

Evenness VR Sensory Room

Interim Report on Research Findings- May 2021

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This report contains an interim summary of qualitative findings from the Evenness VR Sensory Room Study. Pre and post quantitative analysis is ongoing and results will be provided in the Final Report alongside the qualitative findings.

32 adults with a variety of disabilities participated in the pilot study as VR Users along with 32 matched carers. A portion of these participants, and staff who supported the implementation of Evenness, took part in semi-structured interviews which were recorded and transcribed verbatim for deductive thematic analysis by the research team. The purpose of conducting qualitative interviews was to capture perspectives on the impact and use of the Evenness VR Sensory Room, enablers, barriers and points for improvement. Interview participants included:

- VR05- 21 year old autistic person and their carer
- VR08- 20 year old with intellectual disability who is a wheelchair user and their carer
- VR02- 26 year old with a variant of klinefeher syndrome and their carer
- VR27- 33 year old with cerebral palsy and intellectual disability and their carer
- VR29- 61 year old with mild intellectual disability and their carer
- Staff Members #1, #2 - Disability Trust Staff members who were involved in facilitating the use of the Evenness VR Sensory Room with study participants.

Findings from Qualitative Interviews

A number of key findings can be reported in relation to the Evenness VR Sensory Room. These findings are preliminary and will be better understood in the context of the quantitative findings when this analysis is complete and presented in the Final Report. Each finding is presented with verbatim quotes from interview participants. Qualitative findings reporting perceived benefits would need to be supported by quantitative findings to draw firm conclusions about the effectiveness of the Evenness VR Sensory Room.

Finding 1: Evenness VR Sensory Room was reported to reduce anxiety

A number of interview participants reported a perceived benefit in relation to reducing anxiety in those who used the Evenness VR Sensory Room. Both staff members reported this as the most prominent benefit to users:

‘The main one that we see is it helps with anxiety. So a lot of participants come in and they’re quite heightened. They’re having behaviours of concern, self-injurious behaviours.

And we put them in there, and we see them calm down, which is really, really good to see.’
(Staff #1)

‘And I think the benefit also of when they come out of that space is, we see them, they’ve got a smile on their face, they’re happy, they’re relaxed, they’re calm. If they were in a heightened state, or anxious even about going into it, once they’ve been in it and come out of it, it’s almost like a sense of relief, or they’re obviously a lot more relaxed at the end.’
(Staff #2)

Additionally, users and their carers also identified this benefit, with one example provided below from a 61 year old participant with intellectual disability:

‘Just breathing in my own space, not worrying. It’s hard to explain but, when I was in here, all my problems just went. I was just concentrating on what was around me more and the sounds and that was different. People say, “Listen to music when you’re doing that,” but to experience something like that is, I’ll never forget it actually.’ (VR29)

‘I can’t wait for the next one actually. Actually, when I go to bed now and I have a few bad moments, I just look up and I just see the stars and that and I just – it’s changed me a lot actually.’ (VR29)

Finding 2: Evenness VR Sensory Room was reported to support social participation

The two staff members also observed that by users experiencing the Evenness VR Sensory Room and the subsequent reduction in anxiety, users were able to continue to participate in activities, as demonstrated by the following quotes:

‘So benefit for the user is exactly that, that they can get out and live their life to the best of their ability.’ (Staff #2)

‘It helps them – I think it will help them socially interact, because when they’re getting quite heightened, they remove themselves from the situation. And then a lot of the time without other interventions such as the Sensory Room, they won’t want to go back into that situation for the day. So I think by putting them in the Sensory Room, instead of removing them from the situation and not returning for the day, they’re going in a Sensory Room for five minutes, calming themselves down, re-regulating, and then they’re going back into the situation. So I think it will help them to socially interact.’
(Staff #1)

Finding 3: The Evenness VR Sensory Room provides organisations with a point of differentiation and technological innovation for clients

The National Disability Insurance Scheme encourages choice and control for clients whereby they are empowered to select services. Participating staff members identified the potential of the Evenness VR Sensory Room to provide a point of differentiation:

‘It's something different that hasn't been used in disability services. It's a point of difference for our services to have something like this available to participants. It's innovative, it's different, it's new.’ (Staff #2)

Finding 4: The majority of users and carers were motivated to use the Evenness VR Sensory Room and enjoyed the experience

Staff reported that the majority, although not all, participants enjoyed using the Evenness VR Sensory Room, and their carers and families were keen for them to participate. Staff reported that ‘one participant has stated that she no longer wants to do it. So at the start, she was really, really excited. She was enjoying it. She was in there for like five-minute periods. I don't know what happened along the course of the six months, but now she doesn't want to come here.’ (Staff #1)

Other comments from staff, carers and users themselves, however, show the positive interest in the Evenness VR Sensory Room due to its innovation and use of technology:

‘It's obviously something different. It's new. It's technology. It's innovative. So because of that I think there were a lot of families who were interested.’ (Staff #2)

‘He likes technology a lot as well. He's got an iPad and a laptop.’ (VR05- Carer)

‘And a lot of them were extremely interested. A lot of them suffer from anxiety or mental health them self. And again, innovative, new, something completely different that they've never been a part of, and that which really interested them, so therefore they were keen to join.’ (Staff #2)

‘Because it's just a new experience and actually it was the best thing for me, ever. I didn't know what to expect at first but just reading a bit up about it ... And it's amazing. It was something good as well actually and I'm so grateful to have had the opportunity to have a go at it actually.’ (VR29)

Finding 5: Participants were able to use the Evenness VR Sensory Room provided they had support

Interview participants reported that support was required both in the set up and use of the Evenness VR Sensory Room, but once participants were set up, some were able to independently use the room. Staff reported on the support they provided with the setup:

‘It's more we just show them what to doSo I'll put the headset on their head, and then I'll put the controllers - - - yep – put the controllers in their hand, obviously, telling them what's happening the whole time, saying I'm about to put the controllers in your hands. And then I'll hold their hands whilst they're holding the controllers. And I'll help them walk around and reach out to touch everything and explain what all the buttons do. We did it with pretty much everyone, because it's quite a large room in there, and there's quite a few things to touch. And there's a lot of different buttons that needed to be said what they do. So, yeah, we did it with everyone for their first time. Sometimes, a few of the people still, every time they come, we'll need to assist them with walking around the room and touching everything, but most of them, now that we're six months into it, they're capable of doing it by themselves.’ (Staff #1)

‘So generally it's showing them the handsets, getting them to touch the handsets, and hold the hands, so that they know that that's what that is. Showing them the headset itself. Either the support person or the operator would show them how that would go onto their head, so that they could visually see. So putting them on them self, so visually showing where it goes and what it looks like when it's on somebody else. And then supporting them to put it on their head them self. Yeah, with varied results.’ (Staff #2)

‘So he needs someone to set it up for him but, once you put it on his head, he's fine to walk around by himself.’ (VR05- Carer)

Carers and staff reported that having a trusted carer who knew the person and their support needs was important to facilitate participation in the VR Sensory Room:

‘And feedback, I think you'd have to go off body language and visual, like their senses, because they're scared, they're hesitant or, if they're excited, they're excited after they finish it. So I think you have to read their body language to understand if they're really liking it. (VR08-Carer)’

‘Yeah. You will need to have someone dedicated to the VR because they do need help to get it going. And some of the participants as well will need support whilst in there, especially if they're in wheelchairs, and they're also the ones that are quite uncomfortable with walking around. They sometimes like you to help them so you definitely need a carer.’ (VR02- Carer)

‘I think once they're in – and we can obviously see what they can see on the screen. So there is some verbal prompts to say, look around, like 360 degrees and you can see all the things, look up the sky, look down at the floor, this is what a button looks like. So just giving them the verbal prompts of what the actual space is and what each of those things do, but once they've got the hang of that they're really into it and we'll just move around, and some will be, as I said, fixated to a specific item within the sensory room, others it's more exploratory and just moving around and seeing what each of the items do.’ (Staff #2)

Finding 6: Participants used the Evenness VR Sensory Room differently

Participants tended to use the VR Sensory Room differently depending on their own sensory needs and preferences:

‘I think it varies as to what they actually use when they're in there, because obviously there's the whole range of different items they can look at, once they're in there. Some just like the colours, the lights, the sounds. Others will be more glued to a specific within the sensory space.’ (Staff #2)

“Just looking up in the sky, seeing the stars up there. It was just – well, and coming through some tough times at the time and I think that's made a big difference. “ VR29

VR27: Well, there's a piano., Carer: The piano? You like playing the piano. VR27: Yeah.’

‘I think the fact that he can go into a room and there's nobody else in there and it's just him in the room, and he can hear them meditation, music and see everything. I think that's what helps

the most. He does like to do meditation and breathing exercises as well, so music is a big one for him.’ (VR27- Carer)

‘I think if someone’s more interested in the lights, you know, lights versus the sounds, or the sounds versus the lights, having more items within the space that adapt to allow sound versus something – so I know that within the space there's buttons that push to shoot lights out into the distance. We see some participants will spend so much more time just pushing that keyboard, which sends out a sound that they’ll be watching the light the whole time it goes out, whereas others are playing with the – it's, ah - - I'm trying to think what it's called. It's like a chain thing. So again, the lights do change, and the sound there. But just trying to correlate what their interests are, how we can make, more align it with either the sound of the light or what they're actually interested in in that sense.’ (Staff #2)

Finding 7: There were barriers to the Evenness VR Sensory Room use

The most common barrier reported by interview participants was the VR Headset. This was related to reluctance by some participants to engage with the VR Sensory Room because of the headset.

