

Avatar-based therapy within prison settings: Pilot evaluation

This paper presents implementation and piloting of a new, avatar based, virtual reality therapy, called ProReal within a category B therapeutic community prison in the UK. The aim of the project was to introduce this therapeutic method to the existing therapeutic intervention in order to improve mental health outcomes and mental well-being of prisoners. The project was funded by the national health authority (SBRI, www.sbrihealthcare.co.uk), tasked with bringing innovative technologies into health care services.

There is a limited availability of therapeutic and rehabilitation programmes in prisons within the UK and their aim is primarily to reduce reoffending rates rather than to investigate and improve mental health outcomes. However, the complexity of offending behaviour means that rehabilitation programmes have a limited impact on reoffending. The main treatment approach aiming to reduce reoffending used within the UK is a combination of Cognitive Behavioural Techniques and a Therapeutic Community (TC) intervention (Ministry of Justice, 2010) named 'The Challenge to Change' (CtC). According to the Ministry of Justice data, evaluation of the CtC programme shows reductions in reconviction levels of around 35%.

Offending behaviour and mental health issues are inter-related phenomena. Mental health issues in prisons are widespread and caused by experiences prior to going to prison (addictions, homelessness, and trauma) as well as those within the prison (separation, bullying, abuse). A report on mental health issues in prisons in the UK (Durcan, 2008) found that 66% of prisoners had a personality disorder, 45% suffered from depression and anxiety, and 30-45% were addicted to drugs and alcohol. Other studies found a range of psychological issues related to offending behaviours, such as experiences of shame (Jolliffe & Farrington, 2007) and limited empathy for others (Morrison and Gilbert 2001). This would suggest that addressing mental health issues and personality problems within the prison environment should be a matter of priority. However, this is frequently difficult to achieve

within the prison environment. Prisoners are often reluctant to engage in mental health interventions because of the concerns that this might increase their perceived vulnerability within a hostile environment and impact their personal safety (HM Chief Inspector of Prisons, 23 September–4 October 2013). This is not just the case within the UK. A US study by Bourgon (2005) shows that although some aspects of treatment have been empirically linked to effectiveness in reducing reoffending, transfer of these principles to the real prison setting could be difficult.

The particular combination of mental health issues and offending behaviour suggests a need for complex interventions that would have a potential to increase access to therapy and use some of the effective practices suggested by Harper & Chitty (2005). These include highlighting the importance of interpersonal relationships, pro-social modelling and problem solving. A qualitative study from the US (Dahlen & Johnson, 2010) shows that combined treatments could be beneficial for the improved well-being within the prison.

The Therapeutic Community approach (Ministry of Justice, 2010), with its emphasis on empowerment and group decision making, focuses on using groups to facilitate insight and develop relationships between the prisoners, and between prisoners and group facilitators or counsellors.

The literature on offending behaviour and treatment suggests that more successful interventions within prisons provide the opportunity to explore personal experiences in safety without the stigma of 'mental health'. New digital interventions, such as avatar-based techniques and virtual environments, have a potential to provide this and add to the available treatments. Over the last ten years, digital interventions have been used in different approaches to psychotherapy and treatment of problem areas such as phobias, anxiety, depression and eating disorders (Pinto, Hickman, Clochesy, & Buchner, 2013; Riva, 2005). Research suggests that they have a potential to intensify emotional exploration and facilitate

problem solving, pro-social modelling and the development of empathy (Jin & Seung, 2011). Riva's review of research suggests that virtual reality experiences create a secure environment for exploration and facilitate the development of a sense of competence and empowerment, and that all therapeutic interventions based on acceptance, respect of individual defences and collaboration were potentially well suited to using these techniques. These therapeutic principles share values with the TC approach and suggest that they could be an appropriate addition to treatment within a TC prison.

Research aims

The aims of this naturalistic pilot project were to introduce and evaluate the impact of ProReal-based therapy (subsequently referred to as 'ProReal') within a Therapeutic Community prison setting. It aimed to look at the impact of ProReal on participants':

- Levels of psychological distress
- Interpersonal difficulties
- Achievement of personal goals.

In addition, it aimed to evaluate:

- The feasibility of using ProReal within a prison setting
- Participants' experiences of ProReal
- Staff members' experiences of delivering ProReal.

