Author's response to reviews

Title: Motivation and Treatment Engagement Intervention Trial (MotivaTe-IT): The effects of motivation feedback to clinicians on treatment engagement in patients with severe mental illness

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Author's response to reviews: see over
Dear Editor,

Thank you for reviewing our manuscript of the study protocol entitled ‘Motivation and Treatment Engagement Intervention Trial (MotivaTe-IT): The effects of motivation feedback to clinicians on treatment engagement in patients with severe mental illness’ (MS: 1696323060685683). We would like to thank you and the reviewers for the careful examination of our manuscript. The comments of the reviewers inspired us to improve the manuscript to a higher level. Enclosed you will find a detailed point-by-point response to the issues mentioned by the reviewers.

The main changes that we made are the following:

1) Adherence to the CONSORT extension for nonpharmacological treatment, expressed as changes in the abstract and more detailed descriptions of the intervention condition, control condition, randomization procedure, sample size calculation, inclusion/exclusion criteria and measures;
2) More background literature on feedback studies in outpatients in community mental health settings;
3) A more explicit discussion on our decision to incorporate both patients with psychotic and personality disorders;
4) An additional paragraph was written to describe the development of the motivation feedback intervention.

We hope that we were able to address all the issues raised by the reviewers in a satisfactory way and that our revised manuscript now fully meets the standards of BMC Psychiatry.

We do hope that you will consider the revised manuscript for publication in the Journal and we are looking forward to your reply,

Yours sincerely, on behalf of my co-authors,

E.C. Jochems, MSc
(corresponding author).

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Reviewer 1

Comment 1: The manuscript would be improved by adherence to the 2008 CONSORT extension for nonpharmacologic treatment guidance. In particular,
a. there is no description of the randomisation procedure. Is this managed by an online system? How is the random number sequence generated? The abstract should state the level of randomisation.
We thank the reviewer for pointing us to the CONSORT extension for nonpharmacological treatment. We have added the following lines to section 2.7 ‘Procedures and randomisation’, to more clearly describe the randomisation procedure (page 21):

Randomisation will be performed by assigning each randomization unit (e.g. a team or a clinician) a unique number, which is entered in a computerized randomization program (www.randomization.com) that randomizes each unit to a single treatment by using randomly permuted blocks. The randomization is single-blind, as both the principal investigator and clinicians need to know which condition they are in, in order for the clinicians to receive the necessary training for the intervention condition (or not).

The method section of the abstract was rewritten to include key features of the CONSORT extension and (as a result) the discussion section was shortened (page 1):

Methods/Design: The Motivation and Treatment Engagement Intervention Trial (MotivaTe-IT) is a multi-center cluster randomized trial investigating the effectiveness of feedback generated by clinicians regarding their patients’ treatment motivation upon the patients’ TM and TE. Primary outcomes are the patients’ TM and TE. Secondary outcomes are psychosocial functioning and quality of life. Patients whose clinicians generate monthly motivation feedback (additional to treatment as usual) will be compared to patients who receive treatment as usual. An estimated 350 patients, aged 18 to 65 years, with psychotic disorders and/or severe personality disorders will be recruited from outpatient community mental health care. The randomization will be performed by a computerized randomization program, with an allocation ratio of 1:1 (team vs. team or clinician vs. clinician) and patients, but not clinicians, will be blind to treatment allocation at baseline assessment. Due to the nature of the trial, follow-up assessment can not be blinded.

Discussion: The current study can provide important insights regarding motivational processes and the way in which motivation influences the treatment engagement and clinical outcomes. The identification of possible mechanisms through which changes in the outcomes occur, offers a tool for the development of more effective future interventions to improve TM and TE.

