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enabled care

TSA special case study

Using Virtual Reality to manage pain

Overview

Kay Smith is terminally ill. She has an autoimmune disease and is severely allergic to the medication that would cure her. For nearly two decades she has been battling chronic pain with little relief but recently she tried a virtual reality headset and it's changed her life.



Kay Smith presenting at the TSA ITEC Conference in 2018

Eighteen years ago, Kay Smith went to her doctor in North Ayrshire with a chest infection. She was prescribed a common antibiotic, penicillin. But her reaction was anything but normal.

“By the third dose my face was red and swollen. I felt like an elephant was sitting on my chest. I drove to hospital and five minutes later I was in resus and ventilated. They told me never to take it again.”

Every time Kay caught a bacterial infection, doctors tried a new antibiotic, but the results were the same. She was given blood thickeners, steroids and anti-histamines, but nothing worked. Sunbathing triggered the allergic reaction, so did a rapid change in temperature or any pain killers.

“My health got worse. I developed psoriasis, reflux, diabetes and recurrent urine infections. It was always a big fight to get medication because of the risks and no doctors would operate.

Kay was finally diagnosed with lupus, a chronic autoimmune disease where the body’s defence system attacks itself.

“Because of the lupus, my allergies and the E coli in my bladder, my GP wrote to my insurance companies to say I had a high chance of developing sepsis but no way of treating it. They wrote me off as palliative and six months ago I cashed in my pensions.”

Kay is just 54. A former tissue viability nurse, she spent years travelling the UK training clinicians on wound care. Now she lives with her husband, Iain, in a specially adapted bungalow and can only take a few steps without a wheelchair. The pain in her back is so bad that she often goes to bed just hours after getting up.

A unique solution

But today things are different. Kay is getting ready to go scuba diving in Australia. She qualified as a dive master when she was 30 and can’t wait to do it again, this time with a new team of divers, spotting fish in the Great Barrier Reef.

“I sit on the edge of the boat and let myself fall backwards. There’s a big splash and then the peace and tranquillity that scuba diving always brings. I can hear the noise of the bubbles and signal to my dive buddies and we start to swim.”

Of course, Kay gets to scuba dive in Australia and Egypt without leaving her bedroom. She uses a virtual reality headset twice a day to manage her pain.

“Kay had heard about the potential of using a headset and wanted to know the basics of getting started”, “explains Keith Grimes, the GP who first suggested VR to her. “There are some medical conditions it’s not suitable for – things like photo sensitive epilepsy or severe dizziness - and I also recommended some content she might want to try.”

Distraction technique

Keith Grimes has been using virtual reality as a form of pain relief for patients since 2015. His interest was first sparked as a medical student when he used immersive technology to play computer games. But he quickly began thinking how it could be used by his patients.

“I was speaking to this burly rugby player who told me he’d been in tears having a dressing done on his leg ulcer. Shortly after, I treated a lady who had just given birth and had a wound that needed daily care. She was breast feeding and couldn’t take pain relief. All the stars aligned, and I thought, ‘I know how to manage the risk’. I asked if she wanted to try virtual reality, she said yes, and it completely transformed her experience.”

Keith Grimes has now used VR with over 100 patients, mainly as a distraction technique for post-operative wound care but also for people who are scared of blood tests or for minor surgical procedures such as drainage of abscesses.

“I give them my own kit – a mainstream headset I bought on the high street. The NHS approach things with a lot of care and sometimes too slowly”, he laughs. “If I’d asked them to fund it I would’ve been waiting months, possibly years, before I got it – if I got it at all.”

Last year, Grimes formed an online Facebook group, VR Doctors, for anyone interested in ‘virtual, augmented and mixed reality in healthcare’. The group now has over 600 members including clinicians, developers and patients who share their experiences.

Reducing hospital admission

In Barrow-in-Furness, GP Dr Muhammad Farhan Amin has built a VR app for patients with lung disease that encourages them to do breathing exercises at home. It’s been proven to reduce hospital admission.

Nick Peres, head of technology research and development at Torbay and South Devon NHS Foundation Trust, is using 360-degree video to train clinicians, visualising what it’s like to receive good and bad care.

At the Royal Brompton Hospital in London, plans are in place for a study where patients, who are due for major surgery, see an immersive film about the intensive care unit. It is hoped that this pre-operative VR experience might reduce post-operative delirium, a condition affecting patients in intensive care.

For Kay Smith in North Ayrshire, the results too have been startling. “I put on my headset and my mind goes somewhere else. I get a surge of endorphins and the twinges start to ease, but the main thing is how it frees me. I’m free to do what I used to do, I’m free of pain, it reminds me of my life before this illness. I’m no longer a patient when I use VR.”

About TSA

TSA is the industry body for technology enabled care (TEC) services, representing organisations including telecare and telehealth service providers and suppliers, commissioners, digital health businesses, housing associations, emergency services, academics, charities and government bodies.

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