Method

Research Design

The evaluation utilised a multi-method design, combining quantitative ratings of emotional and interpersonal wellbeing from pre- to post-intervention with analysis of qualitative interview data.

As the first pilot project within a complex setting it was agreed to proceed with the preliminary testing of the intervention even with a small sample, depending on the number of clients who signed up for the project. The small sample (n=4) made it only possible to conduct one small treatment group. A control group was not feasible in this context, and it was expected that the analysis would rely primarily on qualitative data.

The ProReal intervention took place between May and July 2014, with seven group sessions in total.

Context.

The study was conducted in the therapeutic community of a privately run category B prison. The prison houses offenders from ages of 21 years and upwards who are awaiting trial, on remand and serving sentences from four years to life in prison. The types of crime to carry these sentences would include armed robbery, burglary, Actual bodily harm (ABH) Grievous bodily harm (GBH), drugs charges, weapons and firearms charges, harm to children offences and murder.

The therapeutic community is a 200 bed separate unit for serious repeat offenders. To be transferred to the therapeutic community from the prison wings inmates need to apply and undergo an intensive assessment period usually covering one month. This assessment period is designed to determine if the inmate is suitable for entry into the therapeutic community as well as their motivations for accessing this service. The therapeutic community offers an intensive programme of group therapy, which combines group sessions for the whole of the community with small group sessions using other therapeutic approaches, such as art therapy.

Prisoners had an opportunity to choose these small group sessions. Prison officers were trained as group facilitators. The focus of the group sessions was to explore and challenge attitudes towards crime as well as psychological issues that may have contributed towards the offending behaviour.

Participants.

ProReal clients.

One wing of the prison, housing 20 inmates (or 'residents', a term used within the TC), was chosen for this pilot project by the prison management. In total, six participants agreed to take part in ProReal. However, two participants (33%) decided not to continue with the intervention after the first session. The remaining four individuals participated in between four and six sessions out of six, with a mean of five sessions.

The average age of these four participants was 33.8 (range: 26-40). Three were of a white British ethnicity and one was of mixed ethnicity. They had spent an average of 16.5 months in the TC (range: 9-30 months). At assessment, their average score on the CORE-10 was 15.0 (range: 9-19), which is above the clinical cut-off for levels of psychological distress.

Staff members.

One member of staff, a counsellor, facilitated the ProReal intervention. This staff member had been trained as a person-centred counsellor, worked for the prison, and was a lead facilitator of groups on the therapeutic community.

Therapeutic community residents.

Four residents of the TC, who chose not to participate in the ProReal intervention, completed a 'Non-Participation Questionnaire'. A modified version of this questionnaire was completed by the two participants who had withdrawn from ProReal after one session.

Measures and Tools

Core-10.

This was the primary outcome measure, and is a well-validated, ten-item scale evaluating levels of psychological distress (CORE Information Management Systems Ltd., 2007). It was used at the initial assessment session and at the start of every subsequent session.

Goals Form.

The Goals Form is a personalised measure of therapeutic outcomes (Cooper & McLeod, 2011). Clients are invited to identify goals for therapy, and then to rate them on a 7-point Likert Scale from *Not at all achieved* to *Completely achieved*. Clients are asked to set goals for the duration of therapy, but have the option of updating or revising them in subsequent session. In the present study, clients wrote out their goals on the Goals' Form at the start of each session.

Inventory of Interpersonal Problems.

The IIP-32 (Barkham, Hardy, & Startup, 1996; Horowitz, Alden, Wiggins, & Pincus, 2000) is a validated, 32-item client self-report instrument rating the severity of a wide range of interpersonal difficulties. It uses a 5-point scale ranging from 0 (*not at all*) to 4 (*extremely*). The IIP-32 is a shortened version of the 127-item IIP devised by Horowitz et al.

(Horowitz, et al., 2000). This measure was used in the initial assessment session, and again at the final session.

Semi-structured client interview.

The aim of the semi-structured interview was to enable participants to reflect on their experience of the ProReal software, the intervention, and the process of research.

Participants were provided with space to express their views, and to reflect on their experiences using their own words. Open questions were used to facilitate the participants' reflection on their personal experience.

