

VR to improve female health outcomes: Review of use cases, technologies, content, research and evaluation practices, barriers, and solutions

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Digital Futures lab is an immersive technology lab based at the Torbay and South Devon NHS Foundation Trust (Torbay Hospital). Our lab is one of the first immersive technologies research spaces, established in 2016. Digital Futures work is supported by Health Education England (HEE) to inform national strategies for development, implementation, upscaling and research in immersive technologies. At Digital Futures lab we use different immersive technologies to create interventions that meet the requirements of Torbay hospital's key priorities- healthcare workers, medical students and patients. Our aim is to inspire and encourage discussions on the use and evaluation of immersive technologies in healthcare. To learn more about work, please visit immersive.tsdftr.uk



Summary

Immersive Virtual Reality (VR) is used widely in the domain of patient care, however, the documentation of VR for female patients' health outcomes is limited. This review presents data from 21 selected studies from around the world that have trialled VR to manage and educate women on various health conditions. The aim of this paper is to provide insights into how VR can be used to improve female healthcare, available technologies, content creation, research practices, evaluation metrics, barriers, and solutions. Improving women's health outcomes through education and accessible information is a top priority in the UK Women's Health Strategy 2022 report. VR may prove to be an extremely useful, non-invasive tool that helps women manage anxiety and pain, but it could also be used as an immersive, engaging, and interactive tool to deliver educational experiences. VR has enormous potential to transform female healthcare, but it demands more attention and interest from practitioners, educators, developers, and researchers. This paper hopes to inspire interesting discussions that may lead to wider adoption of VR for female health.

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Introduction

Immersive Virtual Reality (VR) has the power to transform global healthcare through implications on healthcare education/training, and patient experiences. VR offers simulated realistic healthcare scenarios to train healthcare students and workers in technical and non-technical skills. VR is also used to deliver engaging experiences that educate and empower patients to manage their symptoms. Both domains have witnessed incredible advancement in the recent years. The pandemic period pushed healthcare providers to find solutions that addressed the key problem areas of- training, education, patient backlogs and mental well-being of staff and patients¹. VR quickly appeared to be a technology that could help in the management of some of these problems. Specifically, the space of staff and patient well-being and management of anxiety/stress symptoms benefits greatly from immersive VR. Innovative and successful use-cases that came out of the pandemic are encouraging more healthcare providers to explore and adopt VR.

VR's ability to attract the user's attention, encourage focus and potentially have an impact on their presence and immersion, makes it a perfect tool that can be used in adjunct with traditional training and patient practices. Generally experienced through a VR headset that allows 6- Degrees of Freedom (DOF) in a 3D space and blocks out user's physical reality, immersive virtual experiences may also be delivered through screens that track body movements. A quick literature search will present hundreds of healthcare use cases from across the world, published last year alone!

A large portion of these use cases have investigated and shown strong implications on patient outcomes in - enhanced care and improved experiences, empowering patients with education for prevention or self-management of symptoms, rehabilitation, pain/anxiety/stress distraction during procedures/surgeries, improved Quality of Life, and acclimatising patients to new hospital environments before admission. VR for patient care has been documented by the FDA as having benefits such as increased access to care when face-to-face consultation is difficult, pre and post operative anxiety, pain management, less-invasive therapies, and self-management². Very recently, FDA granted approval to a VR behavioural therapy device for pain relief as a class II medical device². Class II devices carry moderate to high risk to the user. In the UK, NHS also has been trialling VR interventions for patient care, which are used regularly in some NHS Trusts with access to VR devices. At our Digital Futures lab (Torbay and South Devon NHS Foundation Trust), VR is used to distract patients from pain and anxiety, acclimatise them to new hospital environments to reduce pre-operative anxiety and educate them on self-management of symptoms.

Most 'VR for patients' use cases tend to address the needs of the general population, only a small percentage focus on 'VR for female health'. Women's health strategy³ developed by the NHS in 2022 is based on a UK wide survey of 100,000 women above the age of 16 years⁴. The findings of this research highlight the importance of bringing to the fore front key female health issues such as menstrual health, pregnancy, and fertility concerns, mental-well being, effects of violence on female health, and cancer³. For years women have experienced poor healthcare experiences and outcomes; women from marginalised communities within the UK have experienced even worse outcomes. Several problems have led to this, such as lack of access to knowledge, greater number of male participants

in clinical trials, women's health concerns not taken seriously, lack of training, misdiagnosis because symptoms in men and women vary (e.g. heart attacks), taboo topics, prioritisation of acute care over preventative care, gender bias, discrimination, language/cultural/economic disparities, which still exist in the society^{5,6}. If both healthcare and VR industries are to become truly inclusive, it is important to focus on the current gaps, celebrate successes, learn, and improve practices.