Comment 1b. How is clustering accounted for in the sample size calculation?
We agree with the reviewer that the effect of clustering has received too little attention in the manuscript section of the sample size. Therefore, we have rewritten section 2.8 ‘Sample size and power calculations’ (page 24):

The RCT was designed to enroll an average of 6 patients for each of 56 participating clinicians. The sample size was calculated on the basis of our primary hypothesis, that the intervention group (motivation feedback) would be more effective than the control group (treatment as usual) in enhancing treatment engagement, as measured with the Service Engagement Scale (primary outcome) at 12 months after baseline assessment. The difference between the motivation feedback group and control group for the primary outcome is based on a power of 0.80 and an alpha of 0.05 (two-tailed). Earlier studies regarding differences between feedback and treatment as usual (control) conditions have shown effect sizes (standardized mean differences) ranging from 0.34 to 0.92 [1-2], but were based on treatment progress and not (solely) on treatment motivation. One RCT studying the effects of treatment adherence therapy in patients with psychotic disorders used the SES as outcome measure and found an effect size of 0.39 [3]. Therefore, we expect an effect size of approximately 0.40. Using
an unpaired t-test statistic, this resulted in a minimum of 123 subjects per condition. However, as patients are clustered within clinicians, and clinicians are clustered in teams, the patient and clinician observations can not be considered as independent of each other. The sample size was therefore adjusted by the (variance inflation) factor \(f = 1 + (m - 1)\rho\), to account for the variance that would have been achieved had there been no clustering. The cluster size \(m\) is 6 (patients per clinician) and the within-cluster correlation \(\rho\) was estimated from a previous study to be around 0.07 [4]. Thus, the computed sample size was inflated by 1.35 to be at least 166 subjects per condition (minimally 332 in total). The SES is rated by clinicians and so we expect minimal loss to follow-up on the primary outcome, but to be on the safe side we will aim for 350 patients as the total sample size.

Furthermore, although the statistical analyses already described our multilevel approach to account for clustering, we felt that we needed to emphasize this more. Therefore, the following line was added to section 2.9 ‘Statistical analyses’ (page 24):

A clustering of outcomes is likely since a single clinician may treat several patients, and clinicians are clustered into teams. Multilevel modelling will be performed to check for any clustering effects on the primary outcome.

Comment 1c. The abstract should describe the randomisation, blinding etc
See response to comment 1a, where we address the changes in the abstract.

Comment 2. The protocol would be improved if the authors gave more detail about the settings and TAU control condition. In particular, it seems that this intervention would be delivered in outpatient context. As there are many different models of delivery of outpatient/community mental health case management approaches, and interested readers may not understand the particular model in the Netherlands, the manuscript would be improved by a more detailed description. For example, who are the clinicians and what does a standard consultation involve? For example on page 9 it is described as a ‘therapy session’ – this may be quite different to an outpatient appointment.

We agree with the reviewer that the manuscript can be improved by providing more information on the treatment as usual condition, which indeed consists mainly of outpatient community mental health case management. To describe this in more detail, we have added the following lines to section 2.3.1 ‘Control Condition’ (page 8):

Besides assertive outreach, which is the key feature of Assertive Community Treatment (ACT), there is an emphasis on home visits and out-of-office interventions, but when patients constitute a danger to themselves or others and are not motivated for treatment, clinicians can start a procedure for them to be committed to a psychiatric hospital [5]. During hospitalisations, the ACT team keeps into contact with the patient to secure continuity of care. In the Netherlands, a special type of ACT teams exist, called Flexible-ACT (FACT). Van Veldhuizen (2007) has described Dutch FACT as follows: “FACT is a rehabilitation-oriented clinical case management model, which is based on the ACT model but is more flexible and able to serve a broader range of clients with severe mental illness. FACT offers the original ACT as one of several treatment or care models. The FACT team is a case management team with partly an individual approach and partly a team approach; the approach varies from patient to patient, depending on the patient’s needs. For more stable long-term patients FACT provides coordinated multidisciplinary treatment and care by individual case management. Unstable patients at risk of relapse, neglect and readmission are provided with intensive assertive outreach care by the same team, working with a shared caseload for this subgroup. (p.422)”

On page 10 of the revised manuscript, the sentence referring to a therapy session did not accurately describe what constitutes a general outpatient appointment. Therefore, ‘therapy session’ was replaced with ‘appointment’:

