

Evaluating VR Interventions

*An evaluation of Cornerstone Partnership's VR
content by i2 media research limited*



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This research was conducted prior to the Cornerstone Partnership's merger with the Antser Group in 2020.

Introduction

The Cornerstone Partnership (CP), part of the Antser Group since 2020, works across the children, health, education and adult sectors. The group provides training and interventions to professionals across the sectors. This study focuses on the group's work with social care professionals with the ambition of protecting children and survivors of domestic abuse (DA).

Various studies show the positive impact of using VR in training, health care and marketing. Furthermore research also supports the use of VR as a way to change individuals' perspectives and increase empathy, for example for homeless people in the USA (Herrera et al. 2018) and in Spain where experiencing negative behaviours in VR increased levels of maternal empathy (Hamilton – Giachritsis et al. 2018).

Following the successful use of VR to increase empathy and perspectives in adoption, fostering and staff training sectors, CP started testing the use of virtual reality technology in interventions used by Children's Services with perpetrators and survivors of DA to understand its impact and effectiveness for changing attitudes and behaviours.

This report compiles and evaluates interviews conducted by social care professionals with users of the virtual reality content (namely, perpetrators of DA) to understand whether VR is a valuable tool with which to augment existing interventions for helping families and individuals suffering the effects of DA.

The desired behavioural and attitudinal changes that the content should evoke are:

- to discourage perpetrators from engaging in abusive behaviours
- to educate survivors of the longer term impact of DA.

The impacts of VR described in this report are discussed in relation to the use of the VR content to augment two of London Borough of Redbridge's existing intervention programmes. These are:

- The **Respect** programme: an 8 week group based intervention involving perpetrators of domestic abuse with the goals of increasing perpetrators' empathy, understanding of the impact of their DA on their partner and children, and commitment to stop abusive behaviours. In this context, the VR was used to impactfully communicate the affective impacts of abusive behaviour.
- The **Triple P** programme: an 8-10 week group based intervention which aims to prevent severe behavioural, emotional and developmental problems of young people, by enhancing the knowledge, skills and confidence of parents. In this context the goals of using the VR were to raise awareness and for parents to understand that children are affected by observing toxic arguments in the family home.

Data

Data in this report has been provided to i2 media research by the London Borough of Redbridge Council and CP. The qualitative data, comprises user interviews conducted by social care professionals at the London Borough of Redbridge Council and CP. i2 media research interviewed social care professionals to build the evidence base presented in this report. We have augmented this with quantitative data where possible, by drawing on Common Assessment Framework data which were measured pre and post the VR intervention by the London Borough of Redbridge Council professionals in the early help service.

References

Herrera, F., Bailenson, J., Weisz, E., Ogle, E., Zaki, J., 2018. Building long-term empathy: A large-scale comparison of traditional and virtual reality perspective-taking. PLOS ONE 13, e0204494. <https://doi.org/10.1371/journal.pone.0204494>

Hamilton-Giachritsis C, Banakou D, Garcia Quiroga M, Giachritsis C, Slater M., 2018. Reducing risk and improving maternal perspective-taking and empathy using virtual embodiment. Sci Rep 8, 2975 (2018). <https://doi.org/10.1038/s41598-018-21036-2>

Recommendations

This report comprises a key step in the development of an independent evidence base on the effectiveness of the Cornerstone Partnership's VR tools, their impact and the associated risks.

It is important to note that the data provided in this report is not comprehensive enough to provide a firm evidence base of effectiveness. In light of this, we recommend that CP implement a standard impact assessment framework/metric to evaluate the effectiveness of the use of their VR tools in interventions with DA survivors and perpetrators. This metric would provide a consistent and robust means of evaluating such interventions and help professionalise the use of VR tools within the sector more widely.

The preliminary data provided in this report does, however, provide a clear positive indication that VR interventions constitute an effective tool to accelerating behaviour and attitude changes in minimising the negative impacts of DA.

