Synopsis no.: S5.16

Preliminary title: Micro- vs. Macro-level emotional experience in the At Risk Mental State: possible clues for individualized treatment.

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Publication category: 3

Publications from a single work package involving only some parties (or in some cases only one party) in the Work Package

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Work Packages involved: WP5

Partners involved from whom candidate co-authors (*additional to working and writing group*) should be nominated: MUMC, IoP, AMC, UOM

Objectives (scientific background, hypothesis, methods, and expected results):

Scientific background

Affect measured with retrospective self-report or interview-based questionnaires does not necessarily reflect actual in-the-moment emotional experiences in patients with negative symptoms of schizophrenia. A blunted affect score on the BPRS, for example, was found not to mirror a moment-to-moment flattening of emotional experience in daily life (Myin-Germeys et al., 2000, Schizophrenia Bulletin). Similarly, Oorschot and colleagues (Schizophrenia Bulletin, 2013) found no evidence for anhedonia in the daily lives of individuals with high PANSS negative symptom scores. On the contrary, those with low scores showed an increased emotional instability in daily life; those with high scores were emotionally similar to healthy controls. Given the probable role for negative symptoms in transition to psychotic disorder (Demjaha et al., Schizophrenia Bulletin, 2012; Valmaggia et al., Psychological Medicine, 2013), it is of high importance to investigate whether this micro- vs. macro-level discrepancy exists in the ARMS, giving possible clues for treatment options in this early phase of the illness.

Key questions

Goal of the proposed analyses is to elucidate daily life emotional experiences, in terms of both intensity and variability, in subjects with an At Risk Mental State (ARMS) for psychotic disorder. Is affective flattening present in this group, and to what extent does anhedonia as assessed with retrospective questionnaires relate to anhedonia based on daily life measures?

We will address the following hypotheses:

1. We expect scores on retrospective SANS/ BPRS negative symptoms (i.e., affective blunting and anhedonia- related items) not to show an association with emotional experience (in terms of intensity, moment-to-moment variability), or reward-experience (positive emotions with pleasant events) in daily life in a large ARMS sample (N= +/- 100 subjects);

2. In fact, we expect daily life emotional experience when it comes to negative affect to be increased in momentary intensity and variability (thus, taking intensity and fluctuations in negative affect as the 'daily life proxy' for affective blunting as scored on SANS/ BPRS) in those with an ARMS compared to healthy controls (HC);

3. For positive affect we expect slight blunting in daily life ESM scores in the ARMS compared to HC based on previous findings (Myin-Germeys et al., Schizophrenia Bulletin, 2000);

4. The ARMS and HC are expected to show comparable levels of positive affect with pleasant (social) events. In other words, there will be no evidence for (social) anhedonia in daily life in the ARMS group when compared to HC;

5. Those ARMS subjects with low retrospective SANS/ BPRS negative symptom scores are expected to show increased emotional instability in daily life compared to those with high scores and a HC group (the last two showing more or less equal reactivity).

Please note:

SANS/ BPRS negative symptom data will only be used in relation to ESM data.

Controls will be pooled, and matched on demographic characteristics, from our Maastricht ESM Mergefile.

Methods and expected results

ARMS ESM and retrospective questionnaire self-report and/ or interview based negative symptoms data collected within EU-GEI WP5. The following ESM questions will be used to compute necessary variables for the analyses described below:

Macro-level Negative Symptoms (MLNS)

Mean scores on SANS/BPRS negative symptoms

Micro-level ESM variables

Negative Affect Intensity (NA): mean beep-level score on mood adjectives guilty, lonely, anxious, insecure;

Negative Affect Variability (NA_var): individual-level SD on above described NA-measure;

Positive Affect (PA): mean beep-level score on mood adjectives happy, relaxed, satisfied;

Positive Affect Variability (PA_var): individual-level SD on above described PA-measure;

Pleasant social events (+SocEvent): on those moments where subjects state that they are 'with others', the rating of how much they 'like this company' (1-7 Likert-scale).

Pleasant events (+Event): independent of whether these are events where others are present too, the score on 'how pleasant was this event' (taking only those moments where events were rated as pleasant: 1-3 scores on a -3 'very unpleasant' 0 'neutral' +3 'very pleasant' scale).

Pleasant activities (+Act): mean score on 'I like doing this', inverse score of 'I would rather do something else', and 'I'm good at this' (1-7 Likert-scale).

(baseline and follow-up) Data needed for the study:

- Experience sampling data on affective experiences and pleasant (social) activities/ events
- SANS/ BPRS negative symptoms score
- CAARMS

Plan for statistical analysis (overall strategy):

A number of multilevel linear regression models with mixed effects (random intercept, random slope) will be fitted. As an example, below the analyses for the first hypothesis as described above:

1) Association between BPRS Macro-Level Negative Symptoms (MLNS) and micro-level emotional intensity and variability

- $NA = B_0 + B_1\_MLNS + Error$
- $NA\_var = B_0 + B_1\_MLNS + Error$
- $PA = B_0 + B_1\_MLNS + Error$
- $PA\_var = B_0 + B_1\_MLNS + Error$

Other analyses/methods:

N/A

Involvement of external Parties (non EU-GEI):

N/A

IPR check:

N/A

Timeframe:

Start date: Date of completion of ESM data collection in Amsterdam, London, and Melbourne

Month 2: Literature search; obtaining, merging, checking, cleaning of data

Month 4: Completion of statistical analysis and first draft of manuscript

Month 6: Manuscript submission

Additional comments:

N/A