

Findings from mixed-methods feasibility and effectiveness evaluations of the 'Breaking Free Online' treatment and recovery programme for substance misuse in prisons.

ABSTRACT

Reshaping substance misuse treatment in prisons is central to the UK Government's drive to address substance dependence in the prison population and reduce substance-related offending and recidivism. Therefore, a through-care project to support prisoners released from custody to community, 'Gateways', is taking place across North-West England. Amongst support with housing, education, training and employment, Gateways incorporates the Breaking Free Online (BFO) substance misuse treatment programme. Aims: To explore BFO's potential to provide support to prisoners' substance misuse recovery and continuity of care post-release, and examine quantitative outcomes provided by prisoners who have used the programme. Methods: Qualitative interviews with prisoners and analyses of quantitative data collected pre and post intervention. Findings: Themes emerging from qualitative data around prisoners' experiences of engaging with BFO illustrate its potential for use in prison settings. Significant improvements to quality of life, severity of substance dependence and aspects of recovery progression illustrate initial effectiveness of BFO and prisoner's intentions to continue engaging following release to the community. Conclusions: The BFO programme demonstrates potential in providing effective treatment for offenders with substance misuse difficulties, and specifically in delivering continuity of care following release to the community.

Key words: Addiction; cognitive-behavioural approaches; computer-assisted therapy; criminal justice; groups.

INTRODUCTION

The links between substance use and crime are well established in the literature (Bennett, Holloway, & Farrington, 2008; Hough, 2002). High levels of crime committed by substance users during periods of addiction (Ball, Shaffer, & Nurco, 1983; Bennett & Holloway, 2009; Bennett et al., 2008; Best, Sidwell, Gossop, Harris, & Strang, 2001; Goldstein, 1985; Gossop, Marsden, Stewart, & Rolfe, 2000; Inciardi, 1979; McGlothlin, Anglin, & Wilson, 1978) indicate that the two behaviours often co-occur. Associations between substance use and offending are illustrated further by the high prevalence of substance use among prisoners. Although estimates may vary across countries and studies, research suggests that approximately 50% of offenders entering prison may be dependent on alcohol or drugs (Budd, Collier, Mhlanga, Sharp, & Weir, 2005; Fazel, Bains, & Doll, 2006; Prison Reform Trust, 2011; Singleton, Farrell, & Meltzer, 1999). Substance use has been identified as a criminogenic factor that predicts offending and recidivism (Andrews, Bonta, & Wormith, 2006; National Treatment Agency for Substance Misuse, 2009). Use of crack cocaine and alcohol can increase the likelihood of being violent (Gilchrist et al., 2003; McMurrin, 2006; Young, Wells, & Gudjonsson, 2011), while heroin and crack cocaine are related to acquisitive crime (Hall, 1996; Sigurdsson & Gudjonsson, 1995; Young et al., 2011).

In acknowledgement of these links, the UK government have recently implemented a new approach to addressing offender substance use which builds on and develops previous rehabilitation initiatives. The 'Transforming Rehabilitation' (TR; Ministry of Justice, 2013) agenda is informed by recent research highlighting the need for evidence-based psychosocial

treatments delivered in prisons that address substance-related issues, with the intention to reduce recidivism (Belenko, Hiller, & Hamilton, 2013).

Despite attempts to develop such treatment programmes (The Prison Drug Treatment Strategy Review Group, 2010), sustaining clinical improvements by providing continuity of care to prisoners remains a challenge (Lewis et al., 2003). Release to the community brings barriers to sustained abstinence, including reintegration with substance using peers, lack of accommodation and poor employment prospects (Visher, Debus-Sherrill, & Yahner, 2010). This suggests a need to implement through-care from prison to community, to address the difficulties encountered post-release (Bullock, 2003; Field, 1998). Yet, barriers that impact on availability of support services and continuity of care remain (MacDonald, Williams, & Kane, 2012), with a recent systematic review of aftercare demonstrating a paucity of research to demonstrate effectiveness of such approaches (Hayhurst et al., 2015).

An additional difficulty is that pre-existing treatment programmes are relatively inflexible, and sometimes as long as 26 weeks in duration (McMurrin, 2007) making them unsuitable for the new 'resettlement prisons' found across the England and Wales. Prisoners are transferred to a resettlement prison towards the end of their sentence, usually located in region that is close to their home and family, to enable them to be released to an area where they are more likely to have social support networks in place, and more practical support such as accommodation, in order to reduce the likelihood they might reoffending. Resettlement prisons also provide enhanced opportunities for interventions and rehabilitation work started within the prison setting to be continued upon release to the community when services are provided both

inside and outside the prison gate, which may contribute to increased effectiveness and sustained therapeutic benefits.

