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| Report |

Virtual reality (VR) technology in medicine

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Abstract

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Keywords

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# Introduction

Virtual reality, a cutting-edge technology also most commonly known as simply VR. Today the most current virtual reality environment experience is through visuals, which can be displayed either in a computer screen or through special stereoscopic displays. Some experiences include additional sensory information such as audio through headphones or speakers. The simulated environment can be very similar to that of the real world, giving a chance for the user to get a closer look and feel as possible to real life situations like combat fighting or surgical training for doctors.

Virtual reality is applied in different technology development areas like games, medicine and such. But recently mostly in the game industry. Giving the user an innovative and vivid experience in games to interact with. The relevance of virtual reality in the near future is broad. Like mentioned above affecting many different areas.

Accoding to research done in different schools like Southeast University in Nanjing, China VR technology can be used in Psychology for disorders like ADHD, anxiety or PTSD and it can also be applied as a rehabilitation technique for some patients.

## Aim

This report will aim towards the application of VR technology in clinical medicine, pain managment and therapeutic treatment of mental illness and the impact in surgical training for doctors.

1.1.1 Research questions:

1. What benefits does VR technology have on medical patients and doctors itself?

2. What are the effects of VR on the human mind and body?

3. How does VR technology prepare people for different situations?

# 2. Results

2.1 VR for surgery training

Training to be a surgeont is not all that simple. Now a days the number of trainees has increased rapidly and the opportunities to acquire such necessary technical skills have become very limited due to ethical concerns, costs and many other factors. Therefore consequences are a reduction in experience and independent surgical expeciernce for trainees. Furthermore, surgical techniques have advance and evolved during the years. Making VR training essential and an alternative to the other methods of training being reduced. It has even become a prerquisite for junior doctors to actively participate in real operations.

2.1.1 VR surgery practice

VR simulations let trainees interact with all the atomical structures on a operation, that includes muscle, skin, bone, nerve and blood vessels. Exactly like a normal operation although in a simulation with very intuitive atomic structures exhibited in 3D graphics. The whole process cannot only be recorded but holds data permanently available for future trainees. These simulations are evaluated by standard paramenter, including time, path length, collisions, injuries, loose bodies found, satisfaction and more on.

2.1.3 VR for different surgeries

Application of VR simulation for different surgeries such as Laparoscopic, Orthopedics, Ophthamology and others. For laparoscopic surgeries, surgeons must have extensive training. Since it could expose patients to potential risks training these type or surgeries is not tha easy. Due to such circumstances, VR simulations are used a lot in such operation disciplines. Another example of a surgical simulator is the Visible Eat Simulator (VES), it is a 3D virtual temporal bone simulator with force feedback.

2.1.4 Advantages

VR help trainees to familiarize themselves with surgery process and to develop a decision-making skill without having to potentially put at risk a patient. Compared to people that have received only traditional surgical training, these have been found to cause more injuries, slower and to some extent fail to progress with the surgery. Which shows that VR training improves operating room performance, enhanced understanding of comples 3D body structures… according to results of a randomized, double-blinded study. (1)

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Summary and recommendations: This report talks about how virtual reality can bring a lot more benefits to the patients and for the doctors including trainees, and why start using VR should be more explored and recommended to other facilities.

The author has a couple grammar mistakes and sometimes he writes in an informal style, but overall is pretty good, he mentions all the pros and advatages that VR brings to the table, but he could also touch in some desavantages or why not every hospitals are using it.

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# References

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# Appendices

## Appendix A Entitle your appendix

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