

Gynecologic Cancer: New and Follow-Up Patient Appointments in Botswana During the COVID-19 Pandemic

During the COVID-19 pandemic, there have been limited global data on cancer diagnoses and appointments. In the Netherlands, there was a 25% decrease in all non-skin cancer diagnoses and a 60% decrease in skin cancer diagnoses during the COVID-19 outbreak compared with the period before.¹ In Latin America, a survey of 453 pediatric oncohematologists demonstrated that 89% delayed their follow-up consultations,² and in Italy, a survey of 446 patients demonstrated that 44% had follow-up visits canceled.³

A commentary in the American Cancer Society emphasizes the need to expand and leverage telemedicine for oncology visits,⁴ and examples such as Kaiser Permanente in Northern California demonstrate a model for rapidly scaling telemedicine platforms during the pandemic.⁵ However, telemedicine in oncology remains very limited globally.

Oncology care during the pandemic was especially challenging in sub-Saharan Africa during COVID-19 as lockdowns resulted in several cancer centers rescheduling new patient appointments and suspending follow-ups.⁶ However, there have been no quantitative data on the impact of COVID-19 on oncology appointments in sub-Saharan Africa.

We monitored treatment initiation and follow-up of patients with gynecologic cancers who presented to the multidisciplinary team (MDT) clinic at Princess Marina Hospital (PMH) in Gaborone, Botswana, during the COVID-19 pandemic. Botswana, a country in southern Africa with a population of 2.3 million, declared a state of emergency lockdown enforcing extreme social distancing on April 3, 2020. The complete lockdown was lifted on May 21. The clinic at PMH is the primary gynecologic oncology center in Botswana. During lockdown, the clinic continued new patient appointments, but canceled follow-up appointments; follow-up appointments restarted on June 3, 2020.

The MDT clinic uses an outpatient smart phone application called OP Care, which was developed specifically for the clinic and adopted in January 2018. OP Care is able to store oncology records, electronically schedule appointments, and send automatic appointment reminders to patients.⁷ To our knowledge, OP Care is the only such telemedicine system used for oncology care in sub-Saharan Africa during the COVID-19 lockdown. Using the OP Care platform, we assessed the number of attended new patient appointments and missed follow-up appointments by week before and during the lockdown.

There was a statistically insignificant ($P = .06$) decrease in the number of patients who attended new

diagnosis appointments during the lockdown compared with no lockdown (median attended weekly new appointments: 3.5 v 6). During the weeks after the lockdown period, there was a median of 7.5 attended new appointments per week. Care coordination provided by the MDT clinic and use of OP Care to communicate with patients enabled continuation of new patient visits during the lockdown and a return of new patient visits back to baseline after the lockdown.

During the complete lockdown, all follow-up appointments were canceled by the MDT clinic. Thus, the number of unattended follow-up appointments significantly increased during the COVID-19 lockdown period compared with no lockdown (median unattended weekly follow-up appointments: 20.5 v 4, $P < .0001$). Once the complete lockdown was lifted, unattended follow-up appointments returned to baseline with a weekly median of six unattended follow-up appointments. Reasons for unattended appointments included work obligations, family duties, transportation fees, and forgetting appointment dates.⁸

During the lockdown, more than 150 follow-up appointments were canceled. OP Care provided a platform for bulk patient communication, tracking of missed appointments, and rescheduling when appointments could resume. A recent meta-analysis of 18 trials that analyzed text messaging reminders and healthcare outcomes in Africa demonstrated that text messaging reminders improved overall appointment attendance (odds ratio[OR]: 2.03, 95% CI, 1.40 to 2.95).⁹ Specifically for gynecologic cancer, a randomized controlled trial in Kenya on the effect of text messaging on cervical cancer screening attendance demonstrated patients were 8 times more likely to attend screening after a text message reminder (OR: 8.0, 95% CI, 4.7 to 13.7).¹⁰ Before COVID-19, the MDT clinic experienced a 33% increase in patients arriving to appointments ($P = .02$) when comparing the years before and after the implementation of OP Care.⁷

This is the first data demonstrating the impact of COVID-19 on oncology appointments and use of text message-based communication system in Sub-Saharan Africa during the pandemic. We showed proof of concept of the efficiency of OP Care in contracting patients to respond to the dynamic and evolving COVID-19 lockdown and appointment scheduling. Such a platform is a useful tool not just for improving overall appointment attendance, but also as a bulk patient communication tool during COVID-19 pandemic and during future unforeseen situations requiring oncology appointment cancellations in low-and-middle-income settings.

In summary, this is the descriptive data on oncology appointments during COVID-19 lockdown in sub-Saharan Africa. Mobile applications can provide a

platform for tracking missed and attended appointments. There was a significant increase in missed follow-up appointments during the COVID-19 lockdown in Botswana.

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