What is the Effect of Using Collaborative Assessment on Symptomatology as an Intervention in the Treatment of Mental Illness? A Systematic Review and Meta-analysis Protocol.

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What is the Effect of Using Collaborative Assessment on Symptomatology as an Intervention in the Treatment of Mental Illness? A Systematic Review and Meta-analysis Protocol.

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Abstract:

Background:

Clinicians usually conduct diagnostic assessments in order to establish a diagnosis or to evaluate the effect of treatment. One meta-analysis suggests that diagnostic assessment administered in collaboration with the patient along with personalized feedback might have a therapeutic effect.

Methods:

We wish to carry out a systematic-review and meta-analysis of the effect on symptomatology when using assessment as a therapeutic intervention for patients with psychiatric illness.

We will search in five relevant electronic databases. Two reviewers will independently conduct article selection against pre-defined eligibility criteria, data extraction and quality assessment of included studies. Randomized studies that report on the use of psychological assessment as an intervention will be included in the meta-analysis. We will extract data on symptom-related outcomes, quality of life, dropout and re-diagnoziation and use meta-analysis techniques to compute the effect size of assessment-related psychotherapeutic interventions.

The review will be conducted and reported according to the Preferred Reporting Items for Systematic Reviews and Meta-analysis statement (PRISMA). Risk of bias will be assessed by using the Risk of Bias tool RoB 2.0 of the Cochrane Collaboration.

Discussion:

The results will be able to inform clinicians and policymakers on the effect of assessment, and, depending on the results, could lead to a recommendation for modified assessment procedures and approaches in the mental health services. Ultimately, it might improve the outcome of treatment in the mental health services.

Registration: registered in PROSPERO: Registration number CRD42021270567.

Background

Psychological assessment has usually been viewed exclusively as a way to diagnose psychiatric disorders, gather information about patients' and clients' symptomatology, and plan and monitor treatment. This is described as the information gathering model of assessment [1]. Recently evidence has emerged, which suggests that psychological testing might be useful as a treatment, if administered in a way that enlists the patient as a collaborator and not an "object" of the assessment. Several mental health professionals have developed frameworks for utilizing standardized psychological assessment as a therapeutic intervention (PATI), of which the major are the Therapeutic Assessment (TA) and Collaborative Assessment (CA) frameworks [2, 3].

These terms cover a range of semi-structured, brief, therapeutic interventions, where a therapist (usually a psychologist) administers standardized psychological tests in a collaborative manner, and delivers feedback in a useful and enriching way that can be therapeutic for the patient. CA and TA practitioners recognize that psychological assessment is an interpersonal event, and that the relationship between assessor and patient is paramount both in relation to the validity of the result, and in relation to the patients further treatment[3].

TA-practitioners place an emphasis on respect for the patient, and the assessor recognizes that patients are "experts on themselves." In the TA-assessment the practitioner ask the patients what they wish to learn from the assessment at the beginning of the treatment. They do this by making the patient formulate a series of therapeutic questions they would like to "ask the tests," and work with the patients, to find personally viable solutions to their problems and answers to these questions. This includes personalized feedback both in oral and written form based on results from each individual test that has been administered, and their answers to the patient's therapeutic questions, that have been produced during the intervention. In addition to this, the patient is given a report of the assessment, which is formulated in simple language.

A field related to TA/CA and PATI is Collaborative Assessment of Suicidality (CAMS), which utilizes a short assessment in the treatment of suicidality. In contrast to TA/CA, CAMS utilizes an assessment

especially developed for the intervention, and usually does not use tests that are administrated with a therapeutic overlay, in a therapeutic framework.

The PATI-literature consists of mainly textbooks [2-4] and single case studies. In addition to this are an amount of randomized controlled studies and non-controlled studies published, of which most are included in a meta-analysis by Poston and Hanson (2010) [5]. They reported on 17 primary studies including 1496 patients, of which seven studies were from clinical psychology and 10 were from counselling psychology. They calculated 18 independent and 52 dependent Cohen's *d* effect sizes (ESs). They calculated a statistically significant overall Cohen's *d* ES of 0.423 (95% CI). They concluded that "(…) psychological assessment procedures—when combined with personalized, collaborative, and highly involving test feedback—have positive, clinically meaningful effects on treatment, especially regarding treatment processes."[5]

Proposed mechanism of action:

The key papers and books [2-4] authored on PATI do not include any proposed mechanism of action. We propose the following mechanism to account for the proposed mechanism of PATI:

(1) PATI provides the patient with information on her own psychological processes and psychopathology, and therefore acts as psychoeducation. This helps the patient become aware of what she needs to work on in therapy, and aware that she has a need for treatment. Together, this makes her more ready for psychotherapy. (2) The patient develops a relationship with the PATI-accessor during the course of the PATI-intervention, which will carry-over to the therapeutic-relationship with the psychotherapist who is handling her treatment; (3) due to the semi-structured PATI-format, the patient will be confident that her problems are seen and understood by the therapist, and the institution she is representing; (4) PATI aids the therapist in gathering comprehensive information on the patient's psychology and psychotherapy, which allows the therapist to treat the patient more effectively in

psychotherapy. (5) In cases where the patient is referred to a PATI-assessment by an external accessor on account of being stocked in therapy, PATI aids the therapist in reconceptualization of the case, and the new information helps her and the patient move forward in therapy. (6) Lastly, we suspect that the common factors in psychotherapy such as expectations, empathy, goal consensus and collaboration, congruence/genuineness and emotional experience also contribute to the possible effectiveness of PATI [6, 7].

Why it is important to do this review

Poston and Hanson (2010) were critiqued by Lilienfeld, Garb, and Wood (2011) [8] for having too wide inclusion criteria, leading to too wide sampling and results. They further argued that the Barnum effect accounted for a great deal of the potential efficacy of psychological assessment as a therapeutic intervention. Hanson and Poston (2011) [9] replied to the critique put forth by Lilienfeld, Garb, and Wood (2011). Herein they excluded three studies and reanalyzed the remaining 14 studies (n=1,375) and found the overall weighted Cohen's *d* ES to be 0.399 (95% CI) and statistically significant. They further replied that the Barnum effect might contribute to the effect of psychological assessment as a therapeutic intervention, but that their research questions and hypotheses related to "whether" the interventions were efficient, rather than why.

Even after this revision, we still see the need for an updated systematic review and meta-analysis of PATI. This is due to Hanson and Poston (2011) focusing on the entire body of literature which investigates PATI, and did not distinguish between patient populations who received an assessment as a treatment, and healthy adults referred to college counselling or career counselling. Instead, they listed the studies as "client" or "nonclient" studies. Neither Hanson and Poston (2011) or Poston and Hanson (2010) provided data on which studies that included patient populations, and which included healthy individuals seeking counselling. Neither did they include information about which psychiatric diagnoses the studies concerned. Hanson and Poston (2011) did not access the risk of bias of the included studies, and they did not access the certainty of the evidence, and included both randomized and non-randomized studies, which they treated as one body of evidence, without performing any subgroup-

analyses. Finally did Hanson and Poston (2011) calculate the overall weighted Cohen's *d* ES by utilizing a mean of all the reported effect sizes that could be calculated from the data in the given paper (e.g. on both symptomatology and self-esteem), instead of focusing on one specific outcome or group of outcomes such as symptomatology.

Thus, we find it important to conduct a systematic review and meta-analysis, which focuses solely on the use of PATI in clinical populations. This is in order to quantify the effect of this family of interventions, when used in clinical populations receiving treatment in primary care setting or in mental health service outpatients or inpatients facilities. The results of such a study will be able to advice clinicians and policymakers in deciding which kind of assessment should be utilized, and whether they should apply psychological assessment as a primary intervention or as a pre-therapy intervention. In addition, the review will provide a status of the evidence in the research field and provide data to guide the research field forward.

As of current, no such systematic review and meta-analysis exist and the International Prospective Register of Systematic Reviews (PROSPERO; https://www.crd.york.ac.uk/PROSPERO/; accessed 25 May 2021) does not indicate any ongoing review dealing with using assessment as an intervention.

Objective

To provide an evidence synthesis of the effectiveness, benefits and harms of collaborative diagnostic assessment as a treatment along with personalized feedback, compared to assessment as usual for adults in primary care or mental health service outpatient-settings

The review will follow the PRISMA guidelines [10], and this protocol will adhere to the PRISMA-P protocol guidance [11]. The review has been registered in the PROSPERO International Prospective Register of Systematic Reviews (registration number: CRD42021270567).