The aim of this paper is to present a short overview of VR use cases that focus on improving female healthcare experiences. The paper also documents geographical reach, VR devices, content, patient pathways and outcomes, and evaluation metrics. Based on the findings, the paper discusses barriers and provides solutions for adoption of female health VR. The technological scope of this study is only VR (does not include Augmented or Mixed Reality AR/MR applications).

Methodology

This paper presents findings from 21 papers published between 2020-2023, shortlisted by searching PubMed, OVID, EBSCOhost, and Google Scholar database. Variations of the keyword phrase - Virtual reality for women or female health were used. This article does not aim to be an exhaustive or systematic review. All articles included are written in English. All but one study included are Randomised Controlled Trials (RCTs) using one or two-arm designs.

Findings

1. Countries

Findings of this review show that VR is being trialled as a tool for managing female healthcare across the globe. Of the 21 studies included, 4 use cases are from Iran⁷⁻¹⁰, 3 are from United States¹¹⁻¹³, 2 from South Korea^{14,15}, 2 from collaborations between University hospitals in Australia/New Zealand^{16,17}, 2 from Turkey^{18,19}, and 1 each from China²⁰, United Kingdom²¹, Saudi Arabia²², Egypt²³, Spain²⁴, France²⁵, Finland²⁶, and Netherlands²⁷.

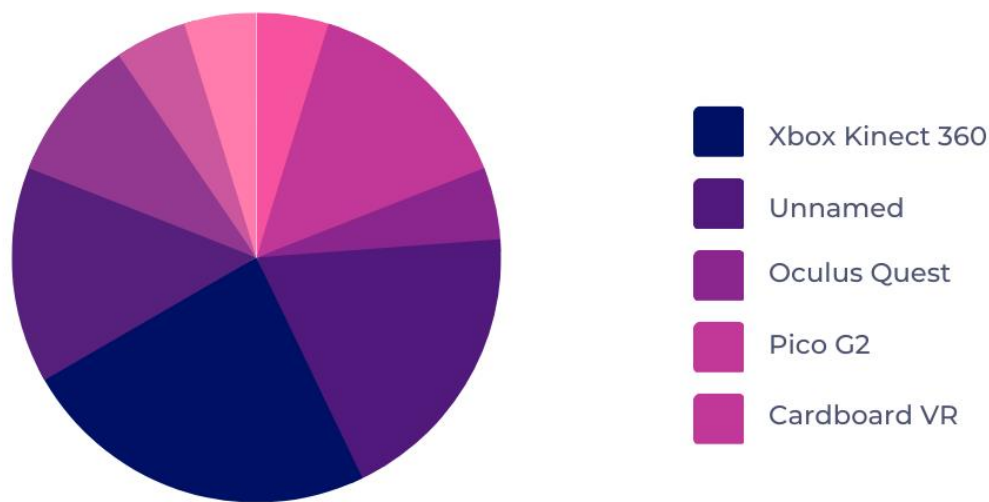
World map of publications



Figure 1: Global reach of VR for female healthcare

2. VR Devices

Figure 2 presents a chart showcasing the different VR devices used and frequency of usage. Eight different VR headsets and Xbox Kinect 360 virtual body tracking systems have been used. Of the 21 studies, 5 have used Xbox Kinect 360^{8,9,19,23,28}, 3 used Oculus Quest 1 and 2^{25,26,29} and a further 3 used the Pico G2^{12,13,16}. Four studies do not mention the type of headset used. Some variations of Cardboard VR have been used by 2 studies. Other headsets mentioned in the literature are- iQIYI Qiyu 2 Pro, Bnext 3D goggles, Oculus Go and the tethered Oculus Rift S.



VR DEVICES

Figure 2: VR devices used in the literature

3. Patient pathway themes and outcomes

Wide range of female health conditions and outcomes have been addressed in the selected papers. Figure 3 presents a map showcasing the different patient pathways and outcomes investigated. Size of the text and circles in Figure 3 presents the frequency of their occurrence in the literature.

Pregnancy related health outcomes make up majority of the use cases (8 of the 21 studies)^{10,12,13,15,18,20,22,24}. VR has primarily been used to distract women from anxiety and pain during labour/c-section and, dilation and curettage. This is followed by two use cases that focus on VR for stress reduction in pregnant women and one educational VR intervention for teaching pregnant women suffering from gestational diabetes, techniques to manage their condition.

Breast and ovarian cancer related VR interventions are the second most used (3 of the 21 studies)^{11,16,23}. The primary health outcome investigated is physical and mental well-being, and Quality of Life (QOL), followed by pain distraction, and management of hot flashes.