The interview guide was orientated around asking participants what was helpful, unhelpful, and areas for improvement in four domains: the experience overall, the introduction to the programme, the software (including the avatars and landscape), and the intervention itself. In addition, the participants were asked what they felt that they had gained by taking part in ProReal, their experience of taking part in the research, and anything else they wished to comment on. Participants were also asked to provide an overall rating of the whole experience on a scale from 1 to 10, where 1 was *very unhelpful* and 10 was *very helpful*.

Semi-structured staff interview.

The aim of the semi-structured staff interview was to enable staff members to reflect on their experience of ProReal therapy, the software, the intervention and the process of research. The interview contained open-ended questions in the following domains: general experience of the intervention, the use of software, and the experience of taking part in research. The interview guide was oriented around asking participants what was helpful, unhelpful and suggestions of improvement in these domains. Participants were also asked to

provide an overall rating of the whole experience on a scale from 1 to 10, where 1 was *very unhelpful* and 10 was *very helpful*.

Non-participation questionnaire.

This questionnaire was developed by the research team to find out why some of the Dovegate residents decided not to take part in the ProReal evaluation, or dropped out. There were two, slightly modified, versions of the questionnaire for each group.

Questionnaire for residents who decided not to take part in research contained ten statements, which the participants could agree or disagree with on a scale of 1-5, where 1 was strongly disagree and 5 was strongly agree. The statements related to different aspects of the project (such as software, timing, context), relationships (with other residents, staff, researchers) and personal motivation. Questionnaire for people who decided to stop taking part in the project contained an expanded set of 12 statements on a similar 1-5 scale. The questionnaires also gave residents an open-ended space to describe their decision not to take part, or drop out, in qualitative terms, and to suggest improvements.

Procedure.

The start of the project was delayed by six weeks, due to staffing changes, lack of equipment and interruptions to communication. There were also access limitations. The research team had no direct contact with the staff team, there was no consistent feedback to the research protocol, and there were changes to the staff team and the management structure. This improved once the research team were allowed to visit the prison, conduct the training with the staff team about the research protocol, and gain consent.

ProReal Therapy

ProReal is an avatar-based therapeutic programme in which people can create a visual representation of their world, or a specific situation, and then explain it to others. During ProReal work the client is enabled, with support from the facilitator, to populate their landscape with people (avatars) and props that help explain how they see a situation. The landscape is generic and contains features such as a river, forest and a castle. Avatars are not gender specific, and more than one of them can be used to represent a scene, other people or different aspects of oneself. Avatars can have different colours, and sizes, and can be assigned emotional gestures. Clients also have a series of props available, such as a bridge, a clock, a bomb, and a treasure chest. The clients' landscape can be viewed from the perspective of the avatar that represents them, or that of any other individuals represented there, offering an additional opportunity for reflection and mentalisation. An example of this could be seen in a scene shown in Figure 1. The client here has represented a conflict with a friend (the seated avatar on the other bank of the river), and the obstacles that make it difficult to resolve it.

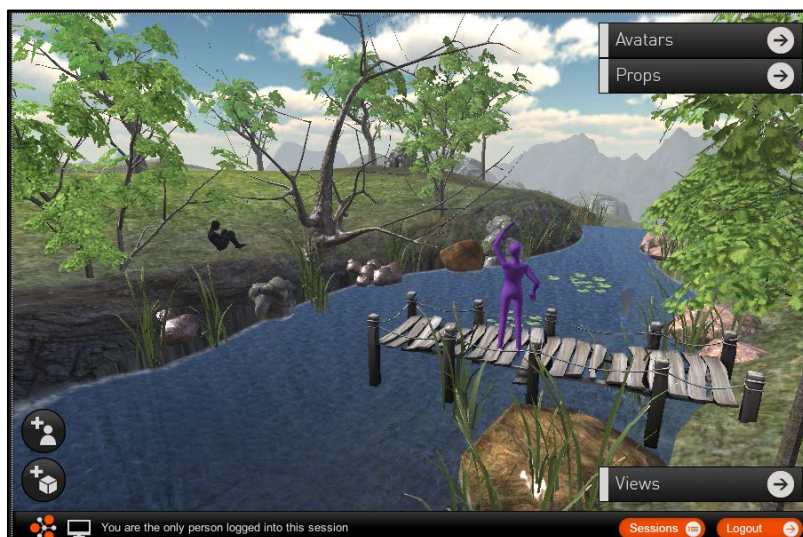


Figure 1 Scene from the software

The ProReal programme aims to support therapeutic change by helping clients make visible their thoughts, feelings, perceptions and experience of the world; and by helping them see it from different perspectives. In the example represented in Figure 1, the client is able to reflect on her experiences, as well as empathise and imagine the situation from the perspective of her friend. It also provides a way of experimenting with options for change, and offers a medium by which people can communicate their worlds to others. It can be used remotely; in individual sessions with the therapist; or in group setting, as it was used in this project. More information about ProReal is available at <http://www.proreal.co.uk/>

