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Research report

Negative affectivity as a transdiagnostic factor in patients with common mental disorders

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ABSTRACT

Background: Screening and monitoring systems are increasingly used in psychotherapy, but it has been questioned whether outcome measurement using multiple questionnaires is warranted. Arguably, type and number of assessment instruments should be determined by empirical research. This study investigated the latent factor structure of a multi-dimensional outcome measurement strategy used in English services aligned to the Improving Access to Psychological Therapies (IAPT) programme.
Methods: Factor analyses and structural equation models were performed on 11,939 intake assessments of outpatients accessing an IAPT service between 2008 and 2010. We examined whether three routinely employed instruments (PHQ-9 for depression, GAD-7 for anxiety, WSAS for functional impairment) assess empirically different dimensions.
Results: The instruments were found to assess mainly one general dimension and only some items of the GAD-7 and WSAS assess unique variance beyond this general dimension. In a structural equation model the disorder-specific factor scores were predicted by patients' diagnostic categories.
Limitations: Since a large naturalistic data base was used, missing data for diagnoses and scale items were encountered. Diagnoses were obtained with brief case-finding measures rather than structured diagnostic interviews.
Conclusion: Although the items seem to address mostly one dimension, some variance is due to differences between individuals in anxiety and impairment. While this generally supports multi-dimensional assessment in a primary care population, the clinical upshot of the study is to concentrate attention on transdiagnostic factors as a target for treatment.

1. Introduction

Patient monitoring systems employ standardized measures to follow and provide feedback on patient progress during treatment (Overington and Ionita, 2012). These systems (a) increase the probability of detecting deterioration during treatment, and (b) help to increase the benefit of therapy for deteriorating patients (Castonguay et al., 2013). While assessments in these contexts often summarise the patient's progress with regard to "general psychological distress", it may be helpful to provide more detailed assessments including other relevant measures to reduce judgement errors on patient progress (McAleavey et al., 2012; Ogles, 2013). Since the relevance of outcome measures varies from patient to patient depending on their clinical presentation, this calls for the availability of a range of assessment instruments, for example to assess more specific outcomes (e.g. depression symptoms) or mediating and moderating process variables (e.g. therapeutic alliance; Kazdin, 2009).

While this multi-dimensional outcome perspective has benefits and is appealing to clinicians, some have questioned whether the addition of diagnostic measures adds incremental value to established routines (Hunsley and Mash, 2005; Meyer et al., 2001). Reininghaus and Priebe (2012) have argued against using multiple measures unless they assess empirically distinct dimensions. Recent research suggests mixed findings, where some favour and others disfavour multiple dimensions. Recently, Cohen et al. (2013) analysed data from three measures of quality of life and depression in a trial investigating the treatment of depression. They found strong support for only one dimension underlying patients' responses to multiple measures, questioning the added value of using multiple instruments. Additionally, researchers have questioned the multi-dimensionality of instruments for assessments of psychological distress (Paap et al., 2011; Thomas, 2012). Other studies found results

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in support of using more than one dimension to assess patient symptomatology (Brodbeck et al., 2011; Crawford and Henry, 2003; Caspi et al., 2014; Markon, 2010; Page et al., 2007; Simms et al., 2012).

The present study aimed to investigate the latent factor structure of a multi-dimensional outcome measurement strategy routinely used in English services aligned to the Improving Access to Psychological Therapies (IAPT) programme. IAPT is a large-scale national programme which offers evidence-based psychological interventions for depression and anxiety disorders (for more detail: Clark et al., 2009). One of the defining features of the IAPT programme is its iterative application of a multi-dimensional battery of measures (see measures section below). IAPT applies a strategy that has been established internationally both in the realm of patient reported outcomes (Reininghaus and Priebe, 2012; Valderas et al., 2008; Willke et al., 2004) as well as in psychotherapy research (Castonguay et al., 2013; Howard et al., 1993; Lutz et al., 2011), but rigorous tests of the differential value of these instruments in outpatient populations are lacking.

Testing the structure of these instruments is not a trivial task since anxiety and depression often co-occur and the corresponding instruments are often highly correlated (e,g., Crawford and Henry, 2003). Some authors argue that both are causally related to one dimension that explains these high correlations ("internalising symptoms", Krueger and Markon, 2006; "negative affectivity", Clark and Watson 1991). Other authors see depression and anxiety as correlated but distinct constructs (Crawford and Henry, 2003; Page, Hooke and Morrison, 2007). Recently, authors have argued for acknowledging a general distress factor explaining the overlap between depression and anxiety symptoms while allowing for unique components of both disorders over and above this general factor (e.g., Brodbeck et al., 2011; Brown, Chorpita & Barlow, 1998; Norton et al., 2013; Simms et al., 2012). The goal of this investigation was therefore to test whether the three instruments used in the IAPT system measure distinct constructs and add incremental value to the screening process. To this end, we compared the results from several categorical data factor analyses based on these theoretical positions including items from all three measures to test the differentiation between depressive and anxious types of distress. In a second step, we used the diagnostic assessments recorded in clinical case records to test whether these predicted different patterns of psychological distress.

