The BASIS-24 Behavior and Symptom Identification Scale

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The Behavior and Symptom Identification Scale 24 (BASIS-24) is a 24 item patient self-report questionnaire designed to assess treatment outcomes by measuring symptoms and functional difficulties experienced by individuals seeking mental health services. The survey is intended for adults of ages 18 and older who present a broad range of symptoms and problems at all levels of care including in inpatient, residential, partial and outpatient settings. The BASIS-24, which has been translated into five languages, can be used across a wide range of therapeutic treatment models. Scores are computed for the overall scale, as well as for six subscales that assess depression and functioning; interpersonal relationships; psychosis, substance abuse; emotional lability, and self-harm. Studies using the questionnaire have shown that its use is associated with an increase in patient satisfaction with care after the domain scores were discussed with the patient as part of developing a treatment plan. In this paper, the authors describe the measure, the procedures related to its use, its psychometric properties and the contexts in which it can be used.

Keywords: Behavior and Symptom Identification Scale; BASIS-24; treatment outcome; progress monitoring; psychotherapy

The Behavior and Symptom Identification Scale 24 (BASIS-24)

, copyrighted by McLean Hospital, is a 24 item patient self-report questionnaire designed to assess treatment outcomes by measuring symptoms and functional difficulties experienced by individuals seeking mental health services. The original tool, Behavior and Symptom Identification Scale 32 (BASIS–32) was developed in the early 1980s to meet the need for a brief but comprehensive mental health status measure that would be useful in assessing the outcomes of mental health treatment from the consumer's point of view. It is a measure of self-reported difficulty in the major symptom and functioning domains that lead to the need for mental health services (Eisen, Dill & Grob, 1994).

BASIS-24 sought to improve upon BASIS-32 by increasing applicability across diverse populations and improving the reliability and validity of the instrument. Revision of the instrument included (a) review of literature; (b) input from 75 researchers, administrators, clinical providers, and consumers; (c) readability analysis; (d) review of survey question design principles and methods; (e) meeting of the research team to review progress and make suggestions for the revision; (f) drafting of a revised instrument; (g) cognitive testing of the revised instrument; (h) analysis of cognitive test data; (i) further revisions of the instrument; (j) a second round of cognitive testing; (k) analysis of the second round of cognitive testing; and (l) further revisions and construction of the instrument for field-testing. The revised instrument was then tested on over 6,000 individuals who were receiving inpatient or outpatient treatment for mental health or substance abuse (Eisen et al., 2004a).

BASIS-24 is intended for adults, ages 18 and older, and is appropriate for individuals who present a broad spectrum of symptoms and problems at all levels of care including inpatient, residential, partial and outpatient. Furthermore, the instrument can be used across a wide range of therapeutic treatment models. It was designed to assess improvement over time regardless of type of mental health treatment. A BASIS-24 Adolescent Pilot version is also available. Both instruments can be used with multiple administrations throughout treatment and post-treatment follow-up (Eisen et al., 2004b). The adult version of BASIS-24 is available in English, Spanish, Portuguese, French, and Russian.

Domains Assessed

The BASIS-24 survey cuts across diagnoses, recognizing the wide range of symptoms and problems that occur across the diagnostic spectrum. BASIS-24 is designed to measure outcomes for a broad range of treatments and services encompassing many theoretical

orientations. Scores can be computed for the overall BASIS-24, as well as for six subscales: Depression and Functioning, Interpersonal Relationships, Psychosis, Substance Abuse, Emotional Lability, and Self-Harm.

The first of these domains, *Depression and Functioning*, seeks to assess daily/role functioning and depression and anxiety symptoms. The *Interpersonal Relationships* domain evaluates the client's perception of the quality of their interpersonal experiences with family and others. The *Psychosis* domain assesses four symptoms of psychotic disorders, such as hallucinations and delusions. The *Substance Abuse* domain seeks information regarding the client's urge to drink or use drugs as well as possible problems resulting from alcohol and/or drug use. The *Emotional Lability* domain, which measures what the Royal College of Psychiatrists describes as an "excessive emotional response to a minor stimulus," includes three items reflecting mood swings, racing thoughts and feeling short-tempered. Finally, the *Self-Harm* domain measures clients' thoughts about hurting themselves and/or ending their lives.

Use and Procedures

BASIS-24 is typically self-administered by the patient and takes between 5 and 15 minutes to complete. The 24 items are written at a fifth- to sixth-grade reading level, which maximizes the number of individuals who are able to complete the questionnaire by themselves. However, it can also be administered via computer, on the telephone, or in an interview. When the BASIS-24 is administered through a structured interview, a clinician, researcher, support staff member, or volunteer reads the items to the respondent and elicits ratings with the help of 8 × 11 laminated "response cards" on which the rating scale is printed in large letters. Telephone interviews and mailed self-report questionnaires can be used at discharge or termination and at follow-up time points (Eisen et al., 2004a; McLean Hospital, 2006).