The ProReal intervention was not specifically structured. The first session typically started with an invitation to clients to build their own world within the landscape. Following this, the intervention tended to be participant-led, based on aims and goals set at the beginning of the project by the clients and reviewed each week. The role of the therapist was to facilitate self-exploration, using guidelines detailed in a ProReal manual. Clients could choose how much of their ProReal experiences and insights they wish to share with their facilitator or members of a therapeutic group.

ProReal took place in weekly groups, facilitated by the counsellor. The sessions lasted 90 minutes and primarily consisted of individual work on laptops using the ProReal software. This was followed by a period of debriefing and ending, which included discussion of options for further support for the participants.

The ProReal (v 2.8) software was installed for the purposes of this evaluation. It was used with standard laptop computers and operated by keyboard and trackpoint mouse; no other specialist hardware (e.g. immersive headsets or games controller units) was used.

Ethical Approval

The protocol was approved by the research ethics committees of the prison authority and one of the academic institutions who conducted the evaluation. Both approved changes in the design and the additional measures.

Analysis

Outcome measures.

Pre- and post-therapy scores were compared on all measures to identify psychological changes associated with participation in the programme. An effect size was also calculated, which gives an indication of the magnitude of change.

Qualitative research analysis.

All qualitative data (participant interviews, staff interviews, and sessional notes) were analysed thematically using NVivo software.

Interview schedules and sessional notes structure were used to pre-set coding. Analysis and the testing for trustworthiness of analysis were conducted by different members of the interview team.

Results

Therapeutic Outcomes

Psychological distress.

The mean CORE-10 score at assessment was 15.0 ($SD = 4.3$). At the end of the intervention it was 11.3 ($SD = 7.2$). This indicates a mean reduction of 3.7 points on the 40-point CORE-10 measure, with a pre- to post-intervention effect size (Cohen's d) of 0.87. This reduction in psychological distress was not significant ($t = 1.7, p = .19$).

Individual change trajectories over the course of the intervention were as follows (see Figure 2):

- Participant 1: Initial levels of distress in clinical range and remaining at similar level throughout.
- Participant 4: Initial levels of distress in clinical range, worsening at midpoint and returning to pre-intervention levels at endpoint.
- Participant 7: Initial levels of distress in clinical range, with reliable reduction to non-clinical range by endpoint.
- Participant 8: Initial levels of distress just below clinical threshold, reducing to milder levels by endpoint.

Of the three participants in the clinical range at assessment, therefore, one (33%) demonstrated clinical and reliable improvement (P7), with no clinical or reliable change for the other two participants.

Interpersonal problems.

Changes on the Inventory of Interpersonal Problems are presented in Table 1, with higher scores indicating greater levels of difficulties. Changes on all subscales, and on the Total score, were not significant from pre- to post-ProReal. However, on all but one subscale the average levels of interpersonal difficulties increased following the Pro-Real intervention.

Personal goals.

Data were available from two participants who completed the Goals' Form over the duration of ProReal. Examples of personal goals were 'Remain positive,' 'Finish my course,' and

‘Stop committing crimes become a better person.’ Participant 1 identified eight goals during the course of ProReal. At first identification, his mean score for these goals was 3.9, and this increased to 4.6 at last rating, giving an effect size of 0.49. Participant 8 identified nine goals. At first identification, his mean score for these goals was 4.4, and this increased to 4.8 at last rating, giving an effect size of 0.35. Across both participants, these changes were non-significant, but were each in the direction of greater attainment of personal goals.

Participants’ Experiences: Analysis of Semi-Structured Interview data

The analysis started with pre-set domains. These were the participants’:

- overall experience of the intervention,
- experience of using the ProReal software,
- perception of their personal gains.

The domains and the emerging themes are summarised in Table 2.