2. Method

2.1. Sample

This study was based on the analysis of anonymous clinical records for patients who accessed a primary care mental health service in the North of England between 2008 and 2010. Qualified mental health practitioners undertook assessments employing a semi-structured interview which aimed to establish the presenting problems, to gauge current risk factors, and to determine suitability for psychological therapy. The assessment interview was supplemented by self-rated case-finding measures for depression, anxiety, and work and social adjustment (described below). Those patients who were deemed suitable based on the likelihood of meeting criteria for a common mental disorder were offered treatment. Treatment options available in the service were in line with the national IAPT programme (Clark et al., 2009), and included low intensity (less than eight sessions) and high intensity (up to 20 sessions) Cognitive Behavioural Therapy, Interpersonal Psychotherapy for depression, and Eye Movement Desensitization and Reprocessing for post-traumatic stress disorder.

Data on 13,390 assessment records were gathered. Of these $N=11{,}939$ (89.2%) provided responses to at least three of the items of each instrument and these were all used in the following analysis. This sample consisted of 65.2% female patients, with a mean age of $M=37.93$ years ($SD=13.56$). The available diagnoses mapped onto four categories: depression (including major depressive episode and recurrent depression; $N=2{,}547$), mixed anxiety and depression ($N=2{,}098$), and generalised anxiety as well as anxiety disorders ($N=1{,}822$). The remaining diagnoses ($N=5{,}472$) reflected a range of common mental disorders (e.g. panic disorder, obsessive compulsive disorder, post-traumatic stress disorder, social anxiety, specific phobias) including $N=2{,}621$ coded as "not otherwise specified" (often reflecting transient stress, social and adjustment problems). For validation purposes the sample of $N=11{,}939$ cases was split randomly into two sub-samples: one estimation sample ($N=5{,}945$), and one validation sample ($N=5{,}994$). The distribution of demographic characteristics was not significantly different between those two samples (gender: $\chi^2(df=1)=.81$, $p=.37$; diagnosis: $\chi^2(df=3)=.31$, $p=.96$; age: $t(df=11{,}928.5)=1.72$, $p=.09$).

The study was carried out in accordance with the Declaration of Helsinki and Good Clinical Practice guidelines. Permission to use the anonymous data presented in this study was granted by a National Health Service (NHS) research ethics committee and the local NHS trust.

2.2. Instruments

The depression module of the Patient Health Questionnaire (PHQ-9; Spitzer et al., 2006) is a self-reported questionnaire to detect cases likely to meet criteria for depression as well as to rate symptom severity. The instrument consists of nine items, each corresponding to a diagnostic criterion for major depressive episodes (DSM-IV; American Psychiatric Association, 2000). Each criterion is rated on a four-point scale ranging from "not at all" to "nearly every day". The validity and reliability of the PHQ-9 scores have been demonstrated in a variety of populations and settings (Kroenke et al., 2001; Manea et al., 2012).

The GAD-7 questionnaire (Spitzer et al., 2006) consists of seven items that are rated on a four-point scale ranging from "not at all" to "nearly every day". These items were derived from the DSM-IV criteria for generalised anxiety disorders (GAD; American Psychiatric Association, 2000) as well as reviews of existing scales for anxiety disorders (Spitzer et al., 2006). Initially developed to detect GAD, this measure has been shown to be a useful case-finding tool for a range of other anxiety disorders (Lowe et al., 2008).

The Work and Social Adjustment Scale (WSAS) assesses the degree of impairment attributable to a specific mental health problem (Mundt et al., 2002). The WSAS consists of five items, each aimed at assessing the extent to which patients feel their disorder impairs them in their daily functioning (work, home chores, social leisure, private leisure, and relationships). Responses are captured on a nine-point scale ranging from "not at all" to "very severely impaired".

2.3. Statistical analysis: factor analytic structure

Factor analytic models were used to assess the number of latent variables needed to explain the responses as well as to investigate the relationship between these latent variables (Thomas, 2012). Because questionnaire data from rating scales are ordinal and often show skewed distributions we used polychoric correlations to estimate the factor models. Polychoric correlations assume bivariate normality of the two correlated variables, but responses to these two variables can be ordinal, and the relationship between the categories of the two items does not have to be