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Treating Alcohol-Related Violence: A Feasibility Study of a Randomized Controlled Trial in Prisons

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Abstract

Purpose: There is a lack of good-quality outcome evaluations of interventions for offenders whose crimes are alcohol-related. Randomized controlled trials (RCTs) are considered gold standard in treatment evaluations. Prior to conducting a full RCT it is necessary to conduct a feasibility study to ascertain whether an RCT can be done and to estimate important parameters for a full study. Here, we report on a feasibility study for a randomized controlled trial (RCT) of an alcohol-related violence intervention, Control of Violence for Angry, Impulsive Drinkers (COVAID).

Method: Participants were 115 adult male prisoners who were randomly allocated to COVAID plus treatment as usual (TAU) or TAU only. The feasibility targets for a full RCT were: that proven reconviction data would be available for 90% of the sample at 6 months post-release and that 85% of participants find COVAID acceptable.

Results: Most participants (84%) found COVAID at least moderately useful. Reconviction data at 6 months were accessed for 109 (95%) participants. There were no differences between the two groups on violent reconvictions or all reconvictions at the 6-month period. However, an exploratory follow-up at a mean of 17 months post-release showed that 13% fewer people in the COVAID group were reconvicted for violence, although this difference was not statistically significant, and 20% fewer had reconvictions for any offence, which is a statistically significant difference.

Conclusion: The results indicate than an RCT is feasible and provide parameters for designing a full RCT. Differences in reconviction between groups favoured COVAID and were clinically important. However, a follow-up period of at least 17 months is indicated to detect any statistically significant positive effects.
KEY WORDS: Alcohol, Violence, Treatment, Prisoners, COVAID, randomized controlled trial
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Alcohol-related health and social harms are a considerable burden to many societies across the world (Krug, Dahlberg, Mercy, Zwi, & Lozano, 2002). The tangible costs of alcohol-related harm in Europe in 2003 have been estimated at €125bn (Anderson & Baumberg, 2006), and in the United States of America (USA) in 2006 the estimated costs were $223.5bn (Bouchery, Harwood, Sacks, Simin, & Brewer, 2011). In Europe, the economic costs of alcohol-attributable crime were estimated at €33bn, with estimated costs of between €9bn and €37bn for the physical and psychological effects of crime, and in the USA criminal justice costs were $21bn. While alcohol consumption may be associated with a range of offence types, including acquisitive offending (McMurran & Cusens, 2005), it is most strongly associated with violent crime (Rossow & Bye, 2013).

Tackling the problem of alcohol-related violence demands interventions at different levels, including legal restrictions on the production, sale and use of alcohol, making drinking environments safer, problem-oriented policing, punishment of offenders, and treatment of offenders (McMurran, 2013). Indeed, taking account of both the population prevalence of hazardous drinking and the strong association with violence, reducing hazardous drinking through public health approaches has the potential to make a substantial impact on violent crime (Coid et al., 2006). Alongside this, it is nonetheless important to conduct interventions at the individual level.

While individual-level interventions that reduce alcohol-related crime are important, these are seriously under-provided and under-developed (McMurran, 2012). In a recent thematic report on alcohol services in prisons in England and Wales, the then Chief Inspector of Prisons commented on the lack of provision as a ‘depressing picture’ (HM Inspectorate of Prisons, 2010). A similarly fragmented picture of services provided by Probation Services in
England and Wales was identified in a review of services for alcohol-abusing offenders (McSweeney, Webster, Turnbull, and Duffy, 2009). Both reports commented on the lack of evidence-based alcohol interventions for offenders whose criminal behaviour is related to their use of alcohol.

One intervention for alcohol-related violence is COVAID\(^1\) – Control of Violence for Angry Impulsive Drinkers (McMurran, 2007a). COVAID is a 10-session structured cognitive-behavioural treatment programme aimed at reducing alcohol-related aggression by addressing alcohol consumption, aggression, and the relationship between these with reference to an anger-aggression system that is adversely affected by drinking (see Appendix). COVAID is fully accredited by the Correctional Services Accreditation Panel (CSAP) for non-alcohol dependent men in prison and probation services in England and Wales.