Domains	Themes and illustrative text
Overall Experience	<ul style="list-style-type: none"> • Making a decision to take part: <i>‘What are they trying to put on us now’</i> • Intensity and helpfulness: <i>‘...opened all different sorts of emotions for me’</i> • The therapeutic intervention <i>Longer and structured</i>
Experience of ProReal software	<ul style="list-style-type: none"> • Avatars: <i>‘you can put as many as you want to’</i> • Landscape: <i>‘there is plenty enough to work with’</i> • Props: <i>‘...sometimes you wake up and you’re like a bomb waiting to go off’</i>
Personal gains	<ul style="list-style-type: none"> • Self-Expression : <i>‘it is easier to do it that way (using ProReal) than telling it in person’</i>

	<ul style="list-style-type: none"> • Insight: <i>'It's showing me what I do: I tend to push people away from me'</i> • Development of empathy: <i>'... so for me to put myself in people's shoes, it's an eye opener'</i> • Goal achievement: <i>lack of clarity</i> • Relationships with other prisoners: <i>'you are not very comfortable among them, they are not your friends'</i> <i>'now he(another prisoner) understands (why I use drugs)'</i> • Improved Relationship with a counsellor
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Table 2 Summary of domains and themes with illustrative text

Overall experience of the intervention.

Making a decision to take part.

Several themes emerged about the way in which the participants made a decision to take part in the project. A strong theme related to the general lack of trust in authorities, as well as a lack of trust in other people involved in the project. This is illustrated by the following comment (P1): 'I thought "What the hell is this, what is going on?" "What's this rubbish?" I thought it was, you know, I thought "What are they trying to put us on now?"' The participants expressed distrust of the motives of the ProReal staff and the prison, and some were concerned that the information they disclosed would find its way to the parole board.

Typically, participants decided to take part to have something to do: 'I think everyone in the room thought, "You know what, I'm just going to kill six weeks, they just want us to do something. So let's just kill six week"' (P 8).

Intensity and helpfulness.

Despite the initial reluctance, and against their own expectations, all the participants said they benefited from the programme. The theme of emotional intensity reappeared throughout the interviews and two of the participants used the word 'daunting' to describe their initial experience. One participant said:

First of all I found it a bit daunting to start with, it opened all different sorts of emotions for me, so I talk about my mum, stepdad, my sisters and all that, there was a time I came away, felt quite drained, go back in my cell and lock myself off to contemplate these things; stuff that I hadn't forgotten about but were buried deep inside of me, so I would go away with a bit of bad head on my-- if you like. Then I would-- after a couple of sessions I wouldn't feel so bad-- actually started to walk around the landscape and started implementing a few things and trying to figure out where I could go and what I could do to make things better. Yeah it was ok! (P 1)

All wanted to continue using ProReal alongside their usual therapy.

The therapeutic intervention.

The participants referred to wanting more structure to the sessions. They also wanted longer, pre-structured sessions, continuity in the therapeutic process, and time in the session prior to working on computers.

Feedback by the therapist was seen as helpful, although a majority referred to difficult feelings they had to manage on their own after the session. One participant (P8) suggested that it would be useful to have access to the programme outside of the group sessions.

The ProReal software.

All of the participants used the software to represent their inner world. The majority of the comments in the interviews related to it. The avatars were one of the features that received the most positive feedback. Most participants wanted more props and options in the landscape.

Avatars.

The avatars were one of the features that participants referred to as most helpful in representing aspects of themselves, their families, their history and emotions. For example: '[It was] very good because you could put as many in place as you want to. I have four avatars myself, I have "the good me", "the selfish me", "the resentment me" and "the thief me"; and, you know, there is a few of them-- it's good to look at those' (P1). Participant 8 said: 'Yeah it was nice, yeah-- yeah. It's a head and you can put different colour heads; that was good because it was-- black represents bad for me and blue represents good for me and it worked like that.'

Landscape.

All the participants used the landscape features provided by the programme, mostly to represent places they knew, or their memories. They highlighted a need for a landscape with familiar, urban features, rather than a more abstract setting

Props.

There were particular props all the participants referred to as helpful, in particular time bombs, minefields, walls and clocks.

