

**ADMINISTRATION AND SCORING MANUAL**

**FOR THE**

**Y-OQ<sup>TM</sup>-SR 2.0**

**SELF-REPORT VERSION OF  
THE YOUTH OUTCOME QUESTIONNAIRE**

**FIFTH PRINTING (08-03)**

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# **ADMINISTRATION AND SCORING MANUAL**

**FOR THE**

## **Y-OQ™-SR 2.0**

**Youth Outcome Questionnaire-Self Report**

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Because of the efforts of these people and organizations, the Y-OQ™-SR 2.0 is now ready for use with the public. It is our pleasure to offer this paper and pencil questionnaire at low cost to the professional community for unlimited use. We request that users of the Y-OQ™-SR 2.0 carefully follow our licensing requirements. We would also appreciate your support in encouraging your colleagues to properly license and use this tool appropriately. With this type of support, we will be able to offer the Y-OQ™-SR 2.0 as one of the soundest, most competitively priced mental health outcome instruments anywhere.

M. Gawain Wells, Ph.D.  
Gary M. Burlingame, Ph.D.

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## **INTRODUCTION**

The Self-Report Version of the Youth Outcome Questionnaire (Y-OQ™-SR 2.0) is a self-report measure of treatment progress for adolescents ages 12-18 receiving mental health treatment. Unlike diagnostic measures oriented to the measurement of psychopathology, the Y-OQ™-SR 2.0 is specifically constructed as a progress tracking and outcome measurement device that assesses behavior change as the adolescent clients themselves perceive it. They complete the questionnaire at intake, to establish a severity baseline, and then complete it repeatedly at regular intervals so that their treatment progress can be tracked. As described later, psychometric calculations from the normative database permit determination of the client's behavioral similarity at each measurement interval to a partial hospital population, outpatient populations, and a large, untreated, community sample. Using cut-off scores and reliable change indices (RCI's), clinicians and/or administrators can determine whether the client's behavior is within the "normal" range of behavior.

The Y-OQ™-SR 2.0, like its predecessor, the Y-OQ™ (Burlingame, Wells, & Lambert, 1996), is composed of 64 items that comprise six separate subscales designed to access several behavioral domains of children and adolescents experiencing behavioral difficulties. Seven of the items are written and reverse-scored to describe elements of healthy behavior, effectively increasing the range of the total Y-OQ™-SR 2.0 score, as well as providing a gross check on accurate completion. The measure takes approximately 7 minutes to complete, depending, of course, on how careful the client is while completing it. Each item is rated on a five-point Likert scale (0-4). It is important to note that the Y-OQ™-SR 2.0 *is not* an equivalent form of, or interchangeable with, the Y-OQ™. The norms and psychometric properties are distinct for each instrument. As with most popular psychometric instruments, the Y-OQ™-SR 2.0 will continue to be studied in years to come. This manual represents our first public release of this tool; as such, users should view the information as preliminary. Users can expect additional psychometric studies in the future since several are underway as this manual was prepared for publication.

## **TEST DEVELOPMENT**

Like the Y-OQ™, the Y-OQ™-SR 2.0 was designed with several priorities in mind: 1) The measure had to be brief, 2) it had to be sensitive to change over short periods of time, 3) it had to be available at nominal cost, and 4) it had to maintain high psychometric standards of reliability and validity. The questionnaire was written to be, as nearly as possible, parallel to the parent/guardian version. Each question was rewritten in first person and in language appropriate to a fourth grade reading level. Following the construction of an initial draft, the wording was tested and revised in three focus groups of adolescents participating in a partial hospital program. With each question, members of the group were asked to read the question and describe what they thought the intent of the question was, essentially asking them to "back-translate" the wording. Where there were difficulties with questions, the groups helped construct new wordings that more accurately reflected the meaning sought.

## DESCRIPTION OF SUBSCALES

### Intrapersonal Distress (ID)

The purpose of this subscale is to assess the amount of emotional distress in the adolescent. Anxiety, depression, fearfulness, hopelessness, and self-harm are aspects measured by the ID subscale. Since depression and anxiety are frequently correlated in assessment instruments (Burlingame, et al., 1995), no attempt was made at differentiating these symptoms. High scores indicate a considerable degree of emotional distress in the client.

