

Digital Tools Case Study

Quick intro to yourself and any contact details you're happy to share ...

My name is Nirtal Shah and I am a licensed physiotherapist with 20 years of experience in Toronto, Canada at the University of Toronto. I have a masters and a doctorate in physiotherapy as well as a master's in public health. I teach at the University of Toronto as well as work at the sports medicine clinic. I have been involved in mobile health technology, specifically developing mobile apps for rehabilitation, for the past 9 years. I am the CEO of Curovate, a mobile health technology company focused on developing apps for physiotherapy following surgery. I can be reached at nirtal@curovate.com Our website is www.curovate.com

What physio services do you provide? (e.g. specialty, conditions, location, patient demographics)

Over the past 4 years I have developed a mobile app (Curovate) for rehabilitation following a total knee replacement, total hip replacement and an anterior cruciate ligament (ACL) reconstruction. The app provides a patient with daily video guided exercises, counts repetitions and sets of each exercise, tracks progress, monitors adherence, provides exercise reminders daily and has the ability to measure knee and hip flexion and extension range of motion with a patient's mobile device. The rehabilitation protocols provided to patients are based on evidence-based protocols as well as the clinical experience of physiotherapist and feedback from over 100 patients.

What tools are you using to deliver your physio services digitally?

We have been using Curovate for patients following total knee and hip replacement and ACL reconstruction at the University of Toronto for the past four years. The Android version of our app has been available globally for the past three years and we have just released the iOS version of our app in January 2020. The mobile app is currently available via the following links

Apple App Store: <https://apps.apple.com/app/apple-store/id1477712207?pt=120343561&ct=dipg&mt=8>

Google Play Store Link:

https://play.google.com/store/apps/details?id=cura.com.cura&referrer=utm_source%3Ddipg

How have these services replaced face to face contact?

The greatest impact this app has had on our patients at the University of Toronto is that we are able to see better adherence with daily rehabilitation exercises after an orthopaedic surgery. Patients tell us they feel motivated by being able to measure their range of motion at home, see their progress and adherence rates on the app and find the daily reminders helpful. We also have patients who are unable to afford the total number of post-operative physiotherapy sessions and require more home programs and self-management. The app has been very beneficial for this group of patients as well.

What is the clinician's experience of using the digital tools?

As a clinician I find that the app saves me a ton of time in the clinic. I focus on teaching the patient the most challenging exercises, performing manual therapy when required and emphasizing the most important post-operative instructions and ask the patient to use the app for many of the simple post-operative instructions and exercises. There is an in-app video that demonstrates how to wrap an elastic bandage, daily reminders to not sit for too long, to remember to take their medication, a video for how to perform heel slides etc. Also, I am not having to spend extra time printing or emailing exercises to my patients because they are all within the app for each day and week for six months.

Do you have any patient feedback on digital physio service offer?

- Needs assessment conducted with patients (8), orthopaedic surgeons (2) and physical therapists (4) prior to developing the app
- 100+ users globally have provided feedback and suggestions which has resulted in modifications and improvement to the app over the past four years.
- Qualitative research study conducted at the University of Toronto with 12 patients who used the app for 6 months of their rehabilitation.
Thematic analysis revealed the following:
 1. Improved adherence and motivation
 2. Improved patient engagement
 3. Patients want a very high level of personalization from digital health toolsThis qualitative study is being submitted to a peer-reviewed journal to be considered for publication.
- Positive feedback received from patients in person, via app reviews, Facebook posts, Instagram posts and emails.
- Received an ORCHA score of 80% for our mobile app Curovate for data privacy and security, user experience and clinical assurance. ORCHA is “the world’s leading health app evaluation and advisor organization.”

Any top tips to others exploring using digital tools in physio services?

My top tips are:

1. Consider the needs of the patient first.
2. Keep patients engaged with their rehabilitation when they are outside of the health care facilities which is where the majority of rehabilitation occurs.
3. Consider that patients are very likely to accept digital solutions as they are already using mobile devices for most other aspects of their life.
4. There still needs to be a trusted healthcare provider such as a physiotherapist to assure patients that a digital solution is appropriate and safe for them to use.
5. The involvement of physiotherapists and patients is critical to ensure that digital tools that are being developed for rehabilitation are addressing the problems faced by patients and clinicians.