

Project Vae – VR Hospice Trial - Research & Conclusions

Hypothesis

“Using Virtual Reality headsets to deliver 360° video field trips to hospice patients, will have a positive effect on their mental health & wellbeing.”

Objective:

The main objective of the trial was to observe if utilising Virtual Reality technology to expose hospice patients to field trip style videos will lead to positive changes in their mental health and wellbeing. Focusing on a specific demographic, the trial will aim to record key indicators of those potential mental health benefits.

The Methodology:

Over the course of seven weeks, patients were exposed to six virtual field trip style 360° videos.

The first week was an introductory session where the patients met me, Ben Malone, and acclimatised themselves with the VR headsets. Each of the following session’s the patients were shown videos from Germany, Scotland, Cornwall, the Peak District, The Royal Albert Dock in Liverpool and finally Thailand.

The videos ranged from 6 to 24 minutes long and were designed in a vlog style manner. This was to further enhance the patient experience, allowing them to feel like they had a companion with them on the adventure, rather than just being shown static clips of a beautiful location. In the videos, there is also extensive aerial 360° video footage, where the patients had a bird’s eye view and flight around the location. The videos have the feel of a genuine adventure and are designed to make the viewers feel something.

Equipment & Software:

Video Production	Video Delivery
GoPro Fusion	2x Pico G2 4K VR Headsets
GoPro Max	Scullcandy Headphones
Mavic 2 Pro	Android Device
Rode Microphone	Showtime VR Software
Audio Recorder	
Adobe Premiere Pro	

The Research:

The research element of this trial was in collaboration with Keele University and The Midlands Partnership NHS Foundation Trust. The research consisted of an 11-item Likert Scale type questionnaire, exploring mental health issues. Examples of these include low mood, anxiety, loneliness and general wellbeing. This was completed prior to exposing the patients to the videos in order to establish a baseline score. The same questionnaire was completed by patients upon viewing all six videos, with an additional question exploring the individual experience of each participant. By comparing the scoring on the Likert Scale we were then able to evaluate the changes in each patient's mental health and draw from this the impact of our hypothesis.

Session 1 (Lake Eibsee & Zugspitze, Germany):

All things considered; the first session went very well. This was the first time that the majority of patients had ever experienced a VR video, so to receive such great feedback from day one was fantastic.

I had purposely designed this video to be very calming and slow, especially to help ease people into the drone footage element of the video. It was also quite a short video at just over 6 minutes, but I had some patients saying they had wished it had been longer, which is brilliant. The video even brought one patient to tears, happy tears just to make that clear.

One patient mentioned that they would like to see this eventually become a 4D experience with the viewing room matching the hot or cold weather conditions of the location in the video, or even sprayed with water in wet locations. One step at a time though.

Some patients were a little more vocal about their experience than others. I think that was due to potentially being a little overwhelmed, anxious, or even maybe a little camera shy. It was still very early days at this point though so I was hoping that they would grow into it as the weeks progressed.

It didn't all go perfectly though, one patient mentioned feeling quite anxious until about halfway through the video but then he did seem to settle into it after that point. So naturally, for the following week, I was quite worried that this might not be for him.

Session 2 (Scotland):

The second week went brilliantly. Every single person seemed to really enjoy the video and some lovely comments were made. This video was just under 13 minutes long so I was a little apprehensive about this session, maybe even more so than the first session because I was unsure how the patients would handle a longer experience. Thankfully they all dealt with the longer video fine and I even had patients again saying they would like the videos to be longer.

A couple of patients had been to Scotland before, and they mentioned the video had brought back memories for them which is great! One patient said that he isn't a lover of mountains, thankfully he still seemed to enjoy it. I was hoping that The Royal Albert Dock Tour later in the trial, might be more his cup of tea.

By the time I filmed the Scotland video I was considerably more comfortable and confident in front of camera, so I was in this video a lot more than I was in the Germany one. This led to patients engaging with me during the experience, laughing and speaking to me as if they were with me on location. This is exactly what I was aiming for with my style of video, but to see it in action and it work, was great. There was even someone singing along with my music choices. Patients also mentioned that this trial has given them a topic of conversation with their partners, relatives, and friends, which is a lovely thing to hear!

So, in this session people were a lot more comfortable and I feel like they allowed themselves to be truly immersed in the video, which led to some very positive feedback.