### Somatic (S)

This subscale assesses change in somatic distress that the adolescent may be experiencing. Items address typical symptoms such as headaches, dizziness, stomachaches, nausea, bowel difficulties, and pain or weakness in joints. High scores indicate increased numbers of somatic symptoms, while low scores indicate either absence or unawareness of such symptoms.

### Interpersonal Relations (IR)

The purpose of this subscale is to assess issues relevant to the adolescent's relationship with parents/caretakers, other adults, and peers. Attitude towards others, communication and interaction with family and friends, cooperativeness, aggressiveness, arguing, and defiance are questioned. High scores indicate that the adolescent reports significant interpersonal difficulty, while low scores reflect a cooperative interpersonal demeanor.

### Critical Items (CI)

This subscale describes features of adolescents often found in inpatient services where short-term stabilization is the primary change sought. It assesses change in paranoia, obsessive-compulsive behaviors, hallucination, delusions, suicide, mania, and eating disorders. A high score may indicate the need for more protective/restrictive intervention beyond standard outpatient treatment (i.e., inpatient, partial hospital, or residential care). We advise providers to give serious attention to a high score on any single item.

### Social Problems (SP)

This subscale assesses problematic behaviors that are socially related, but of a more severe nature, than those assessed in the IR subscale. Many of the items describe conduct problems or aggressive behaviors that involve the violation of social mores. Items include truancy, sexual problems, running away, vandalism, and substance abuse. Another feature of items in this subscale is that they are rather more slow to change, whereas content tapped by many of the other subscales are more amenable to change in brief time periods as a result of treatment intervention.

### Behavioral Dysfunction (BD)

This subscale describes change in the adolescent's ability to organize, complete, and concentrate on tasks; it also assesses task-related frustration, inattention, hyperactivity and impulsivity. Although many of the items on this scale tap features of specific disorders (e.g., Attention Deficit Hyperactivity Disorder), the scale is not intended to be diagnostic. Like all the scales, it tracks behavioral change.

### Y-OQ™-SR 2.0 Total Score

The Total Score is simply a summation of items from all six scales. It reflects total distress in an adolescent's life. Like the OQ-45® total (Lambert et al., 1996) and the Y-OQ™ total (Burlingame et al., 1996), this value tends to be the best index to track global change and has the highest reliability and validity when compared to the scales individually.

## **ADMINISTRATION**

The Y-OQ®-SR 2.0 requires no instruction beyond those printed on the answer sheet. The adolescent client rates each of the 64 items on a 5-point Likert scale.

At the risk of noting the obvious, we wish to reaffirm how important it is that test administrators encourage clients to fill out the scale both honestly and conscientiously. Also, any negative attitudes expressed by test administrators about the test might significantly alter the client's responses. We encourage administrators to be cautious in the presentation and explanation of the Y-OQ™-SR 2.0 so that the client may provide valid responses.

### Time

Under normal circumstances, respondents will complete the test in approximately 7 minutes. Especially careful respondents may take 15 or more minutes to complete the test.

### Scoring

Scoring the Y-OQ™-SR 2.0 is a fairly simple, straightforward procedure. Total and subscale scores are derived by adding the item values that load on each score. For example, if item 1 is endorsed with a value of 3 (i.e., the box with the number 3 by the side of it is filled in), then the weight given item 1 for both the subscale of which it is a part and the total score is 3. This is then added to the scores of other items in the scale to receive a subscale (or total if all 64 items are added) score. Note that there are eight negatively scored items that occur in several subscales (items 7, 16, 24, 32, 45, 47, 53, and 60) that tap healthy behaviors that may increase with mental health treatment. That is, appropriate treatment should not only attenuate negative symptoms, but should also increase positive behaviors. Accordingly, the scoring of these healthy behaviors is weighted as follows:

Y-OQ™-SR 2.0 Response	Appropriate Weight
4	-2
3	-1
2	0
1	1
0	2



The Total Score (TOT) is calculated by summing the client's ratings across all 64 items. This yields a TOT range from -16 to 240. A higher score represents a more disturbed individual.