Users reported the following positive outcomes of the intervention:

1. There was a general motivation to engage with the technology and the content.
2. The content facilitated perspective taking and a desire to change (modify) behaviour.

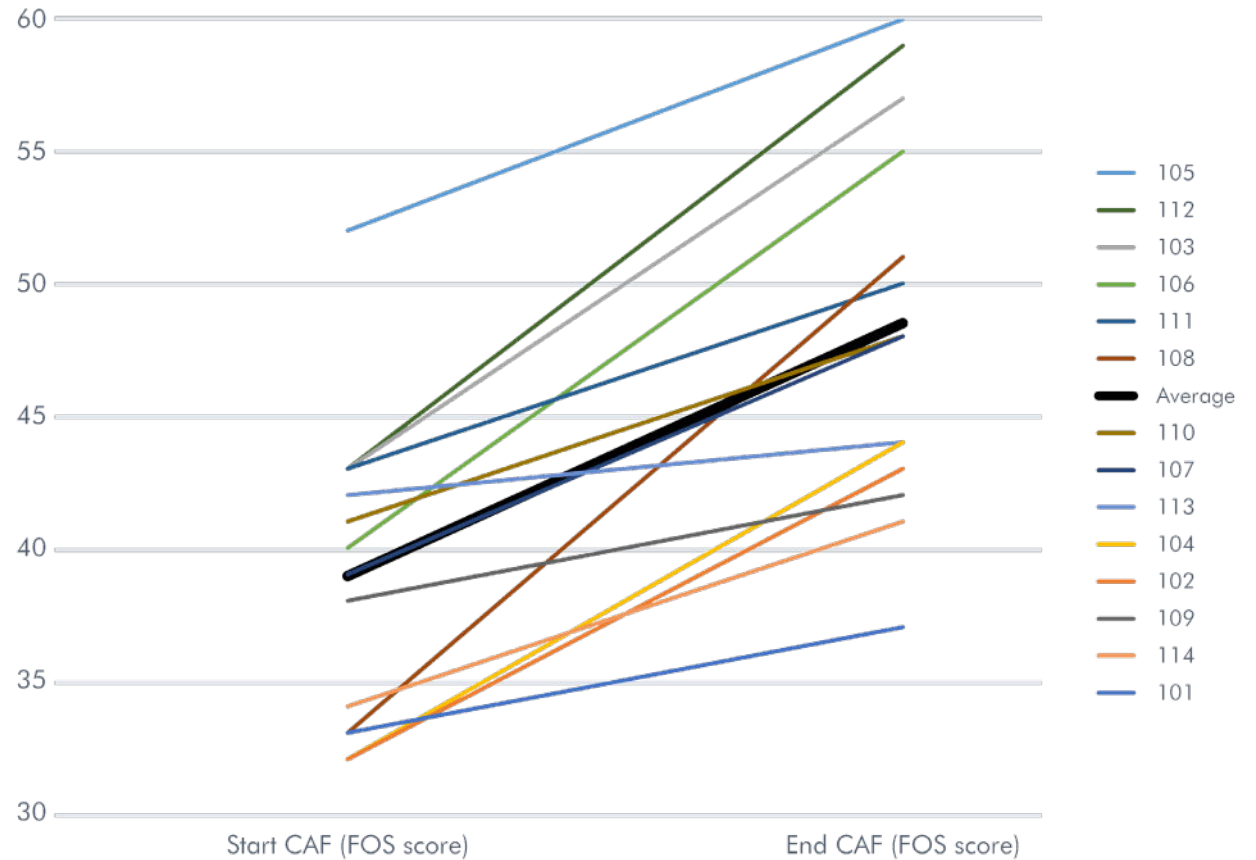
Based on these findings the following next steps are recommended:

1. Generate a definitive list of measures and outcomes which should be assessed by social care professionals pre and post interventions using the VR content constituting a standard impact assessment framework.
2. Evaluate the impact of the VR content on more users to understand key successes, challenges and risks to obtain further quantitative confirmation of the findings highlighted in this report.
3. Test methods for personalising the content of the intervention e.g., via personalised onboarding to the intervention. Personalisation will help perpetrators of DA relate the scenes depicted to their own situations.