Session 3 (Cornwall):

Session three also went well, this was the longest video I had shown them so far at 20 minutes long. I had been a little concerned that the headsets may start to feel uncomfortable for some patients after that length of time, but it didn't, and thankfully everyone was fine! Patients even said that they had enjoyed the video being longer.

Two of the patients had been looking forward to their trip to Cornwall so much that they decided to come fully prepared for their summer holiday. Sunglasses, hats, beach towels and even sun cream at the ready! Honestly, them making this kind of effort and showing that level of enthusiasm towards the trial made my week so huge thank you goes out to them. I really appreciate some of the patient's partners coming down to be involved. Seeing couples engaging with each other while watching the videos was so nice to see.

A patient mentioned this week that they had been researching The Isle of Skye from the previous video during the week, which showed to me these experiences are giving them something to think about long after they have watched the video. This is something that I hoped would happen, but seeing it come to fruition was extremely satisfying.

One patient had mentioned that he had been feeling quite low, drained and with low motivation levels prior to this week's session and that once he had watched the video it had helped to put a smile on his face, which is great. I even had quite a few patients laughing at parts in the video, which must mean I'm quite funny. Unless they were laughing at me and not with me.

I did however receive some constructive criticism about this video. It was mentioned by a patient that I had perhaps included one too many locations, as she felt like I had moved from location to location a little fast for her liking. She had wanted me to spend a little more time at each place so that she could have a little more time to absorb it and take it all in. I had a feeling this might be the case before this session, as I had squeezed four locations in, instead of two or three. The amount of footage I got could have easily equated to two videos, but I didn't want to take up another week in the trial to show them more of Cornwall, so I squeezed it all into one. In future the maximum featured locations in a video will be three, lesson learned. She also mentioned feeling a little off during the extended walking periods, but everyone else was fine so this was an isolated incident.

Session 4 (The Peak District):

Again, this session was fantastic. Everyone enjoyed the video and lots of comments were made on how well the music complimented the scenery. Some words that were used to describe this video were emotive, grounding, relaxing, peaceful, and evocative. To get this kind of feedback shows that this video really made people feel something. It even brought two patients to tears (again, positive tears).

I had a patient say that this was their favourite video so far which is good considering this was the video with, in my opinion, the least impressive locations. Especially when compared with Germany, Scotland and Cornwall, so to get this kind of response was great.

Session 5 (The Royal Albert Docks, Guided Tour, Liverpool):

The Royal Albert Docks video was enjoyed by most of the patients. However, I did have three patients make me aware that this was their least favourite video so far in the trial. Even though the educational and informative style of the video was appreciated by them. These patients mentioned that it had not provoked any emotions or made them feel the way that the other videos had. Pointing out that they prefer more adventure and nature-based videos.

I always had a feeling that the more adventure-driven videos would go down better and potentially have a greater effect on people's overall mood and mental health. This is due to the positive effects that being outdoors has had on me personally. That being said, most of the patients did thoroughly enjoy the video and complimented Charlie's knowledge and personality.

Session 6 (Phuket & The Phi Phi Islands, Thailand)

The final session went down a treat. The patients absolutely loved the Thailand video and a lot of them mentioned that it has been their favourite video out of the entire trial. Most of the patients had never been to Thailand before and were blown away by the locations that were showcased.

