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How VR apps are helping transform mental health support

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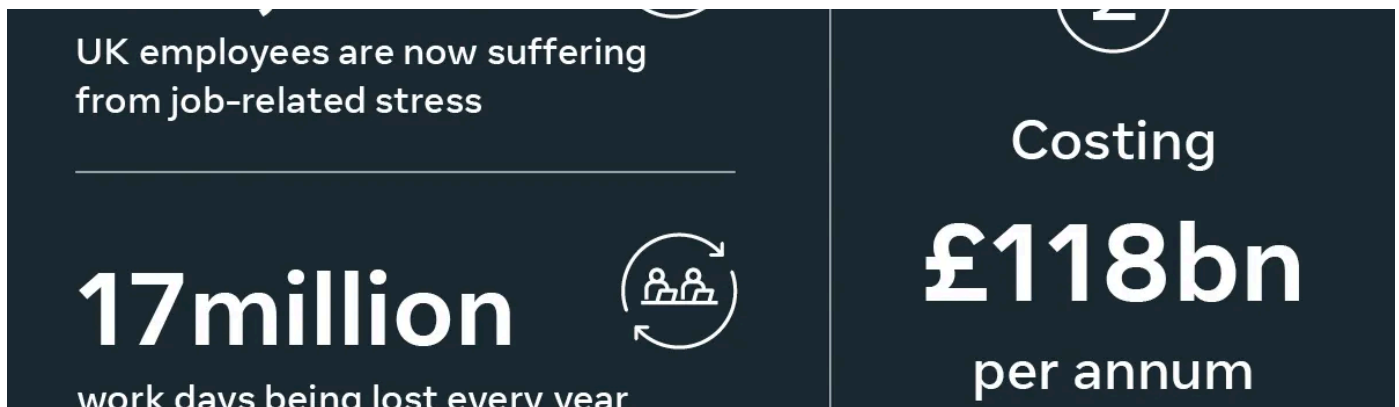


In 1999, a team of American researchers at the [Georgia Institute of Technology](#) became the first group to use virtual reality to successfully treat post-traumatic stress disorder (PTSD) amongst Vietnam War veterans.

Known as 'Virtual Vietnam', this was a landmark mental health study in which participants were exposed to two virtual environments – one placed them inside a Huey helicopter and the other within a jungle clearing. The study showcased the immersive capabilities of virtual reality, with subjects experiencing a 34% drop in PTSD symptoms.

Almost 25 years later, we are now seeing improved technology and increasingly affordable headsets opening up new areas of mental health support, especially in the workplace, where stress and anxiety are having a huge impact.

The cost of work stress



The Health and Safety Executive (HSE), the UK's workplace regulator, [says that](#) 914,000 UK employees are now suffering from work stress, depression or anxiety, resulting in 17 million work days being lost every year. According to [a report](#) produced by the Mental Health Foundation and the London School of Economics, this escalating mental health crisis is costing the UK economy £118 billion per annum.

"Our report reveals the monumental cost to the economy of poor mental health," wrote Mark Rowland, Chief Executive of the Mental Health Foundation. "It also demonstrates the opportunity to make a radical change in our approach to mental health by prioritising prevention, resulting in improved well-being for all and reducing costs to our economy."

Turning to VR immersive technology

Virtual reality is one of the immersive technologies that companies are now turning to in a bid to try and tackle the growing problem of mental health in the workplace. Most of the VR mental health support apps currently available to businesses rely on "virtual reality exposure" (VRE), the technique first used in the Virtual Vietnam trial, which provides an alternative to traditional "imaginal exposure".

Historically, imaginal exposure therapy has been one of the most successful forms of treatment for people with phobias and other anxiety-based conditions, as it forces them to face their fears in a controlled and safe environment. But it also relies on people being able to *imagine* the scenario that causes them distress. VRE immerses subjects far more effectively.

"Cognitive behavioural therapists have traditionally used imaginal exposure with their clients," explains Daniel Andreev, Head of Product at PsyTechVR, "but they're working with the imagination. The biggest problem with asking people to use their imagination is that those people with trauma can find it very hard to close their eyes and imagine a feared object, situation or activity."

Six degrees of freedom

[PsyTechVR](#) is one of the companies taking advantage of VRE to improve mental health in the workplace, employing both virtual and augmented reality (AR) solutions to deliver therapy, research and training.