For example, for graduates of programmes such as the Rehabilitation of Addicted Prisoners Trust (RAPt) intervention which addresses drug dependence, they may be significantly less likely to be reconvicted within one year of release compared to others receiving a lower-intensity treatment (Kopak, Dean, Proctor, Miller, & Hoffmann, 2014). However, this type of programme requires prisoners to be abstinent from all psychoactive substances prior to programme entry and requires them to have a sentence long enough to allow them to complete the programme prior to release. Therefore, those receiving substitute prescribing services and shorter-term prisoners may not be included or achieve comparable outcomes. Furthermore, qualitative research with prisoners suggests that treatment programmes perceived as too intensive may increase drop-out (McMurrin & McCulloch, 2007).

Therefore, there may be a need for short-duration, evidence-based psychosocial treatments addressing substance use within prisons that can be continued upon release or when transferred between prisons. The Ministry of Justice (MoJ) has addressed this through their 'Gateways' initiative, which is intended to improve continuity of care for prisoners by providing psychosocial interventions to address substance use in prison followed by support post-release, including support with accommodation and employment. Providing continuity of care for substance misusers when transitioning between settings has been demonstrated to be cost-effective and reduce relapse and recidivism (Butzin, Martin, & Inciardi, 2005; Butzin, O'Connell, Martin, & Inciardi, 2006; McKay, 2001, 2009; Popovici, French, & McKay,

2008) but also underpinning the Gateways initiative is the intention to improve prisoners' recovery capital – the 'sum of resources an individual has at their disposal to facilitate their recovery' (Best & Laudet, 2010: pg 5).

To achieve continuity of care for prisoners in Gateways, a novel treatment programme has been piloted throughout Gateways prisons in the North West of England. This programme, Breaking Free Online (BFO), incorporates evidence-based techniques taken from cognitive-behavioural therapy (CBT) (Beck, Wright, Newman, & Liese, 2001; Beck, 2011) alongside 'mindfulness' approaches (Marlatt, Bowen, Chawla, & Witkiewitz, 2010; Marlatt, Bowen, Chawla, & Witkiewitz, 2008), and is appropriate for individuals with substance misuse difficulties, in addition to those who are 'dually diagnosed' (substance misuse and comorbid mental health issues) (e.g. Davies, Elison, Ward, & Laudet, 2015; Elison, Davies, & Ward, 2015a; Elison et al., 2014).

The BFO programme is intended to support prisoners to strengthen their resilience and build their 'recovery capital' (Best & Laudet, 2010), through supporting prisoners to develop a range of coping skills and tools based on principals of CBT and mindfulness. It is delivered as computer-assisted therapy (CAT) intervention and could also contribute to delivering continuity of care, as all users can continue to access BFO regardless of their location. Therefore if prisoners are transferred between prisons, or released to the community, they can continue to access the same interventions.

Recent research indicates an emerging evidence-base for the BFO programme in community substance misuse treatment settings (e.g. Davies et al., 2015; Elison et al., 2015a; Elison et al., 2014) but, so far, it is unclear how practicable it might be to deliver in prison settings. This may be specifically important as there are specific issues around security and the use of IT equipment in prisons.

While there have been calls recently to increase prisoner access to the internet (Prison Reform Trust, 2013), as this may confer benefits in terms of prisoner education and training, accessing information and support to facilitate successful reintegration to the community up to release. Although it may aid successful rehabilitation if prisoners were provided with opportunities to develop the IT skills that are becoming increasingly important in today's modern digital society, there are also challenges and risks associated with prisoner access to IT. These may include the risk of collusion with associates in the community, stalking and harassing of victims and other nefarious activities (Champion & Edgar, 2013). There are also a number of practical considerations when attempting to deliver computer-facilitated services in prisons, including cost of equipment, supporting prisoners to develop digital skills, and appropriate training of staff (Champion & Edgar, 2013).

When developing and evaluating effectiveness of complex, multi-component psychosocial interventions the Medical Research Council (MRC) recommends using a mixed-methods approach (Craig et al., 2008); this is the approach adopted in this study. The principle part of the study (Study 1) was to use a qualitative methodology to explore perceptions of the BFO programme with a group of prisoners receiving treatment for substance misuse in Gateways

prisons in the North West of England. Specifically their opinions of CAT and how it might be used to facilitate continuity of care following their release from prison was explored, in addition to their views more generally on the clinical content of BFO. Additionally, as quantitative psychometric assessments are completed routinely as an integral part of the BFO programme, quantitative findings relating to the effectiveness of the programme are also reported (Study 2).