The intrapersonal distress score (ID) is calculated by summing the patient's ratings on items 1, 3, 5, 9, 15, 17, 25, 32, 33, 34, 41, 49, 53, 57, 61, 62, 63, and 64. The ID scale has a score range of -4 to 68.

The somatic score (S) is calculated by summing the patient's ratings on items 2, 10, 18, 26, 35, 42, 50, and 54. The S scale has a score range of 0 to 32.

The interpersonal relations score (IR) is calculated by summing the patient's ratings on items 4, 7, 11, 16, 19, 24, 27, 36, 37, and 43. The IR scale has a score range of -6 to 34.

The social problems score (SP) is calculated by summing the patient's ratings on items 6, 13, 22, 29, 31, 39, 47, and 55. The SP scale has a score range of -2 to 30.

The behavioral dysfunction score (BD) is calculated by summing the patient's ratings on items 8, 14, 23, 30, 40, 45, 48, 52, 56, 59, and 60. The BD scale has a score range of -4 to 40.

The critical items score (CI) is calculated by summing the patient's ratings on items 12, 20, 21, 28, 38, 44, 46, 51, and 58. The CI scale has a score range of 0 to 36.

#### Missing Data

If clients omit answers to items, substitute values can be used. This substitute value is calculated by computing the mean of the remaining items in the subscale of which the missing value is a part, rounding to the nearest whole number, and inserting the value in place of the missing value. Given this procedure, it is recommended that protocols with missing data be considered cautiously and considered invalid if more than 5 items are left unanswered.

### **NORMATIVE DATA**

Normative data were drawn from several samples within the Intermountain Western United States. Adolescents in junior high and high schools who had never received mental health treatment were invited to participate through their schools. Schools were chosen whose children came from a broad spectrum of SES levels and family living arrangements. An incentive of one dollar was given to the school for each useable questionnaire returned. Initially, students took a consent form home to their parents/guardians. Following receipt of parental consent, we mailed the questionnaire to the adolescent with a consent form for him or her to complete.

Three separate patient samples were collected from a large community mental health center, a partial hospital setting of a major health care corporation, and an outpatient substance abuse treatment agency. Parents were asked to complete the Y-OQ™ at intake; adolescents responded to the Y-OQ™-SR at the first treatment session or shortly thereafter. Across all samples (N = 1,334), 49% were male and 51% female. In the clinical sample (N = 821), 55% were male and 45% female.

The means and standard errors for the three normative samples are depicted in Table 1. As anticipated, there are very large differences on the total Y-OQ™-SR 2.0 between the three samples. The community normal (untreated) sample was significantly below that of the clinical groups (partial hospital outpatient, residential),  $F(3, 1333) = 61.1$ ,  $p < .0001$ . Reliable differences do not appear between the clinical groups. As will be seen, one of the effects that is observed throughout the analyses is a truncation of range. Adolescents are unwilling to self-report the extreme scores that are observed by their parents. Comparisons generally between parents and children is that children are more aware of their fears and depression, while parents are more willing to report aggressive, acting-out behaviors. These differences highlight some of the reasons why the Y-OQ™-SR 2.0 scores are *not* interchangeable or equivalent to Y-OQ™ results.

**Table 1: Normative Groups for the YOQ™-SR Total Score (TOT)**

Sample	N	Mean	S.E.
Residential	224	61.22	2.47
Outpatient	228	67.07	2.48
Partial Hospital	291	65.29	2.29
Community	512	34.21	1.31