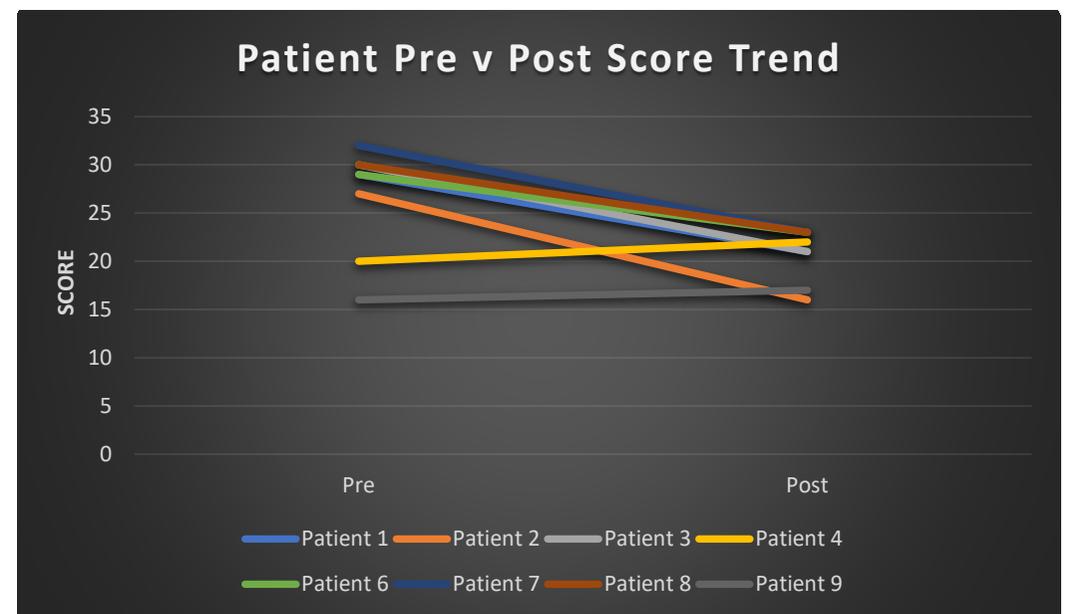
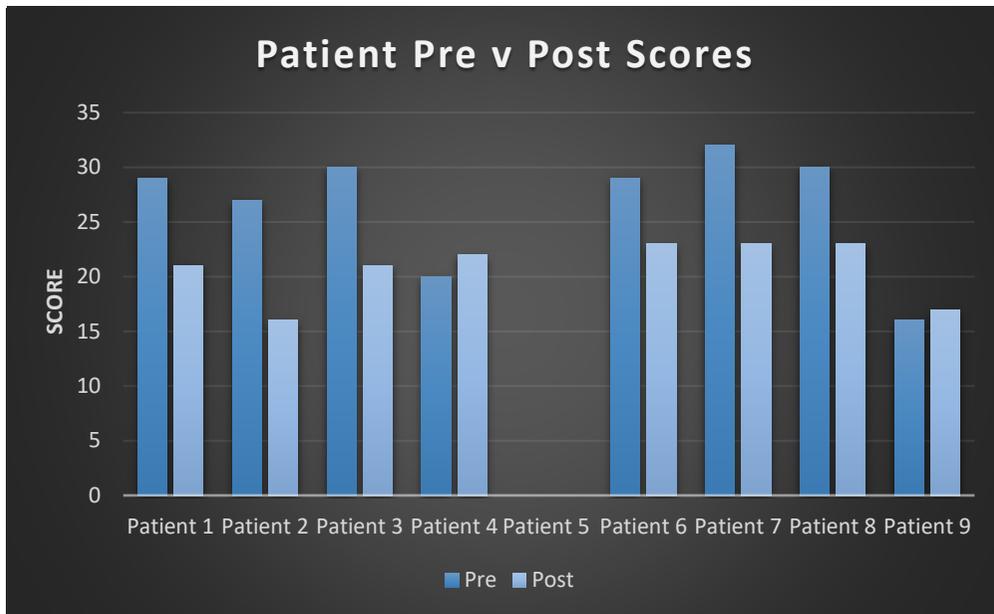
I believe most patients left with a smile on their faces and it was great to end the trial on such a high note.

This being the final session meant that it was time to say goodbye to all of the participants which was really quite sad. I thoroughly enjoyed getting to know them all and seeing my work put a smile on their faces was extremely rewarding for me.

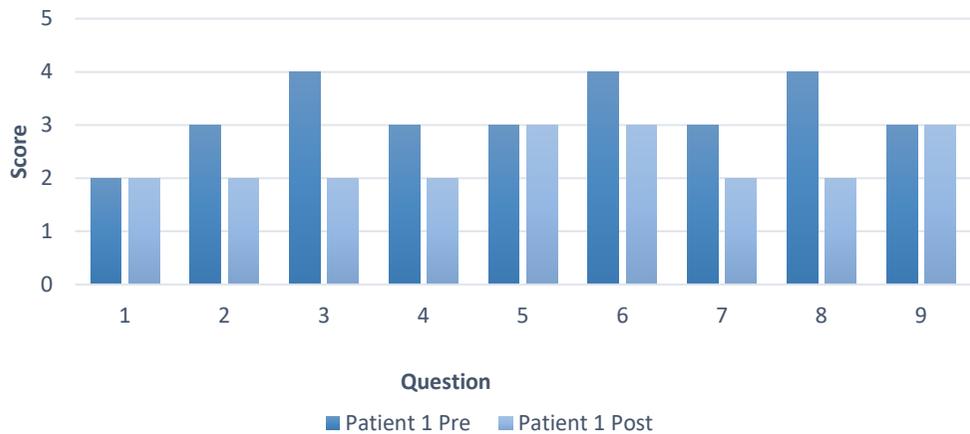
The Data:

