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Does the therapeutic relationship predict outcomes of psychiatric treatment in patients with psychosis? a systematic review

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Does the therapeutic relationship predict outcomes of psychiatric treatment in patients with psychosis? a systematic review

Background: Numerous studies have shown that the quality of the therapeutic relationship (TR) between the patient and the clinician is an important predictor for the outcome of different forms of psychotherapy. It is less clear whether the TR also predicts outcomes of psychiatric treatment programs in patients with psychosis (i.e. outside conventional psychotherapy).

Method: We conducted a systematic review and identified nine primary studies that prospectively tested the association of the TR with three outcomes, i.e. hospitalizations, symptom levels and functioning. Because of the heterogeneity of the methods used, a meta analysis was not feasible. A vote counting method was used to determine the number of statistically significant effects in the hypothesized direction (i.e. that a more positive TR predicts more favourable outcomes).

Results: For each outcome, a χ^2 analysis showed that the number of statistically significant findings in the hypothesized direction was greater than expected if the null hypothesis of no association were true. However, studies had methodological shortcomings and the effect sizes of positive associations were rather small.

Conclusion: It may be concluded that there is some, but not overwhelming, evidence that the TR predicts outcomes of complex psychiatric treatment programs in patients with psychosis and that methodologically more rigorous research is required. Such research should measure the TR at initial stages of treatment and use validated assessment instruments for both TR and outcomes.

Key words: therapeutic relationship – psychosis – hospitalizations – symptoms - functioning

Introduction

The therapeutic relationship (TR) between a patient and a clinician also referred to as helping, working or therapeutic alliance (see Catty et al. [1] for a conceptual review) is at the centre of the delivery of psychiatric treatment. In surveys, patients consider it to be the most important component of care [2]. Qualitative research suggests that the TR plays a major role for patients with severe mental illness to engage with services [3,4]. Although there is no universal consensus on how the TR should be defined and measured, it is widely regarded as an important non-specific factor in determining treatment outcome [5]. However, what is the evidence that the TR predicts outcomes of psychiatric treatments in patients with psychosis?

There has been more research on the TR in psychotherapy and psychosomatics where for several decades it has been regarded as a central and important concept. Numerous studies reported an association between a more positive TR and more favourable treatment outcomes of psychotherapy. In a meta-analytic review of 79 studies Martin et al. [6] found a significant association between the TR and a composite outcome of psychotherapeutic treatment with an overall small effect size of $r = .22$. There was no significant variation of findings across studies so that the finding can be seen as applicable to different settings in psychotherapy. Although 18 of these studies included patients with severe mental illness, psychotherapeutic settings are substantially different from those of psychiatric treatment commonly provided for patients with psychotic disorders. Psychiatric treatment can include coercive measures, typically uses a range of psychological, social and pharmacological

interventions, and is more open ended and more variable in terms of the frequency, length and aims of meetings than psychotherapy [7].

Various measures have been used to measure the TR in psychiatric settings. Most of them had originally been developed for psychotherapeutic settings, and some instruments were designed ad hoc for psychiatric settings [8]. Recently a scale specifically designed to assess the TR in community mental health care has been published [9]. Scales often have separate ratings for the clinician and the patient. Their perspectives of the TR may only be weakly to moderately correlated [10]. More positive ratings of the TR have repeatedly been found to be associated with lower symptom levels [11] but these correlations are based on cross-sectional studies and do not constitute evidence that the TR predicts outcomes of subsequent treatment. In this paper we report the findings of a systematic review of empirical studies that tested the association between the TR and subsequent outcomes of psychiatric treatments for patients with psychosis. The review was guided by the hypothesis that a more positive TR would be associated with better treatment outcomes.

