

Anxiety-Depression-Assessment (ADA)

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INTRODUCTION

Anxiety can occur as a symptom of depression, and depression can be triggered by an anxiety disorder. Consequently, many individuals have both diagnoses concurrently, i.e., anxiety and depression (Hall-Flavin). Anxiety and depression frequently coexist. At least 85% of people with major depression also have significant anxiety symptoms (Clayton). Continuing, about 33% of people with depression have panic attacks during their depressive episodes.

Grohol (2008) demonstrated that it is important for healthcare professionals to assess anxiety during the initial diagnosis of major depression. Such co-existing anxiety can negatively affect treatment outcome if not taken into consideration and also treated. Grohol used the term “anxious-depression.”

Mixed anxiety-depression is the term that defines patients who suffer from both anxiety and depression. The World Health Organization’s ICD-10 describes mixed anxiety and depressive disorder (Wikipedia). The symptoms of mixed anxiety and depressive disorder resemble those presented in DSM-5 (2013) for depression and anxiety disorders. Brady & Sinha (2005) noted, “The high rate of co-occurrence of psychiatric disorders is well established.” The implications of adequate assessment and treatment of co-occurring anxiety and depression disorders is challenging but cannot be ignored.

To aid clinicians in identifying these disorders, Behavior Data Systems has developed the Anxiety-Depression-Assessment (ADA). The ADA is a brief, easily administered and interpreted test that is specifically designed to assess client anxiety and depression risk. The Anxiety-Depression Assessment (ADA) is a self-report test used to assess clients (patients) who are suspected of having anxiety and/or depression problems. The ADA is designed for use by clinicians, psychologists, counselors, treatment staff, probation officers and mental health professionals. The ADA is a patient-centered anxiety and depression risk assessment, which detects early problems and facilitates prompt intervention as warranted and treatment when necessary. The ADA enables accurate matching of problem severity with treatment intensity.

The ADA is composed of 151 true/false and multiple-choice items that comprise 8 scales or measures that evaluate constructs and behaviors associated with driver risk. The ADA requires approximately 30 minutes for completion and 3 minutes for a computer-scored report. The ADA can be administered individually or in groups. Automated scoring and interpretive procedures help ensure objectivity and accuracy. The language of the ADA is direct, non-offensive and uncomplicated making the ADA appropriate for people with sixth grade or higher reading abilities.

The ADA is to be used in conjunction with a review of available records and initial interview. No decision or diagnosis should be based solely on ADA results. Assessment is not to be taken lightly, as the resulting decisions drastically affect peoples’ lives.

Anxiety-Depression-Assessment Scales

1. Truthfulness Scale
 2. Self-Esteem Scale
 3. Depression Scale
 4. Generalized Anxiety Disorder
 5. Specific Phobias
 6. Social Anxiety
 7. Panic Attacks
 8. Agoraphobias
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UNIQUE FEATURES

This section discusses the unique features of the Anxiety-Depression-Assessment (ADA) including Truth Correction, Risk Ranges, the ADA database, and HIPPA compliance.

Truth Correction

A sophisticated psychometric technique permitted by computerized technology involves "truth-corrected" scores which are calculated individually for each ADA scale. Since it would be naive to assume everybody responds truthfully while completing any self-report test, the Truthfulness Scale was developed. The Truthfulness Scale establishes how honest or truthful a person is while completing the ADA. The Truthfulness Scale applies a truth-correction factor so that each scale score is referred to as a Truth-Corrected scale score. Each ADA scale is scored independently of the other scales. ADA scale scoring equations combine client pattern of responding, Truthfulness Scale and prior history. Truth-Corrected scale scores are converted to the percentile scores that are reported in the client ADA report.

Correlation's between the Truthfulness Scale and all other scales permit identification of error variance associated with untruthfulness. This error variance can then be added back into scale scores, resulting in more accurate "Truth-Corrected" scores. Unidentified denial or untruthfulness produces inaccurate and distorted results. Raw scores may only reflect what the client wants you to know. Truth-Corrected scores reveal what the client is trying to hide. Truth-Corrected scores are more accurate than raw scores.