Ethical approval to conduct this study was granted by the Ministry of Justice National Offender Management Service ethics committee on the 18.06.2014 (Ref: 2014-143). Participants were not given any incentive to use the BFO programme or provide data for the study.

STUDY 1: Semi-structured qualitative interviews

Methodological procedure

Prisoners who had completed the BFO programme were invited to interview. A total of 16 prisoners participated in the qualitative interviews. Of those participating, all were male, and had an average age of 35.5 years (range 23 – 56 years) and all were White-British. The most commonly used substance was heroin (7 prisoners; 43.6%). Table 1 provides a full breakdown of substances used by prisoners in the study.

TABLE 1 HERE

Prior to each interview being conducted, the aims of the study were explained to participating prisoners. Interviews schedules contained items that explored prisoners' views of BFO, including their opinions on the clinical content of the programme, and whether they felt the programme had been beneficial in the treatment of their substance misuse. In addition, their thoughts on their continued recovery from substance misuse were gathered, with a specific focus on how they might use the coping skills and techniques provided in the BFO to support them as they attempt to continue their recovery when released back to the community.

Interviews were conducted one-to-one with the researcher in the prison, lasted for approximately 30 minutes, and recorded using a digital Dictaphone. Qualitative analyses were informed by the interpretative phenomenological approach (Smith, 1996; Smith, Flowers, & Larkin, 2009). Interview transcripts were examined individually for interviewee quotes that were relevant to the research aims, with quotes highlighted and notes made in the margin around how these quotes relate the research questions. These notes were then used as the basis of the themes identified and were refined as each interview transcript was scrutinised in turn, with additional themes emerging from the transcripts added to the set.

Themes and sub-themes were checked against interview data by a second independent researcher to ensure consistency by checking identified quotes accurately reflected the themes and sub-themes and clarify how themes were defined. Quotes that reflected the topic of each theme and sub-theme were then selected from interview transcripts, with these then

being used to illustrate the 'story' told by the data. It is under the themes identified during this process that the findings are organised.

Qualitative Findings

Prisoner's perceptions of the BFO programme

All prisoners were asked about their views of the BFO programme, including their opinions about the clinical content, and whether they felt the programme had been beneficial in the treatment of their substance misuse. A recurring theme arising from this line of enquiry suggested that prisoners' experiences of using BFO were largely positive particularly in terms of the programme's potential to build recovery capital and continuity of care. Not only did prisoners appear to enjoy the structure of the programme but they could also identify how the skills gained might be helpful to them in the community.

In comparison to traditional group programmes, the relative benefits of using the online format of BFO were reported, as some were not comfortable talking to others about personal issues:

"I don't think I'd wanna sit in a room with a load of people I don't know, and tell them my deepest, darkest secrets. [The group] expect me to open up and people getting stabbed, sliced and everything else, when you open up."(BFO004H)

Although BFO could compensate for this issue, as prisoners can complete the intervention individually, support may be needed when using BFO as some prisoners reported they did not feel very confident using computers:

“I'm not really good on computers. It was a bit hard to get into at first” (BFO009P)

“Not everybody's confident in using a computer.” (BFO012P)

This evidence indicates the benefits of not only matching components of interventions to individuals, in line with Models of Care advice (NTA, 2006), but also intervention format to the prisoner's preferences and skills. As indicated here, some may prefer to engage in an individual intervention with minimal input from others. The addition of BFO allows prisoners to have a choice in their treatment as an online option is then available to them. Further to this, the non-linear format of BFO allows prisoners to visit or re-visit strategies that are offered in the programme, thus giving prisoners an increased say over their own treatment:

“What I liked about it was, that you're going over the same thing [...] So, it's like, the more times you do something, the more you remember, don't you? It was alright, I liked it.” (BFO002H)

Prisoners also reported the specific ways in which using the strategies in BFO enabled them to recognise the problems associated with their substance use and gain insights to their difficulties with substances:

“I thought it was really helpful [...] I had no idea how many units of alcohol I was drinking,

and how harmful it was. [...] Finding out that I was drinking over 50 units of alcohol a day.” (BFO011P)