**Table 2: Domain Scores by Normative Groups for the YOQ™-SR 2.0**

Setting	BD1	CI1	ID1	IR1	S1	SP1	TOTYOQ1
<i>Community</i>							
Mean	8.3828	5.0801	13.9570	.0996	5.4883	1.2051	34.2129
N	512	512	512	512	512	512	512
Std. Error of Mean	.3383	.1900	.4898	.2110	.1880	.1763	1.3147
<i>Partial Hospital</i>							
Mean	13.4570	8.2646	21.0275	7.3918	7.3505	7.8007	65.2921
N	291	291	291	291	291	291	291
Std. Error of Mean	.4741	.3683	.8402	.3947	.3790	.3909	2.2983
<i>Residential</i>							
Mean	13.9018	7.8348	20.3036	7.8750	6.3080	5.0000	61.2232
N	224	224	224	224	224	224	224
Std. Error of Mean	.5489	.4464	.8828	.3589	.38840	.3893	2.4757
<i>Outpatient</i>							
Mean	14.0395	8.9474	20.3070	8.3333	6.9518	8.4912	67.0702
N	228	228	228	228	228	228	228
Std. Error of Mean	.5335	.4537	.8189	.3757	.3443	.4149	2.4833
<i>Total</i>							
Mean	11.7181	7.0607	17.9265	4.9108	6.3043	4.9040	52.8246
N	1,334	1,334	1,334	1,334	1,334	1,334	1,334
Std. Error of Mean	.2270	.1628	.3500	.1826	.1448	.1725	1.0285

## CUT-OFF SCORE

In their discussion of assessment of clinically significant change, Jacobsen and Truax (1991) developed a formula for establishing cut-off scores to distinguish clinical levels from normal levels of behavior. That is, when an individual's reported score on the instrument falls below the cut-off score, one may assume that the individual's behavior is within the levels reported by those who have not sought treatment. The formula devised by Jacobsen and Truax is:

$$c = \frac{(SD_1)(mean_2) + (SD_2)(mean_1)}{SD_1 + SD_2}$$

Using this formula, cut-off scores can be derived between any two normative samples for comparative purposes in evaluating treatment outcome. We have devised a cut-off score between the community sample and the clinical samples (inpatient and outpatient combined), since this seems the most rational procedure to compare individuals for treatment outcome. Cut-offs for the Y-OQ™-SR 2.0 Total Score and for the subscale scores are as follows: Total: 47; Intrapersonal Distress: 17; Somatic: 6; Interpersonal Relations: 3; Social Problems: 3; Behavior Dysfunction: 11; and Critical Items: 6.

We recommend the cut-off scores presented in Table 3 for general purposes since they are based on large, diverse samples. If special populations are being assessed, however, it may be more appropriate to construct new normative samples and compute new cut-off scores for that particular group.

## RELIABLE CHANGE INDEX

A second element entailed in the assessment of clinically significant change proposed by Jacobsen and Truax (1991) is the determination of how much reported improvement (or deterioration) is necessary for one to be confident that the change is "real," i.e., more than statistical artifact. Jacobsen and Truax devised a formula for calculation of such change termed the reliable change index (RCI). In order for an individual's score to be considered clinically significantly changed, it must cross the cut-off score and exceed the RCI value. Their formula is as follows:

$$RCI = \frac{(pre-) - (post - treatment)}{S_{diff}(1.96)}$$

$$S_{diff} = \sqrt{2S_E^2}$$

$$S_E = SD \sqrt{1 - r_{xx}}$$

The standard error of measure (SE) is computed using the internal consistency of the Y-OQ™-SR 2.0, which is .96 for the total score (computed using all normative

samples), and a pooled standard deviation value (SD). The resulting  $S_E$  value is inserted into the standard error of difference formula ( $S_{diff}$ ). This value is then multiplied by the  $z$ -value of the significance level desired; in this case 1.96 ( $p < .05$ ). Thus, the resulting value represents the size of the difference needed to achieve reliably significant change, given the error of the instrument and the standard deviation of the normative samples. Respective reliability and standard deviation values are used to compute RCIs for each subscale. The RCI's for the total score and subscale scores is as follows: Total: 18; Intrapersonal Distress: 9; Somatic: 6; Interpersonal Relations: 6; Social Problems: 5; Behavior Dysfunction: 12; and Critical Items: 6.

Similar to the cut-off score, we recommend the use of the RCI presented here for most general purposes. If specialized or more specific RCI values are desired, appropriate norms can be gathered and new RCI values can be derived using the formulas given above.

