



FrailtySIM - User Feedback Report

Using the virtual world to improve the real one for older people living with frailty

Contents

1. Executive Summary
2. Overview of the development to date
3. Profile of users
4. Analysis of feedback
5. Conclusions and next steps



Vic's story is told

Executive Summary (1)

FrailtySIM was initially developed by Fusion48 and Virtual Reality Simulation Systems as part of a Nottinghamshire-wide Frailty & Supported Self-Care Education and Training programme.

It has since been used by over 1,000 health, care and related staff at a range of training events. These users have come from over 150 different organisations, 62% have been from NHS organisations, with the balance from local authority adult social care, care providers and related public services (e.g., Fire service).

The average level of experience in health and care has been relatively high with an average of 14 years working in the sector.

"Having a deeper understanding can result in empathy and reduce the level of carer's stress as they can actually "experience" the difficulties that can be faced."



FrailtySIM has three principle learning goals:

1. Increase understanding of frailty and help develop greater empathy.
2. Improve observational skills and awareness of environmental clues
3. Deploy novel assistive technology to help achieve goals

95% of users have provided both quantitative and qualitative feedback, with a consistent set of questions used across all events.

"VR was best idea I've experienced to aid stepping into someone's world to help to understand their needs."



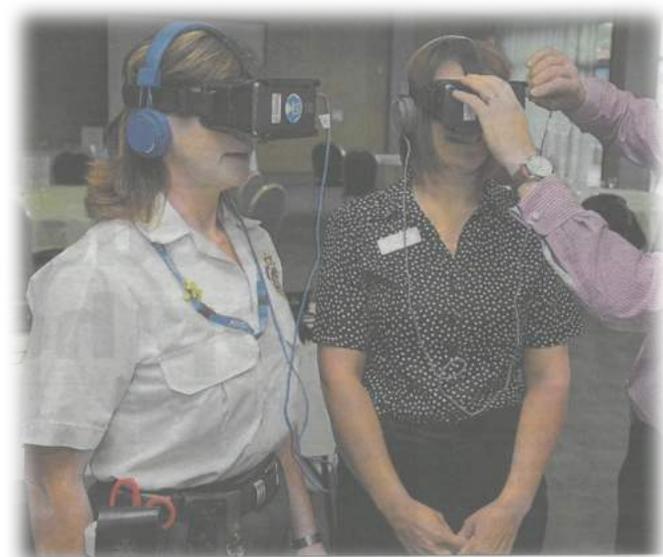
FrailtySIM - Virtual Reality based frailty training

Executive Summary (2)

FrailtySIM has proved to be a high impact, memorable addition to a range of related training events.

The overwhelming proportion (91%) of users rate it as "good" or excellent" across all dimensions. This increased to 96% for the key outcome question of "helpfulness in building empathy".

The lowest rated question (86% "good" or "excellent") was "duration



More than 70 county workers used virtual reality technology to experience living as an older, frail person.

of VR experience" where the main feedback was a desire for longer in the virtual environment.

"I found wearing the simulation goggles the one thing that sticks in my mind and how disorientated I felt. I make a conscious effort now to guide patient more & give clear concise instructions."

Ease of set up and use has been demonstrably improved with deployment of introduction video and improved hardware. Addressing concerns about instructions and comfort of goggles.

Providing longer and better navigation to explore the environment before starting impairments is included in the next phase development.

Quality of VR experience has been highly rated. A small proportion (2-3% of users) had problems with audio or visual aspects of the experience. Less than 1% reported dizziness, nausea or headaches.



"I particularly enjoyed the interactive virtual reality experience which gave me a valuable insight into 'Victor's' world."

Contents

1. Executive Summary
2. Overview of the development to date
3. Profile of users
4. Analysis of feedback
5. Conclusions and next steps



“Brilliant experience - recommend this is used more”

Overview of the deployment to date

The initial development of FrailtySIM was part of a Nottinghamshire-wide Frailty & Supported Self-Care Education and Training programme.

It was developed by Fusion48 and Virtual Reality Simulation Systems and the first prototype was tested in September 2015.

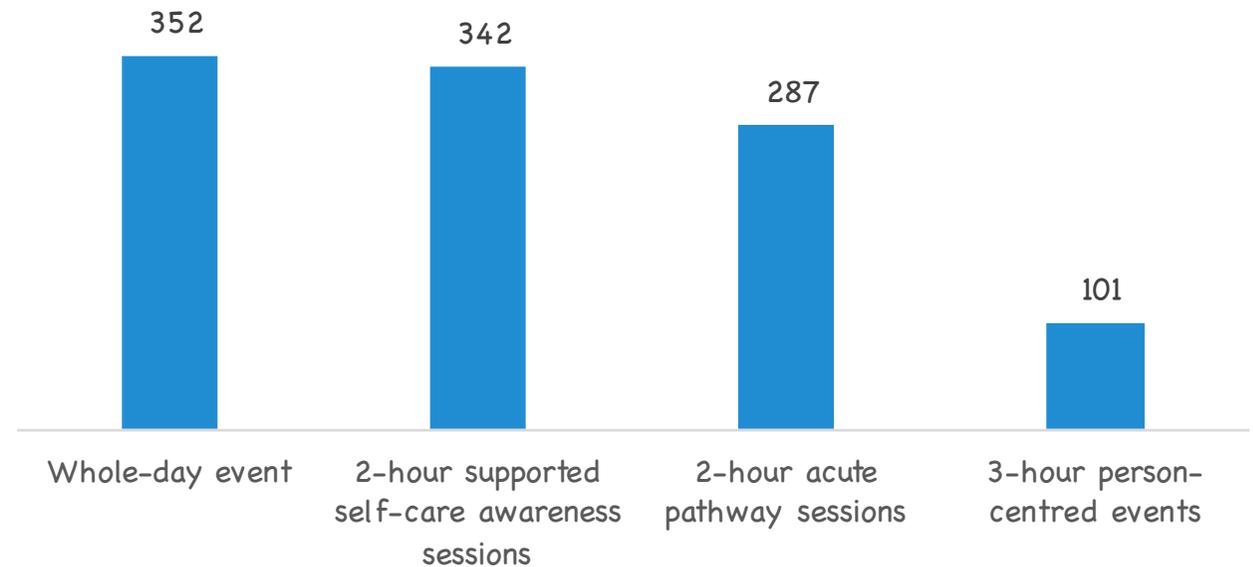
Initially used as part of whole-day training events for health and social care staff, it introduced one of the person-centred case studies used as part of the training events. FrailtySIM has three principle learning goals:

1. Increase understanding of frailty and help develop greater empathy.
2. Improve observational skills and awareness of environmental clues
3. Deploy novel assistive technology to help achieve goals

Over 1,000 users have now experienced FrailtySIM through a variety of training event formats including:

- Whole day training events (10 events)
- 2-hour frailty and supported self-care awareness building sessions (21 sessions)
- 2-hour Managing frailty at the front end of the emergency care pathway (17 sessions)
- 3-hour person centred care training events (4 events)

Users providing feedback by event type



“Very useful, realistic experience that I would recommend.”