Clinicians will be asked to fill in the short motivation feedback questionnaire just before the appointment with the patient. After having filled in the questions, the clinician will ask the patient at the beginning of the appointment to also fill in the questions on motivation for treatment.
Comment 3. A related point, if this is a case management intervention, the background literature should be extended to account for this setting. The literature at the moment is all about psychotherapy settings – which may differ in terms of the outcomes of interest e.g., consider the motivation of patients in mandated treatment in community mental health. There are two trials that I’m aware of that have tested feedback to clinicians in community mental health settings; the outcomes of interest in these two trials are different (e.g., quality of life and satisfaction with treatment) but may be at least conceptually related to the outcomes of interest in this manuscript. Both trials suggest a positive effect for feedback to clinicians. In this context, the authors should say something about the equipoise of this particular intervention.

We thank the reviewer for pointing us to relevant literature, and agree that the manuscript would be improved by including more background literature on feedback interventions in community mental health care and their outcomes. We have therefore rewritten the first two paragraphs of section 1.1. ‘Motivation feedback intervention’ (page 4):

Studies employing feedback to clinicians have shown that monitoring and informing clinicians of their patients’ treatment progress in psychotherapy is effective in enhancing retention and outcome [1-2, 6-9]. Providing systematic feedback can be seen as an addition to regular treatment and may guide changes, prolongation or termination of treatment. It ensures that the attempts to resolve the problems can be evaluated, and if necessary, adjusted [10]. In several studies by Lambert et al. [2, 6-7] in a psychotherapy setting, progress feedback was based upon four domains of functioning, including psychological disturbance (mainly depression and anxiety), interpersonal problems, social role functioning and quality of life [1]. The effects of feedback were most pronounced in patients who showed a poor initial response to treatment [8]. Feedback is also increasingly being researched in other settings. In a study in patients with psychotic disorders in a community mental health setting, patients were asked to rate their quality of life and satisfaction with treatment, which was fed back to clinicians and discussed [11]. When compared to control patients (who did not make use of feedback) after 12 months, patients in the feedback condition reported better quality of life, fewer unmet care needs and higher satisfaction with treatment. However, the groups showed no statistically significant difference on psychopathology scores (i.e. positive, negative or general symptoms of schizophrenia). In another study conducted among SMI patients receiving community care, where clinicians received feedback on their patients’ care needs, a significant improvement was found in patient satisfaction, but not on psychopathology, social functioning and quality of life [4] when compared to controls. A study conducted in the Netherlands among patients with severe mental illness, found that systematic monitoring of patients’ care needs in combination with feedback provision was associated with global improvement in depression and anxiety symptoms, but not with improvement in manic excitement and positive symptoms [12]. It seems that structured feedback has positive effects on some central outcomes of community mental health care (e.g. quality of life and patient satisfaction) but not on others (e.g. level of symptoms or functioning), depending on the setting and the content of the feedback.

In a study by Whipple et al. [2] a more extensive form of feedback was used when compared to the Lambert et al. studies [6-7], where the authors found that using clinical support tools (CSTs) additional to feedback upon the client’s progress resulted in clients staying in therapy longer, and that these clients were twice as likely to show superior outcomes. These CSTs incorporated measures to assess the therapeutic relationship, the motivation to change and the social support network. These results line up with other studies about feedback to clinicians and point out that the use of support tools is of additional value [2]. However, a limitation of Whipple’s study was that it was not possible to determine the effects of the individual components (e.g. motivation to change) in the CSTs upon outcome. Some studies have compared the effects of personalized feedback with the effects of motivational interviewing including personalized feedback, and found that feedback only is less effective than motivational interviewing with feedback in achieving behaviour change [13-15]. Therefore, next to providing feedback, it seems important to apply additional strategies in order to improve the motivation of patients to engage in treatment.
Comment 4. In terms of reporting, as a complex intervention, it is advisable to discuss the stage of development upfront – i.e., Is this a pilot? Efficacy trial versus effectiveness? (see Tansella, Thornicroft et al 2006, Psych Medicine). There are number of guidelines about stages of development that it would be useful to contextualise this intervention with (e.g., UK MRCs guidance on complex interventions). Is this intervention untried in this particular setting and with these patient groups? The authors should discuss the potential impact such novel aspects? There may also be an impact on the sample size if this is untested in this context and with these patient groups.