COVAID has been evaluated in small-scale studies, with positive outcomes. An evaluation with male probation service clients with a history of repeated alcohol-related violence compared six COVAID completers with ten referred but untreated men (McMurran & Cusens, 2003). Reconviction information collected from participants’ probation officers at a mean 18.5 weeks after referral showed fewer reconvictions in the treated group (1/6) compared with the untreated (3/10) (odds ratio (OR) = 0.55, 95% CI = 0.05-6.63). In a single case design with ten community clients with alcohol-related aggression problems recruited from social services, probation service, and a community alcohol and drug service, five participants showed clinically significant improvement on the Alcohol-Related Aggression Questionnaire (ARAQ; McMurray et al., 2006), and seven showed clinically significant improvement on the Controlled Drinking Self-Efficacy Scale (CDSES; Sitharthan, Job, Kavanagh, Sitharthan, & Hough, 2003), although the mean weekly self-reported alcohol

\(^1\) Contact the authors for more information on COVAID.
consumption did not change over the course of COVAID (McCulloch & McMurran, 2008). Both of these studies show some promise for COVAID but small numbers, an inadequate comparison group, short-term follow-up, and a possibly unreliable source of follow-up data limit confidence in the outcomes.

To address these issues, it would be appropriate to conduct a randomized controlled trial (RCT) of COVAID. In preparation for this, a pilot study was conducted to examine the feasibility of recruitment, randomization, and follow-up. Additionally, we aimed to conduct a preliminary evaluation of the effectiveness of COVAID to inform future sample size calculations. The aim was to recruit and randomize 100 men between October 2009 and June 2010. In a previous publication, we reported referrals of 203 male prisoners over the 9-month recruitment period, of whom 115 met the inclusion criteria and were willing to be randomized (Bowes, McMurran, Williams, David, & Zammit, 2012). Analysis of interim outcomes showed that COVAID participants improved more than treatment as usual (TAU) controls on the ARAQ Alcohol-Aggression subscale and all CDSES subscales. The main purpose of this paper is to report on the RCT feasibility criteria that, at follow-up six months after release, reconviction data would be available for 90% of the study participants and that 85% of COVAID participants would be positive about the intervention. Furthermore, we report group differences on violent reconvictions and all reconvictions to inform sample size calculation for a full RCT. The implications of the findings for design of a full RCT are discussed.

**Method**

**Design**

The design was a two-arm parallel RCT comparing COVAID treatment for alcohol-related violence plus TAU with TAU only, with violent reconviction as the primary outcome
measure. The research protocol was registered with the International Standard Randomized Controlled Trials Register (Number CCT-NAPN-20281).

Participants

Participants were 115 convicted adult men recruited from two medium-security prisons in South Wales, UK between October 2009 and June 2010. Inclusion criteria for the study required participants to be aged 18 or over, serving a determinate custodial sentence of 12 months or over, who had at least three recorded or self-reported incidents of alcohol-related violence in the most recent two year period in the community, have a moderate standard of literacy and comprehension, and have an Offender Group Reconviction Scale-3 (OGRS-3; National Offender Management Service, 2008) risk score of 35 or over (i.e., medium risk or above). The OGRS-3 score represents a percentage likelihood of reconviction over a 2-year period. Exclusion criteria were active symptoms of mental illness, mental impairment, currently alcohol dependent, required to abstain from alcohol on medical grounds, serving indeterminate or life sentences, and serving a sentence for a sexual offence. Participants were referred to the study through the usual sentence planning procedures at the sites.