Risk Range Percentile Scores

For each ADA scale respondents are classified into four risk ranges: Low Risk (zero to 39th percentile), Medium Risk (40th to 69th percentile), Problem Risk (70th to 89th percentile), and Severe Problem (90th to 100th percentile). Risk ranges represent degree of severity. Risk ranges

were established by converting raw scores to percentile scores by using cumulative percentage distributions (Behavior Data Systems, 2012). This is similar to the way in which students are assigned grades or scores for grading purposes in school. The 70th percentile is often used for passing grades and this same percentile initially began as a working criterion. Similarly, the 90th percentile is a benchmark for identifying severe problems. Early instrument development included the use of content experts to confirm the proposed risk ranges. Data analyses, in combination with field reports from experienced evaluators have confirmed that these percentile categories provide accurate identification of problem behavior (Behavior Data Systems, 2012).

In addition to establishing risk thresholds, the risk ranges serve an important role when interpreting Truthfulness Scale scores. A truthfulness concern is identified when a Truthfulness Scale score is at or above the Problem Risk range (70th percentile). These respondents are typically cautious, guarded or may be defensive in their answers. Scores in the Problem Risk range should be interpreted cautiously. Severe problem scores on the Truthfulness Scale (90th percentile and above) invalidates all scale scores. Classifying offenders according to pre-defined risk ranges provides an efficient and reliable solution for determining risk (Behavior Data Systems, 2012).

ADA Database

Every time an ADA is scored the data is automatically stored on the disc/flash drive for later inclusion in the ADA database. When the preset number of tests are administered the disc is returned for replacement, and the test data contained on these used discs is transferred, using confidential (no names) procedures, to the ADA database for later analysis. This database is statistically analyzed annually, at which time ADA test items are adjusted to reflect demographic changes or trends that might have occurred. This unique and proprietary database also enables the formulation of annual summary reports that are descriptive of the populations that are tested. Summary reports provide important information which may inform budgeting, resource allocation, recruitment, training, and program development.

Confidentiality (Delete Client Names)

Many agencies and programs are rightfully concerned about protecting their clients' confidentiality. The proprietary Delete Client Names option is provided to allow deletion of client names from test discs prior to their being returned for inclusion in the ADA database. This is optional and once the names have been deleted they are gone and cannot be retrieved. Deleting client names does not delete demographic information or test data. It only deletes the client names when the option is used. The option is available at any time and can be used whether the disc is full or not. Once the client names are deleted there can be no further editing of the client names which ensures client confidentiality.

SCALE DESCRIPTIONS

Truthfulness Scale is an important feature of the Anxiety-Depression Assessment (ADA). Socially desirable responding (answers) can significantly impact assessment results (Stoeber, 2001; McBurney, 1994; 1993; Paulhus, 1991). Denial and problem minimization has been shown to exacerbate lack of treatment progress (Marshall, Thornton, Marshall, Fernandez, & Mann, 2001; Brake & Shannon, 1997), and increased probability of treatment dropout (Daly & Peloski, 2000); while increasing the probability of recidivism (Kropp, Hart, Webster & Eaves, 1995; Grann & Wedin, 2002).

One of the first major psychological tests to use a truthfulness scale and truth-corrected scores was the Minnesota Multiphasic Personality Inventory (MMPI) which is the most widely used personality test in the U.S. and arguably the world. The ADA Truthfulness Scale's truth-correction equation is similar to that used in the MMPI, and converts raw scores to truth-corrected scores. Truth-corrected scores are more accurate than raw scores. It is important to establish a client's (patient's) truthfulness at the time of ADA testing, and this is accomplished with the ADA Truthfulness Scale.