Again, we thank the reviewer for pointing us to relevant literature for the improvement of our manuscript. With reference to Tansella, Thornicroft et al. [16] for effectiveness RCTs in psychiatry, we revised the manuscript such that it is more emphasized that our trial is an effectiveness trial and the study intervention and control condition are now described in more detail (see also our response to comment 2). More specifically, the following adjustments were made:

Page 1: The abstract now states that the study investigates the effectiveness of motivation feedback, to emphasize that our trial is an effectiveness trial.

Page 8: The section on the control condition has been elaborated (see response to comment 2).

Page 9: Section 2.3.2 on the motivation feedback intervention has been slightly rewritten, to elaborate more on the way the feedback is discussed and the content of the training that is given prior to commencing the study:

Clinicians will be asked to fill in the short motivation feedback questionnaire just before the appointment with the patient. After having filled in the questions, the clinician will ask the patient at the beginning of the appointment to fill in the questions. This information will be used by the clinician as a starting point for the discussion with the patient regarding his/her motivation for treatment.

Clinicians randomized to the feedback condition, are expected to measure and discuss the current motivational status of their patients monthly. The clinician may use the information from the questionnaire and the subsequent conversation with the patient about this as feedback and apply an intervention tailored to the patients’ current motivation. Clinicians will be free to decide for themselves how they will structure this discussion with the patient (e.g. discuss only one item or several, discuss differences between patient and clinician vision) and how long this will take. In case the patient is unable or unwilling to indicate his/her motivation, the clinician may still use his own judgment of the motivation of the patient and use this as self-generated feedback. Additionally, the motivation of the clinician to keep treating the particular patient is also measured monthly by asking the clinician to rate two other motivation items.

Before commencing the study, clinicians will be trained by the principal investigator how to read and interpret the motivation feedback graphs. During this training, they are given a presentation about the principles of Self Determination Theory (SDT), the different types of motivation postulated by SDT and perform exercises to learn how to distinguish the needs for autonomy, competence and relatedness in discussions with the patient. Clinicians also perform feedback assessments on each other during this training, to familiarize themselves with the feedback and how to introduce it to their patients. During the course of the study (i.e. one year) clinicians will be regularly contacted by the principal investigator to evaluate the motivation feedback intervention and to discuss their progress and experiences together with other colleagues who also participate in the motivation feedback intervention. During the evaluation sessions with the principal investigator, it can be checked whether the feedback is still being used properly (and if not, actions can be taken). To aid clinicians in remembering to perform SMFL assessments monthly, they will be given MotivaTe-IT bookmarks to use in their paper planners, electronic reminders will regularly be placed in the electronic planners, and the principal investigator will send emails to remind the clinicians of the motivation feedback.

With reference to the UK’s MRC guidance on complex interventions, we added a paragraph to the manuscript to elaborate on the development-evaluation-implementation process of our intervention:
2.3.3. Development of the Motivation Feedback Intervention

The guidance provided by the UK’s Medical Research Council on developing and evaluating complex interventions (www.mrc.ac.uk/complexinterventionsguidance) states that the identification of evidence base and theory, the modelling of process and outcomes, assessing feasibility and piloting methods are important steps towards successful evaluations of complex interventions. The motivation feedback intervention under study here, although new in its emphasis on motivation for treatment as the content of feedback (as opposed to care needs or quality of life), is otherwise fairly similar to previously trialled clinician feedback where it was found that feedback improved SMI patient outcomes in community mental health settings [4, 11-12]. As Self-Determination Theory is the theoretical basis for the intervention, this ensures that the effects (or potentially no effects) of the intervention can be viewed in light of the processes of change proposed by this theory. Pilot testing with the novel short motivation feedback questionnaire in a group of patients with depressive and anxiety disorders showed that the list was comprehensible and easy to use, for both patients and clinicians. The clinicians reported that the questionnaire gave rise to interesting discussions with patients about drives and motivations that the clinician was unaware of, such as partners or children being more important drives to remain in treatment than levels of distress, or patients expressing that they felt very much coerced to enter treatment at first (sometimes even traumatic) but felt that this had progressed to more internal drives during the course of treatment. These pilot evaluations strengthened our belief that the intervention could be executed as intended. Due to time limitations however, no piloting was done with patients with SMI and the psychometric properties of this questionnaire remain to be determined. These issues will therefore be addressed during the course of the trial.