Table 3: ANOVA Analyses of Gender Differences in the Community Normal Group					
		N	Mean	F	Sig.
BD1	Male	192	8.8906	1.402	.237
	Female	319	8.0627		
	Total	511	8.3738		
CI1	Male	192	5.1250	.030	.862
	Female	319	5.0564		
	Total	511	5.0822		
ID1	Male	192	12.4740	5.459	.020
	Female	319	14.8307		
	Total	511	13.9452		
IR1	Male	192	1.2500	19.567	.0001
	Female	319	-.6332		
	Total	511	7.436E-02		
S1	Male	192	4.5781	14.116	.0001
	Female	319	6.0188		
	Total	511	1.1996		
SP1	Male	192	2.1875	19.523	.0001
	Female	319	.6050		
	Total	511	1.1996		
TOTYOQ1	Male	192	34.5052	.043	.836
	Female	319	33.9404		
	Total	511	34.1526		

## GENDER DIFFERENCES

Testing for gender differences on the parent-report Y-OQ™ community normal group revealed no significant differences. On the the self-report Y-OQ™-SR 2.0 for the community normal sample, however, even though there were no Total Score differences, gender disparities did emerge on subscales in domains that are predictable from adolescent developmental literature: (1) females evidence more disturbance than males in Intrapersonal Distress (tapping anxiety and depression particularly) and Somatic subscales

(headaches, stomachaches, etc.), and (2) males report more disturbance on Interpersonal Relations and Social Problems, both of which tap externalizing, aggressive behaviors. See Table 3.

Of even more interest are the gender comparisons on the combined patient groups. There, females generally reported, or were willing to report, more disturbances on several of the scales, including the total score. It may be, of course, as indicated; that female patients are simply more willing to report their difficulties. However, if the differences are valid, it would appear that the perturbation required to have a female being treated is greater than that for males. In other words, perhaps by the time female adolescents are being seen in these facilities, they have generally more problems than do males. See Table 4.

Table 4: ANOVA Analyses of Gender Differences in the Patient Groups					
		<i>N</i>	<i>Mean</i>	<i>F</i>	<i>Sig.</i>
BD1	Male	451	13.6984	.166	.684
	Female	370	13.9270		
	Total	821	13.8015		
CI1	Male	451	7.2572	26.663	.0001
	Female	370	9.5676		
	Total	821	8.2984		
ID1	Male	451	18.0798	32.367	.0001
	Female	370	23.2324		
	Total	821	20.4019		
IR1	Male	451	7.5809	2.975	.085
	Female	370	8.2919		
	Total	821	7.9013		
S1	Male	451	5.6519	42.576	.0001
	Female	370	8.2351		
	Total	821	6.8161		
SP1	Male	451	7.2949	.194	.659
	Female	370	7.0973		
	Total	821	7.2058		
TOTYOQ1	Male	451	59.5632	17.337	.0001
	Female	370	70.3514		
	Total	821	64.4251		

## AGE DIFFERENCES

Three groupings were created to examine possible age differences, roughly corresponding to early, mid-, and late adolescence: 12 to 14, 15 to 17, and 18 to 19. Analyses of the combined samples revealed that younger adolescents were either experiencing overall greater difficulties or, again, were more willing to report greater difficulties;  $F(1,331) = 13.78$ ,  $p < .001$ . That is, like the gender differences observed, if the findings are valid, in order for younger adolescents to be in treatment, they may be

experiencing increased levels of difficulty in comparison to older patients. See Table 5 for total subscale analyses by age group.

<b>Table 5: ANOVA Analyses of Age Group Differences</b>				
<i>Group</i>	<i>Age Range</i>	<i>Mean</i>	<i>S.D.</i>	<i>N</i>
BD1	12 to 14	13.0677	8.9870	325
	15 to 17	11.6896	8.2128	873
	18 to 19	8.6765	5.9664	136
	Total	11.7181	8.2915	1,334
CI1	12 to 14	7.6523	6.8159	325
	15 to 17	7.0939	5.7832	873
	18 to 19	5.4338	4.2474	136
	Total	7.0607	5.9459	1,334
ID1	12 to 14	18.8954	13.7805	325
	15 to 17	17.0195	12.6916	873
	18 to 19	15.0147	10.3122	136
	Total	17.9265	12.7827	1,334
IR1	12 to 14	7.0554	6.8016	325
	15 to 17	4.6838	6.4627	873
	18 to 19	1.2426	5.7857	136
	Total	4.9108	6.6697	1,334
S1	12 to 14	6.3354	5.3427	325
	15 to 17	6.3299	5.3552	873
	18 to 19	6.0662	4.7096	136
	Total	6.3043	5.2869	1,334
SP1	12 to 14	5.6769	6.4992	325
	15 to 17	5.0218	6.3130	873
	18 to 19	2.3015	5.0630	136
	Total	4.9040	6.3016	1,334
TOTYOQ1	12 to 14	58.6831	41.1589	325
	15 to 17	52.8385	36.8273	873
	18 to 19	38.7353	28.7380	136
	Total	52.8246	37.5663	1,334