Approach to feedback

All FrailtySIM users have been asked to provide feedback on the experience. The vast majority (c. 95%) have completed a feedback card (see opposite) or equivalent questions as part of the overall event evaluation feedback form.

The same six questions have been asked throughout, with five requesting a quantitative response along a 5-point scale with qualitative descriptions and emoji faces (Poor to Excellent). These questions cover:

- Set up and use
- Quality of VR
- Duration of VR
- Relevance to learning outcomes
- Helpfulness in building empathy

Suggested improvements have also been requested.

The final questions ask for the words the person would use to describe the experience to a colleague.

The feedback has been captured in an excel spreadsheet which has been used to analyse the results.

Word Cloud software has also been used to analyse the qualitative comments.

Virtual Reality Simulation Feedback



How would you rate the following aspects:	Poor 	Fair 	Neutral 	Good 	Excel- lent 	Please provide brief comments about anything you would recommend changing for future events?
Ease of set up and use						
Quality of virtual reality experience (e.g., audio-visual, environment, interaction)						
Duration of VR experience						
Relevance to Learning Outcomes						
Helpfulness in building empathy / walking in the shoes of an older person with frailty?						

What words would you use to describe the experience to a colleague?

“Would highly recommend this - think it should be taken to CCG.”

Developments along the way

The basic format of the FrailtySIM module has remained reasonably consistent throughout. However changes have been made in response to feedback as time and resource have allowed.

The FrailtySIM module follows a module on “what is frailty” which includes the Frailty Fulcrum animation. At the shorter format events FrailtySIM follows immediately, whilst at the whole-day events other related modules have taken place in between.

Other differences between sessions which may explain changes in feedback are outlined below:

1. Sharing equipment

Due to constraints on the number of VR kits available, users have had to share equipment at 4 events (116 users).

2. Clues worksheet

To increase the focus on the observational skills learning goals, a “clues worksheet” was introduced after the first set of 5 whole day events (155 users). This was then updated to replace the description of “avatar” with “Victor”.

FrailtySIM: Clues about Victor's life			
Clue	Domain	Resilience (+) or Vulnerability (-)	Reasoning
Old style kettle	Physical environment	Vulnerability (-)	Heavier and harder to handle than modern kettle (sloid risk) and doesn't switch itself off (fire risk)

A further change was made before the 3-hour sessions to include both the reflective learning and observational skills, and reinforce the importance of the frailty fulcrum domains.

3. Intro & walkthrough videos

As part of the improvements enabled by the Ufi grant funding, two videos have been produced to “digitise” the introduction to FrailtySIM and the walkthrough of the environmental clues at the end of the session. The intention of these videos is to increase the consistency and enable ‘learner-led’ deployment of FrailtySIM.

These videos have been tested at the 2-hour acute frailty pathway and 3-hour sessions.



Contents

1. Executive Summary
2. Overview of the development to date
- 3. Profile of users**
4. Analysis of feedback
5. Conclusions and next steps



“Very good - produced real feelings of frustration and anxiety.”

Profile of the users

As part of the management of training events where FrailtySIM has been deployed, information about the users has been gathered.

This has varied depending on the nature of the event, with the most information gathered before the whole-day events and the least gathered for the shorter sessions.

Feedback has also been gathered anonymously and so it is not possible to segment the feedback by user demographics but understanding the range of users that have provided feedback enables an assessment of the breadth of its applicability and relevance.

Events have been multi-organisational with a diverse mix of participants. A summary of the information is shown opposite.

1,090 Users providing feedback

152 Organisations represented

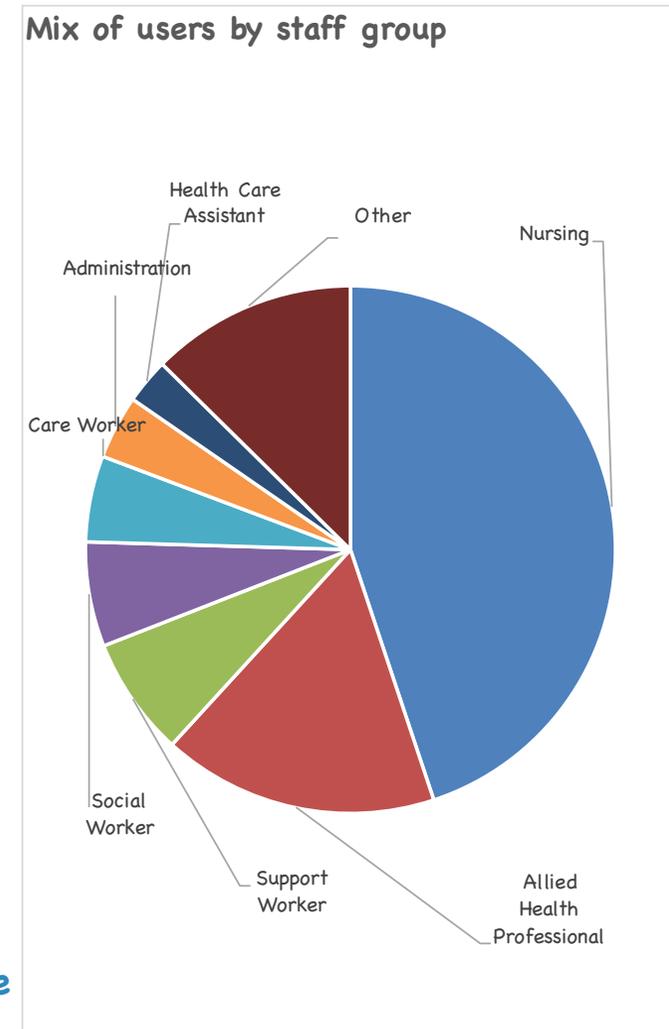
62% Healthcare staff

20% Private, Voluntary and Independent sector

16% Adult social care staff from local authorities

14yrs Average length of time working in health and care sector

8 out of 10 Users have been female



Summary results

Across the 1,090 users that have provided feedback, 98% provided responses to individual questions (c. 1063).