The sample size calculation was based on a conservative estimate of effect, based on previous studies using feedback to clinicians including clinical support tools that included motivation for treatment [2]. This is explained in section 2.8 ‘Sample size and power calculations’.

Comment 5. This may be my lack of understanding, but the primary outcome is not entirely clear to me. Is it TEQ? HCCQ? Or a combination of these and the measures addressing TTM and IM? Which scales were used to determine the sample size? This section could benefit from a little clarification for the uninitiated reader.

We agree with the reviewer that this might not be directly clear from the text, but our primary outcomes were treatment motivation as measured with the TEQ and treatment engagement as measured with the Service Engagement Scale (SES). However, after adjusting section 2.8 ‘Sample size and power calculations’ (page 24) to account for clustering effects in our sample size and power calculations, it was decided to include only treatment engagement (measured by the SES) as the primary outcome variable since this was the basis for the power calculations. Therefore, we have adjusted all sections of the manuscript with reference to our outcomes accordingly (i.e. the abstract, background, aims, hypotheses, methods, discussion) and we have rewritten section 2.6 ‘Methods’(page 13) to emphasize our primary outcome choice:

2.6.1 Primary outcome: treatment engagement

The primary outcome in this study is actual treatment engagement, as measured with the Service Engagement Scale (see paragraph on treatment engagement). Secondary outcomes in this study are treatment motivation, as measured with the Treatment Entry Questionnaire (see paragraph on SDT instruments), administrative data on missed appointments (see paragraph on treatment engagement), psychosocial functioning and quality of life (see paragraph on secondary outcomes).

Points to consider

1. How may the effect of the intervention be affected by individual clinician factors? Would TM be a factor of the relationship with an individual clinician and if so, how would the FACT-team participants differ in their response to the intervention?
We agree with the reviewer that clinician characteristics may moderate or mediate the effects of our intervention on the outcomes TM and TE. Clinician characteristics such as clinician sex, age, years of clinical working experience and specific team were registered before commencement of the study, and therefore we have added the following line to the covariables section of the manuscript (section 2.6.3) entitled ‘socio-demographic factors of patients and clinicians’ (page 19):

*Information on clinician sex, age, years of clinical working experience, and treatment team was collected from clinicians.*

The possible clustering effects of several patients being treated by the same clinician, and clinicians being clustered in teams, are already addressed in the section on statistical analyses (Section 2.9) and sample size (Section 2.8).

2. *It is not clear why (other than perhaps convenience) why personality disorders are included alongside psychosis? What are the likely effects of this and will this be addressed in analyses?*

The current study aimed for patients with severe mental illness treated in outpatient community mental health care, and although there are several definitions of severe mental illness, most definitions include a diagnosis of severe psychiatric disorder, a treatment duration or illness duration of at least two years and several disabilities [17-18]. Since patients with psychotic disorders constitute the majority of patients treated in assertive community mental health teams in the Netherlands [5, 19] and patients with severe personality disorders constitute another significant part of the caseload, combined with clinical observations that these two diagnostic groups may especially benefit from interventions aimed at improving treatment motivation, it was decided to incorporate both patient groups into the study. In the statistical analyses (Section 2.9), it was already described that:

‘We will identify predictive factors in estimating the outcome and whether there are predictive factors dependent on the type of treatment condition (interaction between baseline variables and treatment effect)’ (page 25). Thus, one such predictive factor might be the clinical diagnosis of the patient (e.g. psychotic disorder versus personality disorders, or even specific types of these if we have enough power).