Findings

Family Outcomes Survey

Family Outcomes Survey (Common Assessment Framework; CAF) evaluations were completed by social care professionals for DA survivors and perpetrators' families who experienced an intervention using CP's VR. On average, families scored 39 (ranging from 32 to 52) at the start, and 48.5 (ranging from 37 to 60) at the end of the intervention. The intervention supported an increased score in each instance, with an average increase of 9.5 points.

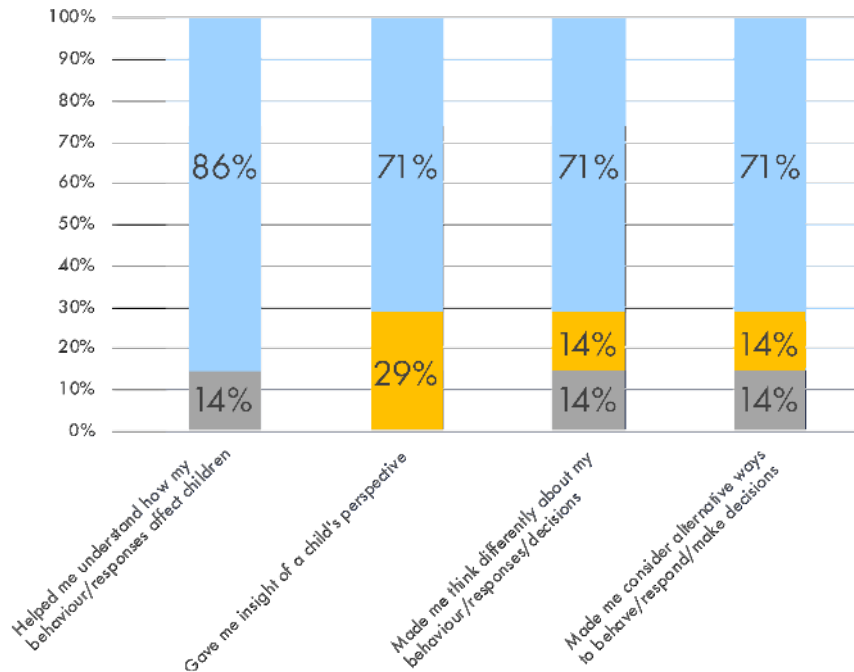


Findings

First Use Data

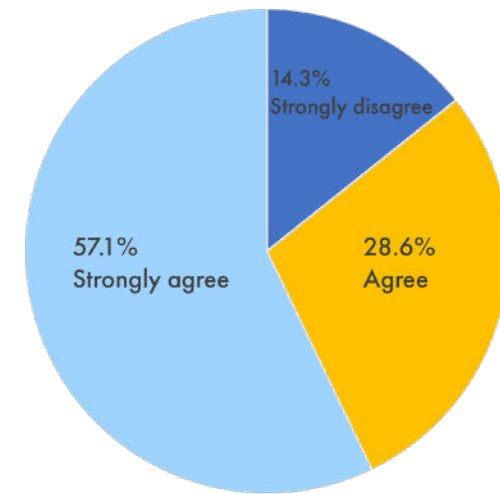
Data was collected after participants' first experience of the VR content. These first use questions sought to understand the initial change in attitude, awareness of behaviour and potential for behaviour change. The participants provided answers to four statements after experiencing the VR content. Overall, the feedback was positive, with the majority of participants strongly agreeing that the content helped them understand how their behaviour affects children.