In addition to helping prisoners to gain knowledge and insight of their difficulties, it also supported them to develop coping skills. The ‘recognise-avoid-cope’ strategy (teaching how to recognise and avoid a risky situation by using various coping methods), for example, was reported as being particularly useful to draw on as a coping tool:

“Like, how to avoid that situation. If you're in that situation, how to deal with it, instead of just accepting it, saying, "Yeah, I'll have it." [...] Just how to cope with it, and not let it niggle in your head. If you say, "No."” (BFO002H)

Some prisoners reported their intentions to use this coping strategy when confronted by difficult situations in the community, suggesting the programme’s potential to provide continuity of care. However, at the time of interview it was not known whether prisoners would translate these intentions into action and continue to use the programme following their release, although prisoners reported that they understood they could use the programme following release to the community: and a

“What I liked about it, I didn't want to just come in here, then go out there with absolutely nothing [...] So, yeah, it is a good tool, and I understand why you've done it.” (BFO011P)

The potential of BFO to provide continuity of care was also discussed more directly by prisoners who stated their intentions to continue to use the programme upon their release to the community:

“When I get home, I'll go on it from time to time, just to re-boost myself” (BFO005H)

“People who are coming up to their release and started it, in here with a few weeks [...] have said they've used it when they've got out.” (BFO010P)

Despite the benefits of using the BFO programme for prisoner's recovery, a number of challenges were identified by prisoners that were suggested as risks to their long-term recovery, particularly upon release into the community, such as finding employment and secure accommodation.

Prisoner anxieties about release

All prisoners were asked how they felt about their continued recovery upon release from prison. While many prisoners acknowledged how techniques learnt from the BFO could be used in the community talking about their release date seemed to trigger a number of anxieties relating to factors that could encourage them to use drugs. These anxieties appeared to stem from how drugs were used as a means to cope with negative life experiences with some prisoners explaining how they were not well equipped to maintain abstinence post-release:

“I was drinking, just to stop the anxiety attacks that I was getting, on a nice level, you know, I couldn't be drunk in my job. I think they called me a functioning alcoholic.”

(BFO009P)

Despite some prisoners recognising that the skills from BFO could help support them post-release, they were still apprehensive about returning to the community. Prisoners expressed particular anxiety about being drawn back into a substance using lifestyle that centred on ‘grafting’, that is, committing crimes to fund their substance use:

“Go home, and then what? Go home. Go home back to the North East, and I'll end up getting out and what have I got down there? Nothing. What'll I end up doing down there, grafting and all that all over again.”

(BFO001Alt)

To overcome the risk of being drawn back into this lifestyle, prisoners recognised the importance of increasing their recovery capital further by developing a more secure and structured life post-release. Issues identified centred around getting a job and having a place to live – factors that might otherwise make up what Cloud and Granfield (2008) refer to as physical capital.

Getting a job featured consistently in the expressions of prisoners’ when talking about their release and was identified as enabling them to develop and sustain recovery from the use of substances. Many reported that employment upon release would mean that they were kept

busy and would therefore not use drugs because of “boredom”:

“Get a job, straightaway, even something voluntary. If someone said to me, you can have your benefits, however long it takes, or whatever, we will give you this job if you volunteer for two years.” (BFO001Alt)

“Just get a job. I know, 'cause like before, before I started using heroin, I was working [...] But, the boredom was the main thing.” (BFO002H)

Accommodation was also identified as an important factor helping prisoners sustain their recovery following release:

“Well, accommodation is gonna be something. I mean, in the end it's gonna be quite difficult, because I can't really get them to look at it three months prior to when I get out” (BFO003P)

“It scares me, because I've got no home out there, I've got nothing. So, it scares me - going through those gates.” (BFO004S)

Anxieties around employment and accommodation would suggest that this is a central concern for prisoners and could relate to recovery outcomes following release. This finding indicates that by providing support around these issues prior to release, via Gateways and using coping strategies within BFO for example, anxieties could be overcome and chances of sustaining recovery enhanced. Some of the prisoners interviewed expressed a wish to continue to access

therapeutic support once they were released, specifically support that would also provide them with stable accommodation, such as in residential rehabilitation or therapeutic community settings:

“I'm hoping to get off the methadone while I'm here, in Preston and then hopefully go to a therapeutic community once I'm released.” (BFO007P)

The reported anxieties around released and need for continued residential support illustrate the vulnerability of offenders leaving prison. Confronted with the prospect of being unemployed, homeless and lacking support, drug use remains a real threat in the lives of those leaving prison. Increasing opportunities for continuity of care for overcoming substance dependence, not only through the MoJ's Gateways intervention but also through the various capabilities of programmes like BFO, indicates that steps are being undertaken to overcome long-term challenges associated with resettlement and reintegration (Padfield & Maruna, 2006). However, the structural deficits of limited employment opportunities and accommodation for ex-prisoners (Gojkovic, Mills, & Meek, 2012; Jones & Maynard, 2013; van Olphen, Eliason, Freudenberg, & Barnes, 2009) remain significant issues that continue to threaten the long-term sustainability of recovery capital for these individuals (McKeganey, 2000; Tsemberis, 2011).

