Summary

The goal of the Amenability Psychotherapy Project (APP) is to create a clinician-report tool that is capable of detecting patients with indications for psychotherapy based on efficacy evidence from the first visit. This easy-to-learn tool would be useful in daily clinical practice in mental health services because it is manageable, easy and quick to fill in, and clearly reliable and valid. This tool would not be confined to the boundaries of categorical diagnosis, but would also predict the effect of psychotherapy to reduce symptoms and dysfunctional relationships aside from the severity of the initial clinical picture.

In an early phase of the project, we conducted a comprehensive literature search to identify and select patient centred factors that have strong scientific evidence to predict psychotherapy outcomes; the result is a Likert-based evaluation tool, the APP Scale, composed of 22 items. The three objectives of this study are: 1) to evaluate inter-rater reliability using Cronbach's alpha; 2) to apply the APP Scale to a sample of 100 unselected consecutive psychiatric outpatients from the Psychiatric and Psychotherapy Unit (S.C. Psychiatry 4, A.O. Niguarda Ca' Granda) to assess the validity of the APP Scale in clinical practice; 3) to verify the internal validity of the Scale with principal component analysis (PCA).

The APP Scale was found to be a reliable and valid tool: it is easy and quick to fill in, and acceptable for both the patient and clinician. As for internal validity, the PCA results show a three-factor solution, which explains 62.047% of variance. We named the three components “ego strength”, “psychological expression” and “illness”. All of the items seem to be maintained.

Key words

Cost effectiveness • Psychotherapy outcome and process research • Empirically supported treatments • Treatment selection • Efficacy

Introduction

In the last few decades, several meta-analyses and reviews have demonstrated the efficacy of psychotherapy for various psychiatric disorders, with comparable or better results than pharmacotherapy 1-3. Indeed, the clinical efficacy of psychotherapy is considered solid enough to allow its inclusion in guidelines providing evidence-based recommendations for treatment of psychiatric disorders 4-6. For some disorders, psychotherapy is indicated as exclusive first-line treatment, as in case of personality disorders, and in particular for clusters B and C 7-9. In other cases, the effectiveness of an integrated approach, both pharmacological and psychotherapeutic, has been demonstrated in comparison with the use of pharmacotherapy alone, for example in the treatment of major depression 10-13. For other disorders, psychotherapy is indicated as second- or third-line treatment after the failure of drug therapies 14. Finally, some studies have focused on the assessment of the effectiveness of specific psychotherapeutic techniques compared to others or with a pure pharmacological approach 15 16 with the aim of identifying the most appropriate and effective therapeutic modalities for the management of specific diseases 17.

Nowadays, both in Italy and in the rest of Europe, the cost of mental health services is a critical issue since mental health disorders represent a significant public health concern in terms of health and economic impact 18. Many efforts have been made to optimise costs in recent decades in order to improve access to mental health care and reduce excess costs. For example, in Italy since the early 1990s, legislation in the form of various decrees has required Departments of Mental Health to demonstrate the
effectiveness and efficiency of their health services, and to evaluate them through the quality assessment and review of results, according to the concept of the so-called “essential levels of assistance” (LEA).

In this context, the availability of psychotherapy is a very important resource: proven assessments have shown that the choice of psychotherapy in specific pathologies (personality disorders, somatic disturbance, anxiety and mood disorders) results in significant cost savings, reduces the number of re-hospitalisations and increases the quality of life.

However, in Italy the National Health System cannot always provide psychotherapy in response to clinical issues and demand; psychotherapy provided by the public mental health service falls short in firstly meeting the high number of legitimate patient demands for treatment. Secondly, appropriate selection of patients for whom this treatment should be provided is not always made. Moreover, there is a high level of drop-outs or non-responders among the few patients who have access to psychotherapy provided by the public health system.