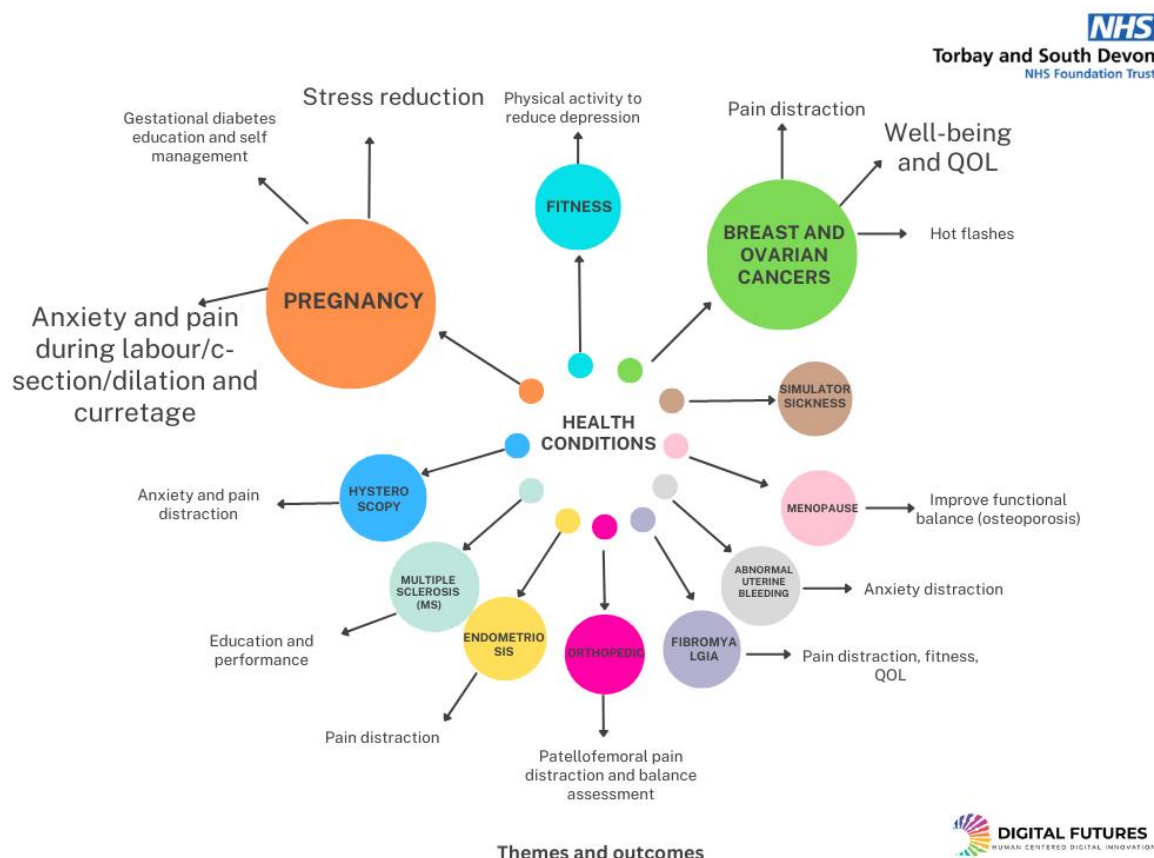


Figure 3: Patient pathway themes and outcomes

Other conditions addressed are- *fitness, menopause related osteoporosis, anxiety distraction during hysteroscopy and anxiety during abnormal uterine bleeding appointments. Pain distraction interventions have been used for women suffering from endometriosis, patellofemoral pain, and fibromyalgia. One study specifically investigates differences in VR exercise induced cybersickness symptoms between men and women.*

It is evident from Figure 3 that the focus of all studies is primarily on using VR to deliver a distraction for pain and anxiety, and potentially improve patient’s QOL.

4. VR content

Figure 4 presents three VR content categories present in the literature, and list of content available. These VR experiences aim to create environments that are calming/relaxing, educational, task oriented, acclimatise patients to new spaces, allow fun interactions, entertain, and encourage physical movement.

Majority of the studies (13 of 21)^{7,8,11,12,16,17,19,21,23,25,26,28,29} have used 3D VR games and experiences that are available online. These experiences provide varying levels of interactivity. Specifically, Your shape fitness evolved 2012, Applied VR and beach volleyball

(Xbox Kinect 360) have been used in multiple studies. 360-degree filmed VR experiences have been used in 5 studies^{10,20,22,24,27}. These experiences have been custom developed for the purpose of the individual studies. Additionally, 3 studies^{9,14,15} have used 3D VR designed specifically for individual case outcomes.



Figure 4: VR content used in the literature

5. Evaluation metrics

Table 1 presents different metrics used to measure research outcomes. Columns 'Headset Usability' and 'User Experience' show (Yes= Y; No=N) whether individual studies asked specific usability/acceptability/user experience/cybersickness based questions regarding the VR headset and VR experience or focused only on primary health based research outcomes.