I think the clock on the ticking time bomb-- the bomb with the fuse in-- and I would say as well the minefield, as well because the situation that I am in today. You know sometimes you wake up and you're like a bomb waiting to go off. That clock is always ticking until the day you go home and the day you come for your parole and the minefield is even outside. The violence I have always been round, you know, it's not very nice. You know, you live in an area that is rife with gun crime and, you know-- personally, I've had experience regarding gun crime: my brother was shot dead in 2005. So you know it is very, very real for me, them minefields. (P 7)

Personal gains

Self-expression.

The intervention provided means for the participants to develop their verbal expression, which was something that they identified as difficult to do.

Insight.

Participants referred to the development of insights, some of which were with respect to personal relationships. Some insights related to into their deeper feelings and ways on managing emotion. For example, one participant gained insight about his feelings of grief for his dead brother and his use of cannabis to manage his feelings.

Development of empathy.

Empathy was described as growing between the members of the group. However, one participant also referred to it in a wider sense:

It was a bit difficult because I have always thought I was right, no matter if I was wrong. ... And now, after sitting down and actually putting it down on the computer, it makes me have that little bit more of empathy for them. Before I had none. I'm not

saying that ProReal has brought the empathy out of me, but it made me look at it in a different way. (P7)

Goal achievement.

There seemed to be a lack of consistency in how the initial goals were agreed and how they were defined and used during the intervention. Some of the participants had, initially, set long term goals (for example: to change their prisoner category, goals about the life they wanted to lead after the prison, relationships with their family). However, they realised that these goals were not achievable during a limited therapeutic intervention.

Relationships within the prison.

Changes in relationships with the other fellow participants were referred to as another personal gain of the ProReal intervention, although this was not without ambivalence. Receiving feedback on personal matters was uncomfortable at times. Despite that, the participants noted changes in those relationships and a development of empathy and understanding within the group members. For instance:

We [i.e., him and another member of the ProReal group] are mates on the wing, anyway, nothing has changed it's just the way he thinks because he was bought up different than me, with drug issues and all that. He used to look down, in a way, at me. Now he understands it and why I use drugs and so forth. (P1).

It was suggested that this extended in the prison wing, after the sessions.

Relationship with the counsellor.

Relationship with the counsellor seemed to benefit from using ProReal. Those residents who already had a good relationship with her referred to the value of her feedback and the respect they felt for her. The two participants who did not have a good relationship with her to start with referred to an increased level of respect. She was also referred to as the 'boss', highlighting the power dynamic within this setting.

Experience of participating in research.

The participants did not express any reservations about having been a part of the research project. The lack of motivation in taking part and the lack of trust in the authorities and other people related to it was particularly notable at the start of the project.

Overall ratings.

The participants gave the whole ProReal programme an average rating of 7.5 out of 10 ($n = 4$), with scores ranging from 5 to 9. The participants commented that scores on the rating scale would have been higher if the intervention had been longer.

Non-Participation Questionnaire

Four TC residents who had not taken part in ProReal (including two who had expressed an interest but then changed their minds) completed the non-participant questionnaire. In addition, two participants who had taken part in ProReal but then dropped out after the first session completed the questionnaire.

In terms of other reasons why they had not taken part in ProReal, two of the non-participants indicated that they had arrived too late to take part in the study, one said that they had only just come in to therapy, and one said that it had taken too long to set up the programme.

Of the two participants who withdrew from ProReal, one stated that there were ‘Not enough things to choose between. Need better landscape or choices of landscape.’ The other stated that he had chosen to do art therapy instead.

Staff Interview and Sessional Notes

The programme and software.

The counsellor indicated that she found the programme easy to use and of overall therapeutic benefit. She stated:

In terms of the actual intervention and use of ProReal as a tool I found that really useful. It’s helped residents, overall, being able to visualise stuff that they carry around in their head or get it out of their head to look at and play with it a little more-- perhaps over-thinking it and getting confused with it in their ‘head space’, kind of thing.... It’s a useful tool to have.

Several times she referred to the importance of working with metaphor. For instance, ‘it helps people to think outside the box and think about different meanings to things rather than being so literal, as a lot of these guys are.’

The counsellor referred to the intensity of the therapeutic process and the need for it to be integrated into the overall TC programme, rather than just being a pilot project. However, she did not identify anything that was unhelpful in the intervention in itself.

Research.

Considerable ambivalence was expressed about taking on a research project, in view of staffing difficulties and various responsibilities within the prison. The counsellor referred to her fears that research would be potentially stigmatising for the residents.