Thus, psychotherapy is inadequate from the perspective of both patients and healthcare operators, and it is therefore necessary to identify patients who can benefit from psychotherapy in order to pursue the patient’s welfare and rationalise the limited resources of the healthcare system. Unfortunately, there are no specific tools to select patients and determine their response to psychotherapy. Although in recent years research in psychotherapy has focused on the identification of predictors of treatment outcome, at present there are no validated instruments to assess social, environmental and personality characteristics to select the right patient for the right therapy and predict a successful outcome. Likewise, descriptive diagnostic methods such as DSM and ICD cannot be relied upon since they fail to consider specific predictive factors for specific treatments. In addition, it should be acknowledged that treatment indications are often based on subjective evaluations, organizational opportunities and economical issues more than on scientific evidence.

Despite this, some predictive factors are well known in the literature: the patient’s treatment motivation, psychological mindedness and metacognition, the patient’s interpersonal problems and coping skills.

Only recently have researchers tried to identify potential indicators to direct the choice of psychotherapeutic treatment for individual patients. Some researchers have identified potential markers for susceptibility to psychotherapeutic treatment. For example, according to Markowitz, these indicators include: 1) patient preference; 2) severity of symptoms; 3) contraindications to pharmacotherapy; 4) history of previous treatment; 5) nature of symptoms; 6) psychosocial context; 7) control and credit; 8) new and continuous skills.

In our opinion, tools need to be developed that can give early indications as to which patients should be considered for first-line treatment with psychotherapy. Indeed, clinical experience and scientific evidence have demonstrated that in the early stages of treatment it is important to make functional treatment choices both for the improvement and/or resolution of the clinical symptoms of the patient, and to reduce the costs of health service. Consequently, there is the need for initial assessment based on valid parameters, which are measurable and comparable, and which must be identified so that the most effective treatment for the individual patient can be undertaken; thus, effective tools are needed to identify patients who are most appropriate for psychotherapeutic treatments.

Psychotherapy should be considered as first choice treatment for appropriate patients. For example, depressed patients, on average, appear to express stronger preferences for psychotherapy than for antidepressant medications, a finding that is of considerable clinical importance given that treatment preference is a potent moderator of response to therapy. Patients receiving their preferred treatment (whether pharmacotherapy or psychotherapy) respond significantly better than those who do not receive their preferred therapy.

The goal of the present study is to create and validate a quick and reliable tool that reveals to the clinician, in the first interview, patients who are most likely to respond positively to psychotherapeutic treatment, consequently increasing the efficiency of the proposed treatments and decreasing the drop-out rate.

The Amenability to Psychotherapy Project

The Amenability to Psychotherapy Project started in 2011 at The Psychiatric and Psychotherapy Unit – S.C. Psychiatry 4 in university management – A.O. Niguarda Ca’ Granda – University of Study Milan in collaboration with the “Zoe Group”, for training and study of quality and efficacy of mental health care Association. The purpose of the project is to create an administered test (i.e. usable by the psychiatrist or the clinician regardless theoretical orientation) that detects patients with psychotherapy indications, based on efficacy evidence, at the very first visit. Such an easy tool would be useful in daily clinical practice in mental health services, because it would be manageable, easy and quick to fill in, and clearly reliable and
valid. This tool would not confine itself to the boundaries of categorical diagnoses, but would also predict the effect of psychotherapy in reducing symptoms and dysfunctional relationships independently of the severity of the initial clinical picture.

The critical questions were: “Does a particular patient have a specific reason for undergoing psychotherapy?” and “What is the likelihood that the patient seated in front of me will obtain a good outcome from psychotherapy?”, thus thinking about a tool that has not exclusion, but inclusion criteria.

In this first phase of the project, we preferred to not discriminate any psychotherapy method among those for which efficacy had already been demonstrated, irrespective of the theoretical orientation, and decided to include individual psychotherapy as well as group psychotherapy. Therefore, we looked for all those patient-related factors associated with a good outcome from psychotherapy, regardless of the theoretical orientation (nonspecific factors).