It is evident from the findings that most studies have used the widely validated Visual Analogue Scale (VAS) or Numeric Rating Scale (NRS) as anxiety and pain measures. For measuring anxiety, other validated scales used are- Positive and Negative Affect Scale (PANAS), Depression Anxiety and Stress Scales (DASS-SF), modified Amsterdam Preoperative Anxiety and Information Scale (APAIS) and Beck Anxiety Inventory. For measuring pain, other validated scales used are- Wong Baker Faces Pain Rating, and Brief

Pain Inventory (BPI). Some studies have used custom surveys, while others have also monitored anxiety and stress through bio feedback (heart rate, blood pressure, skin conductance), and other clinical measures. Very few studies have investigated cybersickness, satisfaction, acceptability, and usability¹⁶²⁰. In terms of research methods, most studies have taken a mixed methods approach incorporating quantitative scales and some open-ended qualitative questions. However, very few have conducted in-depth interviews or focus groups with patients.

Table 1: Evaluation metrics used in VR for female health research

Papers	Metrics	Headset usability	User experience
20	stress: 1. BP/HR/Skin conductance biomonitoring sensors 2. Perceived Stress Scale 3. PANAS Positive and Negative Affect Scale 4. Qualitative questions about lived experiences, attitude toward greenery and VR sickness	Y	Y
14	physical activity and depression: 1. BMI measure, demographics 2. questions about depression, exercise immersion and fun 3. Korean version of patient health questionnaire-9 4. Numeric rating scale for exercise fun measure 5. Sports immersion scale for exercise immersion, developed using the Sport Commitment Model	N	Y
16	pain distraction and mental wellbeing: 1. Quality of life (EQ-5D-5L) 2. Visual Analogue Scale for Quality of Life 3. Functional Assessment of Chronic Illness Therapy Fatigue scale (FACIT-Fatigue) 4. The Brief Pain Inventory – Short Form (BPI) 5. 21-item short version of the Depression, Anxiety, and Stress Scales (DASS-SF) 6. Demographic and clinical questions 7. qualitative questions about the intervention and acceptability	Y	Y
24	anxiety: 1. demographics 2. Maternal and fetal physiologic parameters 3. Variables related to labor and birth included the first stage of labor 4. Anxiety levels were measured using the STAI questionnaire before and after	N	Y
15	patient education (self-management of gestational diabetes): 1. Physiological measures 2. Diabetes knowledge 3. Dietary habits using 5-point scale based on the dietary assessment of Korean adults selected from the Korean National Health and Nutrition Examination Survey conducted by the Korean Centers for Disease Control and Prevention 4. Health-promoting lifestyle profile evaluated with 52 items on a 4-point scale 5. Parenting stress evaluated with 23 items on a 5-point scale	N	N

7	clinical impairment and brain function: 1. demographics 2. clinical assessment 3. balance assessment using modified SEBT 3. Secondary exploratory outcome measures were pain, QOL, function, and brain activity, which were assessed using VAS, SF-36 questionnaire, Kujala questionnaire and step-down test, and quantitative EEG, respectively	N	N
18	pain distraction: 1. Virtual Reality Satisfaction Survey, satisfaction measured using VAS score. 2. Satisfaction assessed using NRS 3. Wong-Baker Faces Pain Rating 4. Anxiety measured using Beck Anxiety Inventory 5. Depression measured using Beck Depression Inventory	Y	Y
11	reduce symptoms (hot flashes) and improve physical well being: 1. Demographic and medical information 2. The Hot Flash Related Daily Interference Scale 3. The Hot Flash Rating Scale 4. The Perceived Stress Scale 5. The Kessler Psychological Distress Scale 6. The Brief Illness Perception Questionnaire 7. The Pittsburgh Sleep Quality Index 8. The World Health Organization Quality of Life Scale-Brief Version	N	N
27	anxiety: Anxiety is measured on the Visual Analogue Scale for Anxiety (VAS-A) 2. State-Trait Anxiety Inventory (STAI-S)	N	N
22	anxiety and stress: 1. basic and clinical data 2. preoperative emotional stress measure (B-MEPS) 3. Novel visual facial anxiety scale 4. Birth Satisfaction Scale- Revised (BSS-R) for satisfaction	N	Y
8	improve functional balance: 1. functional balance assessment	N	N
23	fitness and quality of life: 1. symptom severity assessed through limb volume measurement; visual analogue scale (VAS); and the Disability of the Arm, Shoulder, and Hand (DASH) questionnaire 2. physical function assessment 3. QOL assessed using Medical Outcomes Study Short-Form	N	N
26	cybersickness: 1. Simulator Sickness Questionnaire (SSQ) 2. Immersion Questionnaire 3. BioHarness 3.0 measurements	Y	Y
19	pain, fitness, and quality of life: 1. Fibromyalgia Impact Questionnaire 2. VAS 3. Symptom Severity Scale 4. Fatigue Severity Scale 5. Six Minute Walk Test 6. Hospital Anxiety and Depression Scale 7. Euro QOL 5-Dimesion Scale	N	N
25	pain distraction: 1. pain intensity using NRS 2. pain relief using categorical scale	N	N
17	pain distraction: 1. pain severity using VAS	N	N