STUDY 2: Quantitative psychometrics outcomes from Breaking Free Online

Methodological Procedure

Following referral to BFO all prisoners were supported to complete the psychometric assessment battery that needs to be completed before the programme can be accessed.

This battery of psychometric assessments consisted of:

- a) Recovery Progression Measure (RPM- Elison, Davies, & Ward, under review): The RPM is a 36-item measure comprising 6 Likert scale items (scored 0-10) measuring the impact of the following areas of psychosocial functioning on substance use: difficult situations, negative thoughts, emotions, unhelpful behaviours, physical sensations and lifestyle. The RPM also contains 30 dichotomous 'yes/no' response items measuring presence or absence of specific psychosocial issues within these 6 domains. Internal reliability is reported as excellent ($\alpha > .70$), with item-total correlations revealing moderate–excellent reliability of individual items. A higher score on the RPM indicates a greater degree of substance-related psychosocial impairment.
- b) The World Health Organisation Quality of Life measure (WHOQOL-BREF; Skevington, Lotfy, & O'Connell, 2004): A total of 5 items (items 1, 2, 17, 18, 20) from the WHOQOL-BREF were selected for measuring general quality of life (QoL), as many of the WHOQoL items measure very specific aspects of quality of life such as those related to health or relationships. A higher score on the WHOQOL indicates greater quality of life.
- c) The Severity of Dependence Scale (SDS- Gossop et al., 1995): This 5-item scale measures severity of alcohol and drug dependence. A higher score on the SDS indicates greater severity of dependence on substances.

In addition, all prisoners provided self-reports of their alcohol and/or drug consumption the week prior to collection of baseline data. Once the baseline assessment had been completed, prisoners were provided with full access to BFO. Eighty five prisoners accessed BFO and provided baseline and follow-up psychometric assessment data, equating to 36% of the total number of prisoners who had accessed the programme (n=235). All were male and an average age of 34.8 years (range 21 – 50 years) with the majority being white-British (74 prisoners; 87.1%). The most commonly cited substance of dependence was heroin (23 prisoners; 27.1%), with alcohol being second most commonly used substance (15 prisoners; 17.6%).

Engagement with the programme varied in terms of the period of time in weeks that the programme was used for, the total number of treatment sessions, and the number of minutes/hours the programme was used for. Number of weeks of engagement ranged from 1 – 12 (mean 4.58, SD 3.32), number of treatment sessions ranged between 2 – 41 (mean 10.07, SD 8.71), and time spent using the programme ranged between 29 minutes – 19.81 hours (mean 4.65 hours, SD 3.82 hours).

At the end of each individual's period of engagement with the intervention, the same battery of assessments was completed again online. As Shapiro-Wilk tests revealed data to be non-normally distributed (all $p < .05$), so non-parametric Wilcoxon Signed-Ranks tests were conducted to examine changes in psychometric scores from baseline to follow-up.

Effect sizes were also calculated in order to ascertain the magnitude of difference between scores obtained at baseline and post-intervention follow-up. Linear regressions were conducted to examine any associations between period of time elapsed in weeks between baseline and post-intervention follow-up assessment, and changes in psychometric scores, in order to ascertain whether there was a 'dosage effect' that has been identified with other cognitive-behavioural psychosocial treatment programmes for substance dependence. Age of prisoners was also included in a series of linear regressions to examine whether age of prisoners was associated with the degree of change in scores from baseline to follow-up.

