modules have been modified to include virtual OPD as a routine inclusion. The study on Indian orthopaedic surgeons OPD practice during the COVID-19 first wave indicated a 90% reduction in OPD patient flow for half of the practicing orthopaedic surgeons and about 75% reduction in their earnings [10]. The study based on Nepalese orthopaedic surgeons in a hospital based OPD practice showed about 80% reduction in OPD numbers and suggested a significant reduction in numbers on the operative procedures in the initial lockdown period restrictions [14]. The survey conducted amongst Polish orthopaedic surgeons estimated 20-60% reduction in orthopaedic practice and was associated with high mental stress levels amongst the respondents during the COVID-19 era. The study indicated that only one out of every five practising surgeons were willing to continue with TC in the future [15]. The financial loss can be partially compensated by TC for a clinician. However, a disparity regarding the remuneration for a TC remains an area of discord between the HCP and the recipient [13]. Any disparity discourages the progressive use of TC by HCP.

The orthopaedic surgeon awareness of both the progression and the limitations of TC will allow for a safe clinic management. Presently, there are numerous regulatory challenges, legal tele-health issues

with lack of policies to protect from a malpractice accusation for the HCP [13]. The surgeon therefore, needs to carefully weigh the positive and negative impact of TC on the recipient. In addition, one will need to follow the established guidelines for an effective meaningful TC. The development of standard laws by government's with well-defined reimbursement policies and organised research methodology will benefit the HCP to overcome the negative impacts of TC [13]. We should educate and train the future generation of HCP's for TC. A shared partnership between HCP and health care institutions will empower the orthopaedic surgeons to utilize TC as an effective risk-free tool to enhance their OPD practice.

CONCLUSION:

The doctor patient relation has evolved and the new technology driven systems have given the virtual OPD setting with its good, bad and ugly effects on the providers and patient alike.

The orthopaedic surgeon awareness of the nuances of TC will further empower them to practice a safe and effective OPD. The surgeon needs to follow the established guidelines and norms for TC. The focus should remain to provide the patient centric services for the well-being of the recipient or the patient.

CONSENT FOR PUBLICATION:

The study did not involve any human or animal and no informed consent was taken.

ETHIC APPROVAL:

Not applied for as the study was a perspective with no personal data being presented or disclosed.

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ABBREVIATIONS:

Out-patient Department: OPD

Telemedicine: TM

Teleconsultation: TC

Health care professional: HCP

UNDER PEER REVIEW