"We work with Burgan Bank in the Middle East. Financial services are a key sector for us, as this is a highly stressful environment where people regularly work more than 10 hours a day," says Andreev. "Elsewhere, we tend to work with consulting companies such as PwC – we currently have partnerships with their offices in Dubai and Germany."

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When PsyTechVR launched in 2020, there were a handful of competitors operating in the same space. However, the headsets that they were using only provided three degrees of freedom (known as 3DoF), which meant that users could look around their virtual environment, but they couldn't move through it. As Andreev puts it, in this scenario the user is just a "spectator", not an active participant.

In contrast, "When Meta launched their first [six degrees of freedom headset](#), we knew that it would be a game-changer," he says. "From the beginning, PsyTechVR started working with the Meta Quest. And we knew it had huge potential."

The main advantages of VR for mental health support

PsyTechVR operates as software as a service (SaaS), with clients able to modify their offering. This includes choosing which services are provided to employees, what data can be accessed via the management dashboard, and even the option to add biometric feedback.

"Our system can allow users to track important things such as pulse, heart rate variability, and stress or concentration levels in real time," says Andreev. "We embed biosensors into a Quest headset, which can give the HR or well-being director authentic data on how VR treatment is affecting the employee."

PsyTechVR has also established an advisory board, which includes psychologists, psychotherapists, PhDs and medical doctors. This enables HR teams to access expertise that would otherwise be too costly.

"Cost and time are the two main advantages," agrees Andreev. "Having two headsets and two licences costs a lot less than having two psychologists. Everyone working in HR is trying to promote mental health initiatives. We have heard companies say that they are focusing on wellness, trying to encourage employees to go for a walk during the day or play Jenga to relax. But in the same amount of time, an employee can take a headset and turn on virtual mindfulness meditation or anxiety training. With VR, they can do a lot more in the same amount of time."

Improving mindfulness with VR apps

Where VR exposure therapy, including imaginal exposure therapy can help tackle specific issues around anxiety, mindfulness and meditation VR apps can enable HR teams to address more general work stresses.

Zillah Watson is co-founder of [Phase Space](#), a new application that uses Meta Quest headsets to deliver immersive meditation for workplaces and educational institutions. Before launching Phase Space, Watson worked as the Head of the BBC's VR Hub, where she recognised the potential for VR to improve mental health support.

"I'm passionate about VR because when I was at the BBC, I saw the impact it could have. For example, using VR, we took people on a trip to the Democratic Republic of Congo, and people would vividly remember standing in places like Kinshasa Station as if they'd been there," she says.

"With Phase Space, we have a collaboration between amazing creatives and a clinical hypnotherapist," Watson continues. "We're exploiting what VR can do in terms of the power of presence. So if you're stressed at work, or you're an anxious student revising in the library, it can take you away from that."



To develop the Phase Space app and ensure that it has a rigorous testing and control process, the company is working with academics from Goldsmiths University of London, including Professors Sylvia Pan and Marco Gillies. And the team has also partnered with a medical hypnotherapist who provides a guided experience.

"It's a voice-led application," says Watson. "And we work with an experienced therapist, Ursula James, who is also a clinical hypnosis expert. She's worked with stress management in the workplace and educational settings for years."

Phase Space is delivered as a five-day VR course, which takes seven minutes a day to complete. So, it can reduce people's stress and anxiety in a much shorter time frame than many existing therapies. "As one student said during one of our trials: 'Seven minutes is the time that it takes me to go downstairs to get a coffee.' So, that's a big advantage," Watson explains. "If you offered a workshop that took 40 minutes, they probably wouldn't do it."

