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Original article

Effects of momentary self-monitoring on empowerment in a randomized controlled trial in patients with depression

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ABSTRACT

Background: Interventions based on the experience sampling method (ESM) are ideally suited to provide insight into personal, contextualized affective patterns in the flow of daily life. Recently, we showed that an ESM-intervention focusing on positive affect was associated with a decrease in symptoms in patients with depression. The aim of the present study was to examine whether ESM-intervention increased patient empowerment.

Methods: Depressed out-patients ($n = 102$) receiving psychopharmacological treatment who had participated in a randomized controlled trial with three arms: (i) an experimental group receiving six weeks of ESM self-monitoring combined with weekly feedback sessions, (ii) a pseudo-experimental group participating in six weeks of ESM self-monitoring without feedback, and (iii) a control group (treatment as usual only). Patients were recruited in the Netherlands between January 2010 and February 2012. Self-report empowerment scores were obtained pre- and post-intervention.

Results: There was an effect of group × assessment period, indicating that the experimental (B = 7.26, $P = 0.061$, $d = 0.44$, statistically imprecise) and pseudo-experimental group (B = 11.19, $P = 0.003$, $d = 0.76$) increased more in reported empowerment compared to the control group. In the pseudo-experimental group, 29% of the participants showed a statistically reliable increase in empowerment score and 0% reliable decrease compared to 17% reliable increase and 21% reliable decrease in the control group. The experimental group showed 19% reliable increase and 4% reliable decrease.

Conclusions: These findings tentatively suggest that self-monitoring to complement standard antidepressant treatment may increase patients' feelings of empowerment. Further research is necessary to investigate long-term empowering effects of self-monitoring in combination with person-tailored feedback.

1. Introduction

Electronic momentary assessment with the experience sampling method (ESM) allows for precise and prospective monitoring of emotions. ESM consists of repeated assessments of affective experience and context in the flow of daily life [1,6,22]. These momentary assessments may reveal subtle repetitive and relevant patterns of experience in response to environmental and mental challenges [10,39]. Research employing ESM has shown the relevance of these patterns for the understanding of mental ill health [34,36,31,35,4], and highlights the relevance of focusing on moments of positive affective experiences in predicting resilience against psychopathology [5,37,17] and treatment response [42,13]. These momentary assessments may also be used at an individual level, as input for personalized feedback on dynamic patterns of emotions [8,40,33,41].

ESM-intervention, by transforming implicit, moment-to-moment emotional reactivity to explicit, visualized configurations, may help increase self-awareness of, and control over, daily life

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dynamics that may impact on depression. In contrast, antidepressant pharmacotherapy, as a single intervention, does not provide incentives for patients to actively engage in their treatment; yet mobilizing patient engagement in the treatment and decision making process may enhance treatment adherence, patient satisfaction and patient empowerment [28,25,27,30]. ESM-intervention has the benefit that it can be easily implemented in standard mental health care and does not require much additional investment of clinicians; even more, ESM provides ecologically valid and detailed information on fluctuations in the individual's mental state that may be utilized to optimize treatment effects e.g. by individualizing the delivery of psychological interventions [19].

Recently, it has been shown that the efficacy of traditional psychopharmacological treatment of major depression can indeed be enhanced using ESM-derived person-tailored daily life feedback on patterns of positive affect [20]. It was demonstrated that this ESM-intervention was associated with a linear decrease in depressive symptoms in the six months following the intervention, a pattern not observed in the other two conditions. The present study further examined the effects of this ESM-intervention by investigating its effects on patients reported empowerment. With ESM-intervention, mental health problems may be better monitored and managed with the participation of the patient him/herself, giving the patient an active role in the treatment process and mobilizing individual resources. One of the potential mechanisms explaining the impact of person-tailored daily life feedback thus may involve patient empowerment. Empowerment is recognized as a dynamic, contextually-driven multidimensional construct that can be conceived of as a social process of enhancing an individual's ability to meet their own needs, solve their own problems, and mobilize the necessary resources in order to feel in control of their own lives [14,43]. Person-tailored daily life feedback may thus increase patient empowerment in the sense of having better information, more informed choices and thus enhanced shared decision-making [34,15]. However, the effects of actively involving patients with depression in the data collection and interpretation of daily life mental states on patient empowerment have not been examined.