2. Generalized Anxiety Disorder is characterized by excessive anxiety and worry for several months, about several events or activities. As cited in DSM-5, 2013, the excessive anxiety and worry are associated with three (or more) of the following six symptoms:

- Restless or on edge
- Easily fatigued
- Difficulty concentrating
- Irritability
- Muscle tension
- Sleep disturbance

The client's (patient's) excessive worry and anxieties cause noticeable distress and impairment in the client's social, occupational, interpersonal and recreational functioning. The symptoms of a generalized anxiety disorder tend to be chronic. In summary, the essential feature of a generalized anxiety disorder is excessive anxiety and worry about a number of events or activities (DSM-5, 2013). Common or frequent co-morbidities include other anxiety disorders and depression.

Five common anxiety disorders are included in the Anxiety-Depression Assessment (ADA) and these are: generalized anxiety disorder, social anxiety, agoraphobia, panic disorder and specific phobias. When a person experiences excessive anxiety in normal everyday situations on a regular basis, that person likely has an anxiety disorder.

3. Social Anxiety is characterized by noticeable fear or anxiety in one or more social situations in which the individual may be observed by others. The social situations almost always provoke excessive fear and anxiety. The intense fear, anxiety or avoidance behaviors cause impairment in the individual's social, occupational, interpersonal or recreational activities.

The central feature of social anxiety disorders is intense fear and anxiety of social situation in which the client may be observed, scrutinized or evaluated by others. In short, the concern, anxiety or fear is that the individual would be negatively evaluated because of the anxiety symptoms like excessive sweating, trembling, etc.

4. Panic Attacks are characterized by a sudden unexpected surge of intense fear, discomfort and anxiety that reaches a peak within minutes. Panic symptoms as set forth in the DSM-5, 2013 include: increased heart rate, excessive sweating, trembling or shaking, shortness of breath (like smothering), choking, chest pain, nausea, feeling dizzy/faint, chills or hot flashes, paresthesias (numbness/tingling), depersonalization, fear of losing control (going crazy) and fear of dying.

A panic attack is described as an abrupt surge of intense fear and discomfort that peaks within minutes. The persistent concern and worry about future panic attack symptoms (e.g., losing control, nausea, “going crazy,” fear of dying, etc.) are especially debilitating. Panic attacks are typically unexpected. Nevertheless, “expected” panic attacks occur after exposure to an object or situational to which panic attacks have occurred. The frequency and intensity of panic attacks vary widely. And panic attacks are often co-morbid with other anxiety disorders. When agoraphobia is present, a separate diagnosis of agoraphobia is given. Panic disorder is associated with high levels of social, occupational, interpersonal and recreational impairments. That said panic attack is not a DSM-5 mental disorder.

5. Agoraphobia is a noticeable and intense fear or anxiety triggered by real or imagined exposure to a variety of situations. DSM-5, 2013 sets forth the following common agoraphobia situations: 1. using public transportation, 2. being in open spaces, 3. being in enclosed spaces, 4. standing in line, 5. being in a crowd, and 6. being outside of one’s home alone.

Some agoraphobics also experience panic disorders. It’s often the fear of another panic attack that is debilitating. Other common co-morbid disorders include other anxiety disorders (e.g., social anxiety, generalized anxiety disorder, specific phobias, panic disorder) and depression.

In agoraphobia the patient fears and avoids places or situations that might cause panic. Severe agoraphobia can severely limit one’s ability to socialize, work, manage daily tasks or attend recreational activities. Agoraphobia can greatly restrict or limit one’s life activities. Some people with severe agoraphobia are not able to leave their home and become housebound. Without treatment, agoraphobia often gets worse.

6. Specific Phobias are characterized by intense fear and anxiety elicited by particular situations or objects. To meet specific phobia criterion the fear and anxiety must be intense or severe. The fear and anxiety may take the form of a panic attack. And the fear and anxiety is elicited every time the individual is exposed (comes into contact with) to the phobic object. The fear and anxiety occurs as soon as the phobic object is encountered. Consequently, the phobic individual actively avoids the phobic situation or object.