Among the 24 items, each has five ordered response options reporting either the level of difficulty experienced (no difficulty to extreme difficulty), or the frequency with which a symptom or problem has occurred (none of the time to all of the time). Respondents answer each question describing behavior and symptoms during the past week. For example, "During the past week, how much of the time did you feel sad or depressed?" BASIS-24 is administered at the beginning of a treatment episode, with repeat assessments obtained at desired intervals to assess change during or following treatment. The 24 questions are scored on a 5-point scale (from 0 to 4) and each subscale and overall mean scores also range from 0 to 4, with 0 being the lowest severity of symptoms and 4 being the highest severity of symptoms. The overall BASIS-24 score is a weighted sum that is computed by multiplying the rating for each question by its weight and totaling the weighted ratings for each question. The score for each subscale is a weighted sum that is computed by multiplying the rating for each question in the subscale by its weight and totaling the weighted ratings for all questions in the subscale (McLean Hospital, 2006).

In order to use BASIS-24, a single-site client must purchase an annual site license for $US395. Organizations with multiple sites can purchase additional site licenses for $US95 each. Included with the license fee are a BASIS Instruction Guide, a survey form for photocopying and the scoring procedures and algorithm for the instrument. Each site license allows for an unlimited number of BASIS-24 administrations. Along with BASIS-24, clients may also purchase WebScore, an optional online scoring and reporting application. The cost of WebScore is based on the estimated number of surveys entered into the online application for each year (McLean Hospital, 2011).

Assessment and Treatment Planning

Evidence-based practice has been trending to include analysis of individual patient responses for real-time intervention and treatment planning in addition to the older models of aggregate benchmarking. Self-report measures are especially important in this new trend of measurement tools as an adjunct to treatment planning as they systematically inform providers about difficulties the patient may not otherwise express in other clinical measures (Newnham & Page, 2010). The use of a self-report tool also allows the patient to take a more active role in treatment planning. Studies using the BASIS-32 have shown an increase in patient satisfaction with care after the domain scores were discussed with the patient as part of developing the treatment plan. The patients specifically reported a greater feeling of involvement in care decisions and respect from the clinicians (Eisen, Dickey & Sederer, 2000). The use of self-report measures in treatment planning can be useful in more focused treatment as well as a better patient-clinician rapport.

Although the BASIS-24 is not designed to replace a comprehensive clinical evaluation, the tool documents the consumers' perspectives on the symptoms and problems that bring them to treatment. It is also simple to incorporate into a clinical evaluation process when already part of a Quality Improvement or outcome

assessment program, allowing it to fulfill both roles in the same administration (Eisen et al., 2004a). Using the same standardized tool for both individual planning and aggregate outcomes assessment also provides consistent metrics between the care objectives and its results. The constructs at the individual assessment level thus match those used to measure overall outcomes and assessment, leading to greater consistency.

The BASIS-24 can be used to identify primary and secondary problems from the individual consumer's perspective (Eisen et. al, 2004a). Where BASIS-24 subscales overlap with diagnosis, there is usually a consistency between subscale scores and clinical diagnosis in that consumers diagnosed with depression or anxiety tend to report more difficulty with depression and anxiety than do consumers with other diagnoses (Eisen, Dill & Grob, 1994). Frequently, however, consumers tend to report high levels of difficulty in areas that do not correspond to their diagnosis as well. Problems in interpersonal relationships, managing day-to-day life, and depression often tend to be identified as more difficult than psychotic symptoms for consumers diagnosed with schizophrenia (Eisen et. al, 2004a). In these cases, whereas a clinician may see psychosis as the main focus of treatment, the consumer may identify other priority areas for treatment. The BASIS-24 can thus highlight possible high levels of distress not directly symptomatic of primary diagnosis as well as areas in which the diagnosis has had a negative impact on day-to-day functioning. In addition, Eisen and Grob (1982) found that psychiatric outpatients in a rehabilitation program improved significantly in the areas they themselves had identified as goals for treatment, but did not improve in areas they had not identified, as indicated by both clinician and patient reports. Patient perception is shown to be a predictor of outcomes, and should thus be addressed at the planning stage in order to maximize the effectiveness of treatment. As evidence-based practice becomes more integrative of all facets of care, it is important to use each metric in one's toolbox to its maximum potential.