12	pain distraction: 1. demographics and past experience with technology 2. likert questions about interest in VR and using intervention 3. survey to understand patients pain management plan 4. Patient Reported Outcomes Measurement Information System (PROMIS) global health survey scores on all subjects for physical and mental well-being 5. Childbirth Self Efficacy Index (CSEI) to assess perceived self confidence	N	N
9	task education and performance: 1. nine Hole Peg Test for fine dexterity 2. Bimanual coordination assessment 3. Technical assessment of wrist movement using potentiometers	N	N
10	pain, anxiety and nausea distraction: 1. demographics 2. pain (cognitive, sensory and affective pain), anxiety and nausea measured using self administered questionnaire	N	N
13	anxiety distraction: 1. demographics 2. Participants' perceived pre-procedural anxiety was measured using a modified Amsterdam Preoperative Anxiety and Information Scale (APAIS) 3. Visual analogue scale (VAS) for anxiety 4. Semi-structured interviews about experience and effect on anxiety	N	Y
21	pain and anxiety distraction: 1. pain measured using NRS 2. perception of the clinical and nurses regarding the feasibility of using the virtual reality using questionnaire 3. semi structured interview about pain, anxiety, comfort, nausea	Y	Y

Discussion

The use of immersive VR as a therapeutic and educational tool for improving patient experiences is transforming healthcare practice. When used in adjunct with traditional therapies, VR can empower patients, improve their experience, and may potentially have implications on treatment compliance, reduction in missed appointments and improved health outcomes.

Findings from this short review suggest that VR for female health is slowly gaining traction, but we have a very long way to go. However, the aim is to encourage discussion based on the lessons learned.

1. Global reach of VR

One of the most interesting findings of this review is the use of VR for improving female health outcomes in different countries. Accessibility to VR is improving due to the availability of both high and low end options. Unique VR interventions are being trialled across the world. Unfortunately, it is the countries that have better access to funds, or government policies that encourage use of innovative digital technologies, that are leading in VR patient research. Another critical point that must be made is- public health providers like NHS Trusts may have interventions that are currently in use, but these cases are not being documented due to pandemic backlogs, and lack of funding/resources. Running trials requires a variety of resources- clinical leads with time for research, funds to cover research costs, access to sample, technical team, and other miscellaneous challenges. The past three years have seen healthcare services struggle with pandemic related issues, research and documentation of VR use cases may not have been a key priority.

2. VR devices

The VR market needs more competitors that can provide an even wider range of expensive to affordable headsets. The Xbox Kinect 360, Pico G2 and Oculus Quest 1 and 2, are popular and used frequently in clinical trials. Quite a few studies do not go into details to explain the type of headset used either. None of the studies have made use of haptics technology or incorporated hand and eye gestures for control and movement. VR for female health interventions may benefit from using these affordances of VR, as they are likely to make experiences more engaging and potentially more immersive. Furthermore, such research may provide deeper insights into gender differences or healthcare condition specific issues, which could help in designing better VR experiences for everyone.

3. Patient pathways and outcomes

Pregnancy can be a life-changing event for women, making it a top priority for any female health strategy. Most women experience anxiety and stress during this period, along with challenges of delivery and sometimes complications. VR for female health is largely used to mitigate pain and anxiety symptoms during delivery. Many studies included in this review provide clinical assessment to back the positive benefits of using VR for distraction. However, all studies involving women in labour have offered epidurals, or used VR only in the early stages of labour. The technology acceptance of VR during labour is worth investigating.

Potential of VR as a pregnancy health behaviour improvement tool has also been documented in the case of gestational diabetes. Other health conditions which are also a priority for the UK's female health strategy 2022³, such as gynaecological cancers, endometriosis, menopause, are also shown to benefit from VR interventions. In terms of outcomes, it is

interesting to note that all but one study ²⁷ have found VR to be an effective tool. These findings should inspire others to find ways to integrate VR to improve female patients experiences.

