

## INTRODUCTION

The Generalized Anxiety Disorders Questionnaire 4th Edition (GAD-Q-IV, see Fig. 1; Newman, Zuellig, Kachin, Constantino, & Cashman, 2002) is a 9-item self-report measure, designed for use as an initial screen to diagnose Generalized Anxiety Disorder (GAD) based on the criteria of the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV; American Psychiatric Association, 1994). A scoring system and a means of using the GAD-Q-IV for diagnostic classification have been developed. The diagnostic classification, or categorical scoring scheme, involves examining the symptoms of an individual to determine whether that person meets diagnostic criteria. The dimensional scoring scheme involves summing the scores for individual items to create a total score.

Typically, to determine the effectiveness of a screening test, respondents complete the screening measure as well as a "gold standard" assessment such as a structured diagnostic interview. Four statistics (i.e., sensitivity, specificity, positive predictive power, and negative predictive power; see Fig. 2) are generally reported when comparing the screening instrument relative to the gold standard assessment.

In past research, Newman et al. (2002) evaluated the effectiveness of the dimensional scoring scheme of the GAD-Q-IV relative to the gold standard diagnosis as assessed with the Anxiety Disorder Interview Schedule 4th Edition (ADIS-IV; DiNardo, Brown, & Barlow, 1994) in a non-clinical, undergraduate population. Results demonstrated that a GAD-Q-IV score of 5.70 provided an optimal balance of specificity (97%) and sensitivity (69%), and an overall predictive power of 91%. Barnes, Haigh, and Fresco (2005) evaluated the effectiveness of both the dimensional and categorical scoring scheme of the GAD-Q-IV relative to the Structured Clinical Interview for DSM-IV-TR Axis I Disorders (SCID; First, Spitzer, Gibbon, & Williams, 2002) in a psychiatric outpatient community sample. Results demonstrated that the categorical scheme ( $Sn = .82$ ,  $Sp = .75$ ,  $PPV = .66$ ,  $NPV = .87$ ; Correctly Classified = 87%) was superior to the dimensional cut-score of 5.70 ( $Sn = .92$ ,  $Sp = .61$ ,  $PPV = .58$ ,  $NPV = .093$ ; Correctly Classified = 73%) in providing a balance between sensitivity and specificity. Furthermore, Barnes et al. (2005) determined that a cut-score of 7.66 provided an optimal balance of specificity (71%) and sensitivity (85%)—correctly classifying 78%.

The purpose of the present study to replicate previous research regarding the effectiveness of the GAD-Q-IV in an outpatient sample (Barnes et al., 2005) and extend these results to a primary care setting.

## METHOD

107 primary care patients (82% female; 50% Caucasian; 42% African American; 8% Other; age range 19 to 67 with a mean of 38 years) were recruited in the waiting room at the Family Medicine Center at Akron City Hospital and completed the GAD-Q-IV. Participants were scheduled for a subsequent appointment with graduate students who administered the SCID. (SCID; First, et. al, 2002). Interviewers were kept blind to GAD-Q-IV responses

## RESULTS

- 38 clients met criteria for GAD based on the SCID
- 64 clients did not meet criteria for GAD based on the SCID

|                                        | Categorical Scoring System | Dimensional Scoring System* |
|----------------------------------------|----------------------------|-----------------------------|
| Correctly identified as having GAD     | 18/27                      | 24/27                       |
| Correctly identified as not having GAD | 69/80                      | 48/80                       |
| Sensitivity                            | .67                        | .89                         |
| Specificity                            | .86                        | .60                         |
| Positive Predictive Power              | .62                        | .43                         |
| Negative Predictive Power              | .89                        | .94                         |
| Overall % Correctly Identified         | 81%                        | 67%                         |

\* Newman et al., 2002: Cut score 5.70

Fig. 1

ADIS-IV SCHEDULE

ADIS-IV Q-IV

GAD-Q-IV

1. Do you experience excessive worry?

2. Is your worry excessive in intensity, frequency, or amount of distress it causes?

3. Do you find it difficult to control the worry on any day during the past 6 months?

4. Do you worry excessively or uncontrollably about things such as being late for an appointment, doing reports, homework, etc.?

5. Please list the most frequent things about which you worry excessively or uncontrollably (check the circle in front of each worry you list).

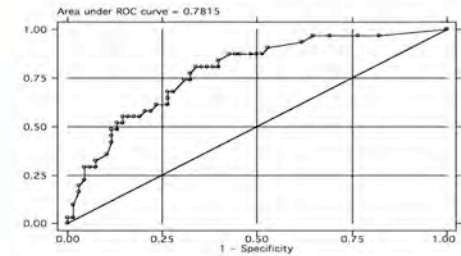
6. During the past 6 months, have you been bothered by excessive worries (worry days) that last more than 1 hour?

7. During the past 6 months, have you often been bothered by any of the following symptoms?

8. How much do worry and physical symptoms interfere with your life, work, school activities, family, etc.?

9. How much are you bothered by worry and physical symptoms (how much trouble does it cause you)?

## RESULTS



### Receiver Operator Characteristics (ROC) Analysis

- ROC analyses were used to determine the optimal cut score using the Newman et al. (2002) dimensional score as a predictor of SCID GAD
- Area Under the Curve (AUC) = .78
- A score of 7.667 provided the best balance of  $Sn$  (.85) and  $Sp$  (.72)
- 74% of patients were correctly classified with the 7.66 cut score
  - 21 of 27 true GADs
  - 62 of 80 true non-GADs

Fig. 2

**Sensitivity ( $Sn$ ):** Proportion of those who have the condition who are predicted to have the condition. ( $Sn = a/a+c$ )

**Specificity ( $Sp$ ):** Proportion of those who do NOT have the condition who are predicted NOT to have the condition. ( $Sp = d/b+d$ )

**Positive Predictive Power (PPP):** Proportion of those predicted to have the condition who actually have the condition. ( $PPP = a/a+b$ )

**Negative Predictive Power (NPP):** Proportion of those predicted NOT to have the condition who actually do NOT have the condition. ( $NPP = d/c+d$ )

|            |          | Actual   |          |
|------------|----------|----------|----------|
|            |          | Positive | Negative |
| Prediction | Positive | a        | b        |
|            | Negative | c        | d        |

$n = a+b+c+d$

## DISCUSSION

Findings from the present study provide further support for the use of the GAD-Q-IV as a screening measure for identifying patients who will meet diagnostic criteria for GAD based on clinician assessment.

In line with past research (Barnes et al. 2005), findings also indicate that the categorical scoring scheme, as compared to the dimensional scoring scheme, may provide a better balance of identifying true positives without including false positives.

## REFERENCES

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