Question	Patient 1			Patient 2			Patient 3			Patient 4			Patient 5			Patient 6			Patient 7			Patient 8			Patient 9		
	Pre	Post	Change	Pre	Post	Change	Pre	Post	Change	Pre	Post	Change	Pre	Post	Change	Pre	Post	Change	Pre	Post	Change	Pre	Post	Change	Pre	Post	Change
How often do you feel that you lack companionship?	2	2	0	3	2	-1	4	2	-2	2	2	0			3	3	0	4	3	-1	3	3	0	2	1	-1	
How often do you feel left out?	3	2	-1	3	2	-1	3	3	0	2	2	0			3	2	-1	4	3	-1	3	2	-1	1	1	0	
How often do you feel isolated from others?	4	2	-2	2	2	0	3	2	-1	2	2	0			2	2	0	3	3	0	3	2	-1	1	1	0	
Feeling nervous, anxious or on edge?	3	2	-1	4	2	-2	4	2	-2	2	2	0			3	2	-1	3	2	-1	4	3	-1	2	2	0	
Worrying too much about different things?	3	3	0	4	2	-2	4	2	-2	2	3	+1			4	3	-1	3	2	-1	4	3	-1	2	2	0	
Trouble Relaxing?	4	3	-1	3	1	-2	3	3	0	3	3	0			4	3	-1	4	3	-1	4	3	-1	2	2	0	
Feeling down, depressed, or hopeless?	3	2	-1	2	2	0	3	3	0	2	2	0			4	2	-2	4	2	-2	3	2	-1	1	3	2	
Feeling tired or having little energy?	4	2	-2	3	2	-1	3	2	-1	2	3	+1			3	3	0	4	3	-1	3	3	0	3	4	1	
Little interest or pleasure doing things?	3	3	0	3	1	-2	3	2	-1	3	3	0			3	3	0	3	2	-1	3	2	-1	2	1	-1	
TOTAL SCORE - OUT OF 36	29	21	-8	27	16	-11	30	21	-9	20	22	+2	(Did not take part)	29	23	-6	32	23	-9	30	23	-7	16	17	+1		
PERCENTAGE	80.56%	58.33%	-22.23%	75%	44.44%	-30.56%	83.33%	58.33%	-25%	55.56%	61.11%	+5.55%	(Did not take part)	80.56%	63.89%	-16.67%	88.89%	63.89%	-25%	83.33%	63.89%	-19.44%	44.44%	47.22%	+2.78%		
On a scale of 1-10 how anxious do you feel about the proposed experience? (10 being very anxious and 1 being not at all anxious?)	3			3			2			3 or 4					5			5			5			4			
(POST TRIAL QUESTION) - On a scale of 1-10 how anxious do you now feel about viewing VR experiences? (10 being very anxious and 1 being not at all anxious?)		2	-1		1	-2		1	-1		1	-2 or -3				4	-1		1	-4		1	-4		1	-3	
(POST TRIAL QUESTION) - On a scale of 1-10, have these experiences helped you to overcome some of the symptoms listed above? (10 being greatly and 1 being not at all)		8			10			10			6					5			10			9			8		

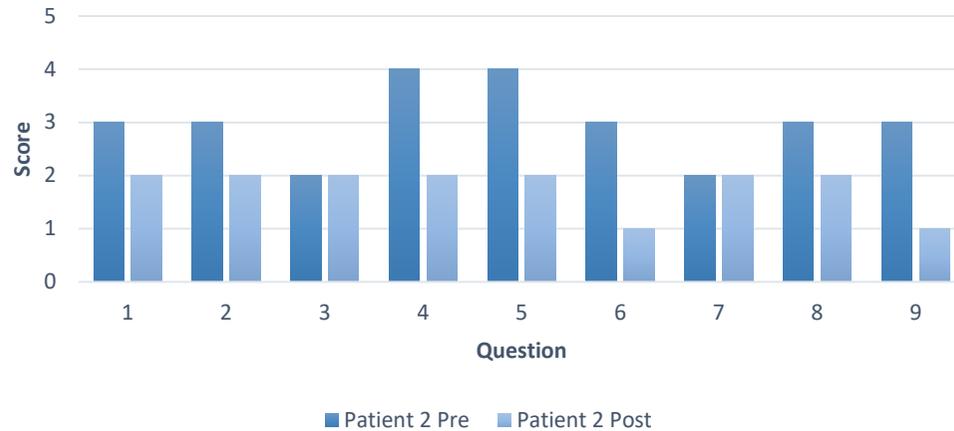
Never	Hardly Ever	Sometimes	Often
1	2	3	4