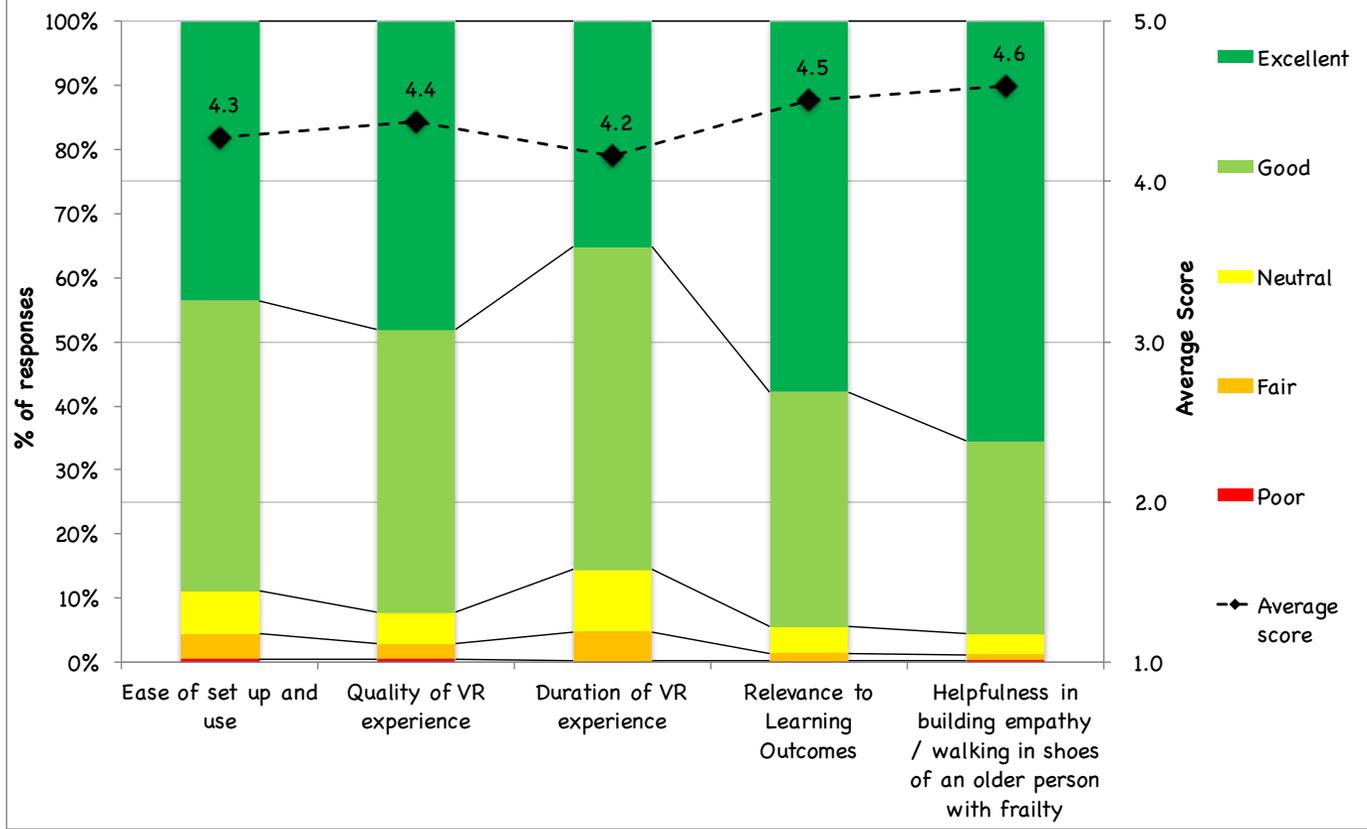
91% of all responses were either "good" or "excellent". This increased to 96% for the key outcome question of "helpfulness in building empathy".

The lowest rated question (86% "good" or "excellent") was "duration of VR experience" where the main feedback was a desire for longer in the virtual environment.

All averages scores were in the range 4.2 to 4.6 out of 5 ("excellent"), with 50% of all responses being the highest rated score.

Two-thirds (66%) of users rated the experience as "excellent" for "helpfulness in building empathy".

Profile of responses across all questions



58% of users rated the experience as "excellent" in terms of "relevance to learning outcomes"

Ease of set up, quality of VR experience and duration received excellent ratings from 44%, 48% and 35% of users respectively

"Extremely useful to understand how frustrated a frail person gets."

Ease of set up and use

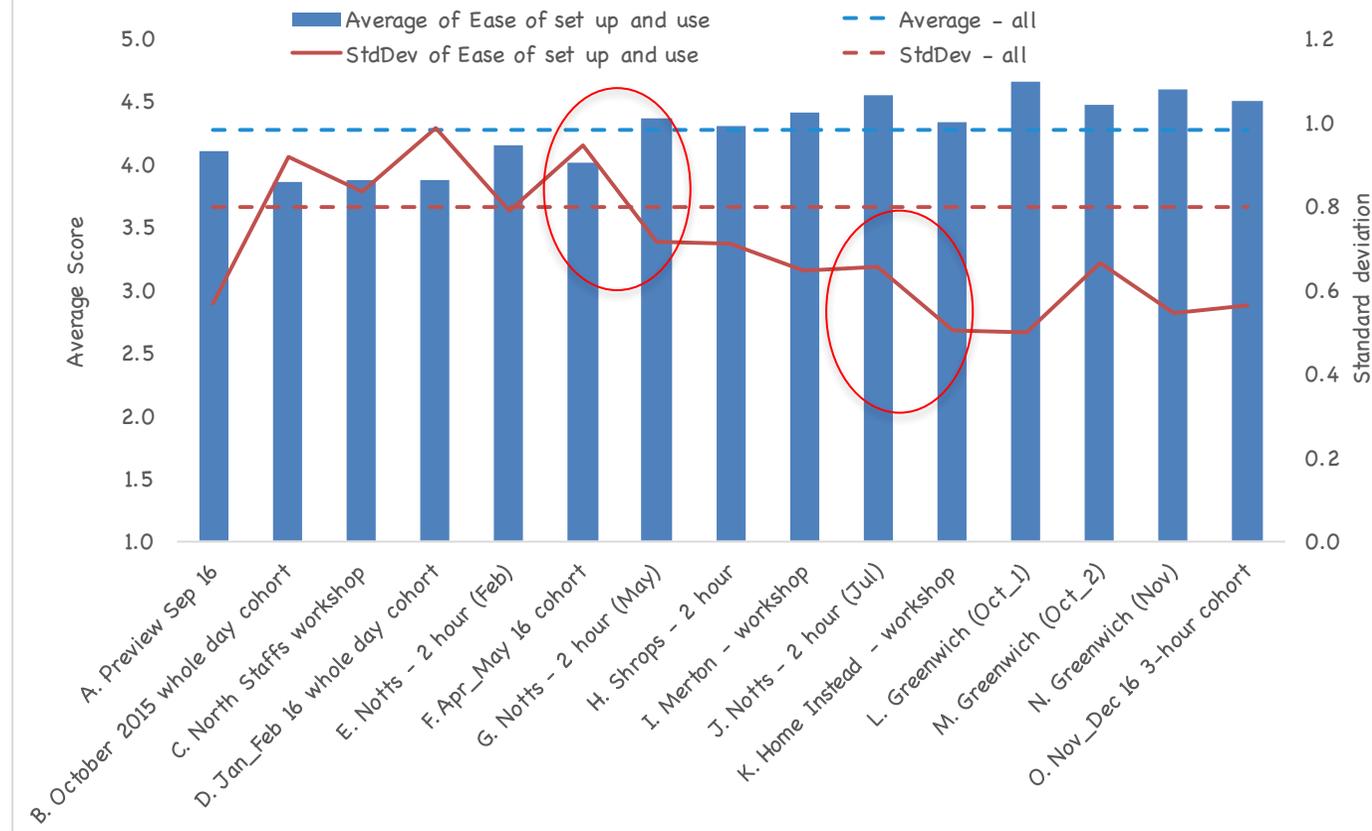
The average rating across all users was 4.3, with a standard deviation of 0.8.