Responses to the VR session



Social care professionals were asked to rate how well the session met their aims on a scale from one to five where one represented Strongly Agree and five represented Strongly Disagree. Over half of the professionals said they Strongly Agree that the session met their aims and almost a third said that they Agree.

The session met my aims



- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

DA Perpetrator Case Studies

Cornerstone Partnership have collaborated with various social care professionals to use VR content as a behaviour change intervention for perpetrators of DA in conjunction with existing intervention programmes. After experiencing the VR content, three individuals took part in interviews with social care practitioners to reflect on their experiences, their behaviour and the impact of the VR content.

Motivation

Case Study 1

This individual described his interaction with the VR content as “definitely a good experience” and “definitely something new, something different to the TV and different screens”. He didn’t speak much about his emotions or any behaviour change as a result of watching the videos; he stated that his behaviour was “totally different” to what was shown in the videos. He also mentioned multiple times

that he had never experienced any of the situations depicted in the videos describing them as “harsh” and “extreme”. Instead, he commented on how immersive the technology is and that he thinks it would “definitely help a lot of people”.

Despite the fact that the individual avoided discussing his emotional response to the video content and any possible behavioural change, he was on

the other hand motivated to talk about the experience of using the VR technology itself, especially compared to television, rather than the content. He said “It was so useful. It was clear, it was loud, everything was so clear in there. It was a good experience using them. I never had a chance before, I never used it before. That was my first time in my life using the VR system. I really liked it, it was nice”. This experience was exciting and novel for him. He said the feeling that you get is better than watching TV, “the feeling was like you were there”. He went on to say that “When you sit in front of the TV, it’s different... it’s definitely a different feeling. It’s not about that one video, I’m talking about it in general, whatever you’re watching and that, it’s definitely different from the TV”.

When remarking on the technology further, he mentioned additional ways that people could engage with VR. He said “You could watch a

movie there ... you could watch Discovery Channel on it or whatever”. The individual’s willingness to engage with the technology, his enthusiasm to discuss the physical experience of using it and discuss its potential is evidence of VR technology being a motivational mechanism for people. The willingness to engage with VR technology demonstrated by this individual is promising. It suggests that using novel technology could be an approach that is widely adopted in order to engage with DA perpetrators - individuals who have been historically difficult to engage with.

The next case studies look at two more DA perpetrators who were willing to engage with the VR content. ■

“The feeling was like you were there ... [it is] something new, something different to the TV and different screens.”

DA Perpetrator Case Studies

Reflection

Case Study 2

This individual described his experience with the VR content like “a lucid dream”, he said that it impacted him “really deeply” and was “soul touching”. He was particularly impacted by the depiction of the unborn baby as it made him realise that children are “always listening”. He said the videos are “something that’s always gonna be with me” and described himself as “more aware as an individual now”. He said he is more conscious of how he behaves with his partner, his children and around vulnerable people. He also said that he now observes “how parents are with their children and how they’re acting” and wished that they would be able to see the content too.

The individual reflected that the experience could have been optimised if he could “relate to the individuals” depicted in the

content. He noted that abusers can be “smart” and “sophisticated” and that the content didn’t portray abusers in this manner. He suggested that the content could be more relatable if it was “tailored around the clients that are using it”. ■

“I’m more aware of the way I am as an individual now.”



DA Perpetrator Case Studies

Emotion

Case Study 3

This individual found the VR content “moving” and said “it’s impossible not to be moved”. He described it as having a “very, very powerful effect” and “it was like going back in time”. He said it brought back “lots of memories” and that “it was quite tough”. He said “I cried a bit. I had some tears, I’m not a guy who cries, but I was moved”. Being in the “place of a kid” was very impactful for this individual.

The experience for this individual was “surreal”, he said “you only have to put the face of your father and your mother [onto the characters in the VR content] and that’s it”, the experience becomes very realistic. The individual commented that “I don’t want my kids to grow up in the same environment like me” and has begun to make active changes. He said, “I’m calming myself down. We’re still arguing,

but not on the same level like we have before; throwing stuff, and violence. We’ve changed a lot. We still have lots of tension, but the kids are not involved in it”.

