



Heriot-Watt University
Research Gateway

Virtual reality as a distraction therapy in obstetrics and gynaecology

Citation for published version:

Harper, A, Sivanathan, A, Jordan, A, Harper, S, Worth, A, Lim, T & Denison, FC 2019, 'Virtual reality as a distraction therapy in obstetrics and gynaecology', *BJOG: An International Journal Of Obstetrics & Gynaecology*, vol. 126, no. S1, EP.229, pp. 98.

Link:

[Link to publication record in Heriot-Watt Research Portal](#)

Document Version:

Peer reviewed version

Published In:

BJOG: An International Journal Of Obstetrics & Gynaecology

General rights

Copyright for the publications made accessible via Heriot-Watt Research Portal is retained by the author(s) and / or other copyright owners and it is a condition of accessing these publications that users recognise and abide by the legal requirements associated with these rights.

Take down policy

Heriot-Watt University has made every reasonable effort to ensure that the content in Heriot-Watt Research Portal complies with UK legislation. If you believe that the public display of this file breaches copyright please contact open.access@hw.ac.uk providing details, and we will remove access to the work immediately and investigate your claim.

Virtual reality as a distraction therapy in obstetrics and gynaecology

Harper, AM^{1.}, Sivanathan, A^{2.}, Jordan, A^{1.}, Harper, S^{2.}, Worth, A^{3.}, Lim, T^{2.}, Denison, FC^{1.}

¹Tommy's Centre for Maternal and Fetal Research, The Queen's Medical Research Institute, The University of Edinburgh

²Institute of Mechanical, Process and Energy Engineering, Heriot Watt University

³Usher Institute of Population Health Sciences and Informatics, The University of Edinburgh

Background

- Virtual reality (VR) is a computer-generated replication or simulation of real or imaginary multi-sensory environments users can explore and/or interact with without physically leaving their current environment.
- VR technology is emerging as an effective distraction therapy for patients undergoing painful and/or distressing healthcare procedures.



Aim

To explore women's and obstetric and gynaecology (O&G) healthcare professionals' views on the acceptability and preferences for VR as distraction therapy within O&G.

Methods

- Clinical setting-specific (i.e. obstetric and gynaecology) paper-based questionnaires for both women and professionals were developed to assess views on:
 - VR use in clinical settings (e.g. for labour, during hysteroscopy)
 - Hardware options (i.e. types of head equipment)
 - Software options (i.e. content, audio)
- Short online questionnaires for women were developed to assess views on VR use in clinical settings from a broader cross section of potential O&G service users.
- A consultation meeting was held with women, O&G professionals and VR-technologists to enable a real-world insight into the technology.

Results

- A total of 247 questionnaires were completed (90 obstetric and 157 gynaecology) [Figure 1].

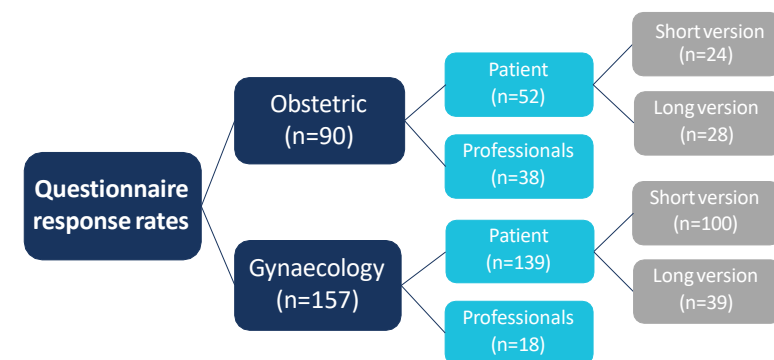


Figure 1: Questionnaire response rates

i) VR use in clinical settings

Obstetrics

- Women's interest in trialling VR during early labour, established labour and perineal repair was predominantly positive [Figure 2a], and professionals were largely supportive of women trialling VR in these settings [Figure 2b].

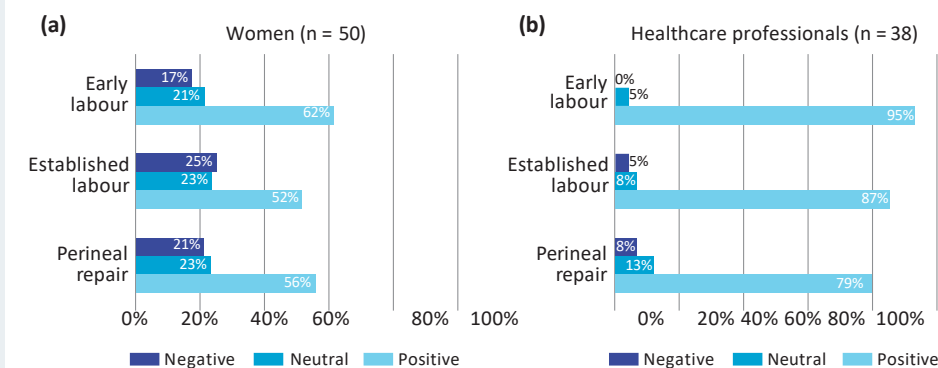


Figure 2: Percentage of obstetric women and professionals responding negatively, neutrally and positively to the potential application of VR as a distraction therapy during early labour, established labour and perineal repair.

Gynaecology

- Women's interest in trialling VR during coil insertion/removal and colposcopy/hysteroscopy was predominantly positive [Figure 3a] as was professional support for women trialling VR in these settings [Figure 3b].

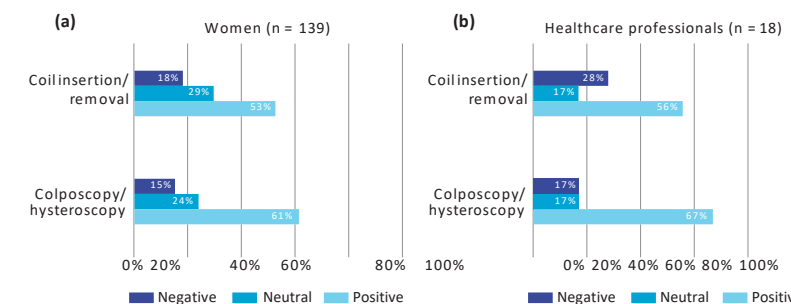


Figure 3: Percentage of gynaecology women and professionals responding negatively, neutrally and positively to the potential application of VR as a distraction therapy during coil insertion/removal and colposcopy/hysteroscopy.

ii) Hardware options

- Visually, stereoscopic glasses were the most popular head equipment [Figure 4].



Figure 4: Percentage of women and professionals whom ranked each head equipment option as their first choice (i.e. the piece of head equipment they would most like to wear or most like their patients to wear).

- However, practically, women and obstetric professionals preferred headsets for viewing images [for example, option B in Figure 4].

iii) Software options

- Natural content was preferred by all, **beach** was the most frequently reported preference of virtual environment.
- The majority of women and professionals were supportive of accompanying audio.

Conclusions

- Women are interested in and healthcare professionals largely supportive of the potential for VR as a distraction therapy within O&G.
- Reported hardware and software preferences are presently limited by current VR-technologies.
- Future studies should allow participants to experience different VR-technologies, inform design specifications, and ultimately pilot the technology.

Acknowledgements

- Edinburgh Tommy's Centre for Maternal and Fetal Health
- The Academic and Clinical Central Office for Research and Development Patient and Public Advisory Service