Methods

Searches and inclusion criteria

A three-stage systematic search was undertaken to locate primary research papers relevant to the review. Initial search terms contained adjectives or derivatives of “therapeutic alliance” (e.g., (therapeutic and relationship) or (helping and alliance) or (working and alliance) or (therapeutic and bond)), “treatment outcome” (e.g., readmission or housing or (social and support) or work or symptom or functioning) and “psychosis” (e.g. schizophrenia or schizo or psychosis or (schizo and affective))

that were combined using a series of Boolean and/or operators and wildcards. These combinations were used to search Medline, Psychinfo, Psych-articles and Cochrane databases between 1990 and 2009. Only English language journals were considered. Potentially relevant articles were exported into a reference citation manager where titles and abstracts were screened for relevance. At stage 2, studies were included only if a) patients were treated in psychiatric settings, b) at least 50% of the sample were diagnosed as having a psychotic disorder (including schizophrenia, schizo affective disorder, and psychoses), c) the study used a measure of the TR, and d) the TR was linked to at least one measure of clinical improvement or outcome. Moreover, only prospective studies were considered, i.e. studies that used a longitudinal design measuring the TR prior to the assessment of outcome (not cross-sectionally at the same point of time). Finally, at stage 3, we included only outcomes that were assessed in more than one study. Where data was missing, authors were contacted. Papers from which data were extracted are marked with an asterisk in the reference section. When a study reported associations of TR ratings at several points of time with the same outcome, we included the associations of only one of the ratings and selected the earlier rating, making sure that the interval between TR rating and outcome measurement was at least six months.

Data coding

The following data was coded from each primary article where present (also see Table 1): a) reference details; b) treatment setting and country; c) sample size and patient diagnoses; d) TR measure(s), and rater (clinician and/or patient) e) observational period; f) clinical outcome; g) outcome measure(s) and rater (observer/patient rated); h) tested associations. In order to minimise bias resulting from statistically dependent

findings [12] global composite scores were coded wherever available. Ratings of patients and clinicians were treated separately.

Quality criteria

The following criteria and coding were used to assess for each association the quality of the study reporting it: the response rate of those patients who were eligible and/or approached to participate ($<30\%$ or not reported = 0, $\geq 30\%$ = 1), drop out rates between the assessments of the TR and outcome ($\geq 30 = 0$, $<30 = 1$), the sample size ($<30 = 0$, ≥ 30 and $<100 = 1$, $\geq 100 = 2$), the reliability of the instrument used to measure TR and outcome (no established scale = 0, established scale with internal consistency $<.70$ or non reported reliability = 1, established scale with internal reliability $>.70 = 2$), association is adjusted for baseline scores of outcomes (no = 0, yes = 1), association is adjusted for other potential confounders (no = 0, yes = 1). When the outcome was hospitalisation during the follow up period, the reliability of assessing hospitalisation was coded as 2, as data was obtained from medical records and assumed to be reliable. Adjusting for baseline scores of outcomes was always coded as 0 for hospitalisation, and adjusting for hospitalisations prior to baseline was considered as adjusting for confounders. Scores were summed across each item to create an overall quality score, ranging from 0 to 10 with higher scores indicating better study quality. Studies were then allocated to one of three groups, i.e. low (0–4), medium (5–7) and high quality (8–10), a distinction used in other reviews (e.g. [13]).

Inter-rater reliability

All articles were coded by two independent researchers. An initial agreement rate of 92% across all judgments was obtained and all disagreements were resolved through discussion.

Analytic strategy

The heterogeneity of methods prevented us from conducting a meta-analysis. A vote counting method was used to establish the number of statistically significant effect size estimates in the hypothesised direction. Chi square tests were used to compare hypothesised versus obtained frequencies of positive significant findings, using the 5% probability criterion of making a type 1 error.

Results

At stage one the search strategy yielded a total of 129 papers. After scanning abstracts and titles using the specified inclusion criteria 33 papers were identified as relevant and read in detail. The substantial exclusions at this stage were due to a large number of studies that had assessed the TR, but not studied it as a predictor of subsequent outcome. Finally, 9 [14-22] of the 33 relevant papers were found to meet all inclusion criteria and included in the review. The search process is summarized in Figure 1.

Insert Figure 1 about here

The reported studies were conducted in Canada, Germany, Sweden, the United Kingdom and the United States. The percentage of patients with psychosis or

schizophrenia respectively (depending on which category was reported) varied between 55% and 86%.