Methods/design

Criteria for considering studies for this review

Types of studies

Randomized controlled trials

Types of participants

Adult patients in primary care setting or secondary (mental health service) outpatient-settings, with all psychiatric diagnosis diagnosed according to both the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders (DSM) III [12], IV [13] and V [14], and the WHO's International Statistical Classification of Diseases (ICD) 9 [15] or 10 [16], with or without comorbid conditions, except mental retardation.

Types of interventions

Eligible trials will examine the effects of using collaborative, diagnostic assessment with standardized tests and instruments, and personalized feedback as an intervention. We will consider that a study examines this, if the study describes utilizing the test as a part of the treatment, and administration of the tests collaboratively with a therapeutic overlay. This both administered individually but also in groups (as defined by the authors of the primary studies).

Exclusion criteria:

We exclude studies on Collaborative Assessment of Suicidality (CAMS). We do so because we find the intervention better suited to be treated in a separate meta-analysis, since we consider it a research field on its own different from PATI.

Types of comparator(s)

For inclusion in the meta-analysis, studies will be required to have a comparator, which is assessment as usual. The comparator intervention will be defined as the administration of a psychiatric assessment without a therapeutic overlay and personalized feedback.

Outcomes

Outcomes can be self-rated by patients or observer-rated by clinicians. All outcome must be psychometrically validated.

Primary outcomes

Symptomatology. In the meta-analysis we will include studies with a symptom-related outcome given as continuous data, and that have published data on mean and standard deviation. If more than one symptom-related outcomes are reported, we will use the one described as the primary outcome in the study. If no symptom-related outcome is described as primary, then NR, ORH and JRG will make a consensus-decision on the most appropriate outcome. This process will be documented in the final paper. We will use the reported end-of-treatment data.

Adverse events. We will further report on outcomes on adverse events, and use the Euromean Medicines Agency definition of adverse events and serious adverse events [17]. We will (I) report on the Risk Ratio of experiencing any adverse events, and (II) the Risk Ratio of experiencing a serious adverse events.

Secondary outcomes

Readiness for treatment. We will report on readiness for treatment measures. Due to the possibility of studies utilizing different measures for readiness for treatment, NR, ORH and JRG will make a consensus-decision of whether a measure is an appropriate measure for readiness for treatment.

Search methods for identification of studies

Search terms and mesh – full table for one database in appendix

Information sources

Five electronic databases are selected for searching: PubMed, PsycInfo, Web of sciences, Cochrane Central Register of Controlled Trials (CENTRAL) and Embase.

These sources will be searched using combinations of relevant search terms that we developed and tested for sensitivity in advance of the systematic review and meta analysis, which will be reported in the appendix along with the dates the search were conducted on.

Furthermore, we will supplement the literature search with a manual review of the reference lists from eligible publications including textbooks on the subject.

Data collection and analysis

We will conduct this review according to guidelines set out in the Cochrane Handbook for Systematic Reviews of Interventions [18], and perform the analyses using the latest version of Review Manager 5 (RevMan 5), Cochrane's statistical software [19].

Data management

The Covidence application [20] will be used to manage records throughout the review process [21]. The selection, removal and rejection of studies will be documented in the PRISMA flow diagram [10].

Selection of studies

After removal of duplicate citations, studies will be screened in two stages: title/abstract and full text. Titles and abstracts of identified study reports will be independently screened by ORH and JRG using the inclusion and exclusion criteria described in the appendix. If they are in disagreement, theywill discuss the matter and receive a consensus. If they cannot reach an agreement, they will consult NR.

If the title and abstract is deemed relevant, the paper will be read in full by both ORH and JRG independently, again using the inclusion and exclusion criteria described in the appendix. If they are in disagreement, disagreements will be resolved through discussion. If an agreement cannot be reached, they will again consult NR. In case of the exclusion of a trial, reasons for doing so will be documented.

We will list apparently relevant RCTs that do not fulfil the inclusion criteria with reasons for exclusion in the 'Characteristics of excluded studies' tables. To ensure transparency of study selection, we will provide a flow chart in accordance with the PRISMA statement, to show how many records have been excluded and for what reason, and how many records that have been included [11].