“I cried a bit. I had some tears, I’m not a guy who cries, but I was moved.”



Social Care Professionals' Evaluations

Context

The purpose of the VR intervention for families A and B was to make parents aware that children are adversely affected by observing heated arguments in the family home by allowing parents to see this behaviour from a child's perspective. Within this intervention, parents were encouraged to absorb and take responsibility for their actions and prioritise the needs of their children.

For Family C, the purpose of the intervention was for the father to correct his preconceived idea that witnessing arguments makes children/young people stronger and to emphasise that they do not need to witness this behaviour to be strong. Furthermore, the intervention encouraged parents to acknowledge the presence of children in the home during disagreements and increase parental awareness of the long-term effects of arguments.

Actual Process

After an initial visit with the parents where terms of the referral and support that can be given were outlined, they were then introduced to the VR content, which both parents experienced at the same time.

Prior discussions regarding the concerns raised about the family are taken place before holding a session using the VR. The family are prepared for the content and are made aware that there are some aspects which do not relate to them e.g. living conditions and the professional gives them clear instructions to focus on the behaviour of the family when in the VR experience in order to achieve the learning outcomes and aid further discussions about the impact of these behaviours on children. The family are debriefed after the VR experience and time is given for further discussion.

Family A Outcome

"Both parents were extremely upset after watching the mini clip but spoke about their feelings and took on board my advice and strategies. The mother said that she realised that the arguing was having effects on their daughter emotionally and felt that she needed to spend more time with her than her ex-partner." – Family Support Worker

Family B Outcome

"The mother was extremely upset by the content. The father did not take the content seriously at first, but later realised the seriousness of the situation. Both realised that arguing in front of their child was not good for their emotional well-being. The VR content may have been perceived as conveying a stereotypical "troubled family" as the mother made comments like "My home is clean and we are not alcoholics". The father's initial reaction could also have been a result of the VR content being less relatable visually. Despite this both parents seemed to understand the underlying message behind the content." – Family Support Worker

Family C Outcome

"The father was upset by the content as well as shocked at the long-term effects of arguing on children. He realised the way that he was resolving arguments was having a negative effect on his marriage and did not want his children exposed to it. He commented that "Children do not need to be this strong" while viewing the content. The mother did not show much emotion and understanding in reaction to the VR content however." – Family Support Worker

Social Care Professionals' Evaluations

Longer Term Impacts

Impressively, in the 6 months after the end of the intervention which used the VR content, none of the participants invoked any further police action or contact related to DA. This speaks compellingly to the long-term effectiveness and impact of the intervention augmented with VR, beyond the immediate impacts described above.

Summary

Although the VR content can be a powerful tool, some family members may already have insight into the long-term effects that exposure to domestic abuse can have. Whilst some may feel it is not necessary to show the content to all family members, the professionals believe that there is a benefit in showing the content to the parents together so that they can have the discussions together. This will also ensure that the parents receive the same message which then facilitates them being able to support and work together in order to make the necessary changes to their behaviour. Similar to families A and B, it is also important to stress that the content is intended to be an extreme representation of familial conflict and does not attempt to accurately reflect the situations of specific users.

Adequate and standardised onboarding is therefore an essential component of the intervention to avoid its message being lost in the visual features of the content being viewed.

Conclusion

This research provides compelling evidence for the potential of Cornerstone Partnership's VR content to improve the effectiveness of interventions addressing Domestic Abuse.

As our recommendations highlight, there is more research and development to do, in particular in generating a definitive impact evaluation tool to accompany all use of the VR in interventions.

Both users and social care professionals spoke about the potential of the medium to motivate, sustain engagement and affect behavioural and attitudinal changes.