Specific phobias frequently occur with other anxiety disorders and depression. Consequently, there may be symptom overlap. However, specific phobias, fear and anxiety is elicited by a specific situation (e.g., flying) or object (e.g., snakes).

7. Self-Esteem Scale assesses a person's explicit valuing and appraisal of self. Self-esteem incorporates an attitude of acceptance-approval versus rejection-disapproval of self. Low self-esteem sufferers often report feelings of inadequacy, being undervalued, incompetence, hypersensitivity, and having difficulty adapting or adjusting to change. Self-esteem attacks are sometimes called "panic attacks" and often lead to feelings of remorse, depression and more anxiety.

Self-esteem refers to a person's appraisal of self. The concept of self-esteem is often addressed in clinical settings because, according to many clinicians, as individuals actions or behaviors can be viewed as a reflection of their self-esteem. When needed, counseling and psychotherapy can be helpful in developing healthy self-esteem. Self-esteem underlies and reflects depression and anxiety disorders.

8. Depression has been linked to impaired social, occupational, interpersonal and recreational activities. Depression is a major mental health disorder. DSM-5 (2013) sets forth symptoms of depression as:

- Depressed mood
- Diminished interest and pleasure in almost all daily activities
- Significant weight loss (or gain)
- Insomnia
- Psychomotor agitation or retardation
- Fatigue
- Feeling worthless
- Diminished ability to think
- Suicidal ideation (thoughts)

Depression is characterized by a two week period during which there is either a depressed mood and/or a loss of interest and pleasure in nearly all activities previously enjoyed. Major depression disorders are associated with high mortality, some of which is accounted for by suicide. Depression frequently co-occurs with (co-morbid) anxiety disorder and poor self-esteem.

An extreme or persistent depression disorder (dysthymia) involves a depressed mood for at least two years. During this two year period the individual has not been without symptoms for more than two months at a time. In other words, the depressive symptoms have persisted for at least two years.

Dysthymia and anxiety disorders are common co-morbid conditions (Corcoran & Walsh, 2006). Anxiety is defined as heightened worry, uneasiness, or apprehension (Bjornlund, 2010). Anxiety is characterized by feelings of powerlessness and an inability to cope with threatening imaginary and real events (McIntosh & Livingston, 2008). Depression is characterized by feelings of hopelessness, lack of energy and feelings of helplessness (Bjornlund, 2010).

EMPIRICAL RESEARCH

The Anxiety-Depression-Assessment (ADA) validation studies were conducted with established Minnesota Multiphasic Personality Inventory (MMPI) scales as well as Polygraph examinations and other reports. Reliability and validity studies have been conducted on substance abuse inpatients, outpatients, college students, job applicants, defendants, diversion program attendees, probationers, inmates and counseling patients.

1. Validation of the Truthfulness Scale (1985, N = 78)

The Truthfulness Scale in the ACDI is an important psychometric scale as these scores establish how truthful the respondent was while completing the ACDI. Truthfulness Scale scores determine whether or not ACDI profiles are accurate and are essential to the calculation of Truth-Corrected ACDI scale scores.

The Truthfulness Scale identifies respondents who are self-protective, recalcitrant and guarded, as well as those who minimized or even concealed information while completing the test. Truthfulness Scale items are designed to detect respondents who try to fake good or put themselves into a favorable light. These scale items are statements about oneself that most people would agree to. The following statement is an example of a Truthfulness Scale item, "Sometimes I worry about what others think or say about me."

This preliminary study used the 21 Truthfulness Scale items in the ACDI to determine if these Truthfulness Scale items could differentiate between respondents who were honest from those trying to fake good. It was hypothesized that the group trying to fake good would score higher on the Truthfulness Scale than the group instructed to be honest.