A comprehensive literature search, including Medline, Pubmed, Embase, Psychinfo database, meta-analytic studies, narrative reviews, and outcome studies, up to December 2011, was conducted using search terms psychotherapy outcome, psychotherapy predictive factors and patient-related factors. We selected those factors underpinned by stronger scientific evidence and found a possible operationalization of them in some of the items of the Operationalized Psychodynamic Diagnostics (OPD-2), in particular within axis I “Experience of illness and pre-requisites for treatment” and axis IV “Structure”. OPD-2 is a reliable and validated system. The result of this investigation is a Likert-based evaluation tool, the APP Scale, composed of 22 items ranked by the clinician on a scale from 0 to 4 (Tab. I).

The APP Scale

The first 13 items are related to objective evaluation of the disorder and the subjective experience that the patient has about his/her disease. Three items evaluate the disorder chronicity and its functional severity, information that can be obtained by the clinician in objectivity. The next four items investigate subjective suffering of the patient due to his/her disease, and how much his/her concept of illness is connected to psychological issues in terms of the disease source, problem presentation and treatment desired (patient theory about change). Those aspects are of extreme importance in the alliance building process, and alliance is a proven efficacy factor as established by the APA 12 Task Force work, in which the aspects of real efficacy in the psychotherapy treatment were investigated, regardless of the theoretical orientation. The next six items evaluate the personal and social resources the patient has access to, and in particular regarding a possible course of psychotherapy. Those dimensions are useful for treatment personalisation and can give an initial idea of the possible critical aspects to consider in relation with a specific patient, especially regarding the risk of dropout. Finally, some aspects of the personality structure of the patient are evaluated, such as cognitive capacity of the patient and the significant other, his/her relational skills and his/her impulse control.

The clinician assesses all these different aspects of the patient during the first interview. After a training period (9 hours) to medical psychiatrists, psychiatric residents and psychologists in psychotherapeutic training, the clinician will have learned how to obtain the required information for assessing the individual areas on the APP Scale as described in the APP manual guidelines. To use the APP Scale, a 50-min semi-structured interview is required, with an additional 5-10 min for scoring.

The interview is a synthesis of a psychodynamic interview with a series of more structured interview strategies borrowed from existing diagnostic systems and adapted as required. This procedure may best be described as an oscillation in attentive focus between a relationship-dynamic and an explorative interview stance.

The degrees of structure may thereby vary along the following lines:

- an unstructured interview procedure, which serves to bring about spontaneous unfolding of the patient’s inner experiencing;
- a moderately structured procedure, which focuses on individual thematic areas in the interview and directs the patient’s thoughts in certain ways, for instance in the gathering of biographical data, self-perception and perception through others;
- a structured procedure which strives to extract specific details, for example through exploration of psychopathological signs and symptoms and symptomatology so that an DSM-IV-TR syndromal diagnosis can be made.

The points of the scale are connected to anchor point descriptors that enable the clinician to form a clinical picture that corresponds to that particular score (Tab. II). The aim of the interview is to obtain the required material to assess the patient in the aspects needed. Thus, some guidelines are provided to help the clinician follow the appropriate strategies to collect relevant information. All the guidelines will be available to the clinician after a short training period of three sessions, each session lasting three hours. On completion of training, the clinician will be equipped with working knowledge of the tool so as to gather targeted aspects of information that can give reliable indication for psychotherapy treatment for that patient, through use of guided questions and strategies.
Research hypothesis and methods

Objectives
The objectives of the present study are to:
1. evaluate the inter-rater reliability of the APP Scale;
2. assess the internal validity of the APP Scale;
3. assess the feasibility in clinical practice of the APP Scale.

Sample
Objective 1: The sample consists of 30 psychodiagnostic audio-recorded APP interviews with patients who approached the Psychiatry and Psychotherapy Unit – S.C. Psychiatry 4 in university management – A.O. Niguarda Ca’ Granda – University of Study Milan, a second level service which is part of the mental health service.

Objectives 2 & 3: The sample consists of 100 non-selected consecutive psychiatric outpatients from the same Unit. Following informed consent, patients were recruited for this study between 01/2012 and 12/2012.

Patients who agreed to collaborate for research purpose were audio-recorded, and the material was used for instrument refining.
Patients suffered from anxiety (39%), mood disorders (36%), cluster B personality disorder (12%), somatoform disorders (9%) and cannabis addiction (4%) as principal DSM IV TR diagnoses (Fig. 1). Moreover, 23% of the patients had comorbidities: 4% with cluster A, 5% with cluster C personality disorder and 14% diagnosis of NAS personality disorder. These patients are typical of those treated at our Unit.