Three outcomes were assessed in two or more studies: hospitalizations, symptom levels and measures of functioning. The included studies either i) measured TR at baseline and predicted the symptoms/functioning at a later point in time and/or the re-admissions or days of hospitalisations between baseline and follow up assessments [18, 15, 22] or ii) tested TR as a predictor of change in symptoms/functioning after controlling for a) the same measure at baseline [21, 18, 14 ,17] and/or b) a combination of constructs in a multivariate analyses [18 ,17], or iii) tested the correlation of the TR with computed change scores of symptoms/functioning [16, 19, 20]. Three different types of effect size estimates were reported: correlations (r), standardised betas (β) and F values (F). Table 1 shows all studies and their findings as considered in this review.

Insert Table 1 about here

In total 22 associations of the TR with outcomes were reported, i.e. 6 with hospitalisations, 10 with symptoms (5 observer rated, 5 clinician rated) and 6 with a measure of functioning (all clinician rated). Given the relatively small number of studies included, stratification by potential moderating factors was not possible.

Hospitalisations

Three studies assessed how the TR predicted hospitalizations [15, 18, 21] with a total of 6 bivariate associations. Exact outcome measures were re-admissions, days spent in hospital or an hospitalization index reflecting days in full and partial hospitalisation.

Across all studies, there were three statistically significant associations in the hypothesised direction, i.e., a better TR was associated with fewer hospitalisations. Thus 50% of the associations obtained statistical significance which is different from the distribution assumed under the null hypothesis ($\chi^2 (1) = 426.316, P < .001$).

Symptom levels

In six studies a total of 10 associations between the TR and symptom levels as outcomes of subsequent treatment were reported [14, 17, 19, 21, 22]. With respect to the symptom scales used in the studies we distinguished between observer [14, 17, 19, and patient rated measures [19, 21, 22].

The studies reported a total of 5 associations between the TR and observer ratings of symptoms. Four of these were bivariate associations of which two were in the hypothesised direction and statistically significant [14, 19]. The remaining two associations were from the same two studies and non-significant. In one study (17) a non-significant association was reported in a model that also included baseline symptom scores and weeks in permanent residence as predictors.

Five associations were reported between the TR and patient rated symptoms. Only one of them was in the hypothesised direction [20] and obtained marginal statistical significance.

In summary, of the 10 associations between the TR and symptom outcomes three (i.e. 30%) obtained statistical significance or marginal statistical significance and were in the hypothesised direction. This is statistically different to a hypothetical sampling distribution under the null hypothesis ($\chi^2 (1) = 131.579, P < .001$).

Functioning

Four studies were located [16, 17, 19, 20] assessing associations between the TR and measures of functioning, reporting a total of six associations. All included clinician rated measures of functioning. Four associations (3 coded as bivariate, 1 as multivariate) related to global assessments of functioning [16, 1, 20], two of which were statistically significant [16, 20]. One study used clinician and patient ratings of the TR and reported two associations with measures of occupational functioning [19]. None of them obtained statistical significance.

In summary, out of six reported associations between the TR and functioning outcomes two (i.e. 33%) were in the expected direction and statistically significant, both using global assessments of functioning. This indicates that the sampling distribution is different to that assumed under the null hypothesis ($\chi^2(1) = 165.053, P < 0.001$).

Quality of studies

When the quality criteria were applied, 9 of the 22 associations were coded as based on low quality studies (1 with hospitalisation, 5 with symptoms, and 3 with functioning as outcomes). The remaining 13 were coded as based on medium quality studies (5 with hospitalisation, 5 with symptoms, and 3 with functioning as outcomes), whilst no study met the criteria for high quality.

All three significant associations for hospitalization were from medium quality studies. Out of the five significant associations for symptom change, two were from low quality studies and three from medium quality studies. The two significant associations for functioning originated one each from a low quality and a medium quality study.

Discussion

We reviewed the prospective studies on the association of the TR with outcomes of psychiatric treatment programs in patients with psychosis and included nine papers reporting studies from five countries. The findings were mixed within and across the studies. Several studies showed that a more positive TR was associated with fewer re-admissions to hospital and more favourable changes in symptom levels and functioning measures. Overall, there were more significant correlations in the hypothesised direction than would have been expected if there was no association. However, most tested associations were not significant and the existing evidence for the predictive value of the TR for treatment outcomes in this patient group is not overwhelming.