Data Extraction

Study and sample characteristics

In terms of general study characteristics, we will extract the following information:

- Author
- Publication year
- Location
- Study design (only RCT-studies)
- Sample size
- Sample characteristics (age, biological gender, ethnicity, country, diagnosis)
- Setting (primary care or secondary care)
- Participation and attrition rates
- Intervention type (CA, TA or other) and length
- Assessment instruments applied
- Outcomes relating to symptomatology
- Outcomes relating to readiness for psychotherapy

- Outcomes relating to adverse effects

Data extraction and management

ORH and JRG will extract data, and ORH will enter the data into RevMan 5. They will resolve disagreements by discussion. In cases where there is not enough data or data is unclear in the published trial reports, we will contact the trial authors, requesting them to supply the missing information. We will develop data extraction forms to facilitate standardization of data extraction.

Assessment of risk of bias in included studies

Risk of bias in the included RCTs in the meta-analysis be assessed by using the updated Risk of Bias tool RoB 2.0 of the Cochrane Collaboration[22].

For each included trial, ORH and JRG will independently evaluate each risk of bias domain as being at low risk, some concerns or high risk, resolving disagreements by discussion. Each study as a whole, will following this initial rating, be rated according to its highest risk of bias in any of the assessed domains. However, we will rate studies with 'Some concerns' in multiple domains as "High risk" of bias [22]. Disagreement will be resolved via consensus discussion or consultation with NR.

We will assess the following domains in our risk of bias assessment: 1) bias arising from the randomization process, 2) bias due do deviations from the intended interventions, 3) bias due to missing outcome data, 4) bias due to measurement of the outcome, and 5) bias due to selective reporting [22].

Outcome data

To measure the effectiveness of the intervention in terms of our primary outcome, we will extract the following:

Continuos data

- Baseline symptom severity for all outcomes and if possible symptom severity at follow-up.
- Duration of a possible follow-up measurement

Categorical data

- Which symptom-related outcomes were used
- Amount of reported adverse-events (yes/no) in percentage

Measures of treatment effect

Continuous data

We will compare the mean score between the two groups to give a mean difference (MD) and present this with 95% CIs. We will use the overall MD, where possible, to compare the outcome measures from trials. We will estimate the standardized MD (SMD) where different outcome measures are used to measure the same construct in the trials. We will calculate SMDs using both end-scores and change-scores at post-treatment results, and will also group the two different measures into independent groups, and test for subgroup differences.

Our first choice will be to calculate effect sizes on the basis of intention-to-treat (ITT) data. If means and standard deviations from an ITT analysis and missing values that were replaced are available, we will use these data. In other cases, we will conduct the analysis using only the available data.
We will perform all calculations using the latest release of RevMan 5 software [19].

We will report and utilize data on continuous outcome reported at both end of treatment and follow-up. We will utilize the reported number of patients, means and SD's to calculate Cohen's d's effect sizes. We will interpret the Cohen d's effect sizes using the following general guidelines: small (0.2), medium (0.5) and large (0.8) [23].

In case of missing data, will we instead try to calculate these values from other reported values such as t-tests and p-values.

If the outcome-scales utilized in the studies measure a positively outcome with a high score compared to a low score, will we transform this value by multiplying -1.

Dichotomous data

We plan to analyze the dichotomous data as risk ratios (RR) and present these with 95%CIs.

Unit of analysis issues

We will analyze data at end of treatment and at the longest reported follow-up

Cluster-randomized trials

We do not expect cluster-randomized trials. However, if such trials are located in the literature search, we will anticipate that investigators will have presented their results after appropriately controlling for clustering effects (robust standard errors or hierarchical linear models). If it is unclear whether a cluster-randomized trial has used appropriate controls for clustering, we will contact the investigators for further information. Where appropriate controls have not been used, we will request and reanalyze individual participant data using multilevel models that control for clustering.

Studies with multiple treatment groups

If a trial compares more than two intervention groups, we will include all pair-wise comparisons as long as they are not subject to the same meta-analysis.

Dealing with missing data

We will try to obtain any missing data, including incomplete outcome data, by contacting trial authors. We will report this information in the 'Risk of bias' tables.

Assessment of heterogeneity

We will group heterogenicity of the reported trials into three domains: (1) clinical heterogeneity will refer to the possible variability in the patient populations regarding diagnoses, age, treatment-site etc. (2) Methodological heterogeneity will refer to differences regarding the intervention applied in the particular study. (3) Statistical heterogeneity as the difference in the intervention effects on the trials.