Measures

Reconviction information was collected via Police National Computer (PNC) records, which were requested for all participants on November 2, 2012. Violent reconvictions were defined according to the OGRS-3, namely: harassment, assault, murder, firearm offences, explosives offences, aggravated burglary, kidnapping, wounding, and manslaughter. We also examined all reconvictions (violent and non-violent combined) recorded on the PNC. There are problems with using reconviction data as a measure of recidivism, as violent reoffending often goes unreported or is not convicted (Friendship, Beech, & Browne, 2002; Lloyd, Mair,
& Hough, 1994). However, it is criminal violence in forensic settings that this intervention is designed to address; the most appropriate measure of this is official reconviction data.

Participants were asked to rate how useful they found COVAID on a scale from 0 (not useful at all) to 10 (very useful indeed). A semi-structured interview was designed to elicit participants’ views of the COVAID intervention and asked for general opinions, points learned, good experiences, and bad experiences. Those allocated to COVAID but who did not complete were also interviewed using an extended version of the semi-structured interview above to explore reasons for drop out and whether and how the treatment team could have helped prevent dropout.

**Procedure**

Ethical approval was obtained through ethics panel of the University of Wales Institute Cardiff (UWIC, now Cardiff Metropolitan University) School of Health Sciences and approval was obtained through the Research Quality Assurance process within the Ministry of Justice. Participants were informed about the study and written consent to participate was taken. They were then randomly allocated either to COVAID plus TAU or TAU only using a web-based system of random permuted blocks of varying size.

The manualized COVAID intervention was delivered to groups of between 8 and 10 participants by facilitators trained by Delight Training (www.delight.co.uk) to the accredited programme manual standards (Delight, 2009). Facilitators were probation officers and prison group work facilitators. Over ten sessions, COVAID covered the following topics: explaining alcohol-related aggression; crime harm reduction; managing anger and stress; modifying drinking; altering triggers; weakening the expectancies that contribute to alcohol-related violence; identifying and coping with high risk situations; and enhancing problem-solving skills. COVAID participants accessed approximately 20 hours of group treatment and at least 4 hours of individual support over a four-week period. Following participation in the
programme, all COVAID participants were offered interviews with the research assistant (BW), who was not involved in the delivery of the programme.

**Analysis strategy**

The analysis of pilot studies should be mainly descriptive or should focus on confidence interval estimation; since no formal power calculations have been carried out, results from hypothesis testing should be treated as preliminary and interpreted with caution (Lancaster, Dodd, & Williamson, 2004). The feasibility criteria were that proven re-offending at 6 months from release date could be ascertained for at least 90% of participants, and 85% of participants express positive views about COVAID. Relative risk (RR) calculations were used to compare the intervention group (including treatment dropouts) with the TAU group on violent reconvictions and all reconvictions at follow-up. As we had participants who had been released for longer periods than the stipulated 6 months, we conducted exploratory analyses of both violent reconvictions and all reconvictions for the entire period of follow-up. Data were analysed using SPSS Version 20 (IBM, 2011).

For participants’ opinions, the mean score on the acceptability rating scale was calculated and comments are presented to illustrate their views of COVAID.

**Results**

**Participants**

The total number of referrals was 203 over a period of 9 months, of whom 115 (56.65%) met inclusion criteria and were willing to participate in the study; 56 were allocated to COVAID plus TAU and 59 to TAU only. The sample is described fully elsewhere (Bowes et al., 2012). In summary, the mean age was 24.45 years ($SD=5.71$), and the majority were White ($N=107; 93.04$%). The groups were comparable in age and OGRS-3 risk scores (COVAID $M=58.86$, $SD=12.82$; TAU $M=59.54$, $SD=12.90$). Of the 56 in COVAID treatment, 40 (71.43%) completed treatment.
Reconviction Data Collection

At the PNC data collection point (November 2, 2012), reconviction data were collected for 109 men (94.78%). Four of the 115 participants were still in prison completing their sentences and data were missing for two men. Thus, the feasibility criterion of 90% was exceeded.