‘I think that would be a lot better [technology with no headset]. Look, I think even if the goggles were more glasses not – they're quite big and bulky at the moment. I think they would be more open to just putting on some glasses, because it is quite intimidating. It's black. It's very big and bulky. We're coming at them, and it's very intimidating for them, I think. So even if it was glasses, or if it was a screen that they could look at, that would probably be a lot more successful.’ (Staff #1)

‘There's a barrier for a lot of other participants being able to put the headset on. They don't like the feeling of having it on their head, it's quite intimidating for them.’ (Staff #3)

‘I think a lot of the barrier is the big goggles, because a lot of the sensory part on the head is an issue because you're tracking them in these confined, autistic children or adults that's confined, that's a sensory thing. (VR08- Carer)

‘I think the physical headset itself can be a barrier for some, as we've said before. And we've found the colour the headset has been a barrier as well. It's black. So we’re not sure whether just something black going on could be – as people have said to us, oh if it was white it might be more - - - The users have said that, yeah. There have been other people that have said that the black is off-putting. So potentially a white headset or a colourful headset could be more user friendly’ (Staff #2)

Barriers were also reported in relation to accessing the headset because it was only available at one location during the study:

‘Probably just getting here to be able to use it, because he's actually from another centre, so we have to organise time to get him here but that's probably it. So the accessibility.’ (VR05- Carer)

‘Access is definitely a barrier. So whether it be transport, availability, hours of operation, staff to support access, are all barriers to it.’ (Staff #2)

There were also barriers related to staff time to support participants to use the VR Sensory Room as VR05, a 21 year old autistic participant describes:

‘INTERVIEWER: And why don't you start using it?, VR05: Because you get the other workers are busy doing something.’

Staff willingness to support participants was identified as a barrier, although some of this was related to the research project data collection:

‘We have taught staff how to use it, but then they forget quite quickly. I don't know whether they actually want to be involved with it. So that's probably a factor as well is staffs' willingness to engage the participants in the VR. It's quite low, to be honest. Even with the other team leaders at the other centre, I'm finding even though it does not affect their job at all, I'm finding it quite difficult to get them to be involved in it and to have an openness to the project as well. I think it's just the amount of people involved in the research. Yeah, the pre and post. And the fact that we have to put them in quite a lot. Every two weeks I'm doing it, to get that large amount of data. So I think once were the research side of it's finished, people will probably be a bit more open to it, because I'm not saying you have to come down here every two weeks to get this data, it would more be a bit more client focused. So when they come every two weeks, there's not much that they have to do, but I think because it's taking them away from their other programs that they do. They have to come here for half an hour, 40 minutes. They just don't like change in routine. Yeah, definitely. I think that's what it is. They're seeing it as a bit of a burden because it's extra work that they have to do.’ (Staff #1)

‘But at the end of the day they're also, I think the staff are motivated to use the VR space, because they've also seen the benefits to the participants they're supporting. So because they've seen those benefits over time, they're willing to come and continue to give it a go, and support this, and encourage them as much as possible to get into the space, so that the benefit is there for the participant. Definitely. I think staff who are supportive and willing to support the participant, are aware of the participants needs and they know that this is a program that supports them to regulate themselves, or they need to disengage from the activity, and use something as a tool to get them to refocus. So yeah. So that would be an enabler, having staff understand that process.’ (Staff #2)

Finding 8: There are ways to improve the VR Sensory Room and support use by people with disabilities:

More resources including technology, space and staffing would support implementation as staff have outlined during their interviews:

‘I just think at the end of the day it's just accessibility to the system. We only have one headset available. So if we did have multiple, and I know the system that we're using is also a fixed system, so I know that there is also portable systems that can be used as well. So whether there is, in further study or whatnot, there's opportunity to almost sign out systems to those people who live in the community and use them when they feel dysregulated, if they're at work, if they're in the community, whatever. I mean, having that readily available and pop them self into a quiet space. Maybe that would make a difference as well.’ (Staff #2)

‘I think budget comes into it because it's very expensive to get the full package.’ (Staff #1)

‘Also, you have to have the space for the Sensory Room. So it has to be quite a decent sized room for you to be able to run it effectively. Because if you make the room too small, it's not going to be very enjoyable for the participant. I think they definitely need the support person with them at least for the first few times. And then you can gauge whether or not they have the independence to go in there by themselves. But there's not much that you need to run it really.’ (Staff #1)

‘I think, definitely resources are a factor. I'm mainly the only one who knows how to run the VR Sensory Room. So if I'm not here, which I'm not – I run two centres, so, sometimes, I'm not here every day, that plays a big factor. So I think funding as well, to be able to fund things.’ (Staff #1)