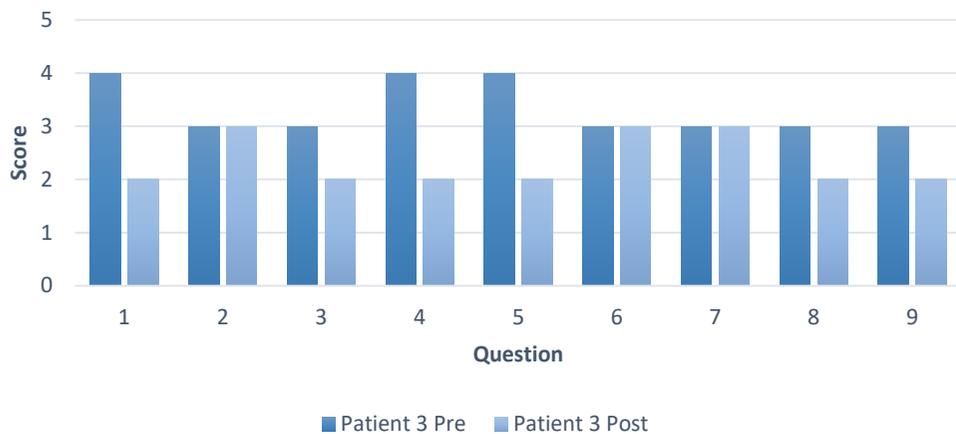
Patient 1



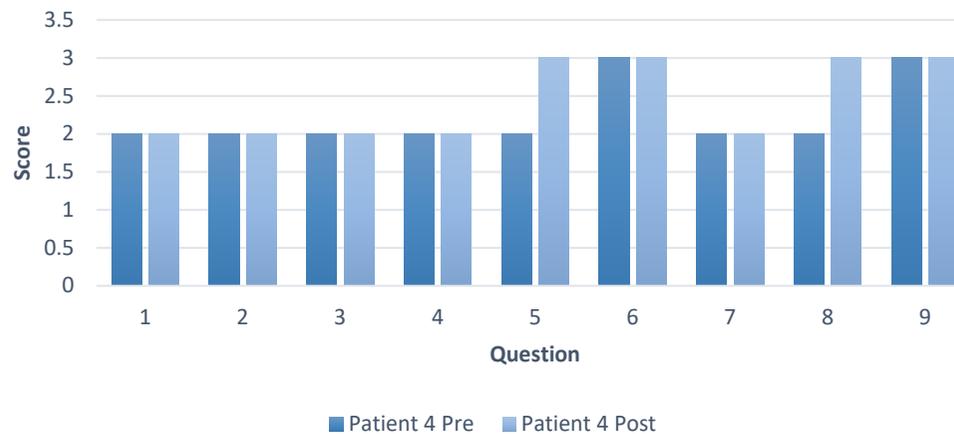
Patient 2



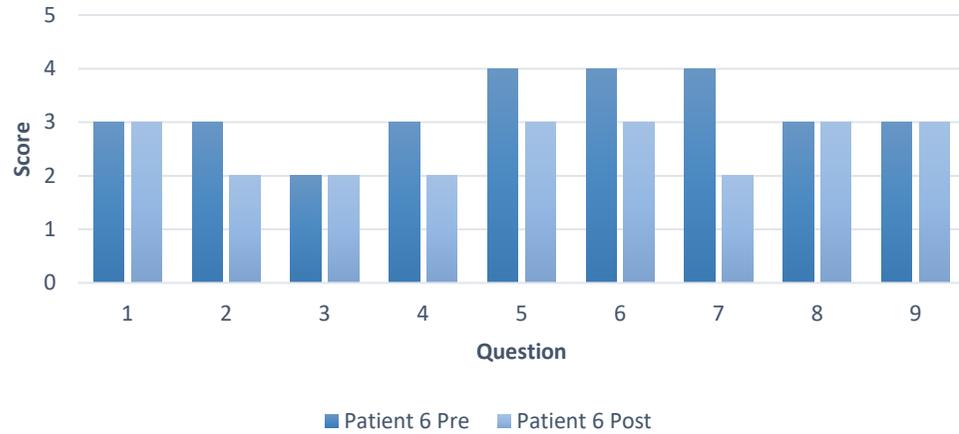
Patient 3



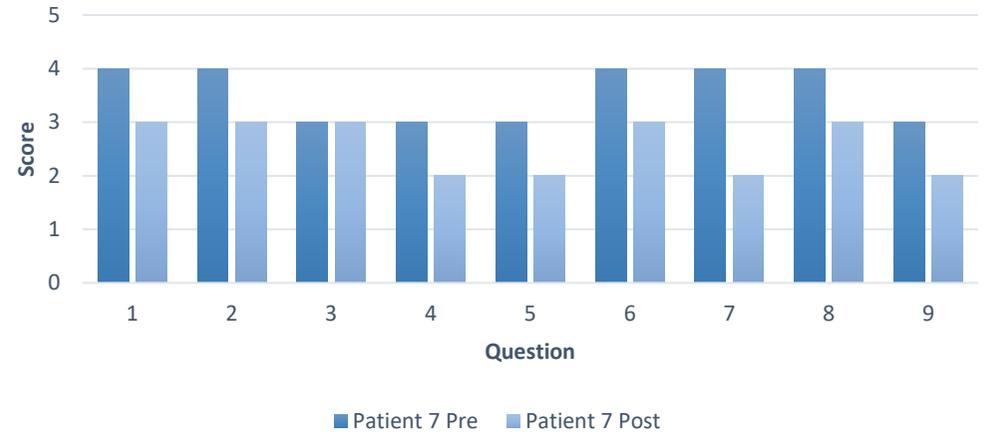
Patient 4



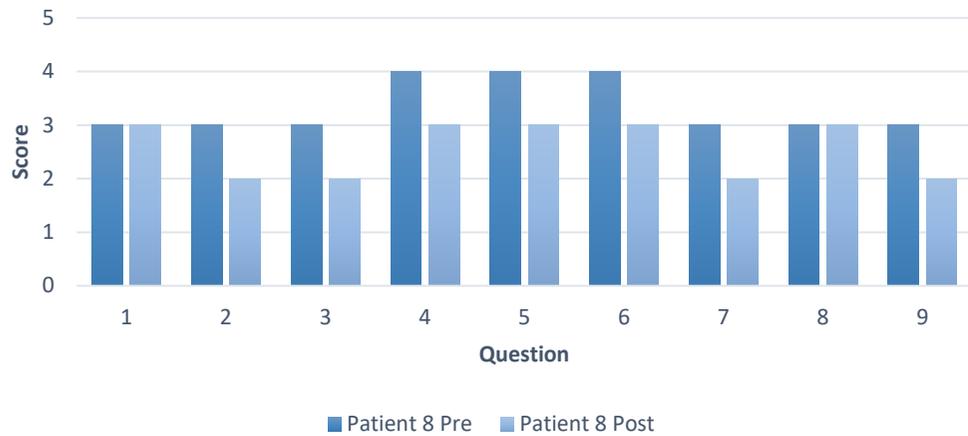