Quantitative findings

Analyses revealed statistically significant changes in scores on the WHO-QoL ($F = -.815$, $df = 84$, $p < .0001$), and SDS (Alcohol- $F = -2.486$, $df = 84$, $p = .013$; Drugs- $F = -4.744$, $df = 84$, $p < .0001$) and significant reductions in self-reported weekly alcohol and drug consumption (alcohol- $F = -5.654$, $df = 84$, $p < .0001$; drugs- $F = -6.186$, $df = 84$, $p < .0001$). Although no significant change was identified when total RPM score was examined ($F = -.815$, $df = 84$, $p = .415$), when scores for individual items representing the six different domains of biopsychosocial functioning measured by the RPM were analysed, there were some significant improvements in the domains of negative thoughts ($F = -3.143$, $df = 84$, $p = .002$), emotions ($F = -2.873$, $df = 84$, $p = .004$), physical sensations ($F = -2.452$, $df = 84$, $p = .014$) and ability to cope with difficult situations ($F = -2.237$, $df = 84$, $p = .025$). However, no significant differences were found in the unhelpful behaviours ($F = -.459$, $df = 84$, $p = .646$) and lifestyle ($F = -.455$, $df = 84$, $p = .645$) domains of the RPM.

Effect sizes were also calculated with these showing effect sizes of $r = .38$ for WHO-QoL, $r = .57$ for SDS Alcohol, $r = .36$ for SDS Drugs, $r = .74$ for alcohol consumption and $r = .67$ for drug use. Effect size for total RPM scores was $r = .01$ with individual domain effect sizes being; difficult situations $r = .24$, negative thoughts $r = .34$, physical sensations $r = .27$, unhelpful behaviours $r = .05$, lifestyle $r = .06$ and emotions $r = .31$. See Table 2 for a summary of data related to these outcomes analyses examining changes in functioning from baseline to follow-up.

TABLE 2 HERE

In addition to examining changes from baseline to follow-up, given participants used BFO for varying time periods, regression analyses were conducted for each of the psychometric outcomes to examine whether these varying time periods acted as predictors of degree of change in psychometric scores. For RPM, SDS Alcohol, SDS Drugs, and alcohol and drug consumption, time elapsed in weeks did not predict psychometric outcomes (RPM- $r = .197$, $p = .072$; SDS Alcohol- $r = .220$, $p = .138$; SDS Drugs- $r = .018$, $p = .884$; alcohol consumption- $r = .001$, $p = .995$; drug consumption- $r = .105$, $p = .388$). However, time elapsed between baseline and follow-up assessment did appear to be significantly associated with degree of change in QoL scores ($r = .220$, $p = .043$).

Given the significant findings around individual RPM items, changes in scores on each of these, and their relation to period of time in weeks between baseline and follow-up

assessment, were also examined. Time elapsed between baseline and follow-up assessment did appear to be significantly associated with degree of change in score on the difficult situations item ($r = .346, p = .001$), the negative thoughts item of the RPM ($r = .352, p = .001$) and the emotions item ($r = .216, p = .049$). Outcomes for the other three RPM items did not appear to be significantly associated with time elapsed in weeks between assessments (physical sensations- $r = .081, p = .465$; unhelpful behaviours- $r = .105, p = .340$; lifestyle- $r = .104, p = .339$)

TABLE 3 HERE

As the age range of the 85 prisoners who engaged with BFO was wide (21 – 50 years) age of was also used in a series of regression analyses to explore whether this independent variable might be associated with degree of change in the quantitative measures included. From the psychometric assessments used, changes in quality of life ($r = .073, p = .510$), SDS Alcohol ($r = .287, p = .053$) and units of alcohol consumed ($r = .117, p = .440$) did not appear to be associated with age. However, changes in scores on SDS Drugs ($r = .294, p = .014$) and the RPM ($r = .322, p = .003$) did appear to be significantly associated with age, with degree of change being significantly positively correlated with age. In addition, changes in scores on all six of the individual RPM items were also found to be associated with age (difficult situations- $r = .238, p = .029$; negative thoughts- $r = .252, p = .021$; physical sensations- $r = .217, p = .047$; unhelpful behaviours- $r = .344, p = .001$; lifestyle- $r = .322, p = .001$; emotions- $r = .295, p = .006$). Table 4 provides all data for the regression analyses using prisoner age.

TABLE 4 HERE

DISCUSSION

This study explored effectiveness of the BFO treatment and recovery programme for substance misuse, which has been specifically developed for use in prisons and uses a computer-assisted therapy (CAT) format for delivering evidence-based psychosocial intervention techniques. This study used a mixed-methods approach to qualitatively explore prisoners' perceptions of engaging with the programme in prison and intentions to continue engaging following release to the community. Additionally, changes in quantitative, psychometrically measured severity of drug and alcohol dependence and quality of life (QoL), and self-reported substance use was also examined. Findings from the study are now discussed with qualitative findings summarised first, followed by quantitative findings.