‘I know that it would probably be great for there to be a VR specific position for someone who could help with the implementation and rollout to make sure it goes – we're not setting everyone up for failure. Because I think if it's rolled out correctly, then everyone will be more open to it wherever. However, if there's a lot of bumps along the way, and it's not rolled out smoothly, people aren't going to be open to it, and they're going to shut off quite quickly. So I think having someonewho would – and then they can also go out and train the staff how to use it, train the team leaders how to use it. They can be in charge of getting other people involved into it. So, maybe, going out to other stakeholders, seeing if there's people in other companies who want to come in and use it who would be interested in using it, going out to schools and seeing if – because this is something as well that we could entice people to come to our service because we have this brand – this thing that no one else has. So if it's rolled out correctly, it's something that could be very positive for the company.’ (Staff #1)

‘It's [training staff] very, very important, I think. And it's also important for the participant to learn that when they're feeling heightened, that they can self-regulate themselves, and they can go to that space without having to involve anyone else, so it's very important.’ (Staff #1)

‘To improve implementation. Availability. Yeah, so obviously they'd have more headsets. The Disability Trust is a big organisation, so as I said before, there's a number of regions that are interested watching what's happening in the Illawarra. Yeah, exactly. Exactly. So whenever I say this is what I'm doing today and I'm going to do this, and this is about the VR space, they're all like, oh, when's it coming to us? So I think we need ready access to headsets that are available to move out to the regions. There is a cost barrier obviously associated with that.’ (Staff #2)

VR Users also made suggestions to improve the Evenness VR Sensory Room as detailed in these quotes from VR Users:

‘VR05- Carer: So you just want to see bubbles in there. , VR05: Yes.’

‘VR27 Carer: And what else do you want to see in there? VR27: A waterfall. Carer: A waterfall? VR27: Yeah.’

‘INTERVIEWER: Is there anything else that would make it better? VR27: Clock. Carer: A clock? Do you want a clock in there? VR27: Yeah. Yes.’

Finding 9: A VR Sensory Room was preferred by most participants when compared with a standard physical sensory room:

Interview participants expressed that despite the initial outlay in cost, the VR Sensory Room may be more cost effective over time than a physical sensory room:

‘Cost is the big one. So having a physical space, things get broken, they need to be updated, renewed, cleaned. Yeah, with the participants that we’re dealing with, with challenging behaviours, you're putting someone into a sensory space who is heightened or dysregulated and breakages can happen. Yeah, I think there's a definite difference in cost. While I say the VR equipment is an outlay cost, the ongoing cost is a lot less. That’s definitely one thing, from an organisations point of view, is beneficial’ (Staff #2)

A VR Sensory Room is more portable and COVID-safe than a physical sensory room:

‘And then the VR Sensory Room, it's great because it can be moved, if you have the wireless one, from space to space. So you could take it out with you in the community, for example, as well. Probably the VR Sensory Room is more versatile because you can take it out with you. You can move it from space to space.’ (Staff #1)

‘If a participant lives in a group home, but then also goes home to their parents on a weekend, they could take that device with them. They can take it out in the community. A VR sensory room would be a lot more useful in that sort of sense of things, because it's not one room and that can’t be moved.’ (Staff #1)

‘A virtual reality sensory room is a lot more easier to clean, if we're talking about COVID related. But I think that the Virtual Reality Sensory Room will be a lot better for COVID because you can move it from room to room.’ (Staff #1)

‘Definitely again the cleaning of the physical space and so many touch points versus the one touch point, which is the VR headset, well three if you include the two handsets as well.’ (Staff #2)

Individual sensory preferences were considered by individuals when deciding whether they preferred the VR Sensory Room or the physical sensory room. VR27, a 33 year old with cerebral palsy and intellectual disability described the VR Sensory Room as better in relation to visual input:

‘INTERVIEWER: Which one is better? [*physical sensory room or VR sensory room*]
VR27: That one. [*indicates VR*], INTERVIEWER: That one, the VR one, it’s better and why is it better? VR27: Because you can see. VR27 Carer: Because you can see?
VR27: Yeah.’

VR Users who preferred tactile (touch) input as part of their sensory room experience reportedly preferred the physical sensory room. VR08, a 20 year old with intellectual disability who uses a wheelchair described their preference:

‘INTERVIEWER: So if you have the touching and real sensory experiences as compared to the virtual reality, which one is better? So the real room or - - - Carer: Do you know when we put things on the table, and the sand and the puzzles and the rice - - -
VR08: Yeah. Carer: - - - or you've got this? Which one do you like the best?
VR08: The rice. Carer: The rice one, so you can feel it? VR08: Yeah.’