However, the research process became easier and was seen as giving a sense of pride and achievement as it became more integrated into the therapeutic work:

Discussion and Recommendations

Therapeutic Intervention

Changes on the quantitative outcome measures were not significant. However, for a small sample of just four participants, this is not unexpected, and the magnitude of improvement on the primary outcome measure is within the range of what would be expected for a brief therapeutic intervention see, for instance, (Stiles, Barkham, Twigg, Mellor-Clark, & Cooper, 2006). In general, the participants also rated the overall programme positively.

Qualitative analysis of the interviews with the participants demonstrates that they engaged strongly with the project and the intervention, against their initial expectations. This was the case with a member of staff too, who took up the project reluctantly and finished it with a sense of achievement and excitement. However, two participants of the initial six (33%) did drop out of the project after just one session. In one case, this seemed to be due to competing therapeutic priorities, but in another case it did seem to be due to a specific dislike of the programme.

ProReal seemed to facilitate the development of reflection and insight amongst the client population with limited reflexive and verbal skills. This was evidenced in the participant interviews and reflection by the member of staff. Development of empathy was particularly notable between the group member and it would suggest that it was the ProReal

programme enabled them to see the world from each other's perspective, thus increasing their ability for empathy.

Intensity and Containment.

Interviews suggested that the intervention brought up intense emotion, as some of the participants worked on painful and traumatic personal experiences. This highlighted the importance of containment and self-soothing after the sessions. Some of that was met by the feedback session at the end of therapy, some by the relationships with other group members. However, it still remained an issue and led to missed sessions. Participants wanted a longer period of therapy and this seemed particularly relevant in view of the intensity of the personal issues it brought up.

Software.

Participants and the staff found the software easy to use. However, the interviews indicated that choice in landscapes and props is important in providing digital environments more suited to individuals from a range of backgrounds. Urban environments and familiar objects were particularly important for this group, and suggested that consideration would probably need to be given to other areas of difference, such as culture or age.

Structuring the Intervention.

There were some indications from the interviews that a more structured and focused therapeutic intervention would be helpful, with a clearer set of tasks for the participants to engage in. The six session intervention was too brief for this group, evidenced in both qualitative and quantitative data. The interviews indicated that developing structured goal setting and monitoring as a part of the intervention would be helpful.

Relationship to Authority.

Relationship to authority clearly played a part in how the participants decided to take part in the programme, what they shared about their levels of distress or the relationship to the therapist. This could be an area of particular importance to any therapeutic work in prisons and would need to be taken into consideration in any future projects.

Feasibility

Difficulties in setting up the project and the recruitment of participants caused obstacles and would need to be considered in any future research within such a complex organisational setting.

Limitations

There were significant challenges in conducting this evaluation, as could be expected within a prison setting. There was a limited take up of the intervention by the residents and this resulted in a small sample size for evaluation of the therapeutic intervention. This meant that there was insufficient power to detect statistically significant effects, and that a control group could not be used. In addition, involvement of just one staff member in the programme meant that there was limited insight into the experience of staff. This limits any conclusions about the effectiveness of efficacy of the intervention. The participants self-selected for the project and this could indicate that they were individuals who were likely to benefit from the programme like this, even though they did not report being particularly motivated at the beginning. They also had other therapies within the TC, and this project could not establish the impact of ProReal on its own.

Conclusion

This project is a preliminary evaluation of an innovative therapeutic programme with a potential to offer a useful avenue for exploration of the inner world of the participants and their relationships. Difficulties in engaging offenders with mental health interventions within prisons, evidenced in literature (HM Chief Inspector of Prisons, 23 September–4 October 2013; Ministry of Justice, 2010), were present at the start of this project, even though it was taking place within a TC environment, structured to develop relationships between the prisoners and prisoners and staff. It was of interest that working with ProReal intensified emotional experiences and also seemed to increase empathy and develop relationships, as previous research into digital and virtual reality interventions has suggested (Jin & Seung, 2011; Riva, 2005; Suler, 2004). If this impact was replicated in further studies, it would have a potential to add a very useful intervention into a complex environment, with a hard to reach population. The scale of the project was too small to draw clear conclusions about the effectiveness, but it gave indications of usefulness and feasibility to both the offenders and staff. Further research is needed to evaluate the intervention more fully.

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