- 44% rated ease of set up and use as excellent (5 out of 5)
- 45% rated it as "good"
- 7% were "neutral"
- 4% rated it as "fair" (2 out of 5)
- Less than 1% scored it as "Poor"

14% of users provided a comment (153/1067). Of these:

- 38% (57) were positive such as "easy to set up"
- 14% (21) referred to the fact that they had received support or that the equipment was set up for them
- 12% (18) felt that the delivery of explanation or instructions could be improved or that more information was required.
- 9% (14) referred to discomfort of the headset / straps being either heavy or too tight.

Ease of set up and use



All other themes of comments had or fewer comments (less than 0.5% of all feedback).

The feedback improved across the cohorts, reflecting improvements made along the way including use of video and new headgear.

"Once the unit was on, it was easy to use."

Quality of VR experience

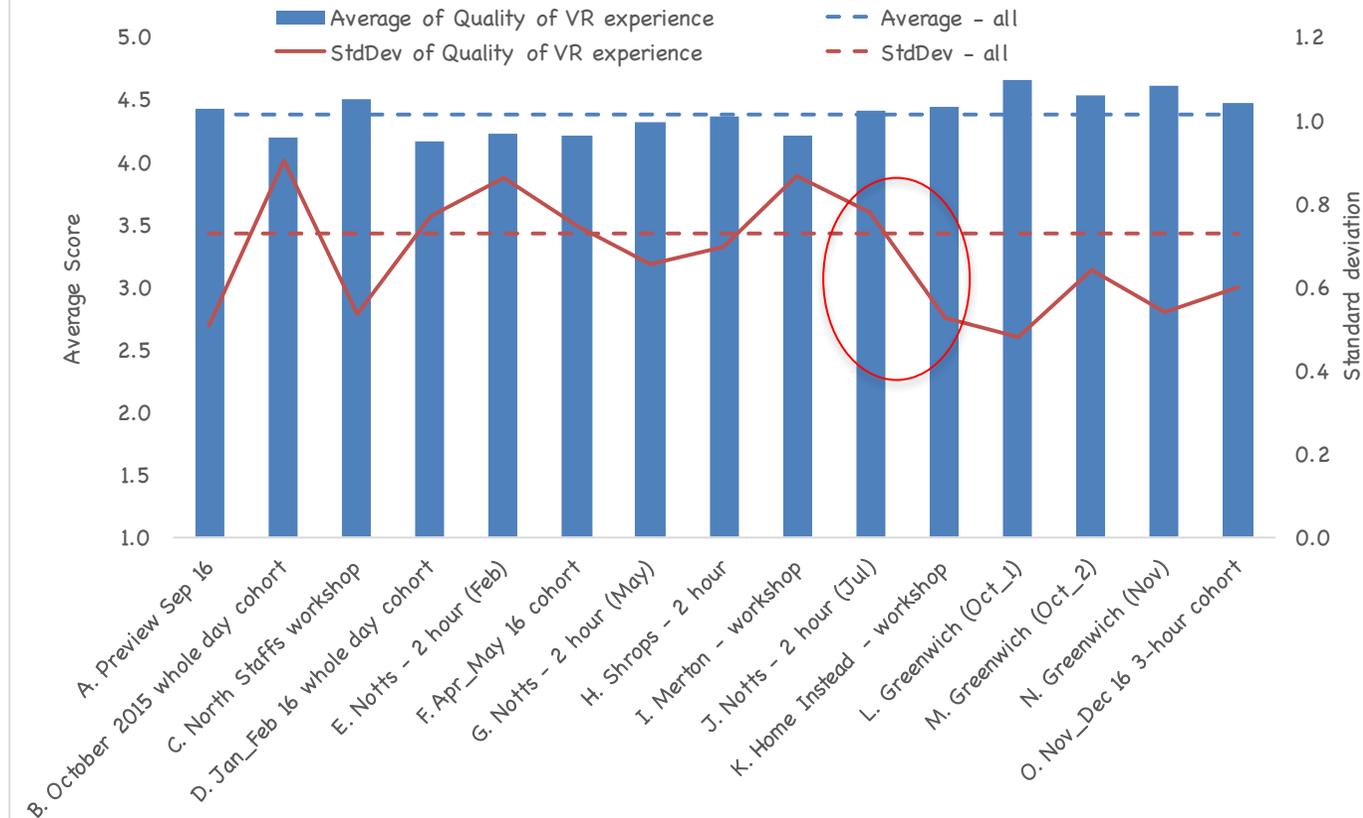
The average rating across all users was 4.4, with a standard deviation of 0.7.

