

World Journal of *Clinical Cases*

World J Clin Cases 2021 January 16; 9(2): 291-520



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ABOUT COVER

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The *WJCC* is now indexed in Science Citation Index Expanded (also known as SciSearch®), Journal Citation Reports/Science Edition, PubMed, and PubMed Central. The 2020 Edition of Journal Citation Reports® cites the 2019 impact factor (IF) for *WJCC* as 1.013; IF without journal self cites: 0.991; Ranking: 120 among 165 journals in medicine, general and internal; and Quartile category: Q3.

RESPONSIBLE EDITORS FOR THIS ISSUE

Production Editor: Jia-Hui Li; Production Department Director: Yu-Jie Ma; Editorial Office Director: Jin-Lai Wang.

NAME OF JOURNAL

World Journal of Clinical Cases

ISSN

ISSN 2307-8960 (online)

LAUNCH DATE

April 16, 2013

FREQUENCY

Thrice Monthly

EDITORS-IN-CHIEF

Dennis A Bloomfield, Sandro Vento, Bao-gan Peng

EDITORIAL BOARD MEMBERS

<https://www.wjgnet.com/2307-8960/editorialboard.htm>

PUBLICATION DATE

January 16, 2021

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<https://www.wjgnet.com/bpg/GerInfo/288>

PUBLICATION MISCONDUCT

<https://www.wjgnet.com/bpg/gerinfo/208>

ARTICLE PROCESSING CHARGE

<https://www.wjgnet.com/bpg/gerinfo/242>

STEPS FOR SUBMITTING MANUSCRIPTS

<https://www.wjgnet.com/bpg/GerInfo/239>

ONLINE SUBMISSION

<https://www.f6publishing.com>



Continuity of cancer care in the era of COVID-19 pandemic: Role of social media in low- and middle-income countries

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Author contributions: Yadav SK contributed to study design, literature search, writing, and proofreading; Yadav N contributed to literature search, writing, and proofreading.

Conflict-of-interest statement: No conflict of interest.

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Manuscript source: Invited manuscript

Specialty type: Medicine, research and experimental

Country/Territory of origin: India

Peer-review report's scientific

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Abstract

A novel coronavirus (severe acute respiratory syndrome coronavirus 2) first detected in Wuhan, China, has spread rapidly since December 2019, causing more than 1.4 million confirmed infections and 15000 fatalities (as of April 9, 2020). The outbreak was declared a pandemic by the World Health Organization on March 11, 2020. Isolation, quarantine, social distancing, and community containment measures were rapidly implemented in China, which helped in containing the disease. However, other low- and middle-income countries lack such extensive infrastructural capacities and resources. Cancer patients are particularly at high risk of infection and mortality due to immunosuppression. Hence self-quarantine is recommended for them. Additionally, it is becoming impossible to maintain the continuity of care when cancer patients have to avoid physical visits. Social media applications, e.g., Facebook and WhatsApp, can provide educational group program and psychosocial support to these patients while maintain social distancing. We have analyzed their use in this review article and how it could change the follow-up of cancer patients during this pandemic.

Key Words: COVID-19; Telemedicine; Cancer care; Social media; Low- and middle-income countries; Remote monitoring

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Core Tip: Social media is an effective modality in remote monitoring of cancer patients. While using social media, platforms that have end-to-end encryption (e.g., WhatsApp) should be preferred over open platforms (e.g., Facebook). It is recommended to use a

quality classification

Grade A (Excellent): 0
 Grade B (Very good): 0
 Grade C (Good): 0
 Grade D (Fair): 0
 Grade E (Poor): 0

Received: April 10, 2020

Peer-review started: April 10, 2020

First decision: November 20, 2020

Revised: November 22, 2020

Accepted: December 6, 2020

Article in press: December 6, 2020

Published online: January 16, 2021

P-Reviewer: Pan H

S-Editor: Huang P

L-Editor: Filipodia

P-Editor: Wang LYT



single smart phone that should have multiple security mechanisms so that only the clinician can open the social media platform. It is always a good practice to transfer the patient data to a secure hard drive on a regular basis and then delete it from the smart phone.

Citation: Yadav SK, Yadav N. Continuity of cancer care in the era of COVID-19 pandemic: Role of social media in low- and middle-income countries. *World J Clin Cases* 2021; 9(2): 291-295

URL: <https://www.wjgnet.com/2307-8960/full/v9/i2/291.htm>

DOI: <https://dx.doi.org/10.12998/wjcc.v9.i2.291>

INTRODUCTION

A novel corona virus disease 2019 (COVID-19) outbreak was first detected in Wuhan, China in December 2019^[1,2]. Subsequently, it has spread globally, and the World Health Organization has declared it a pandemic^[3]. The World Health Organization reported on April 7, 2020 that globally 1.4 millions are infected, and 15000 persons have died due to COVID-19. This data illustrates the gravity of this disease, which has no vaccine as of now. Without any proven cure and vaccine, the World Health Organization has advised infection prevention as the only proven method to control the pandemic^[4]. More and more countries have announced lockdowns and closed schools and bans on mass gatherings, cinema halls, shopping complexes and factories to prevent the infection. Trains and the aviation sector have also been closed in many countries including India. The biggest challenge for patients with cancer is the inability to access required clinical appointments, traveling to the hospital, and admission and discharge without getting infected. This has impacted the care of cancer patients as collateral damage. Herein we have reviewed the use of social media platforms and how they can overcome the difficulty of physical visits in these times.