Method

Seventy-eight Arizona State University College students (1985) enrolled in an introductory psychology class were randomly assigned to one of two groups. Group 1 comprised the "Honest" group and Group 2 comprised the "Fakers" group. Group 1 was instructed to be honest and truthful while completing the test. Group 2 was instructed to "fake good" while completing the test, but to respond "in such a manner that their faking good would not be detected." The test, which included the ACDI Truthfulness Scale, was administered to the subjects and the Truthfulness Scale was embedded in the test as one of the five scales. Truthfulness Scale scores were calculated based on the number of deviant answers given to the 21 Truthfulness Scale items.

Results

The mean Truthfulness Scale score for the Honest group was 2.71 and the mean Truthfulness Scale score for Fakers was 15.77. The results of the correlation (product-moment correlation coefficient) between the Honest group and the Fakers showed that the Fakers scored significantly higher on the Truthfulness Scale than the Honest group ($r = 0.27, p < .05$).

The Truthfulness Scale successfully measured how truthful the respondents were while completing the test. The results of this study reveal that the Truthfulness Scale accurately detects "Fakers" from those students that took the test honestly.

2. Validation of the ACDI Truthfulness Scale using Criterion Measures (1989, N = 33)

The findings reported here are part of a larger examine of the ACDI, a juvenile chemical dependency assessment. The Truthfulness Scale results are reported here to demonstrate evidence of criterion validity.

In general terms, a test is valid if it measures what it is supposed to measure. The process of confirming this statement is called validating a test. A common practice when validating a test is to compute a correlation between it and another (criterion) test that purports to measure the same thing and that has been previously validated. For the purpose of this study (1989), the ACDI Truthfulness Scale was validated with comparable scales on the Minnesota Multiphasic Personality Inventory (MMPI). The MMPI was selected for this validity study because it is the most researched, validated and widely used objective personality test in the United States. The ACDI Truthfulness Scale was validated with the MMPI F Scale and L Scale. High scores on the F scale indicate lack of cooperation, desire to fake bad, haphazard approach to testing or failure to understand the items. High L Scale scores indicate attempts to fake good, deceptiveness or a need to appear in a good light. High scores on the ACDI Truthfulness Scale reflect guardedness, evasiveness, recalcitrance or impaired reading abilities.

Method

Thirty-three (33) adjudicated delinquent adolescents (1989) were administered both the ACDI and the MMPI. Tests were counterbalanced for order effects -- half were given the ACDI first and half the MMPI first. There were 29 males and 4 females, and they ranged in age from 15 to 18 years (average age 16.1). All participants had at least a 6th grade equivalent reading level.

Results and Discussion

Product-moment correlation coefficients were calculated between ACDI scales and MMPI scales. These results are summarized in Table 1. Correlation results presented in Table 1 show that the ACDI Truthfulness Scale significantly correlated (.01 level of significance) with all represented MMPI scales. In addition, the correlations were in predicted directions.

Table 1. MMPI scales and ACDI Truthfulness Scale (1989, N = 33)

<u>MMPI SCALES</u>	<u>ACDI Scale (Measure)</u>	
	Truthfulness	Significance Level
F Scale	0.687	0.01
L (Lie) Scale	0.590	0.01

These findings strongly support the validity of the ACDI Truthfulness Scale. The ACDI Truthfulness Scale was highly correlated with the MMPI criterion scales it was tested against. The large correlation coefficients support the validity of the ACDI Truthfulness Scale. The product-moment correlation coefficients testing the relation between ACDI Truthfulness Scale and MMPI scales were significant at the $p < .01$ level.

3. Validation of the Truthfulness Scale in a Sample of Substance Abuse Inpatients

The findings reported here are part of a larger examine of the SAQ, chemical dependency assessment. The Truthfulness Scale results are reported here to demonstrate evidence of criterion validity.