VR for female health interventions selected as part of this review, largely and rightly focus on pain and anxiety distraction. Along with reducing pre and post operative anxiety, patient education is a top priority for UK's female health strategy. As established earlier, there are several barriers to gaining access to education and information about services. Importance must be place on educating women and improving access to information. VR could play an important role in potentially breaking down language barriers and delivering vital education in a fun and engaging format.

4. VR content

The variety of VR experiences available online is expanding. With advancements in consumer friendly VR devices and game engines, high quality, realistic experiences are now available at cheap prices on the app stores. Through the Oculus, Pico, and Microsoft Xbox stores, or SideQuest VR and Steam, users can get access to diverse games and VR experiences.

Healthcare providers who do not have access to VR production capabilities can purchase VR games and experiences. This opens the door to innovative uses of entertaining games for education and learning. Most studies in this review have used 3D games and experiences that are currently available online. But none of the studies acknowledge- costs and processes for procurement if the experience is not on app store, or licensing fees. It is crucial that this information is made available to help decision makers.

Other VR content options are- 360-degree films and 3D VR content, both developed in-house. Each option has its pros and cons. It is relatively much cheaper and easier to film 360 videos but they do not offer the interactivity or movement afforded by 3D VR experiences. Although, 3D VR can deliver more engagement, development can be expensive and time-consuming, especially if developers are not available in-house.

5. Evaluation metrics

VR practice and research are not in synchrony. Access to VR has improved, but processes for conducting trials is still time-consuming. In addition, running trials may require additional funding for development and research, which may not be feasible for all. The primary focus of most VR for female health trials is on the effectiveness of VR interventions for health outcomes- pain/anxiety distraction, improved QOL, task performance and knowledge retention. Number of validated scales have been used to measure primary outcomes, which are supported through clinical assessments of patients.

Primary outcome measures only cover one aspect of VR as a therapeutic or education tool. VR headsets are still clunky, cannot be worn for prolonged periods especially when suffering from certain health issues, and most importantly, may not be of interest to everyone! Very few studies investigate users' perceptions and experiences of using the VR device and the VR experience. VR induced cybersickness differs in men and women, women experience higher intensity of cybersickness and it takes them longer to recover than men^{26,30}. Menopause and the menstrual cycle can cause vertigo, dizziness, hot flashes, which can all contribute to cybersickness and discomfort. VR is not a solution for everyone; therefore it must be established who may not be suited for these interventions. Furthermore, immersion and presence that may be antecedents to behaviour change in VR, have not been explored in most studies. Higher immersion and presence may lower cybersickness³¹.

6. Barriers to VR for female health

There are several barriers to adoption of VR for female health, some of the most difficult challenges for healthcare providers are documented in Figure 5.