As both reviewers have raised the question why both patients with psychotic and personality disorders are included in the study, we felt that a more explicit discussion on our decision was in order. The following lines were added to the second paragraph of section 2.5 ‘Study population: inclusion and exclusion criteria’ (page 12):

*The current study aimed for patients with severe mental illness treated in outpatient community mental health care, and although there are several definitions of severe mental illness, most definitions include a diagnosis of severe psychiatric disorder, a treatment duration or illness duration of at least two years and several disabilities [17-18]. Since patients with psychotic disorders constitute the majority of patients treated in assertive community mental health teams in the Netherlands [5, 19] and patients with severe personality disorders constitute another significant part of the caseload, combined with clinical observations that these two diagnostic groups may especially benefit from interventions aimed at improving treatment motivation, it was decided to incorporate both patient groups into the study.*

3. *Regarding therapeutic alliance (and this relates to the points about settings) recent evidence suggests that there is only weak evidence for a link between therapeutic alliance and outcomes in community mental health settings*

The reviewer is correct that only modest associations have been found between the therapeutic alliance and client outcomes in community mental health for patients with severe mental illness [20-21]. However, it has been noted that most studies performed in these settings have been limited by a lack of power and standardized measures [20]. Possibly, the current study can improve on these limitations. This has therefore been added to section ‘2.6.3 Covariables’ (page 20):
Modest associations have been found between the therapeutic alliance and client outcomes in community mental health for patients with severe mental illness [20-21]. However, it has been noted that most studies performed in these settings have been limited by a lack of power and standardized measures [20]. Possibly, the current study can improve on these limitations.

4. Have the authors considered some qualitative work/process evaluation to determine the acceptability of the intervention from the perspectives of the patients themselves? This may also help to explicate which of the theories are most applicable.

Although we agree with the reviewer that such process evaluation can result in valuable information on the (possible absence of) success of the intervention on outcomes, the current study is focused on quantitative data. During process evaluations with clinicians, their feedback on the intervention and comments that patients give to the clinicians are noted, and these will be discussed in the paper on the results of the trial.

**Typos/wording**

P 5 – third line from the bottom ‘complement’ rather than ‘completement’

P 14, last line suggest ‘respond according to social desirability’

The suggested corrections have been made.
Reviewer 2

Comment 1a: Patients with psychotic disorders and/or personality disorders are extremely different populations, and this is not sufficiently addressed. There is no discussion on why the same intervention is expected to work with these disparate populations. There is also no discussion on how the study manages acutely psychotic patients who may be actively hearing voices or paranoid.

This comment reflects the second comment under ‘points to consider’ from reviewer 1. To this, we have responded: As both reviewers have raised this question, we felt that a more explicit discussion on our decision to incorporate both patients with psychotic and personality disorders was in order. The following lines were added to the second paragraph of section 2.5 ‘Study population: inclusion and exclusion criteria’ (page 12):

The current study aimed for patients with severe mental illness treated in outpatient community mental health care, and although there are several definitions of severe mental illness, most definitions include a diagnosis of severe psychiatric disorder, a treatment duration or illness duration of at least two years and several disabilities [17-18]. Since patients with psychotic disorders constitute the majority of patients treated in assertive community mental health teams in the Netherlands [5, 19] and patients with severe personality disorders constitute another significant part of the caseload, combined with clinical observations that these two diagnostic groups may especially benefit from interventions aimed at improving treatment motivation and treatment engagement, it was decided to incorporate both patient groups into the study.

Comment 1b: Moreover, why isn’t recruitment stratified by diagnosis? This would ensure that both conditions contain an equal number of patients from each diagnostic category.

The reviewer raises a relevant question. Stratification as a means of limiting the potential confounding effects of diagnosis on outcome, can be done in advance (at recruitment time) or after completing the study. To describe our decision regarding stratification, we have therefore added the following lines to section 2.7 ‘Procedures and randomization’ (page 22, halfway the first paragraph):

Stratification for diagnosis in advance was considered unrealistic and impractical, as we would then have to achieve equal numbers of each patient diagnosis in each treatment condition, while our randomization is at team-level and clinician-level. Therefore, we chose to use multivariate modelling with diagnosis as a covariate (see section 2.9 'Statistical analyses').