We will utilize I^2 statistic for quantifying inconsistency in order to give an estimate on the percentage of variation in effect estimates, which can be regarded as due to heterogeneity rather than sampling error. We will judge I^2 values of 0% to 40% as indicating little heterogeneity; 30% to 60% as indicating moderate heterogeneity; 50% to 90% as indicating substantial heterogeneity; and 75% to 100% as indicating considerable heterogeneity [18]. We will assess potential reasons for the heterogeneity by examining individual trial characteristics and subgroups.

Data synthesis and analysis

We will perform statistical analyses according to recommendations in the latest version of the *Cochrane Handbook for Systematic Reviews of Interventions [18]*. In carrying out the meta-analysis, we will apply the inverse-variance method, in order to give more weight to more precise estimates from studies with less variance (mostly larger studies). We will use the random-effects model for meta-analysis, since we expect some degree of clinical heterogeneity to be present in most cases, though not so substantial as to prevent pooling in principle. We will prefer observer-rated measures as the primary analysis, but will include self-reported outcomes if observer-rated outcomes are not available.

Sensitivity analysis

We plan to test any possible difference between ”end-of treatment scores” and ”change scores.” We will further conduct a sensitivity analysis to determine whether the findings are sensitive to random effects or fixed effects models.

Subgroup analysis

We will conduct the following subgroup analysis:

- Risk of bias (high risk of bias or low risk of bias accessed by the RoB tool)
- Biological gender (male and female)
- Length of the intervention (more or less than ten hours)
- Setting (primary care or secondary care)
- Intervention modality (TA, CA or other)
- Age group (mean age <30, 30-60 or >60)
- Psychiatric comorbidity (yes or no)
- Referral diagnosis (emotional, psychotic, no diagnosis, or substance abuse)

GRADE assessment

To assess the certainty of the body of evidence, we will apply the GRADE approach (Grading of Recommendations Assessment, Development and Evaluation)[24] as recommended by Cochrane [25]. We will utilize GRADE on our two primary outcomes, symptomatology and adverse effects.

Discussion

Available evidence suggests that standardized psychological test can be administered with a psychotherapy-oriented approach, which might benefit patients suffering from psychiatric illness[9]. The review described in the present protocol will aim at providing an evidence synthesis of the effectiveness of administering standardized psychological tests as an integrative part of the treatment of patient populations with psychiatric illness.

There has already been one attempt to quantify the effects of psychological testing administered together with personalized feedback using meta-analysis techniques. However, this review is now both aged and was conducted with suboptimal techniques, and had wide inclusion criteria.

In our review, we utilize contemporary standards including assessment of bias, and focuses solely on clinical populations. In addition to this and in order to further narrow the inclusion criteria down, we will exclude studies on Collaborative Assessment of Suicidality (CAMS). We will do so because CAMS utilizes a test developed specifically for the purpose, and does not utilize a standardized psychological test in a new way, as seen in the rest of the literature on PATI. In addition to this,CAMS can be considered a research-field in itself, and is therefore better suited for treatment in a separate systematic review and meta-analysis.

We see some limitations to our design. PATI is a heterogeneous field, and it is debatable which interventions should be regarded as PATI and which should not. The heterogeneity of PATI makes conduction of a thorough literature search difficult. Thus, we might overlook psychological interventions that could be regarded as PATI, because they are not highlighted as being collaborative by the authors, and therefore do not show up in the literature search. However, do we plan to conduct a manual review of the reference lists from eligible publications including textbooks on the subject, which we believe will ensure literature saturation.

To the authors' knowledge, this is the first systematic review and meta-analysis that explicitly and exclusively intends to inform the development of therapeutic interventions that utilize assessment as a treatment, to treat psychiatric illness and their associated distress.

The review will provide an overview of psychological interventions utilizing psychological testing for purposes beyond diagnostic and monitoring of treatment. The results might have the potential to improve the outcome of existing psychotherapeutics treatments, to modify existing treatments, and to improve the choice between different treatments based upon more solid data.

Declarations

Ethics approval and consent to participate:

Not applicable

Consent for publication:

Not applicable

Availability of data and materials:

The data used in the meta-analysis will be available from the corresponding author on reasonable request.

Competing interests:

The authors declare that there are no competing interests in this review. The authors have no allegiance to TA or CA-groups.

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Authors' contributions:

SA, ORH, NR, OJS and JRG conceptualized the protocol and ORH was responsible for writing the first draft manuscript. All authors have discussed, reviewed and approved the manuscript.

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