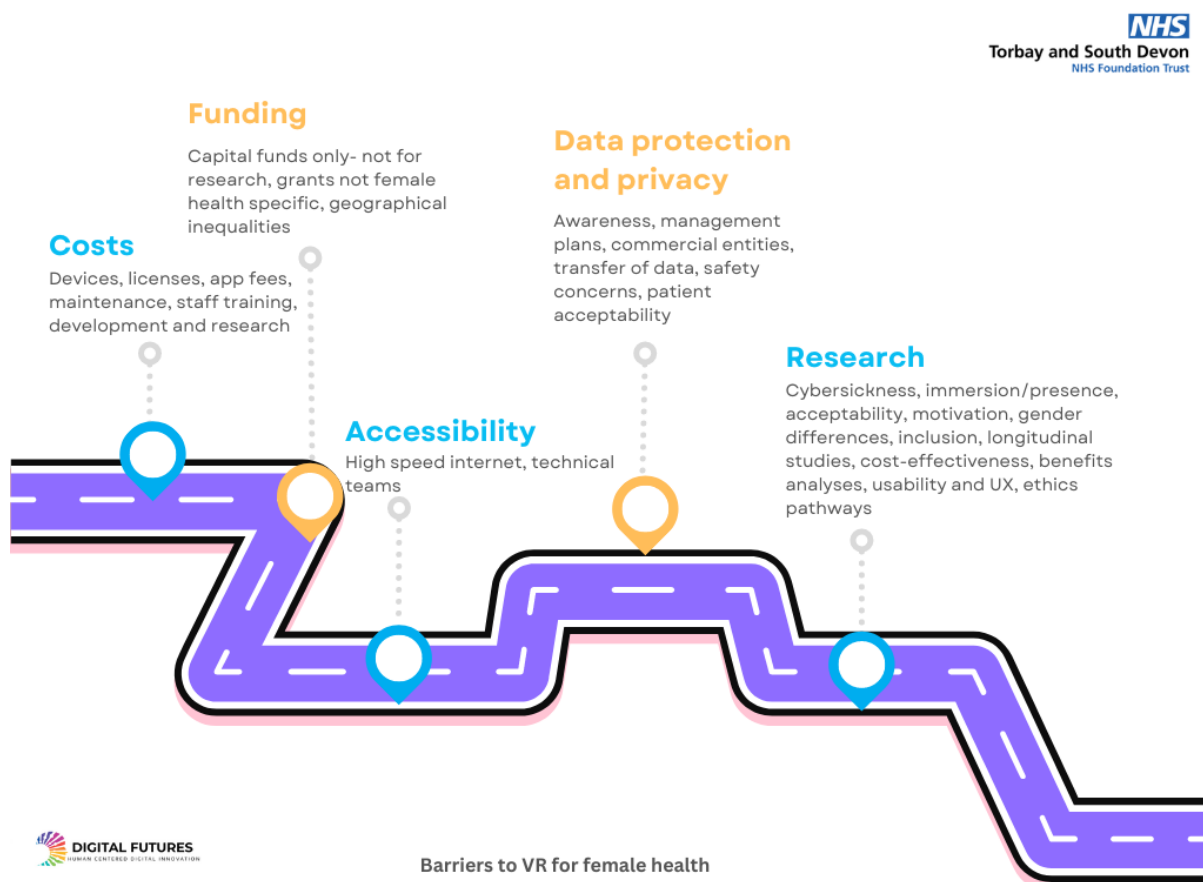


Figure 5: Barriers to adoption of VR for female health

- i. **Cost:** VR devices are an expensive investment. Using them at enterprise level may require licenses. Maintaining hygiene requires approved Infection Control protocols such as a UV-C cleaning device, which is an additional cost. Other necessary costs are- staff training, VR development, VR researchers.
- ii. **Funding:** Many grants still do not prioritise female health as this may be too specific. The availability of these grants may vary worldwide. Furthermore, grants may be available but only accessible to researchers in certain countries.
- iii. **Accessibility:** High speed internet is required to run experiences on VR devices. This may be a major challenge to adoption, especially in parts of the world with poor internet connectivity.
- iv. **Data protection and privacy:** Although commercial VR devices are available, there are several concerns around data protection and privacy. Transfer of patient data must happen securely, furthermore, the data should only be accessible by the patient's healthcare provider. Fuzziness around the topic of data protection and privacy also affects how patients may view VR devices. XRSI Medical Council has been doing exceptional work on developing protection and privacy frameworks.
- v. **Research:** Many critical aspects of VR devices and experiences are still not investigated thoroughly. There are almost no studies that provide a longitudinal view of the efficacy of VR interventions over a period. In addition to these research challenges, cost effectiveness and benefits analyses, which can influence decision makers, are missing from most healthcare VR studies. Gender differences in how people connect with and through VR, how it influences their behaviour and learning outcomes, have not been studied either.

7. Solutions to overcome barriers

To overcome challenges and improve women's health outcomes using immersive VR technology, flexible and pragmatic thinking must be used. Some solutions that may assist have been documented in Figure 6.