Group Differences in Reconviction

For the purposes of six-month reconviction analysis, we excluded three participants. The release date for two men was not recorded by prison and so the six-month period was unclear, and one escaped from prison during the period and was re-captured, hence his reconviction preceded his release date. This left a total sample of 106 for this analysis: 52 in COVAID plus TAU and 54 in TAU only. Table 1 shows reconvictions by group at 6 months (180 days) follow-up. There were no differences between the two groups on violent reconvictions (Relative Risk (RR) = 1.00; 95% Confidence Interval (CI) = 0.88, 1.13, z=0.06, P=0.95) or all reconvictions (RR=0.99; 95% CI=0.81, 1.21, z=0.10, P=0.92).

Table 1 about here

The follow-up period allowed for reconviction data to be collected over a longer period and whilst this was not a feasibility criterion, we conducted an exploratory analysis at the data collection point on November 2, 2012, at which time data were available for 106 participants with a mean follow-up of 518 days (SD=264). Of these, 52 were in the COVAID group and had a mean follow-up of 528 days (SD=267), and 54 were in the TAU group and had a mean follow-up of 509 days (SD=263). Reconviction data are presented in Table 2. There were no significant differences between groups for violent reconvictions (RR=1.23, 95% CI=0.93, 1.63, z = 1.44, P=0.15), although in the COVAID group 13.26% fewer were reconvicted for violence. There was a significant difference between groups in favour of
COVAID for any offence (RR=1.71; 95%CI= 1.04, 2.83; \(z=2.10, P=0.04\)), with 20.06% fewer in the COVAID group being reconvicted of any offence.

**Table 2 about here**

**Acceptability of COVAID**

Follow-up interviews were available from 46 men in the COVAID arm, 37 completers and 9 dropouts. The mean score on the usefulness rating scale was 7.04 (SD=2.83) with 84.40% rating COVAID equal to or higher than the mid point of 5. Thus, the target of acceptability to 85% was almost attained. Unsurprisingly, completers of COVAID had a higher mean score of \((M=7.76; SD=2.09)\) than did dropouts \((M=3.75; SD=3.58)\).

Participant comments suggested that COVAID’s aims and contents were appropriate:

- *The beauty of COVAID is that it doesn’t push you towards abstinence or drinking ... I’d like to abstain and COVAID taught me ways to abstain, but also gave you tips and advice for drinking, so it prepares you for both scenarios.*

- *It makes you realise there’s always another option; you don’t have to resort to violence.*

- *For myself, with my violence, alcohol was really fuelling it. I have anger issues anyway, but alcohol was fuelling it.*

The relevance was expressed even by non-completers:

- *Cause I’ve always had problems drinking and fighting, I’ve been trying to sort it out, but there’s things I was learning in there that will help me in the future, because I’ve had enough of it.*

Participants commented on how they thought COVAID might have benefitted them:

- *Made me think a bit more about what I want to do. Not drink so much, spend time with my kids and girlfriend. I was thinking that already but it made me think a little bit more.*

- *It just made me reflect on my past behaviour. It made me feel guilty and*
embarrassed which is an eye-opener for me at the age of 40.

The delivery of COVAID in a group format drew mixed views from participants:

- *It was good in a way because you could listen to other people’s problems and realise you’re not the only one with those problems, hot tempered. And it was good in a way to get stuff off your chest. You learn to interact with people in a group.*

- *A room full of YOs [Young Offenders]. I’m 35 - I don’t want to discuss anything with them.*

The participants who dropped out of treatment indicated that they did not think they needed or would benefit from the programme or the group delivery of COVAID did not suit them:

- *Everything they were talking about I already knew anyway.*

- *I don’t feel like I need it.*

- *I can’t read and write, felt uncomfortable in front of people.*

When dropouts were asked whether they thought there was anything the treatment team could have done to support them in completing COVAID, participants’ responses suggested that they chose not to continue, had competing Court appearances, or did not respond well to the group delivery style.