Methods and Statistical analysis

Objectives 1: We trained 8 judges on the APP Scale and interview. Each of the 30 interviews was evaluated by a randomised pair of independent judges. The reliability of the APP Scale was evaluated using Cronbach’s Alpha. Objectives 2 & 3: The initial diagnostic assessment was part of the usual diagnostic protocol performed for patients who come to our Unit. Patients are usually referred by their primary care physician, or by other mental health specialists.

The diagnostic work-up for each patient includes: a) a first session in which an expert psychiatrist applies the APP Interview and Scale and evaluates the patient using DSM-IV criteria; b) three sessions in which personal anamnesis is collected by a trainee psychotherapist; c) a concluding session in which a formulation of a treatment plan is established. After this consultation phase, patients start individual or group psychotherapy within the service.

Concerning objective 2, we conducted a Principal Component Analysis (PCA) on 100 cases. Using the Monte-Carlo simulation system, three different components were found. Determinant was 2.91x10^7, coherent with a good preliminary analysis. The KMO index (KMO = 0.835) and Bartlett’s Sphericity Test (p < 0.001) also obtained good
values. Since there was correlation between the different components, the Oblimin rotation with delta = 0 was used.

**Results**

**Objective 1:** The results varied from $\alpha \geq 0.8$ (good) to $\alpha \geq 0.9$ (excellent), except for 4 items (absence of external impediments to change, self-object differentiation, realistic object perception) with $\alpha \geq 0.7$ (acceptable). The overall $\alpha = 0.669$ indicates an acceptable result from a clinician-report instrument (Tab. III).

**Objective 2:** The PCA showed a three-factor solution that explained 62.047% of the variance (Tab. IV). A PCA always extracts a number (n) of factors that explains 100% of the variance. We selected a three factor solution that allowed us to identify three major dimensions that explain the majority of the variance, and did not select the remaining variance that is explained only by one-item components that do not actually reflect any dimension. The variance explained from components $4^{th}$ to $n^{th}$ is due to the extraction algorithm, but has no clinical relevance. The first component extracted had an eigenvalue of 8.111 and a percentage of explained variance of 38.625%. It is composed of the following items: total structure, empathy, self-reflection, affect-differentiation, release of attachment, accepting help, self-objective differentiation, impulse control, realistic object perception, personal resources and strength, absence of secondary gain and duration of disorder. All items had a positive correlation in the component except for duration of disorder, which had a negative correlation with the component.

The second component extracted had an eigenvalue of 3.302 and a percentage of total variance explained of 15.724%. It was composed of the following items: personal resources and strength, concept of illness based to psychological complaints problems, presentation of psychological complaints, psychological mindedness, desired treatment form (psychotherapeutic treatment, (psycho)social support) duration of disorder (negative), absence of internal impediment and age of onset of the disorder. All items had a positive correlation in the component except for age of onset, which had a negative correlation.

The third component extracted had an eigenvalue of 1.617 and a percentage of variance explained of 7.698%. It was composed only of two items: subjective suffering and severity of symptoms, which positively correlated with each other.

**Objective 3:** The APP Scale was shown to be an easily applicable tool within our Unit in routine practice, and all the clinicians trained at the psychotherapy unit were able to administer it. It required only an extra 5 to 10 min to complete after the 50 min interview and does not significantly increase the workload as reported by interviewers. The interview follows the standards of an initial interview, except particular attention is given to some variables, namely those that are clinically essential for evaluation of the patient’s situation.

**Discussion**

The APP Scale is a reliable and feasible tool: it is easy and quick to fill in, and acceptable for both the patient and clinician. The statistical analysis showed a three-factor combination, that we named “ego strength”, “psychological expression” and “illness”.