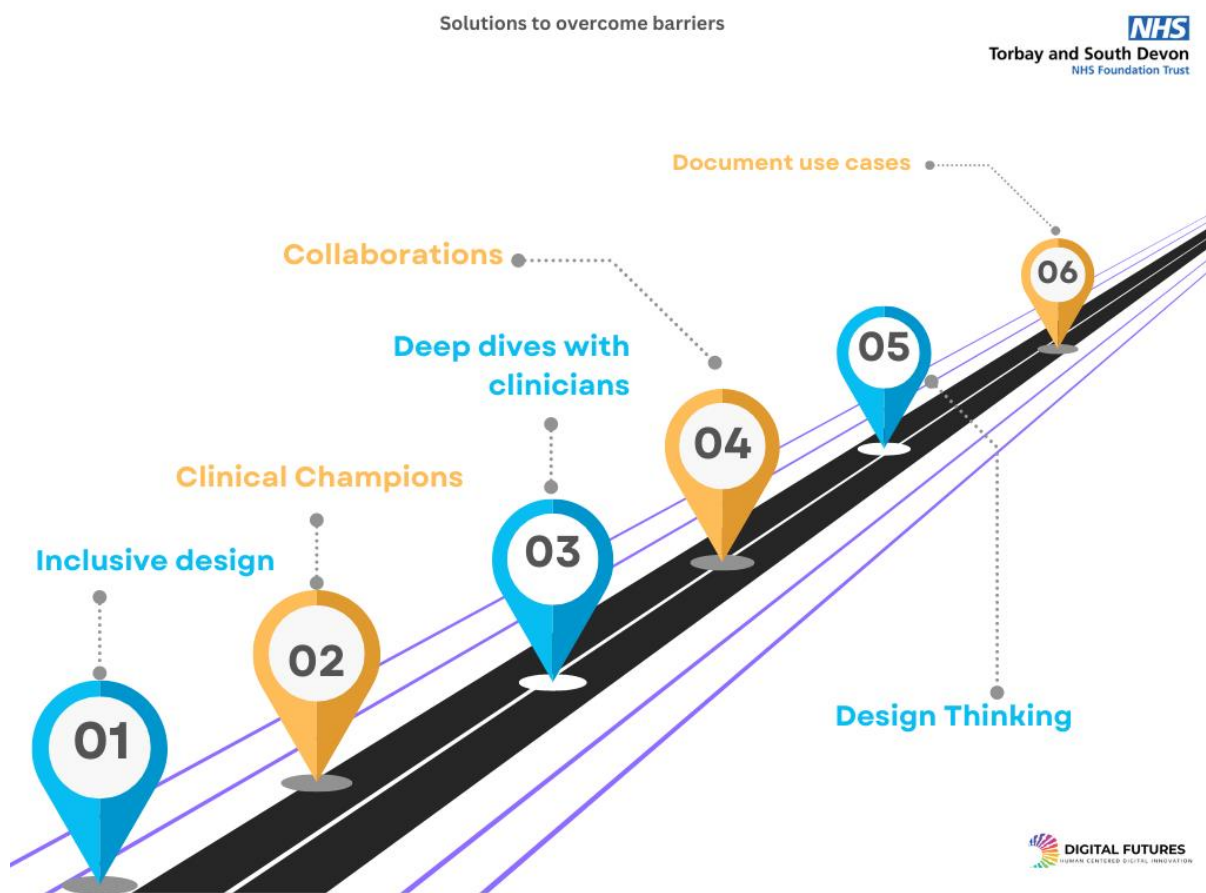


Figure 6: Solutions to overcome barriers to VR for female health

- i. **Inclusive design:** Practitioners and researchers need to include patient voices in the design process, or at the very least conduct qualitative research in the form of interviews and focus groups. Conscious effort needs to be made to include under-represented groups such as minorities, women from lower socio-economic groups and people who identify as women. The Lancet⁶ and Kings Fund UK⁵ suggest, that to break bias, change must occur at the fundamental level in healthcare and research. More women need to be included in the leadership, development, and research roles. More efforts also need to go toward training young women to become VR developers.
- ii. **Clinical champions:** VR in healthcare has early adopters to thank! Clinicians who can champion VR technologies play a critical role in persuading colleagues, patients, and management. These clinicians exist in all healthcare organisations. Providing them support and flexibility, encourages the development of innovative solutions to improve patient care.
- iii. **Deep dives:** Deep dives are a way to introduce healthcare workers to immersive technologies and their potential. Digital Futures runs weekly deep dives with clinicians and nurses working in diverse pathways. These deep dives have led to

- the generation of new use cases. The aim is to support healthcare workers and empower them to lead projects that will eventually go to a funding and trial stage.
- iv. **Collaborations:** Collaborations between universities and hospitals are a key to improving research and practice. Due to time constraints, it is often not feasible for clinicians to run research trials. Partnering with universities can provide better access to researchers, resources, and grants. Furthermore, establishing relationships with immersive developers who create experiences for female health is crucial for knowledge exchange.
 - v. **Design thinking:** Design thinking is a human centred approach to rapid innovation, which uses empathy and end-users point of view in the development process. During the pandemic, Digital Futures was able to leverage design thinking and develop multiple innovative technology-based solutions for the Torbay hospital. This approach to innovation uses practical but creative solutions, encourages inclusivity and empathy to solve problems. This approach will be the key toward creating effective and usable VR experiences that improve female health.
 - vi. **Documentation:** Search results show several news articles from around the world, which mention different applications of VR in female healthcare practice. However, these cases are not documented clearly. Due to the novel and innovative nature of VR, the technology itself can seem exciting, however, an effort needs to be made to document the journey toward implementation and adoption. AHSN Real World Evaluation and NICE Early Value Assessment are working toward assessing the value of digital healthcare technologies in real world settings, and making them available more quickly to the public. Furthermore, NHS also blueprints digital technology use cases, that are step-by-step guides to inform other Trusts. All documentation, whether in a case study form, service evaluation or clinical trial, contributes toward improving patient care.

Conclusion

The purpose of this paper is to enlighten the reader on the current use of VR for female healthcare, encourage curiosity and highlight areas that are calling for attention. The review has its limitations as the literature search was not systematic or exhaustive. However, this paper aims to inspire practitioners and researchers so that more can be done to improve VR interventions for female health. Immersive technologies like VR could easily contribute toward inequalities that already exist in women's healthcare. Conscious effort must be made to make these technologies inclusive, with the hope to improve health outcomes for women everywhere.

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