

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.

When determining the effectiveness of a screening test, studies tend to have respondents complete the screening measure as well as undergo an elaborate, "gold standard" assessment such as a clinician administer 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. They found the GAD-Q-IV score of 5.70 provided an optimal balance of specificity (97%) and sensitivity (69%), and an overall predictive power of 91%. The purpose of the present study was twofold. First, we sought to evaluate the effectiveness of the categorical and dimensional scoring schemes of the GAD-Q-IV in an outpatient clinical sample. Second, we sought to identify the optimal cut score for the GAD-Q-IV from the dimensional scoring scheme.

METHOD

Clients presenting for treatment at the Psychological Clinic at Kent State University completed the GAD-Q-IV and were evaluated by clinic therapists with the Structured Clinical Interview for DSM-IV-TR Axis I Disorders (SCID; First, Spitzer, Gibbon, & Williams, 2002). KSU is a large, Midwestern university, serving approximately 24,000 students. The clinic offers individual, couples, and family outpatient treatment to university students and staff, and residents of the community. Approximately 35% to 40% of clients seen at the clinic are children and adults from the community, while the remainder are KSU students. Interviewers in the clinic were all second or third year doctoral students trained in diagnostic assessment with the SCID, and were receiving weekly supervision in diagnostic case formulation. Interviewers were also kept blind to GAD-Q-IV responses.

One hundred and two consecutive adult clients (33 men, 69 women) presenting for treatment at the Psychological Clinic were included in the current study. Age of clients ranged from 18 to 45, with a mean of 23 years ($SD = 5.4$).

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	31/38	35/38
Correctly identified as not having GAD	48/64	39/64
Sensitivity	.82	.92
Specificity	.75	.61
Positive Predictive Power	.66	.58
Negative Predictive Power	.87	.93
Overall % Correctly Identified	78%	73%

* Newman et al., 2002; Cut score 5.70

Fig. 1

GAD-Q-IV

	Yes	No
1. Do you experience excessive worry?	<input type="radio"/>	<input type="radio"/>
2. Is your worry excessive in intensity, frequency, or amount of distress it causes?	<input type="radio"/>	<input type="radio"/>
3. Do you find it difficult to control the worry (or stop worrying) once it starts?	<input type="radio"/>	<input type="radio"/>
4. Do you worry excessively or uncontrollably about <u>minor things</u> , such as being late for an appointment, minor repairs, homework, etc.?	<input type="radio"/>	<input type="radio"/>
5. Please list the most frequent topics about which you worry excessively or uncontrollably (darken the circle in front of each worry you list):		
<input type="radio"/> _____	<input type="radio"/> _____	
<input type="radio"/> _____	<input type="radio"/> _____	
<input type="radio"/> _____	<input type="radio"/> _____	
6. During the <u>last six months</u> , have you been bothered by excessive worries more days than not?	Yes <input type="radio"/>	No <input type="radio"/>
7. During the <u>past six months</u> , have you often been bothered by any of the following symptoms?		
<input type="radio"/> restlessness or feeling keyed up or on edge	<input type="radio"/> Irritability	
<input type="radio"/> difficulty falling/staying asleep or restless/unrefreshing sleep	<input type="radio"/> being easily fatigued	
<input type="radio"/> difficulty concentrating or mind going blank	<input type="radio"/> muscle tension	
8. How much do worry and physical symptoms interfere with your life, work, social activities, family, etc.?		
<input type="radio"/> None	<input type="radio"/> Moderate	<input type="radio"/> Mid
<input type="radio"/> Severe	<input type="radio"/> Very Severe	<input type="radio"/> Very Severe
9. How much are you bothered by worry and physical symptoms (how much distress does it cause you)?		
<input type="radio"/> None	<input type="radio"/> Moderate	<input type="radio"/> Mid
<input type="radio"/> Severe	<input type="radio"/> Very Severe	<input type="radio"/> Very Severe

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

$n = a+b+c+d$

RESULTS

- Among the 64 clients without a SCID GAD diagnosis, the categorical and dimensional approaches were used to examine what SCID diagnoses the patients received after getting a positive GAD diagnosis on the GAD-Q-IV (see Fig. 3)

	Categorical Scoring System	Dimensional Scoring System*
Negative SCID GAD, Positive GAD-Q-IV GAD	16/64	25/64
Major Depressive Disorder	6/22	9/22
Dysthymic Disorder	3/5	3/5
Social Phobia	2/2	2/2
PTSD	2/7	2/7
Panic Disorder	2/6	2/6
OCD	2/2	2/2
Anxiety Disorder NOS	3/8	5/8
Any Anxiety Disorder Dx	8/22	10/22

* Newman et al., 2002; Cut score 5.70

- 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) = .86
 - A score of **7.667** provided the best balance of Sn (.87) and Sp (.72)
 - 78% of patients were correctly classified with the 7.667 cut score
 - 33 of 38 true GADs
 - 46 of 64 true non-GADs
- ROC analyses were also conducted using a cut score from a continuous variable without the skip out rule of Newman et al. (2002)
 - Area Under the Curve (AUC) = .82
 - A score of **21.5** provided the best balance of Sn (.71) and Sp (.78)
 - 76% of patients were correctly classified with the 21.5 cut score
 - 27 of 38 true GADs
 - 50 of 64 true non-GADs

DISCUSSION

Findings from the present study support the use of the GAD-Q-IV as a screening measure for identifying clients who will meet diagnostic criteria for GAD based on clinician assessment. Findings also indicate that the categorical scoring scheme may provide a better balance of finding true positives without including false positives as compared to the published dimensional scoring scheme.

REFERENCES

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