Comment 2. The inclusion of the third objective examining the three theories of motivation provides the study with much needed depth. However, there is no discussion concerning the similarities or more importantly the differences between the theories, and why it is important to measure constructs from all three.

A very detailed discussion on the similarities and differences between the three theories and the ways in which they predict treatment engagement and outcome is given in our review that was published in Current Psychiatry Reviews in 2011 [22]. This topic was too long to incorporate in the study protocol and therefore, we refer to the 2011 article in the last paragraph of section 1.1 ‘Motivation feedback intervention’ (page 6). To emphasize this separate review better, the line ‘In a critical analysis of three motivation theories [22] (i.e. the Transtheoretical Model [23], the Integral Model of Treatment Motivation [24], and Self-Determination Theory [25]), we showed that, despite their differences, these theories could complement each other’ was rewritten into:

Despite the differences between the Transtheoretical Model [23], the Integral Model of Treatment Motivation [24], and Self-Determination Theory [25] on the concept of treatment motivation, these theories may complement each other [22]. A detailed discussion of similarities and differences in how these three theories predict treatment engagement and outcomes can be found in Jochems et al. [22].
**Comment 3.** Page 5 first sentence of the third paragraph is awkward. I would revise it to read “solely providing feedback to clinicians of patients with severe mental illness might not be intensive enough to improve treatment engagement,” or something similar.

As the reviewer suggested, this sentence (i.e. ‘Furthermore, findings regarding the effectiveness of the combination of using feedback and motivational interviewing suggests that solely providing feedback to clinicians of patients with severe mental illness might be an intervention ‘too light’ to expect improvements in treatment engagement’) is now changed into:

*Furthermore, solely providing feedback to clinicians of patients with severe mental illness might not be sufficiently intensive to improve treatment engagement.*

**Comment 4.** It would be helpful if inclusion exclusion criteria are expanded upon. Does “organic psychosyndrome” include dementia? Are suicidal patients excluded or included?

The inclusion and exclusion criteria were purposely defined very broadly, in order to achieve a study population that reflects the reference population of patients with severe mental illness. As well as a primary psychiatric disorder, most of these patients also suffer from co-occurring disorders, physical symptoms and functional and social disabilities. Whether or not patients are suicidal is not an inclusion/exclusion criteria. However, to clarify this we have slightly rewritten section 2.5 ‘Study population: inclusion and exclusion criteria’ (see our response to comment 1a) and adapted the exclusion criteria for clarification (pages 12 and 13):

*Exclusion criteria are insufficient command of the Dutch language and/or a documented diagnosis of organic psychosyndrome (e.g. dementia or chronic toxic encephalopathy).*

**Comment 5.** I am unfamiliar with some of the measures (e.g. Stigma-Scale, Temperament and Character Inventory) and would like a better description of their psychometrics (i.e., validity and reliability).

We have adjusted the descriptions of the Stigma Scale and Temperament and Character Inventory (section 2.6. ‘Covariables’ on page 19) as follows:

**Experienced stigma**

*Stigma will be measured using the 12-item ‘perceived devaluation and discrimination’ subscale of the self-report Stigma-Scale [26]. This subscale refers to the perception of common opinions about psychiatric patients, such as ‘Most people stay friends with someone who has had a mental illness’ and ‘Most people look down on people who have been hospitalized for mental illness’. The items are scored on a scale from 1 (strongly disagree) to 4 (strongly agree). A higher total scale score means more perceived stigmatization. The scale had acceptable reliability (Cronbach’s alpha = .78) and construct validity was shown in studies predicting associations between stigma (as measured with the subscale of ‘perceived devaluation and discrimination’) and self-esteem, employment, demoralization, quality of life and treatment seeking in patients with mental illness [27-28].*

**Personality characteristics**

*The temperament dimensions from the Temperament and Character Inventory (TCI) [29-31] will be used to measure personality characteristics, in order to explore the relationship between temperament and motivation to engage in treatment. The temperament dimensions from Cloninger’s theory called novelty seeking, harm avoidance, persistence and reward dependence [29, 31] are used in this study. Convergent validity exists in the form of studies demonstrating overlap between the TCI scales and other similar scales of validated personality tests [32]. The internal consistencies (i.e. Cronbach’s alphas) of the novelty seeking, harm avoidance, persistence and reward dependence subscales varied between α =0.62 and α =0.90 in psychiatric patients recruited from community mental health care [32]. The temperament dimensions are measured by items that can be scored as true or false.*
Comment 6. It seems as though there is not an attention control because the amount of treatment is no different between the conditions. The authors might want to make this explicit.