The review has various limitations. Because of the small number of studies and the heterogeneity of methods, we were unable to conduct a meta-analysis. Consequently, artifact variance such as sampling and measurement error could not be accounted for. We used a vote counting method which does not provide an estimate of the overall effect size. In some cases, two or more associations were extracted from the same study which may have led to a bias in the vote counting procedure [12]. However, we had decided to consider more than one association from the same study because we treated clinician and patient ratings of the TR as distinct and tested separate outcomes. Further limitations of the review reflect the methodological shortcomings of the included studies, **none of which met the defined criteria for a high quality study.** Seven out of the nine included studies had insufficient power to detect a small effect size, with three studies having sample sizes of <30. Consequently, the fact that most tested correlations were not statistically significant may be a result of the usually small sample sizes. Only two studies had sample sizes of >100. One neither used

standardized outcome measures nor reported bivariate associations and had a negative result. The other one showed a significant association of the TR with re-admissions in patients who were newly admitted to assertive outreach care, but not in patients who had already been in care of the teams for more than three months. Finally, the vote counting method may have been influenced by publication bias.

The findings are consistent with the assumption that the TR is associated with important clinical outcomes of psychiatric treatment programs in out-patients with psychosis, and the strength of the association represents a small effect size so that it gets identified in some studies and not in others. Such a conclusion would be in line with evidence in psychotherapy which also shows a small effect size [6]. However, whilst the findings are consistent with this assumption, there is too little research and some of the existing studies are of too poor a methodological quality to provide conclusive evidence for it.

Whilst one can only speculate about the reasons for the relative lack of high quality studies addressing the role of the TR in psychiatric treatments of patients with psychosis, the review underlines the need for methodologically more rigorous research and points to at least three requirements for future research in the area.

First, the TR should be assessed with accurate instruments that have been shown to be valid measures of the TR in psychiatric treatments of patients with psychosis. These instruments might distinguish between different aspects of the TR, as some research suggested that there may be distinct components of the TR in the perspectives of both clinician and patient. Different components such as the overall collaboration or emotional responses of the clinician and patient could have different associations with outcomes. Validated instruments should also be used to assess outcomes.

Second, the assessment of the TR and the baseline measure of the outcome criterion should happen early in treatment. If both assessments are not conducted initially and the observation period for the association of TR and outcomes begins at a later stage of treatment, outcomes may already have improved as a result of a positive TR.

Similarly, a longer time period between the measurement of TR and follow-up assessment may facilitate detection of an effect [23]. Thus, study design can lead to ceiling effects (or floor effects respectively) and reduce the chance to detect an association of the TR with outcomes in the future, e.g. in terms of further symptom change. Such effects may be the reason why one study in patients in assertive outreach teams [14] identified an association between the TR and readmissions in newly admitted patients, but not in patients who had already been with the team for more than 3 months.

Third, research should consider mediating factors such as treatment adherence to understand how the TR may impact on outcomes in different settings and samples. The assumption that a more positive TR is linked to better treatment outcomes in patients with psychosis can have clinical implications. Clinicians can be trained in communication skills to establish better relationships with patients and receive supervision to improve the TR with some or all of their patients [24]. One may also develop and test interventions compared to an appropriate control [25] influencing patient-clinician communication (e.g. focusing on shared decision making) directly to improve both TR and outcomes. An example for the latter is the DIALOG intervention [26] which is a computer mediated method to structure the communication in a patient-centered and forward looking manner and has been found to be associated with better treatment outcomes in community mental health care (see too, [27] and [28]). Many clinicians may intuitively agree with the assumption that the

quality of the TR is relevant for outcomes of complex psychiatric treatments in patients with psychosis, and that the overall effect of the TR on outcomes is limited within the complex interplay of all specific pharmacological, psychological and social interventions. There is some research evidence for this assumption, but the existing research has serious shortcomings and the evidence is not overwhelming.

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