- 48% rated quality of VR experience as excellent
- 44% rated it as "good"
- 5% were "neutral"
- 2% rated it as "fair" (2 out of 5)
- Less than 1% scored it as "Poor"

15% of users provided a comment (156/1065). Of these:

- 34% (56) were positive
- 12% (20) referred to a lack of volume or problems with audio
- 11% (17) had problems with visuals – either due to impairments (own or Victors) or ability to focus eqpt.
- 6% (10 – or less than 1% of all users) complained of nausea, dizziness or headaches
- Similar numbers suggested more time to get used to environment; a lack of realism or interaction;

Quality of VR experience (audio visual, interaction)



or need to emphasise "having a look around first". All other themes of comments had or fewer comments (less than 0.5% of all feedback).

The feedback improved across the cohorts, but proportion commenting on volume, vision and nausea remained relatively constant (albeit low overall numbers)

Duration of VR experience

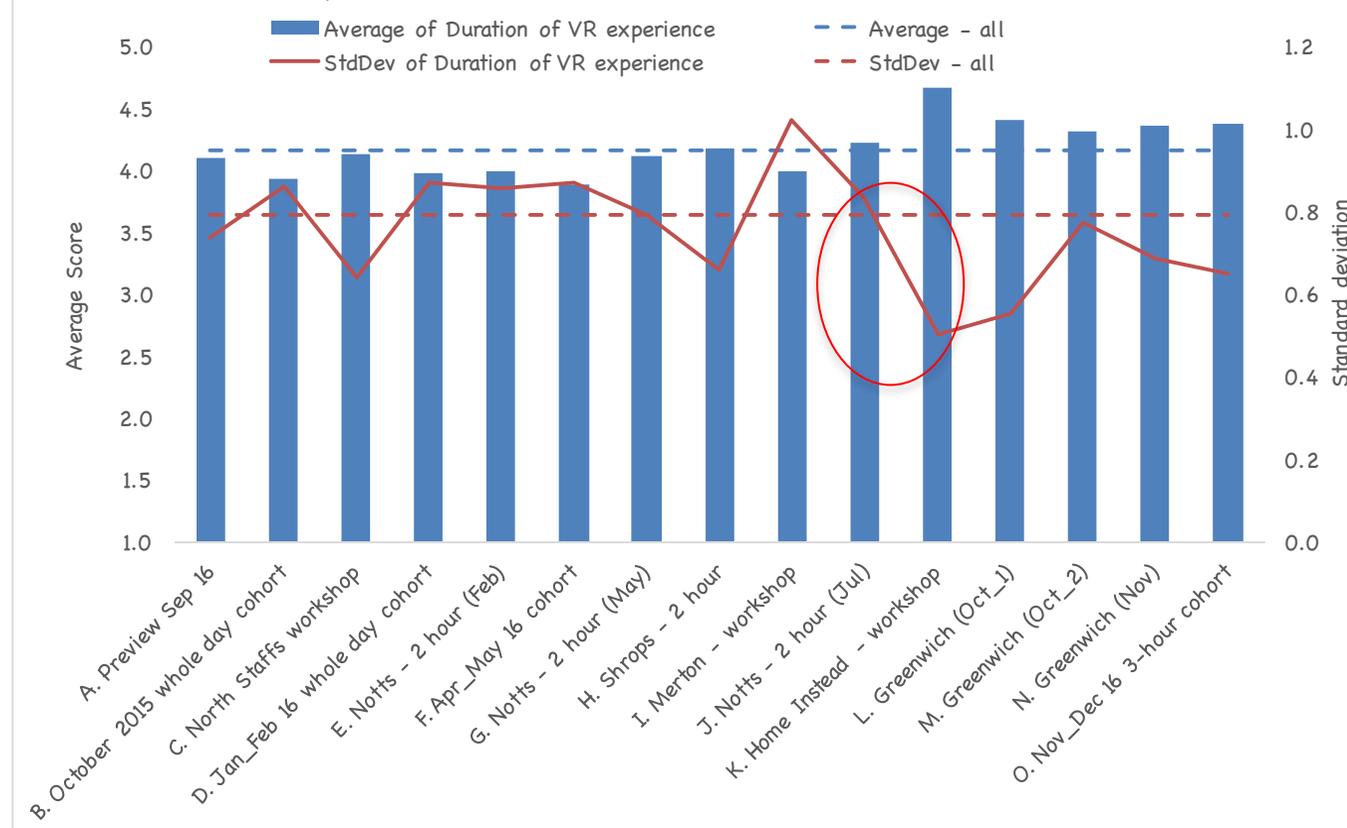
The average rating across all users was 4.2, with a standard deviation of 0.8.

- 35% rated duration of VR experience as excellent
- 51% rated it as "good"
- 10% were "neutral"
- 5% rated it as "fair" (2 out of 5)
- Less than 0.2% scored it as "Poor"

22% of users provided a comment (236/1064) - the most of any question. Of these:

- 70% (172) would have liked longer. This included being able to do it again, have more time to explore and have more interactions, environments and hazards
- 25% (60) felt it was long enough (or too long). Around 1 in 3 of these users mentioned actual or potential dizziness, nausea or similar.

Duration of VR experience



The remaining 5% either made a positive comment not directly related to duration or that more emphasis should be given to looking around first for clues.

The feedback improved across the cohorts, but not as markedly as ease of use. Generally it was a reduction in both of the main types of comments

"May be a trial run before actually using the gadget for 3 minutes."