Patient 6



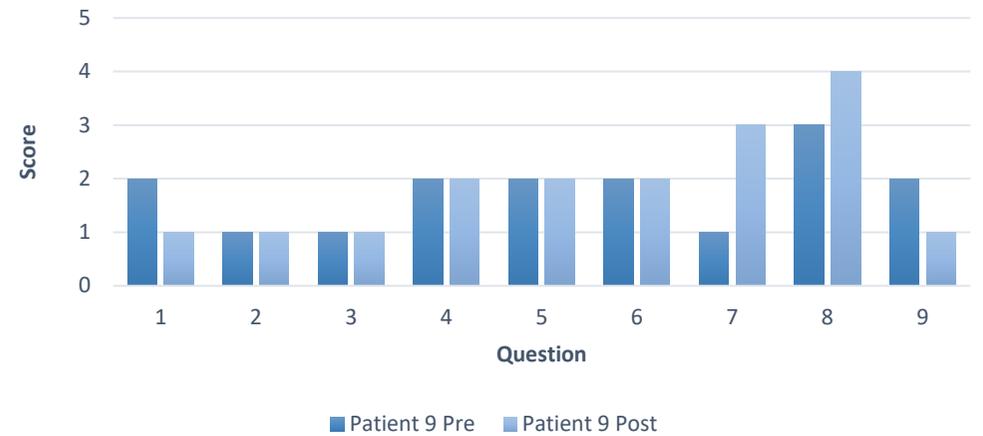
Patient 7

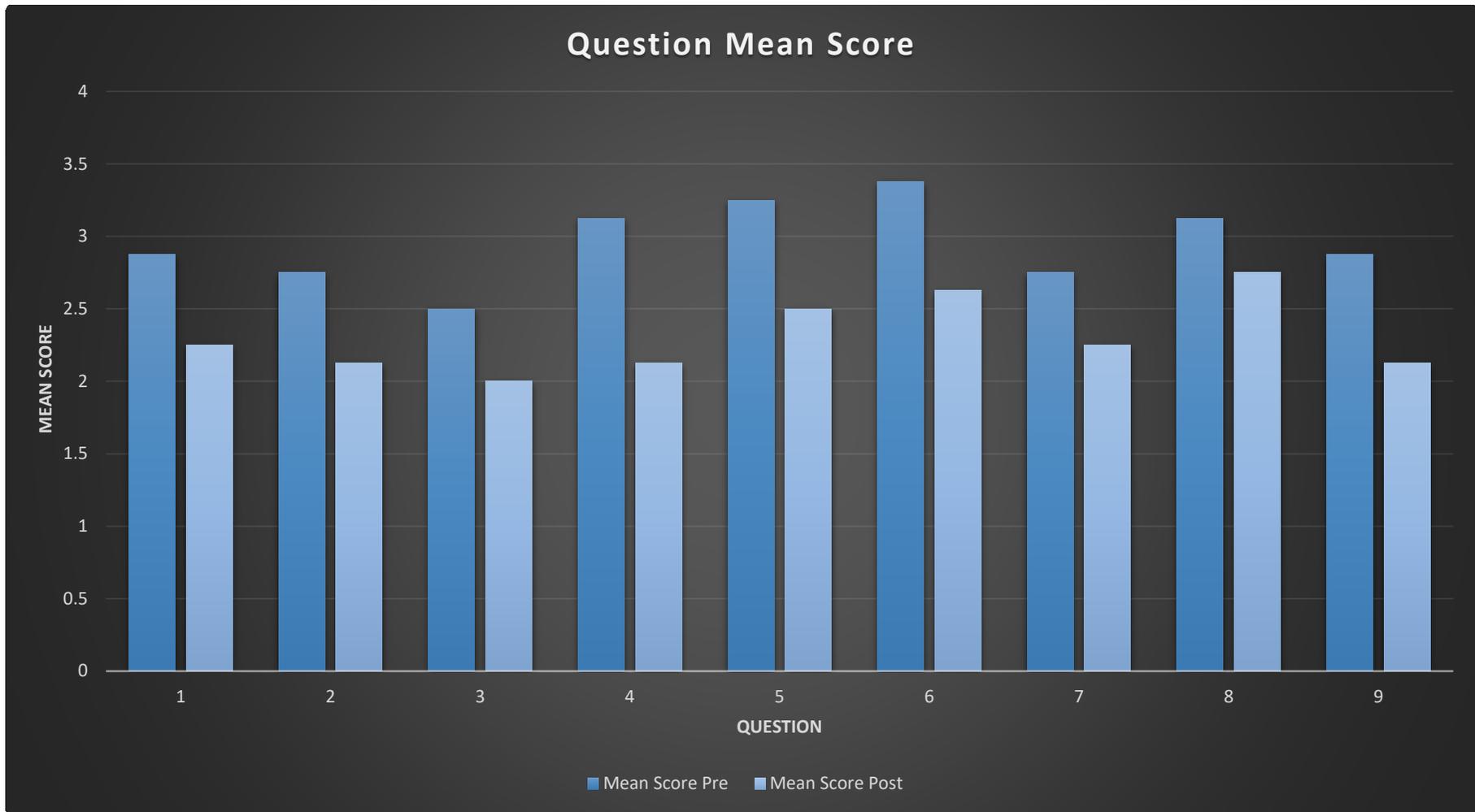


Patient 8



Patient 9





Results & Conclusion:

The study was set out to explore any potential mental health & wellbeing benefits of using 360° videos as virtual field trips using virtual reality headsets with hospice patients. All patients involved were from a range of backgrounds, suffering from a variety of conditions and with differing standards of life.