The current study investigates the effectiveness of motivation feedback, additional to treatment as usual. As reviewer 1 also pointed out, the control condition (i.e. treatment as usual) was not clearly described in the first draft of the manuscript. Therefore, adjustments have now been made to describe the control group as well as the intervention group in more detail (below is a copy of our responses to comments 2 and 4 of reviewer 1):

(control condition)

Besides assertive outreach, which is the key feature of Assertive Community Treatment (ACT), there is an emphasis on home visits and out-of-office interventions, but when patients constitute a danger to themselves or others and are not motivated for treatment, clinicians can start a procedure for them to be committed to a psychiatric hospital [5]. During hospitalisations, the ACT team keeps in contact with the patient to secure continuity of care. In the Netherlands, a special type of ACT teams exist, called Flexible-ACT (FACT). Van Veldhuizen (2007) has described Dutch FACT as follows: “FACT is a rehabilitation-oriented clinical case management model, which is based on the ACT model but is more flexible and able to serve a broader range of clients with severe mental illness. FACT offers the original ACT as one of several treatment or care models. The FACT team is a case management team with partly an individual approach and partly a team approach; the approach varies from patient to patient, depending on the patient’s needs. For more stable long-term patients FACT provides coordinated multidisciplinary treatment and care by individual case management. Unstable patients at risk of relapse, neglect and readmission are provided with intensive assertive outreach care by the same team, working with a shared caseload for this subgroup. (p.422)”

(motivation feedback intervention)

Clinicians will be asked to fill in the short motivation feedback questionnaire just before the appointment with the patient. After having filled in the questions, the clinician will ask the patient at the beginning of the appointment to fill in the questions. This information will be used by the clinician as a starting point for the discussion with the patient regarding his/her motivation for treatment. Clinicians randomized to the feedback condition, are expected to measure and discuss the current motivational status of their patients monthly. The clinician may use the information from the questionnaire and the subsequent conversation with the patient about this as feedback and apply an intervention tailored to the patients’ current motivation. Clinicians will be free to decide for themselves how they will structure this discussion with the patient (e.g. discuss only one item or several, discuss differences between patient and clinician vision) and how long this will take. In case the patient is unable or unwilling to indicate his/her motivation, the clinician may still use his own judgment of the motivation of the patient and use this as self-generated feedback. Additionally, the motivation of the clinician to keep treating the particular patient is also measured monthly by asking the clinician to rate two other motivation items.

Before commencing the study, clinicians will be trained by the principal investigator how to read and interpret the motivation feedback graphs. During this training, they are given a presentation about the principles of Self Determination Theory (SDT), the different types of motivation postulated by SDT and perform exercises to learn how to distinguish the needs for autonomy, competence and relatedness in discussions with the patient. Clinicians also perform feedback assessments on each other during this training, to familiarize themselves with the feedback and how to introduce it to their patients. During the course of the study (i.e. one year) clinicians will be regularly contacted by the principal investigator to evaluate the motivation feedback intervention and to discuss their progress and experiences together with other colleagues who also participate in the motivation feedback intervention. During the evaluation sessions with the principal investigator, it can be checked whether the feedback is still being used properly (and if not, actions can be taken). To aid clinicians in remembering to perform SMFL assessments monthly, they will be given MotivaTe-IT bookmarks to use in their paper planners, electronic reminders will regularly be placed in the electronic planners, and the principal investigator will send emails to remind the clinicians of the motivation feedback.
References:


32. Duijsens IJ, Spinhoven P, Goekoop JG, Spermon T, Eurlings-Bontekoe EH: The Dutch Temperament and Character Inventory (TCI): Dimensional structure,