Relevance to learning outcomes

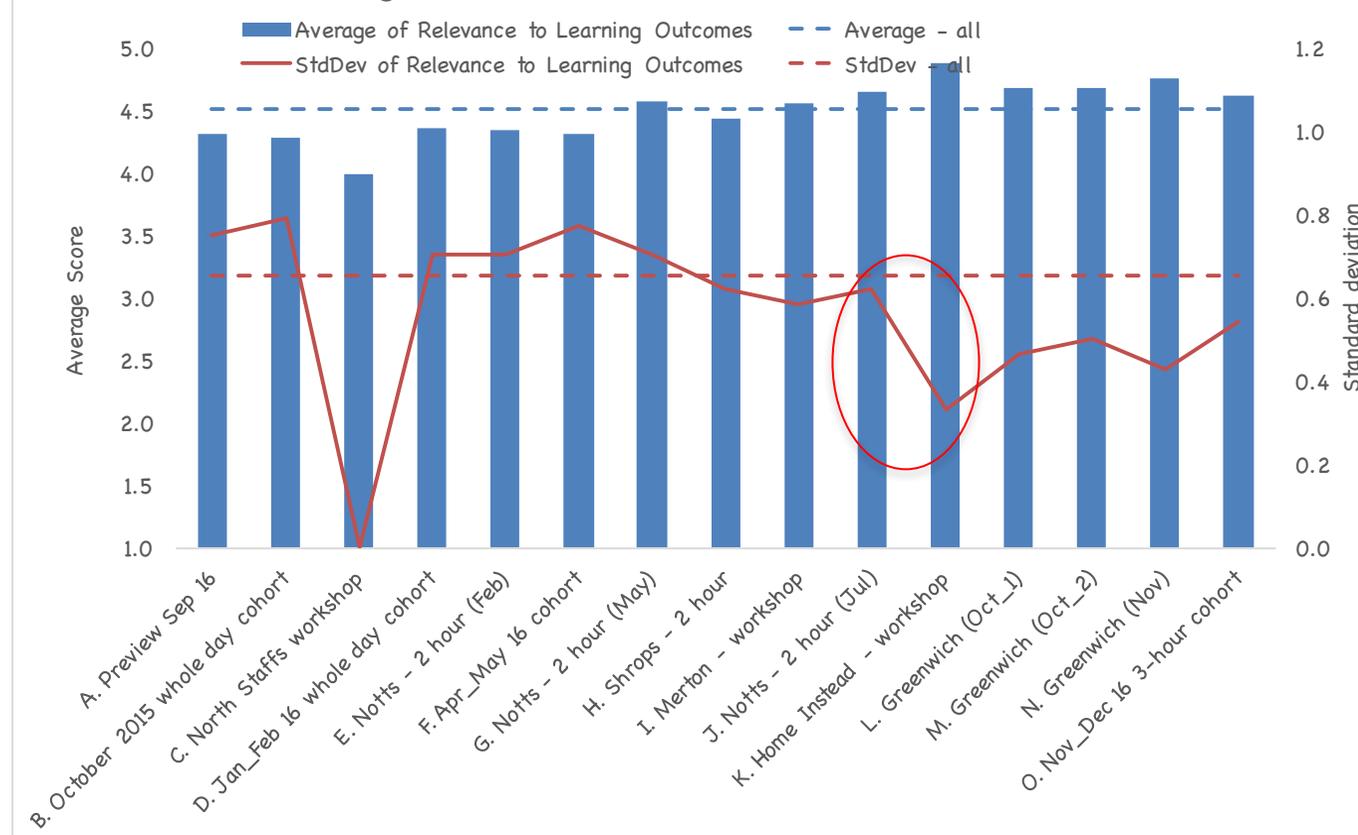
The average rating across all users was 4.5, with a standard deviation of 0.7.

- 58% rated relevance to learning outcomes as excellent
- 37% rated it as "good"
- 4% were "neutral"
- 1% rated it as "fair" (2 out of 5)
- Less than 0.2% scored it as "Poor"

10% of users provided a comment (106/1063) - the lowest of any question. Of these:

- 82% (86) were positive, either making general comments such as "very relevant" (55/86) or specific reference to empathy building related aspects (22/86), physical impairment or visual clues
- 18% (20) were either unsure, unconvinced or unclear on what was expected (c. 2% of all users)

Relevance to Learning Outcomes



The number of comments reduced, particularly once the feedback was incorporated into the overall event feedback.

The consistency of feedback in particular improved over time and with the move away from whole day events/

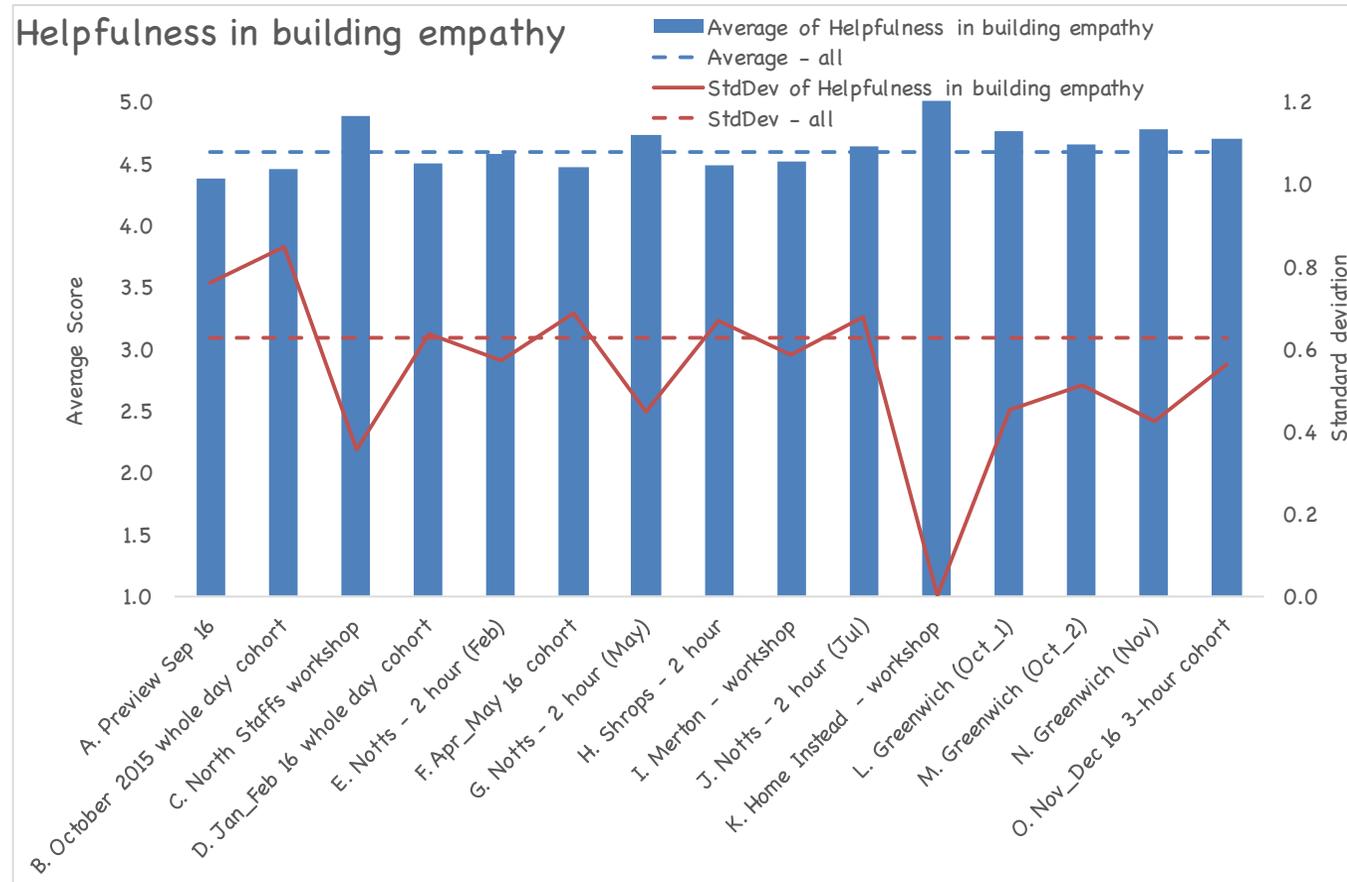
Helpfulness in building empathy

The average rating across all users was 4.6, with a standard deviation of 0.6.