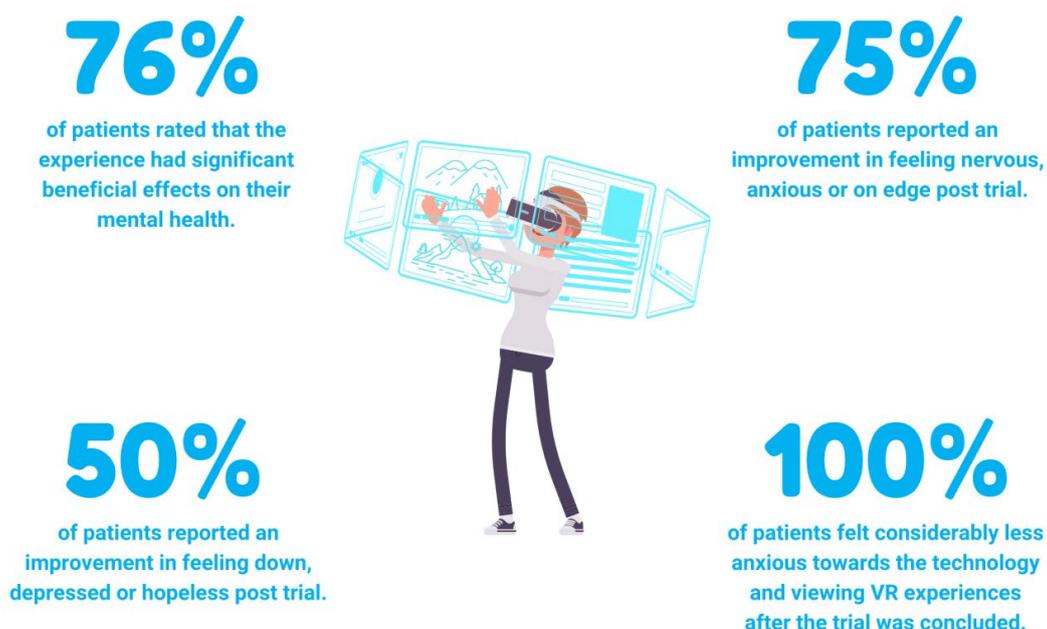
All eight patients were exposed to six 360° videos over the course of six weeks after gaining their consent. Participants were given an 11-item Likert Scale type questionnaire prior to exposure, and the same questionnaire post-exposure, including one more item on exploring the individual experience and feedback of each participant.

The results have been very encouraging as 75% of patients who reported feeling nervous, anxious or on edge sometimes/often, prior to exposure, reported improvement on the scale to experiencing this hardly ever. 50% of patients who reported feeling down, depressed or hopeless sometimes/often, reported improvement on the scale to experiencing this hardly ever, post-exposure.

Another huge positive is that every single patient (100%) felt considerably less anxious towards this technology and viewing VR experiences after the trial was concluded.

The results to the most conclusive question, captured during the post-trial questionnaire, were significant. This was concerning their own belief of the beneficial effect on their mental health, with 38% of patients rated that experience helped them greatly (10/10), a further 38% still significantly helped by it (8-9/10), and the rest rated their experience 5/6 on a scale of 1-10, showing a moderate effect on their mental health symptoms.

There were three additional participants for the trial (participant's partners) although formal feedback was not collected from these individuals, the informal feedback was highly positive.



Final Thoughts:

I personally think that the trial was a huge success. The patients took to the technology far faster than I could have hoped and they truly embraced the trial. They let themselves get fully immersed in each video and this really helped the overall success of the trial.

To see these videos, have such a positive effect on the patients and to see them engaging with me during the videos, as well as each other (the participants that did this in pairs) was extremely rewarding for me. Patients also mentioned having a topic of conversation with each other, family and friends for the following week. Some even decided to research in more depth about the locations that were showcased. This showed that the videos had a long-lasting effect even after the patients had finished each session.

A huge thank you must go to every patient that gave up their time to be involved in this. Their enthusiasm and willingness to try something new was pivotal in the success of this trial, so thank you.

Another thank you must go out to all the staff at Katharine House Hospice for being so open to trialling this technology and for being so welcoming and accommodating to me whilst I was there. It was great to get to know you all.

A thank you must also go to Rashi & Saeed for their input with the research element of the trial. I really appreciate you dedicating some time out of your busy schedules to be part of this.

And finally, a thank you must go to the team at The National Lottery Community Fund for rolling the dice with Project Vae and giving me a chance to finally show what I have been saying for years. That this technology has the potential to help a lot of people.

The hospice trial video can be found at:

<https://youtu.be/v6tfkOByu10>