2. Aims of the study

This study examined whether providing patients with tools to self-monitor their own mental states increases experienced empowerment. It was hypothesized that self-monitoring combined with person-tailored daily life feedback increases patient empowerment.

3. Methods

3.1. Participants

For the current randomized controlled trial (registered in the Dutch trial register, www.trialregister.nl, trial id: NTR1974) [20], participants were recruited between January 2010 and February 2012 via mental health care facilities in or near the Dutch cities of Eindhoven and Maastricht, and through local advertisements. The study was approved by an institutional review board (Medical Ethics Committee of Maastricht University Medical Centre; id: NL26181.068.09/MEC 09-3-013) and all participants provided written informed consent before their enrolment.

Participants were considered eligible when they were between 18 and 65 years of age; a DSM-IV-TR diagnosis of depressive episode (assessed with the Structured Clinical Interview for DSM-IV Axis I Disorders [SCID-I] [11]) with current or residual symptoms (17-item Hamilton Depression Rating Scale (HDRS) score of >7 [16]); treated with antidepressants or mood stabilizers. Participants were excluded if they met criteria for a non-affective psychotic disorder according to DSM-IV or if they reported a (hypo) manic or mixed episode within the past month.

3.2. Design

A randomized controlled trial was conducted with three parallel treatment arms [20]. After completion of all baseline assessments, participants were randomly allocated to the experimental, pseudo-experimental, or control group. In addition to treatment as usual (TAU), the experimental group participated in an ESM procedure (three days per week over a six-week period). This group received weekly standardized feedback on personalized patterns of positive affect. The pseudo-experimental group also participated in the ESM procedure (three days per week over a six-week period) in addition to TAU, but without feedback. The control group received no additional intervention during TAU.

Randomization (allocation ratio 1:1:1) was stratified by (i) duration of antidepressant pharmacotherapy (receiving the current antidepressant or mood stabilizing medication for shorter vs. longer than 8 weeks prior to study entry), and (ii) current psychotherapy (yes or no). Interviewers were not blind to the patients' treatment allocation. After randomization, the participants were considered part of the study regardless of whether they decided to leave the study prematurely.

Participants allocated to the experimental group engaged in a weekly three-day ESM procedure for six consecutive weeks and received standardized feedback based on the participant's ESM data in six feedback sessions, in addition to TAU. The pseudo-experimental group was identical in procedure to the experimental group except that no feedback was given. Instead, during these weekly sessions, participants engaged in a structured conversation with the researcher, i.e. an HDRS interview, to keep duration of contacts equivalent to the experimental group. During these six consecutive weeks, participants allocated to the control group received TAU only.

3.3. Procedure

The study protocol consisted of a telephone interview, a screening, a baseline assessment (week 0), a six-week intervention period (weeks 1 to 6), a post-assessment (week 7), and five follow-up assessments (at weeks 8, 12, 16, 20, 32). The recruitment process started with a short telephone interview conducted by a psychologist or psychiatrist to establish whether inclusion criteria were likely met. During a face-to-face screening, two weeks before randomization, the SCID-I and HDRS were administered to assess whether individuals met inclusion criteria. ESM-assessments took place as part of the baseline assessment, during the six-week intervention period, and at the post-assessment. Empowerment was assessed twice, at screening and at post-assessment, with nine weeks between the two assessments. Fig. 1 shows participant flow and procedure throughout the trial period from enrolment to post-assessment.

3.4. Empowerment

Empowerment was assessed with the Dutch Empowerment questionnaire [3]. This is a 40-item self-rating scale to assess patient empowerment developed by the Dutch Trimbos Institute and validated for use in severe mental illness (see [32] for an English translation). It incorporates the dimensions professional help, social support, own wisdom, sense of belonging, self-management, and community inclusion. Items are formulated in positive statements of strengths as perceived by the participant