- 66% rated relevance to learning outcomes as excellent
- 30% rated it as "good"
- 3% were "neutral"
- 1% rated it as "fair" (2 out of 5)
- Less than 0.3% scored it as "Poor"

14% of users provided a comment (143/1063). Of these:

- 83% (118) were positive, either making general comments such as "very useful exercise" (50/118) or specific reference to increased awareness, understanding, insight or describing the emotions felt e.g., frustration, disorientation, vulnerable
- 17% (25) felt they needed more time (8/25), were unsure (7/25) or had a suggested enhancement



The number of comments reduced, particularly once the feedback was incorporated into the overall event feedback.

The feedback was the highest and most consistent of all the questions across all cohorts

"I think everyone should do this."

What words would you use to describe the VR experience to a colleague?

73% of users provided a response to this question (774/1067). The most frequently mentioned words are shown in the word cloud opposite.

“Good” was the most frequently mentioned word (122 times). Other high frequency words include:

- Interesting (102)
- Useful (68)
- Informative (59)
- Excellent (50)
- Frailty (48)
- Really (39)
- Insight (37)
- Enlightening (34)
- Frustrating (34)
- Helpful (32)
- Feel (31)
- Person (31)
- Shoes (29)
- Empathy (28)



“Excellent use of technology to put myself in a frail older person's shoes.”

Impact of different event types on feedback

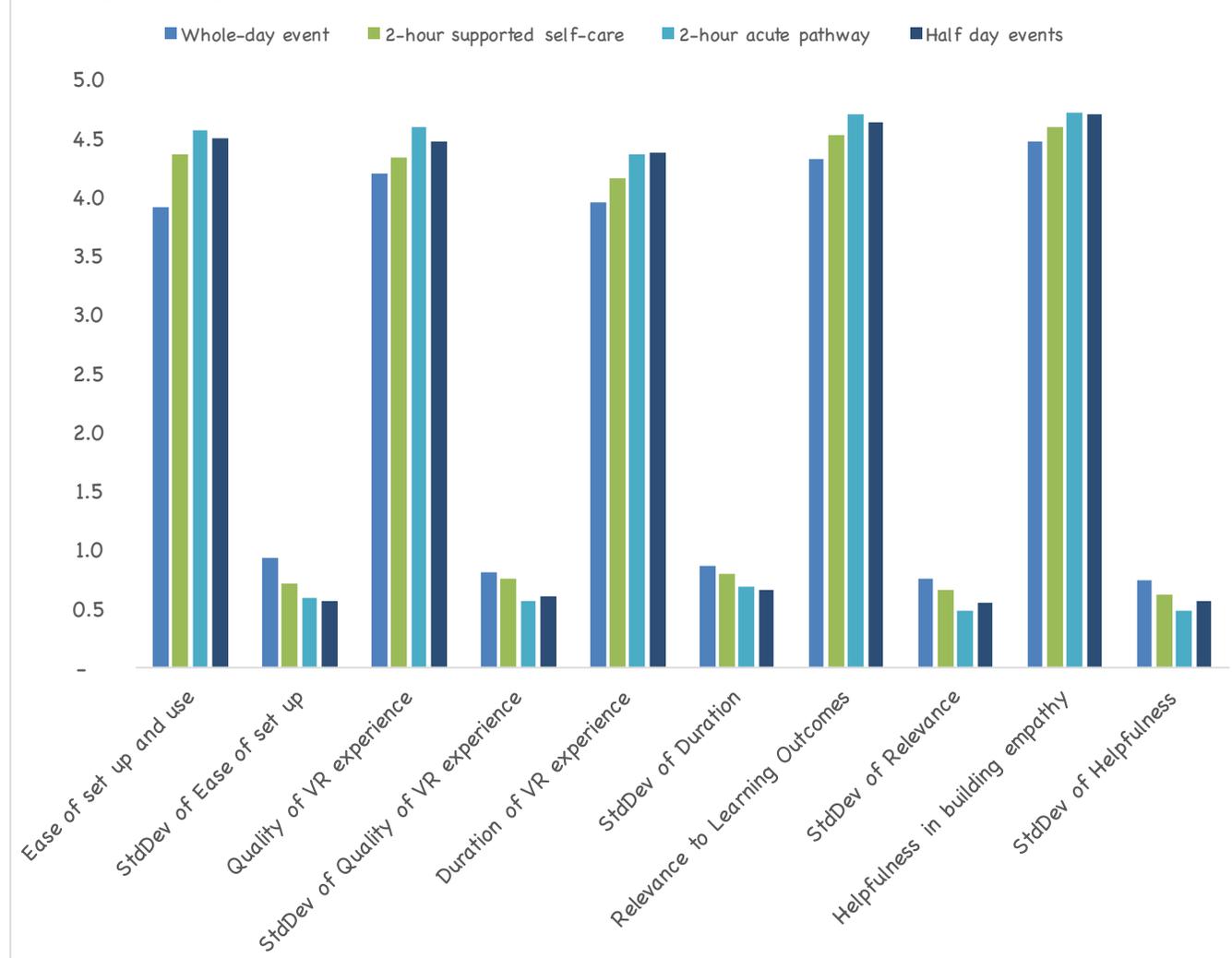
Average ratings for 2-hour supported self-care events were 5 - 10% higher than for the the whole-day events. They also tended to have less variance as measured by standard deviation.

The highest ratings came from the 2-hour acute pathway sessions (despite FrailtySIM being a 'home-based' scenario). These ratings were also the most consistent.

The half-day (3-hour) events scored similarly to the 2-hour acute sessions and higher than the 2-hour supported self-care sessions.

Both the half-day and the 2-hour acute pathway sessions benefited from the introductory video, walkthrough video and clues worksheet. The scores may have also been affected by feedback being completed with the session feedback.