In the qualitative interviews, prisoners indicated that the intervention strategies provided in BFO were useful in supporting them to develop coping skills that they could apply to their lifestyle to facilitate their recovery. Intentions to continue to access the programme when released back to the community, were reported. These findings would indicate that BFO has the potential to provide continuity of care between prison and community settings, something the Ministry of Justice (MoJ) outlines in its Transforming Rehabilitation (TR) agenda (Ministry of Justice, 2013) as being essential for sustained substance misuse recovery and successful reintegration into the community.

The qualitative findings may also provide some insights into why the reductions in drug and alcohol dependence and increases in QoL identified in the quantitative part of the study, were observed. Prisoners reported a number of psychosocial triggers for their drug and alcohol use outside of prison, such as difficulties in their interpersonal relationships and lack of accommodation. Being in the prison environment, and therefore removed from these triggers, may reduce perceived dependence on drugs and alcohol and subsequently result in a subjective increase in QoL. Additionally, prisoners have reduced access to high volumes of substances within the prison setting, so this reduced access, and subsequent reduced opportunities to use substances, could result in reduced dependence.

Supporting the proposition that it may be beneficial to prisoners in recovery to be removed from environments in which psychosocial triggers for drug and alcohol use are present is the fact that some prisoners interviewed in this study reported a sense of uncertainty about their ability to cope with the difficulties they faced in the community post-release. Despite calls for reform of the release/resettlement process over the last century (Morgan & Owens, 2001; Revolving Doors Agency, 2011; Social Exclusion Unit, 2002), the process of prisoner reintegration has remained fraught with complications that have been near-impossible to realise (Padfield & Maruna, 2006). Therefore, the anxieties reported in the interviews, may partly reflect prisoners' previous experiences of being released from prison.

Prisoners also reported more generalised anxieties surrounding release, in particular around securing accommodation and employment. Continuing progress made in prison, increasing recovery capital post-release was reported as being central to sustaining recovery. This

finding is in line with Duncan Selbie's (CEO of Public Health England) vision of addressing the three underlying social determinants in people's lives that promote good health through a positive lifestyle – 'jobs, homes and friends' (Das, 2013),

Quantitative data from the relatively small sample of prisoners (n = 85) included in this study who provided baseline and post-interventions quantitative outcomes suggest that participation in BFO may reduce self-reported drug and alcohol dependence and improve quality of life (QoL). These findings are consistent with clinical outcomes found in research examining effectiveness of BFO in community settings (e.g. Davies et al., 2015; Elison et al., 2015a; Elison et al., 2014).

In contrast to research in community samples with BFO (e.g. Elison et al., 2015a; Elison, Humphreys, Ward, & Davies, 2013), no significant changes in 'recovery progression' were found in the sample when total scores on the Recovery Progression Measure (RPM- Elison, Davies, & Ward, under review) were analysed. This potential lack of change in RPM scores, and therefore more global improvement in the aspects of biopsychosocial functioning associated with recovery progression, may partially be explained by the fact that in the stressful prison environment it may be more difficult to achieve the more global improvements in functioning previously identified in service users accessing BFO in the community (Elison et al., 2015a; Elison, Davies, & Ward, 2015b; Elison et al., 2013).

However, when scores on individual items of the RPM were analysed, significant improvements were identified across all domains apart from unhelpful behaviours and lifestyle. This could be explained by the fact that the two core intervention strategies most likely to be affected by the physical constraints of the prison environment and the restrictions imposed by the prison regime are those related to these domains of functioning measured by the RPM. These intervention strategies relate to expanding the prisoners behavioural repertoire by engaging in specific positive activities at scheduled times (related to the unhelpful behaviours domain of functioning) and taking a series of steps in a structured and systematic way in order to achieve chosen lifestyle goal. In contrast, the intervention strategies that are associated with the domains of functioning measured by the RPM for which significant improvements were seen are all strategies that could be easily practiced in any environment, even the restrictive environment of a prison. These strategies include mindfulness approaches to cope with cravings and difficult emotional states (associated with the 'physical sensations' and 'emotions' domains of the RPM), cognitive restructuring (associated with the 'negative thoughts' domain) and practising recognition, avoidance and coping skills (associated with the 'difficult situations' domain of the RPM).