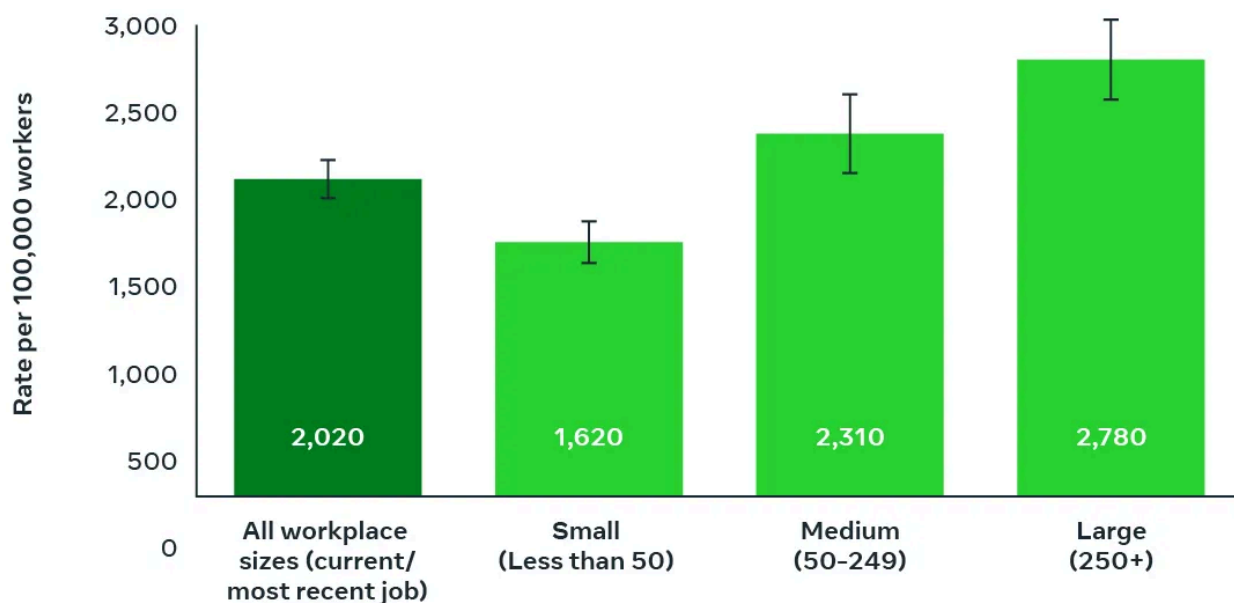
The Phase Space application takes users into an environment that Watson describes as "reminiscent of a spa and cathedral architecture". It's a domed space, which gradually transitions into a kaleidoscope of light. This experience will only be improved as new hardware becomes available.

"At the moment we use Meta Quest 2 headsets," says Watson. "But we're really looking forward to the [Quest 3](#), which will support full-colour Pass-through, enabling us to transition people from where they are now into a different space in an even more beautiful way."

Government support for mental health VR apps

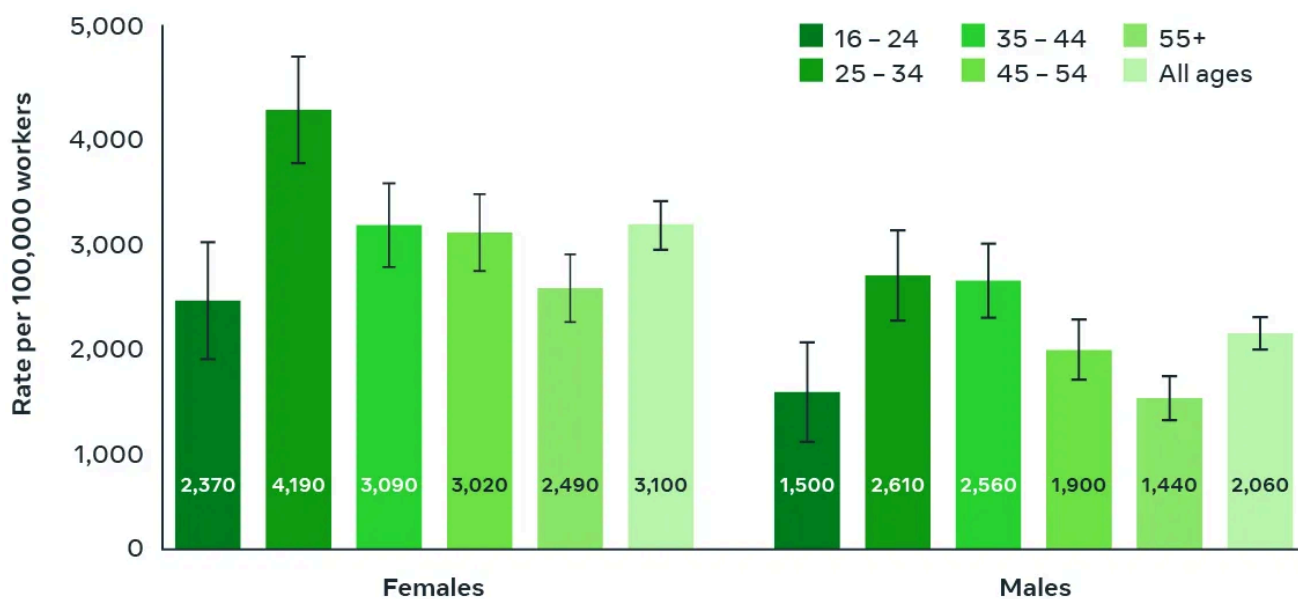
Phase Space is currently being trialled in the UK, with feasibility tests taking place with medical students and employees in a number of selected workplaces. The trials are government-funded in the form of a grant from [UK Research and Innovation's](#) GBP 20m [Mindset programme](#).

