Reviewer's report

Title: A multi-site controlled trial of a cognitive skills programme for mentally disordered offenders

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Reviewer: Maroesjka van Van Nieuwenhuijzen

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In this paper an adjusted version of the R&R intervention (R&R MDO) is examined on its effectiveness, because of high dropout percentage of the regular R&R intervention among MDO’s. The adjustments made are inclusion of a mentor, specific adaptations for client with cognitive deficits, and fewer sessions (from 36 to 16). Previous pilot studies have indicated lower dropout, and improvement on several outcome measures. The value of the current study is the inclusion of more respondents, and in the end a specific intervention for a specific population.

However, quite some issues remain unclear.

Major compulsory revisions

Introduction

1) The introduction is lacking a theoretical framework. What is the explanation model of the intervention? What are the goals of the program? What is known on the goals/outcome measures in relation to the population under study? Thus, which variables (outcome measures) are examined to answer the question whether the program is effective in reaching the goals in this particular population? Now, a list of outcome measures is given, without any rationale whatsoever (p 6-7).

Method

2) P7. The population is defined rather vaguely. The inclusion criterion states ‘diagnosis or history of severe mental illness’. This is a rather heterogeneous group, as it must include different mental illnesses.

P14. There are 2 different illnesses in the population under study: psychotic disorders and mood disorders. How are they divided over the groups?

How does this influence the results? The intervention may work better for the group with illness A than for group with illness B.

3) P7. ‘all participants were referred by their clinical team…’ Were offenders asked to participate, or is the intervention an obligated part of their treatment. The text is not clear on this point. In addition, the authors should make clear how respondents are assigned to treatment and waiting list condition? Was the intervention introduced to all residents of the facilities, and thus was randomly
assignment possible? Or is the intervention offered to new patients, so that the treatment group consists of the first X patients.

4) P7. One of the inclusion criteria is ‘Absence of learning disability (IQ< 70)’. This means that people with an IQ between 70-85 are included in the study. According to the literature I assume about 30-40%. [Of the men appearing as defendants in Australian court 30 % has an IQ between 70 and 85 (Vanny, Levy, Greenberg & Hayes, 2009). In Norway 31 % of the prisoners have an IQ between 70 and 84 (Sondenaa, Rasmussen, Palmstiern, & Nottlestad, 2008). Among UK probationers 19 % has an IQ between 70 and 85 (Mason & Murphy, 2002). Among young males aged 18 to 21 in UK prison, 10% has an IQ between 55 and 70, 10 % between 70 and 75, and 14% between 75 and 79 (Herrington, 2009). Another study examined incarcerated juvenile delinquent boys aged 12-17 and found that 27 % of them had an IQ below 70, and 42% between 70 and 85 (Kroll, Rothwell, Bradley, Shah, Bailey, & Harrington, 2002)].

This group is a special group, and considered as intellectual disabled when having both problems in intellectual functioning and adaptive functioning (definition of intellectual disabilities, American Association on Intellectual and Developmental Disabilities; Schalock et al., 2010). This group is also referred to as having a borderline intelligence.

From the literature we know that compared to youth with mean IQ, youth with an IQ between 70-85 have more emotional and behavior problems (Dekker, Koot, Van der Ende, & Verhulst, 2002; Einfeld & Tonge, 1996; Tonge & Einfeld, 2000), show more delinquent behavior (Douma, Dekker, de Ruiter, Tick, & Koot, 2007), and have more problems with social problem solving (Van Nieuwenhuijzen, Orobio de Castro, Wijnroks, Vermeer, & Matthys, 2004).

Therefore, it is important that the authors are aware of the specific characteristics of this subpopulation . IQ scores should be provided for both groups. How is IQ measured? Does IQ influence the results of the intervention? In addition, if there is a considerable amount of respondents with an IQ between 70-85, have the authors considered the specific characteristics when testing the respondents, and in the instruments used?

5) P7. Respondents come from both medium and low secure facilities. Authors should provide more information on these facilities. What is the difference between both facilities? Why are both facilities included?

6) P7/9. Authors should provide more information on what the treatment as usual consists of. Is the intervention program given on top of the treatment as usual? Is the current study an add-on study?

Measures

7) No information is provided on the appropriateness and reliability of the scales in people with borderline intelligence. In addition, I wonder whether psychotic patients can complete the questionnaires. No information is provided on the appropriateness and reliability of the scales in a psychotic/mood disorder sample,
except from the LoC scale.

Results
8) No information is provided on treatment integrity
9) P14. Groups differed in level of security. Did the authors control for level of security?
10) P15. Table2. Only information on the total scales is provided and not on the subscales. Do groups differ on the subscales of the instruments?
11) It would help the reader in interpreting the data to provide minimum and maximum scores for each scale in the Methods section.

Discussion
12) P17. The statement ‘..findings support the feasibility…. , and further extend its utility to low secure settings’ is rather strong, considering 25 respondents from low security settings in the intervention group and only 7 in the control group. At p18. The second aim, the evaluation of the intervention, is discussed. In the introduction the evaluation was presented as main aim, and the completion of the intervention as secondary. In the discussion, I would present the main aim first.
13) P17. The discussion section starts with discussing ‘an important finding was the low dropout rate, supporting the hypothesis…’
14) P19-20. The not findings are discussed in the light of previous research. However, the authors do not explain why they have not found effects on all scales. In what way does the current study differ from the previous studies (population, intervention) which may explain the non-findings?
15) P20. The section about the development of the R&R intervention touches theoretical framework, and should be discussed in the introduction (see my comment 1)
16) P21. IQ has not only been association with non-completion rates but also with other concepts (see my comment 4)

Minor comment
17) The authors use a lot of abbreviations, which is confusing for the reader.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**
I declare that I have no competing interests