- **Ego Strength:** this is a component that collects aspects related to the personality structure of the patient, personal resources (i.e. capacities and behaviour that can promote health, well-being and help to tolerate the illness and supportive care pathways), duration of the disorder and absence of secondary gain, which corresponds to the absence of social benefits (i.e. disability certification) from the disease or its consequences. This component shows that the stronger the Ego functioning is, the shorter the time between the onset of the disorder and the request for help, and vice versa.

- **Psychological Expression:** in this component there is correlation among the psychological presentation of the

<table>
<thead>
<tr>
<th><strong>Severity of symptoms</strong></th>
<th>0.874</th>
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<tr>
<td><strong>Subjective suffering</strong></td>
<td>0.840</td>
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<tr>
<td><strong>Presentation of psychological complaints/problems</strong></td>
<td>0.910</td>
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<td><strong>Concept of illness based to psychological factors</strong></td>
<td>0.896</td>
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<tr>
<td><strong>Desired treatment form: psychotherapeutic treatment</strong></td>
<td>0.917</td>
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<tr>
<td><strong>Personal resources and strengths</strong></td>
<td>0.806</td>
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<td><em>(Psycho)social support</em></td>
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<td><strong>Absence of external impediments to change</strong></td>
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<tr>
<td><strong>Absence of internal impediment</strong></td>
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<tr>
<td><strong>Absence of secondary gain</strong></td>
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<td><strong>Psychological mindedness</strong></td>
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<td><strong>Structure total</strong></td>
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<td><strong>Self reflection</strong></td>
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<td><strong>Self-object differentiation</strong></td>
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<td><strong>Realistic object perception</strong></td>
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<tr>
<td><strong>Impulse control</strong></td>
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<tr>
<td><strong>Empathy</strong></td>
<td>0.890</td>
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<tr>
<td><strong>Accepting help</strong></td>
<td>0.823</td>
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<tr>
<td><strong>Release of Attachments</strong></td>
<td>0.889</td>
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illness, the concept of illness based on psychological factors, and the desire of treating the problem in a psychological manner. It also concerns personal resources, the presence of a supporting social network, the absence of internal impediments to change and the capacity to recognise links among conflicts, stressful events and symptoms. The only item negative correlated to the previous ones is age of onset. It can be hypothesised that, together with the duration of disorder (which is positively correlated with all the other items), this could be connected to the presence of previous care attempts. This hypothesis should be verified by investigating the numbers of previous care attempts in future research.

- Illness: this component collects subjective suffering and severity of symptoms. While a two-factor solution was attempted, the first two components had clinically-inconclusive relavance. Accordingly, this third component, despite including only two items and despite explaining less variance than the other two factors, must be considered a as compensating solution. As a result of the PCA, there was an item that was not included in any of the components: “absence of external impediment to change”. This item regards those external factors – logistic, economic, organizational ones – that render the care pathway difficult. In the literature this variable is recognised to have a significant correlation with treatment outcomes. We hypothesise that this result is connected to the specific context in which the study was conducted: a public clinic, the only one in Milan that offers a public long-term psychotherapy service and which permits access to everyone regardless of provenance; moreover, patients who access the service are already selected, since it is a secondary level service. These factors reduce possible external impediments that could emerge in private practice or in first level public services. Thus, we think that the incidence of this item is under-represented in our sample, and have decided to maintain it for future analyses to verify what happens with a wider sample, in different contexts and when the relationship with outcome is studied.

**Conclusions**

The present study is the first phase of a broader research project that aims to reach a definitive version of the scale at multiple centres using a broader patient population. This is a pilot study that will end with the correlation between the APP Scale items and the psychotherapy outcome in our cohort of 100 cases. Reaching this first milestone will allow us to eliminate variables that are not predictive or irrelevant, and we will subsequently proceed with validation of the tool with an adequate sample and through other studies for comparison and validation. At present, the APP scale may represent a useful tool for the clinician to provide the patient with an indication for psychotherapeutic treatment through a checklist of problems of different nature that are all related to outcome.

Our purpose in publishing these results is to involve other services and research centres at a national and international level, with the hope that they will support further experimentation and perfection of a tool that appears to be essential to improve public health and optimise resources and the efficiency of mental health services.

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