Selected scales in the Minnesota Multiphasic Personality Inventory (MMPI) were used as criterion measures for the different SAQ scales. The Truthfulness Scale was validated with MMPI L Scale, F Scale and K Scale. The Alcohol Scale was validated with MMPI MacAndrew Scale (MAC) and Psychopathic Deviate-Obvious (PD-O). The Drug Scale was validated with MMPI MacAndrew Scale and Psychopathic Deviate-Obvious. The Aggressiveness Scale was validated with MMPI Authority Problems (PD2), Psychopathic Deviate (PD), Manifest Hostility (HOS) and Resentment/Aggression (TSC-V). The Resistance Scale was validated with MMPI Ego Strength (ES), Social Responsibility (RE), Social Maladjustment (SOC), Social Alienation (PD4), Social Alienation (SCIA), Authority Conflict (AUT) and Suspiciousness (TSC-III). The Stress Coping Abilities Scale was validated with MMPI Psychasthenia (PT), Anxiety (A), Taylor Manifest Anxiety (MAS) and Tension/Worry (TSC-VII). The MMPI scales were chosen to compare to the SAQ scales because they measure similar attributes.

Method

The subjects used in the study were 212 substance (alcohol and other drugs) abuse inpatients in chemical dependency facilities. The SAQ and MMPI were administered in counterbalanced order.

Results and Discussion

The **Truthfulness Scale** correlates significantly in predicted directions with selected MMPI criterion scales, L Scale (lie, $p < .001$), F Scale (validity, $p < .001$) and K Scale (validity correction, $p < .001$). Other significant correlations with traditional MMPI scales include: PD (Psychopathic deviate, $p < .001$), ES (Ego Strength, $p < .001$), and RE (Social responsibility, $p < .001$); Harris MMPI subscales: PD2 (Authority Problems, $p < .001$), PD4 (Social Alienation, $p < .001$), SCIA (Social Alienation, $p < .001$); Wiggins MMPI content scales: SOC (Social Maladjustment, $p < .001$), HOS (Manifest Hostility, $p < .001$); Wiener-Harmon MMPI subscales: PDO (Psychopathic Deviant-Obvious, $p < .001$); Tryon, Stein & Chu MMPI cluster scales: TSC-V (Resentment/Aggressive, $p < .001$).

ADA RESEARCH FINDINGS

4. Anxiety-Depression-Assessment Reliability Study

This study uses data from online tested administered by clients of Behavior Data Systems Inc. 1,116 ADA tests were administered online between December 2014 and August 2019.

Participants: 47.0% were male, 52.6% were female, 57.9% were Caucasian, 10.1% were African American, 19.4% were Hispanic, <1% were Asian, 8.0% were Native American, and 1.7% responded other. 50.4% were single, 29.5% were married, 10.8% were divorced, 4.7% were

separated, and 1.5% were widowed. 62.4% of offenders had at least a high school education. 60.8% of offenders were between ages 21 and 40.

Reliability

Test reliability refers to a scale's consistency of measurement. Cronbach's Alpha, a measure of reliability, measured the internal consistency of each scale for each instrument administered by clients of Behavior Data Systems Inc. Perfect reliability is 1.00 and the professionally accepted standard of reliability for these types of instruments is .70-.80 or higher (Murphy & Davidshofer, 2001).

Table 1. ADA Reliability (N =1,116, 2019)

Scales	Coefficient Alpha
Truthfulness Scale	0.91
Self-Esteem Scale	0.82
Depression Scale	0.95
Generalized Anxiety Disorder	0.95
Specific Phobias	0.86
Social Anxiety	0.93
Panic Attacks	0.88
Agoraphobias	0.93

All scales exceed accepted reliability standards.

As more test administration data is collected on the ADA, reliability and validity studies will be conducted to establish empirical support for its use with patients.

SUMMARY

This document is not intended to be an exhaustive compilation of Anxiety-Depression-Assessment (ADA) research; however, it does summarize many research studies supporting the reliability, validity, and accuracy of the ADA. Moreover, ongoing ADA database research ensures an increasingly accurate picture of individuals with anxiety, depression, or mixed features of both disorders.

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