- *I’d just made my mind up, it was nothing to do with the staff.*

- *No it was the Court system and that.*

- *Was nobody’s fault, nothing to do with the course, I feel uncomfortable in front of other people.*

**Discussion**

In this study, we have demonstrated that an RCT to evaluate COVAID in prisons is feasible. Over a nine-month period, 115 participants were recruited from 203 referrals (57% recruitment rate), thus meeting our target of 100 recruits. Of the 115 participants, 56 were
randomly allocated to COVAID and 40 of them (71%) completed the treatment programme. This compares favourably in comparison with 60% drug treatment completions for men in medium secure prisons (Ministry of Justice, 2013). Also, given that COVAID was a new programme in these prisons, and that it was delivered under a new contracting arrangement with probation services, there were some initial practical problems in establishing COVAID. Most participants (84%) found COVAID at least moderately useful, which virtually met our target of 85%. Of the 115 participants, reconviction data at 6 months were accessed for 95%, exceeding our target of 90%.

No differences in reconvictions for violent or any offending were found at the 6-month post-release follow-up. However, at a longer follow-up, on average 17 months post-release, differences were apparent, with 13% (n=9) fewer people in the COVAID being reconvicted for a violent offence and 20% fewer being reconvicted of any offence. The lack of an apparent short-term effect may be explained the protective effects of community supervision in both groups on release from prison. This suggests that there is a need for longer follow-up periods when examining reconviction.

The average cost of a crime of violence against the person is £11,617 at 2007-2008 prices (Sinclair & Taylor, 2008). If 13% fewer violent crimes are committed over a period of 17 months, then, potentially, for every 100 offenders treated over £150,000 can be saved. The unit costs of delivering offending behaviour programmes in prisons ranges from £34 to £76 per hour (Brookes, Barrett, Netten, & Knapp, 2013). The upper excess treatment costs of delivering COVAID, which is 20 x 2 hour sessions long, to 100 men in groups of 8, is £39,000. Although more sophisticated cost-benefit analyses are required, a 13% reduction in violent reconvictions over a 17-month period would be clinically and economically sufficient for many practitioners to incorporate COVAID into their treatment services. Further evaluation of COVAID would therefore be worthwhile.
In addition to demonstrating the feasibility of an RCT of COVAID in prisons, the information presented here provides the basis for planning a full RCT. Using the information for violent reconvictions over the whole period of follow-up, at a power of 0.80 and significance of 0.05, a Chi-square of 2.08 and one degree of freedom, 415 participants would be required to detect a reliable difference between groups (Lenth, 2009). To collect violent reconviction data for 415 offenders, a service would have to build in a 5% excess for unavailable reconviction data at follow-up (N=436) and would likely need to screen twice that number to identify sufficient numbers who meet the criteria for COVAID treatment. While this seems a sizeable task, it is by no means impossible if a number of prisons were to be involved in the project and if an appropriate time-frame was calculated from local information about the likely number of referrals.

In an earlier publication, we reported on interim outcomes on alcohol-related aggression expectancies, anger control, impulsivity, and controlled drinking self-efficacy were taken before and after the COVAID treatment or the equivalent times for the TAU group (Bowes et al., 2012). Compared with TAU, there were greater reductions in the COVAID group’s alcohol-aggression outcome expectancies, as measured by the ARAQ (McMurran et al., 2006) and greater improvements in controlled drinking self-efficacy, as measured by the CDSES (Sitharthan et al., 2003). In a full RCT, relating these interim outcomes to recidivism would be useful in investigating the processes by which COVAID may exert its effects.

Limitations

COVAID aims specifically to address alcohol-related violent offending, but it was not possible, using the PNC data, to identify whether alcohol was related to the recorded offences or not. Accessing data from other sources (e.g., the Offender Assessment System – OASys; Debidin, 2009) to identify this information may be useful for future studies. Additionally, no
follow-up information was collected on alcohol consumption, and so it is not known if a lower incidence of reconviction in the COVAID group was the result of better alcohol management by them.