## PSYCHOMETRIC PROPERTIES

### Reliability

The reliability of the Y-OQ™-SR 2.0 was tested using Chronbach's alpha with the entire sample of adolescents (N = 1,334). The Total Score had a remarkably high internal consistency estimate of .96 across the three groups. Coefficient alphas for the subscales are as follows: Intrapersonal Distress: .91; Somatic: .73; Interpersonal Relations: .77; Social Problems: .84; Behavior Dysfunction: .78; and Critical items: .81. The lowest estimate found, the Somatic subscale, is suggestive of that scales greater item heterogeneity.

Nevertheless, like the Y-OQ™, the overall very high reliability estimate of the Y-OQ™-SR 2.0 suggests a strong single factor underlying the several subscales of the questionnaire.

### Sensitivity and Specificity

While the Y-OQ™-SR 2.0 was not designed to be a diagnostic device but specifically to track therapeutic change, it is useful to examine its utility as a screening device for psychopathology. Two of the operating characteristics of the instrument are useful in that regard. Sensitivity is the proportion of the “true positives” that are correctly identified. In other words, sensitivity measures the degree to which patients from the clinical samples are correctly identified as being clinical. The sensitivity of the Y-OQ™-SR 2.0 is .66, meaning that two-thirds of the clinical sample would be identified when utilizing the cut-off score of 46. Specificity is the proportion of the “true negatives” correctly identified; i.e., the members of the community normal sample that are correctly identified as non-clinical in their score elevation. The specificity of the Y-OQ™-SR 2.0 is .74, meaning that 74% of the community normal sample had scores that fell below the cut-off score of 46. Thus, the current information suggests that the Y-OQ™-SR 2.0 presently should not be utilized for screening purposes, in that one-third of the clinical cases would be missed, and one-fourth of the non-clinical cases would be identified as clinical.

A consideration of the measurement process, as well as the characteristics of the adolescents responding, indicates why these results may be obtained. Like the Y-OQ™, we have defined the untreated adolescents as being normal and the adolescents in treatment as clinical. Yet, some adolescents who have never been in treatment may, in the opinion of professionals, be in need of such care. Moreover, some adolescents are in treatment for difficulties which are related to distrust and suspicion of authority. A self-report instrument, therefore, is more likely to be falsified by patients who have made it a practice of keeping their feelings and behaviors hidden from adults. Other adolescent patients may complete the questionnaire carelessly, not wanting to be bothered. Parenthetically, while more work needs to be done to detect dissimulation on the questionnaire, we have found that a rough indicator of an invalid protocol may be in the reverse-scored items. If they are responded to in ways identical to the problem behaviors, one can be confident that the respondent has completed the protocol inaccurately.

## **CONCLUSION**

Studies are underway to establish other psychometric characteristics of the Y-OQ™-SR 2.0; particularly, other tests of reliability and studies of criterion validity comparisons to extant adolescent self-report questionnaires. However, the data analyses conducted thus far suggest that it is, indeed, a parallel instrument to the Y-OQ™ and that it can be utilized with confidence with adolescents in treatment—with the caveat, of course, that any self-report instrument is liable to falsification. Other studies are in process to establish the Y-OQ™-SR 2.0's sensitivity to change as a treatment tracking device. We anticipate revisions to the questionnaire and this manual as data becomes available. In the meantime, we repeat the request stated in the manual for the Y-OQ™. Inasmuch as our goal is to have created a measure that is well standardized, brief, and inexpensive, we invite clinicians, agencies, and other researchers to share their data with us as they utilize the

instrument. In that way, we can further refine this self-report version of the Youth Outcome Questionnaire.



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