DEADLY DUOS: CANCER AND COVID-19

Cancer and COVID-19 form a deadly duo associated with higher mortality. Liang *et al*^[5] reported that cancer patients had higher morbidity and mortality. The frequency of severe events was 39% in cancer patients *vs* 8% in other patients ($P = 0.0003$). Similarly, cancer patients who had received chemotherapy or had undergone surgery recently were at a greater risk of clinically severe events than patients who had not (75% *vs* 43%, respectively; odds ratio = 5.34, $P = 0.0026$). Higher adverse events in cancer patients is due to an immunocompromised state.

LATEST BARRIER IN CANCER CARE: COVID-19

Low- and middle-income countries (LMICs) have high mortality related to cancer. Cost of transportation and treatment, failure of the primary health care provider to recognize the possibility of cancer, and illiteracy are a few major barriers in delivery of cancer care in LMICs^[6]. With the emergence of COVID-19, another barrier has been added to it. Along with social distancing, many countries have ordered lockdowns. More than a third of the planet's population is under some form of restriction. The world's two most populous countries are India and China. While China is an upper middle-class country, India (population of 1.3 billion) is the largest LMIC to declare a lockdown on March 24, 2020. Many other LMICs have restricted their public transportation to prevent further transmission of COVID-19. The challenges faced by cancer patients due to COVID-19 are numerous. Cancer patients undergoing chemotherapy need regular monitoring of their white blood cell counts, and in the case of neutropenia they need treatment. Patients who have completed their treatment need to visit the hospital for physical check-ups and investigations. All of this is difficult to accomplish due to restrictions.

RISE OF 4G AND SOCIAL MEDIA IN LMICS

With the advent of 4G technology, more of the global population is using the internet and social media. A survey^[7] stated that 19 emerging and developing economies had a substantial increase in internet connectivity. Between 2013 and 2014, a median of 42% across these countries said they accessed the internet at least occasionally or owned a smartphone. By 2017, a median of 64% were online. Social media use has also increased in emerging markets. In 2015-2016, roughly 40% of adults across the emerging nations surveyed said they used social networking sites. As of 2017, 53% used social media. This has created a unique opportunity for health care services in these LMICs.

CONVENTIONAL TELEMEDICINE VIS-À-VIS SOCIAL MEDIA

Hospital based telemedicine systems are already being used to carry out continuity of care after primary treatment is over and are being used in both developed countries and LMICs^[8-11]. Although, financially less costly in comparison to conventional follow-up, telemedicine requires equipment and prior appointments. The physical presence of the patient is also needed at a nearby telemedicine center. Social media can provide continuity of care without any physical visit. This is where social media can fill the gap by providing continuity of care without any physical visit. This is a form of consultation at leisure where both physician and patient remain within the confines of their homes. However, a major issue with this form of consultation is the issue of privacy.

PRIVACY ISSUES

General Data Protection Regulation requires businesses to protect the personal data and privacy of European Union citizens for transactions that occur within European Union member states. The HITECH Act in North America is a similar type of regulation. These types of regulations do not exist in most LMICs. India is planning to introduce the Digital Information Security in Healthcare Act to protect the privacy of healthcare data.

The COVID-19 pandemic has changed the mindset of authorities making these regulations, and now many countries are relaxing their regulations. India introduced telemedicine guidelines on March 25, 2020, and a clinician may use any telemedicine tool suitable for carrying out technology-based patient consultation (*e.g.*, telephone, video) connected over LAN, WAN, internet, mobile or landline phones, chat platforms like WhatsApp, Facebook Messenger *etc.*, mobile apps, or internet based digital platforms for telemedicine or data transmission systems like Skype/email/fax, *etc.*^[12] In my opinion, more LMICs should relax their norms for telemedicine practice so that clinicians can provide required services over social media.

WhatsApp can be used because the platform is encrypted, which ensures privacy between the doctor and the patient. No one, not even a WhatsApp employee, can access the information except for the sender and recipient. All the images received may be transferred to a secure hard drive regularly and data from the smart phone can be deleted permanently. This may solve privacy concerns.

SOCIAL MEDIA IN REMOTE MONITORING OF CANCER PATIENTS

A trial of a social media application (WhatsApp) for remote monitoring of cancer patients was studied in India by the author^[13]. Sixty-four differentiated thyroid cancer patients were studied in this trial: 24 were followed up conventionally and 40 *via* social media. There were no significant differences between these two groups regarding satisfaction. More patients in the social media group were "very satisfied." Wound evaluation through remote follow-up was on par with outpatient department follow-up. If all of these 40 patients would have come to our outpatient department follow-up, they would have traveled an average of 930 km per patient.

Eng *et al.*^[14] reported that among 371 cancer survivors, 74% used the internet and 39% used social media for cancer care; 48% felt confident in using online information for cancer-care decisions. Young adults were more likely to use social media for

cancer-care [odds ratio = 1.79 (1.08-2.99), $P = 0.03$]. A review of the available literature on breast cancer survivors using social media concluded that it is a positive experience^[15]. Multiple studies have now proven the effective role of social media in cancer care. Han *et al*^[16] reviewed 18 studies, seven of which were randomized controlled trials. Most studies were conducted for all types of cancer, and some were conducted for breast cancer in the United States with mostly white female participants. Facebook was the most frequently used platform. Most studies targeted healthy participants providing cancer prevention education. They concluded that the use of social media platforms, either as a part of a larger intervention or as the main component of an intervention, was feasible and showed a significant improvement in cancer prevention and management.

CONCLUSION

The COVID-19 pandemic has changed the global landscape of telemedicine, and most governments have relaxed the norms for conducting telemedicine. Social media can be an effective tool in LMICs in remote monitoring of cancer patients due to the increased availability of smartphones and 4G data connectivity. This is particularly suitable for monitoring patients with less aggressive cancers like breast cancer, thyroid cancer, *etc.* However, there is limited evidence on long term outcomes. Safety and reliability of social media applications to deliver remote cancer follow-up needs further studies.

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