In terms of the linear regression analyses in relation to severity of drug and alcohol dependence, self-reported alcohol and drug use and RPM scores, length of time in weeks was not related to degree of change. This would indicate that BFO may not be subject to the 'dosage' effect that other interventions based on cognitive-behavioural therapy (CBT) principles are (Carroll et al., 2011; Glenn et al., 2013), which may be explained by the fact that BFO is modular rather than linear in nature. This means that users of the programme can

access the sections of it that are most relevant to them immediately, without having to spend time working sequentially through content that may not be relevant, which may delay any potential therapeutic benefits. This means that the programme can be tailored to the needs of the individual, with the literature suggesting that the more capable a complex behavioural change intervention is of being tailored, the more likely it is to be effective (Baker et al., 2010).

Additionally, linear regressions conducted examining whether age of prisoners was related to degree of change in quantitative outcomes demonstrated that offender age was significantly associated with degree of change in some outcomes, including severity of drug dependence, drug use, and scores on the RPM. According to these outcomes, the older a prisoner is, the greater the reduction in severity of drug dependence and drug use, and the greater the degree of improvement across all six domains of biopsychosocial functioning measured by the RPM.

These findings would appear to be aligned with the principles of desistance theory (McNeill, 2006) which describes the processes that occur when an offender changes their behaviour and stops offending. One of the key predictors of desistance from crime is age, with offenders being more likely to stop committing crimes as they get older (Massoglia & Uggen, 2010). Additionally, findings from studies in the substance misuse literature demonstrate that older adults are more likely to stop using substances (Satre, Chi, Mertens, & Weisner, 2012), are more likely to complete treatment (Webb, Ryan, & Meier, 2008) and also less likely to be substance dependent at five-year follow-up (Satre, Mertens, Arian, & Weisner, 2004). Taken together, this literature supports the findings that older prisoners may demonstrate a greater

degree of improvement in functioning and progression in substance misuse recovery than younger prisoners.

Overall, the findings from this study indicate the potential of BFO for use in prison settings to support prisoners to begin the process of recovery from substance use, though chances of recovery maintenance may only be optimal if the appropriate support around issues such as accommodation and employment is provided upon release to the community. Additionally, BFO shows promise as one that can provide based interventions that crosses the prison-community divide through providing continuity of care during the reintegration process. However, as with any research there are some limitations to the study that should be considered when drawing conclusion from the findings generated.

Firstly, data reported are only preliminary outcomes from the very first cohorts of prisoners accessing this new treatment programme. Only longer-term follow-up will reveal whether the continuity of care potential of BFO is realised and prisoners are able to translate their intentions to continue accessing the programme when released to the community into action. Additionally, the total length of time that prisoners engaged with the programme was relatively short, with a mean of 4.65 hours. It is yet to be seen whether length of engagement time increases as the programme becomes more firmly embedded into standard treatment practice and whether this has an impact on clinical outcomes. The encouraging clinical outcomes reported also only provide an indication off the potential of BFO to reduce substance dependence and use in prisoners; whether these reductions are sustained in the long-term is yet to be seen. Additionally, the prisoners included in the study were self-

selecting, and there were no female prisoners represented in this sample, although this does reflect the fact that there are significantly higher numbers of male than female prisoners in UK prisons (Ministry of Justice, 2014). Additionally, no data were available to compare outcomes for those prisoners engaging with BFO, with outcomes of those engaging with other interventions.

Given these limitations, further research is already underway, with more planned for the future. This involves a randomised controlled trial (RCT) in which BFO will be compared to compared to 'treatment as usual'. Additionally, focussed work with female prisoners is also planned, in order to examine differences in effectiveness of BFO for males and females, given the gender differences in aetiology and clinical profiles (Ministry of Justice, 2014; Tuchman, 2010). Further sub-group analyses will also be conducted as the sample size of prisoners using BFO increases, in order to explore the effectiveness of BFO for individuals with different clinical profiles, including different substances of dependence. This builds on previous work by the study authors (Elison et al., 2015b) which examined outcomes in a group of 393 community-based service users, and compared different sub-groups based on whether their primary substance of dependence was opiate and/or crack, non-opiate and/or crack substances or alcohol. Outcomes for males and females were also compared. Analyses demonstrated that regardless of sub-group, all service users demonstrated significant improvements in substance dependence, substance use, and also quality of life and mental health. Additional key priorities are to further examine the potential of BFO to provide continuity of care through support maintained recovery upon release to the community, and hence reduce likelihood of reoffending. Therefore, longitudinal follow-up of individuals using

the programme is planned, in order to ascertain longer-term impact of BFO and contribute to further development of the programme.

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