Average ratings and standard deviation by question and event type



Impact of FrailtySIM on different event types

As part of the feedback on the the training events at which FrailtySIM was used, participants were asked to comment on what they considered to be "the best things about the event".

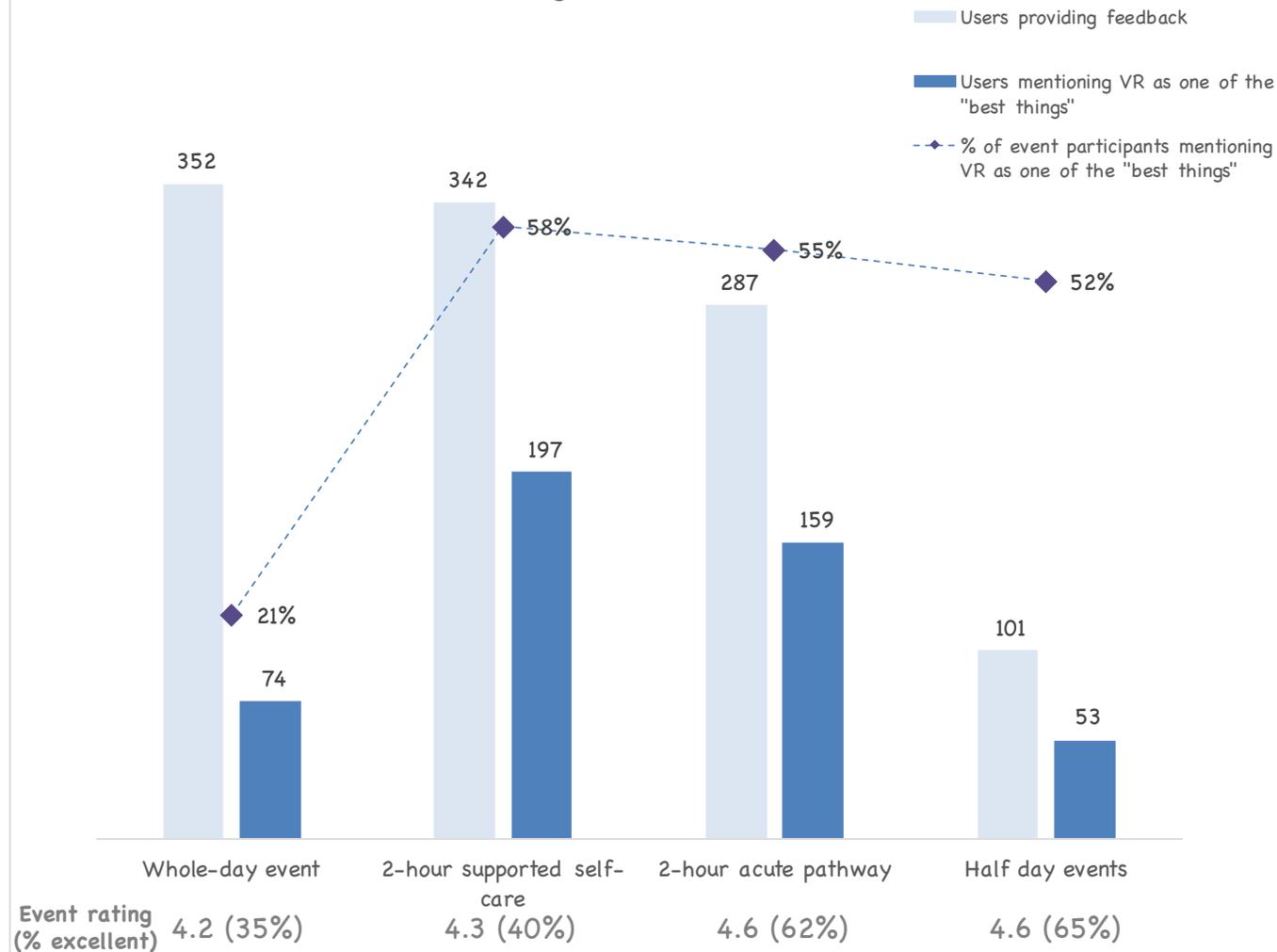
On average, participants mentioned 1.6 things per feedback form (i.e., there were 1,082 feedback forms with 1,710 things mentioned).

483 participants (45%) mentioned FrailtySIM as "one of the best things about the event".

This increased from 21% at whole-day event (where FrailtySIM represented a considerably smaller proportion of overall event) to 58% for the 2-hour sessions.

In addition to specific mention of FrailtySIM, the level of interaction and variety of activities were also frequently mentioned "best things".

Number and percentage of event participants mentioning FrailtySIM as "one of the best things" about the events



"The quiz made us think about a frail person - the VR made us that person!" 21

Contents

1. Executive Summary
2. Overview of the development to date
3. Profile of users
4. Analysis of feedback
- 5. Conclusions and next steps**



Conclusions and next steps

FrailtySIM has proved to be a **high impact, memorable addition** to a range of related training events.

The overwhelming proportion of users rate it as “good” or excellent” across all dimensions.

It achieves its learning goals, with its “helpfulness in building empathy” the highest rated aspect.

Ease of set up and use has been improved with deployment of introduction video and improved hardware. Addressing concerns about instructions and comfort of goggles.

Further improvements will take place as part of the next phase of development, including better navigation in the “Begin experience” room, further instructions to help navigate and interact with the environment.

Quality of VR experience has been highly rated. A small proportion (2-3% of users) had problems with audio or visual aspects of the experience.

Some of this may have been due to headphone audio level being too low before the hearing impairment due to inbuilt safety feature of the phone which had to be overridden as part of the setup. This may not have always been completed and is being addressed in the next phase of development.

Providing longer and better navigation to explore the environment before starting impairments is also included in the next phase development. This will allow less confident users to gain practice as well as provide opportunity to spot clues prior to visual impairments.

It will also extend the duration of the virtual reality experience which is the most frequently mentioned improvement. The optional nature of the extra ‘walk around’ and that it will be with ‘normal settings’ should mitigate the impact on those who felt current version is “long enough”.

There is limited scope to improve relevance to learning outcomes – although **there are more potential deployment options to test the use of FrailtySIM** as a useful immersive training experience. (e.g., induction training for care workers, as part of training of fire service staff for conducting safe and well checks, pre-registration and undergraduate training).

The next phase of testing will include deployment with less experienced facilitators and “learner-led” use of FrailtySIM in conjunction with e-learning modules.

“Can't learn this experience in a classroom or text book. You need to do it!” 23

12th January 2017



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