Prevalence rates of self-reported work-related stress, depression or anxiety in Great Britain, by workplace size per 100,000 workers, averaged over the period 2019/20-2021/22



Source: LFS estimated annual average 2019/20-2021/22 95% confidence intervals are shown on the chart

Prevalence rate of self-reported work-related stress, depression or anxiety in Great Britain, by age and gender per 100,000 workers, averaged over the period 2019/20-2021/22



Source: LFS estimated annual average 2019/20-2021/22 95% confidence intervals are shown on the chart

The UK's National Health Service (NHS) has played an integral role in establishing the viability of mental health use cases for immersive technologies, enabling the UK government to identify new opportunities and support start-ups through schemes such as Mindset.

One of the key figures in establishing how these technologies can be used in the NHS is Neesa Mangalaparathy. Prior to her role as Senior Solutions Manager at UCLPartners – a health innovation partnership made up of multiple NHS organisations – Mangalaparathy was Programme Manager of an NHS team tasked with looking at how emerging technology could be used by health practitioners.

"One of the immersive technologies that we started looking at was extended reality [XR]", says Mangalaparathy. "It came about as a result of the COVID pandemic. One of the things that we noticed during the pandemic is that providers started using VR headsets and content to deliver some of the healthcare services that they would maybe normally have provided face to face."

During the pandemic, waiting lists increased and the backlogs became difficult to manage. XR provided a different means to deliver healthcare services and still achieve the same kind of outcomes for patients. "It triggered interest at a national and policy level to say, 'Hang on a minute, this is something that we've always put as an emerging technology. But providers are actually looking at this technology at the moment.' We needed to know what they were doing", Mangalaparathy explains.

Mangalaparathy and her team secured a GBP 2M grant from the [Unified Tech Fund](#), which enabled them to run 14 pilot studies and assess whether technologies such as VR could be used in a safe and effective way. It culminated with the release of a report titled ['The Growing Value of XR in Healthcare in the United Kingdom'](#).

"We realised that before the pandemic, you could probably count on two hands the number of providers that were using XR and doing research into how it could affect healthcare", she says. "Following the pandemic, we were looking at nearly 100 different providers and that number kept growing."

New guidelines for mental health support apps

An increase in the number of XR applications focused on mental health support also increases the urgency for regulation. While some developers have created their own advisory boards, this isn't the case for all. So, official bodies are now stepping in.

In 2021, the US Food and Drug Administration (FDA) authorised a product called RelieVRx, making it the first FDA-approved pain treatment that could be delivered at home through a VR headset, meaning that it could be provided under medical insurance in the United States. In the UK, the National Institute for Health and Care Excellence (NICE) has released its [Early Value Assessment for medtech](#), which is the first step in creating guidelines for technology developers looking to use XR in a mental health setting.

"With all of the different mental health apps out there, how do you actually get it to a point where we can say that something is clinically safe and effective? Thankfully, NICE has developed an evaluation framework to speed up the way that it looks at digital therapeutics or digital interventions", says Mangalaparathy.

Getting organisational buy-in



There's a lot for companies to consider when providing mental health support via XR technology, but Mangalaparathy believes that the most important thing is to get support from everyone when doing so, not just the people that happily back new tech initiatives. "Investing in XR and using it to address some of those mental health and well-being issues that are faced by employees in the workplace takes organisational buy-in. So, you need the willingness and appetite to be able to achieve that", she admits.

"And it's not just champions that you need. It's really important that the people that are critiquing this the hardest are brought on board as well. Because when they see the promise, you start moving towards a magical place where a business can appreciate the true potential of what can be achieved with XR", she concludes.

In the 20 years following the groundbreaking Virtual Vietnam study, VR technology has matured to the point where start-ups such as PsyTechVR and Phase Space can now help businesses to improve the mental well-being of their employees.

And as companies grapple with the staggering costs of work stress, the immersive power of virtual reality is providing new solutions as we find ourselves on the cusp of a transformative era of mental health support in the workplace.

Virtual reality empowers organisations to create an environment better able to support employees' mental health. Not only does this help to improve their wellbeing, it can also unlock new potential within a team. Learn how [VR app integrations](#) can maximise the potential of your organisation.

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