Other learning points from the feasibility study, not reported here, are implementation issues that require consideration ahead of implementing a full-scale RCT in prison settings. These include informing staff of RCT procedures, promoting referrals, and facilitating the effective delivery of the intervention. In particular, the reluctance of staff to risk individuals being allocated to TAU needs to be addressed through raising awareness of the principles of equipoise in RCTs; that is, there should be a genuine uncertainty about whether the treatments offered differ in their intended effects (McMurran, Delport, Wood, Jenkins, Wall, & Day, 2012). Communication with relevant staff, prior to and throughout an RCT is imperative, particularly those staff responsible for planning and reporting on the risk management of offenders, in order to prevent such anxieties and to protect the integrity of the trial.

Conclusions

An RCT of COVAID versus TAU is feasible in prison settings. The information presented here allows for the specification of a research protocol that takes into account likely referral rates, recruitment rates, and follow-up completions. Consequently, the resources required to conduct a full RCT can be accurately projected. Importantly, the differential reduction in violent and any reconvictions over a period of 17 months suggest that a full RCT is worthwhile.
References


Acknowledgement

The research was funded by the National Offender Management Service Cymru (Wales). Our thanks to Samantha James, Karen Grove, Gemma Worgan and Psychology and staff within NOMS Cymru.
Table 1.

Violent and any reconvictions by group at 6-month follow up

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<td>N (%)</td>
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<tr>
<td>COVAID + TAU</td>
<td>5 (9.80%)</td>
<td>46 (86.79%)</td>
<td>11 (27.50%)</td>
<td>40 (72.50%)</td>
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<td>(N=52)</td>
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<tr>
<td>TAU</td>
<td>5 (9.43%)</td>
<td>48 (90.57%)</td>
<td>11 (26.19%)</td>
<td>42 (73.91%)</td>
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<td>(N=54)</td>
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<td>Total</td>
<td>10 (9.62%)</td>
<td>94 (90.38%)</td>
<td>22 (26.83%)</td>
<td>82 (73.17%)</td>
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<td>(N=106)</td>
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Table 2.

*Violent and any reconvictions over mean 518 days*

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<th>Any violent reconviction</th>
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<tr>
<td><strong>COVAID + TAU</strong> (N=52)</td>
<td>15 (28.85%)</td>
<td>37 (71.15%)</td>
<td>27 (51.92%)</td>
<td>25 (48.08%)</td>
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<tr>
<td><strong>TAU</strong> (N=57)</td>
<td>24 (42.11%)</td>
<td>33 (57.89%)</td>
<td>41 (71.93%)</td>
<td>16 (28.07%)</td>
</tr>
<tr>
<td><strong>Total</strong> (N=109)</td>
<td>39 (35.78%)</td>
<td>70 (64.22%)</td>
<td>68 (62.39%)</td>
<td>41 (37.61%)</td>
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Appendix.

*The COVAID Programme*

| Pre-programme introduction | Information about COVAID  
|                           | Participant consent and agreement |
| 1. Assessment and introduction | Introduction to the ‘Personal Scientist’ approach |
| 2. Explaining drunken aggression | Introduction to anger-aggression system  
|                               | How drink affects the system |
| 3. Crime harm reduction | Consider harm reduction methods  
|                           | Physical relaxation techniques |
| 4. Managing stress and arousal | Stress management  
|                               | Psychological and physical relaxation techniques |
| 5. Altering triggers | Identify common triggers for aggression  
|                        | Consider methods for tackling triggers |
| 6. Weakening the beliefs about the effects of alcohol | Identify alcohol-outcome expectancies  
|                           | Challenge expectancies |
| 7. High risk situations | Identify high risk situations  
|                          | Methods for dealing with risk |
| 8. Problem Solving (1) | The *Stop & Think!* method of problem solving |
| 9. Problem Solving (2) Moods | Apply *Stop & Think!* to bad moods  
|                             | Consider the effect of good moods |
| 10. Synthesis and evaluation | Action plan for the future  
|                           | Feedback |