Technical Support

The process to use BASIS-24 begins with preregistration on www.ebasis.org, where the client can create an account and agree to the terms of a general service agreement. Once payment and completed paperwork, including signed end-user license agreement, has been received, the account will be approved by an eBASIS staff member and clients will be able to begin using BASIS-24. Additionally, large volume users can utilize BASIS-24's optical scanning forms. Clients can complete the survey on these forms and the eBASIS staff will provide scanning services at a current charge of $US1 per form so that data does not need to be manually entered.

Clients who wish to use BASIS-24 have four levels of service available to them: (a) BASIS-24 license; (b) license and access to WebScore; (c) license, WebScore, and Performance Measurement System Reporting; or (d) consultation. WebScore is an internet-based scoring and reporting tool for the BASIS-24 survey. It is an easy-to-use data entry and reporting application that lets users automatically score the BASIS-24 from a personal computer, download and print survey results, and maintain data for future analysis and reporting. Clients may try a free demo of WebScore for 30 days by signing up at https://secure.ebasis.org/basisdemo/login.php.

WebScore provides both patient-level and aggregate population-level reporting capabilities, which can be sorted by time point, level of care, gender, or age. Reports can also be produced by patient admission or discharge date. Results can be downloaded into a CSV/Excel file that can easily be imported into SPSS, SAS or other statistical software applications. For those clients who choose to utilize WebScore for online scoring, eBASIS Systems ensures the highest standards of confidentiality and security, including compliance with all HIPAA guidelines and requirements. Data is stored in a secure server and individual cases are not identified in any report or aggregate results. All hard-copy patient information is stored in confidential, locked areas and paper surveys are shredded after 3 years, once all data is verified, cleaned, and backed up (McLean Hospital, 2011).

The Performance Measurement System offers custom reports, including change scores for a given quarter, control charts showing month-by-month outcomes, and comparison charts comparing the client's data with national benchmarks. Consultation is available regarding design of an outcome assessment system, data collection, data management, and reporting, and can be customized to meet the organization's specific needs.

Psychometric Properties

Confirmatory factor analysis conducted with BASIS-24 items confirmed the six factors described above under BASIS-24 domains. The Adjusted Goodness of Fit Index (0.81), root mean square error of approximation (0.08), standardized root mean squared residual (0.06), Comparative

Fit Index (0.95), and Non-Normed Fix Index (0.95) all indicate adequate to excellent fit (Eisen et al., 2004b). Internal consistency reliability (Cronbach's alpha) coefficients for the 6 domains ranged from 0.75 to 0.89 for inpatients and from 0.77 to 0.91 for outpatients (Eisen et al., 2004b). When broken down by race-White, African-American, and Latino-Cronbach's alpha coefficients exceeded 0.70 for all domains and for all race/ethnicity groups for both inpatients and outpatients, with one exception: for Latino inpatients, the alpha was 0.66 for the emotional lability domain (Eisen et al., 2006). When broken down by gender, the internal consistencies ranged from 0.73 to 0.89 for males and 0.77 to 0.89 for females (Idiculla, 2008). Test-retest reliability coefficients ranged from 0.81 to 0.96 for inpatients, and 0.89 to 0.96 for outpatients (Eisen et al., 2006).

For both inpatients and outpatients, correlations of the BASIS-24 domain and summary scores with the Mental Component Score of the Short Form (SF)-12 (Ware et al., 1996) ranged from 0.15 to 0.77, and correlations with global ratings of mental health ranged from 0.12 to 0.75. Correlations of the BASIS-24 scores with the Physical Component Score (PCS) of the SF-12 ranged from 0.01 to 0.15 for inpatients, and from 0.06 to 0.28 for outpatients (Eisen et al., 2004b). In a later study comparing racial/ethnic groups, correlations of the BASIS-24 summary score with other self-reported measures of mental health status (MCS, global mental health, and satisfaction with life) ranged from 0.59 to 0.82, for both inpatients and outpatients in each group. Additionally, correlations between the summary score with PCS were consistently lower, ranging from 0.07 to 0.45 (Eisen et al., 2006), indicating that, as expected, BASIS-24 is substantially correlated with other measures of mental health, but not with measures of physical health.

Institutional Implementation

BASIS-24 is currently in use in 5 countries in over 200 hospitals, mental health centers, community-based outpatient clinics, schools and managed care organizations. BASIS-24 was previously used for accreditation purposes by The Joint Commission and is approved by the Massachusetts Behavioral Health Partnership for use in clinical outcomes measurement.

For more information about BASIS-24, please visit http://ebasis.org/ or contact by mail at McLean BASIS Plus/eBASIS, MS-112, McLean Hospital, 115 Mill Street, Belmont, MA 02478-9106;

by phone at (617) 855-2424;

or by email at basisadmin@mclean.harvard.edu.

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