Supplementary Online Content

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This supplementary material has been provided by the authors to give readers additional information about their work.

eAppendix. Technical Appendix

1 Item Factor Analysis Based on Item Response Theory

IRT-based item factor analysis makes use of all information in the original categorical responses and does not depend on pairwise indices of association such as tetrachoric or polychoric correlation coefficients. For that reason it is referred to as *full information* item factor analysis. It works directly with item response models giving the probability of the observed categorical responses as a function of latent variables descriptive of the respondents and parameters descriptive of the individual items. It differs from the classical formulation in its scaling, however, because it does not assume that the response process has unit standard deviation and zero mean; rather it assumes that the *residual* term has unit standard deviation and zero mean. The latter assumption implies that the response processes have zero mean and standard deviation equal to

$$\sigma_{y_j} = \sqrt{1+\Sigma_v^d \alpha_{jv}^2}\ .$$

Inasmuch as the scale of the model affects the relative size of the factor loadings and thresholds, we rewrite the model for dichotomous responses in a form in which the factor loadings are replaced by factor slopes, a_{jv}, and the threshold is absorbed in the intercept, c_j:

$$y_j = \sum_{v=1}^{d} a_{jv}\theta_v + c_j + \varepsilon_j\ .$$

To convert factor slopes into loadings we divide by the above standard deviation and similarly convert the intercepts to thresholds:

$$\alpha_{jv} = a_{jv}/\sigma_{y_j} \quad \text{and} \quad \gamma_j = -c_j/\sigma_{y_j}\ .$$

Conversely, to convert to factor analysis units, we change the standard deviation of the residual from 1 to

$$\sigma_{\varepsilon_j}^{*} = \sqrt{1-\Sigma_v^d \alpha_{jv}^2}\ ,$$

and change the scale of the slopes and intercept accordingly:

$$a_{jv} = \alpha_{jv}/\sigma_{\varepsilon_j}^{*} \text{ and } c_j = -\gamma_j/\sigma_{\varepsilon_j}^{*}\ .$$

For polytomous responses, the model generalizes as:

$$z_j = \sum_{v=1}^{d} a_{jv}\theta_v,$$

$$P_{jh}(\theta) = \Phi(z_j + c_{jh}) - \Phi(z_j + c_{j,h-1})\ ,$$

where $\Phi(z_j + c_{j0}) = 0$ and $\Phi(z_j + c_{jm_j}) = 1 - \Phi(z_j + c_{j,m_j-1})$ as previously. In the context of item factor analysis, this is the multidimensional generalization of the *graded* model introduced by Samejima (1969).

2 Confirmatory Item Factor Analysis

In confirmatory factor analysis, indeterminacy of rotation is resolved by assigning arbitrary fixed values to certain loadings of each factor during maximum likelihood estimation. An important example of confirmatory item factor analysis is the bi-factor pattern for general and group factors, which applies to tests and scales with item content drawn from several well-defined sub-areas of the domain in question. To analyze these kinds of structures for dichotomously scored item responses, Gibbons & Hedeker (1992) developed full-information item bi-factor analysis for binary item responses, and Gibbons extended it to the polytomous case (Gibbons et.al., 2007). To illustrate, consider a set of n test items for which a d-factor solution exists with one general factor and $d-1$ group or method-related factors. The bi-factor solution constrains each item j to a non-zero loading α_{j1} on the primary dimension and a second loading ($\alpha_{jv}, v = 2,\ldots,d$) on not more than one of the $d-1$ group factors. For four items, the bi-factor pattern matrix might be

$$\boldsymbol{\alpha} = \begin{bmatrix} \alpha_{11} & \alpha_{12} & 0 \\ \alpha_{21} & \alpha_{22} & 0 \\ \alpha_{31} & 0 & \alpha_{33} \\ \alpha_{41} & 0 & \alpha_{43} \end{bmatrix}$$

This structure, which Holzinger & Swineford (1937) termed the ``bi-factor'' pattern, also appears in the inter-battery factor analysis of Tucker (1958) and is one of the confirmatory factor analysis models considered by Jöreskog (1969). In the latter case, the model is restricted to test scores assumed to be continuously distributed. However, the bi-factor pattern might also arise at the item level (Muthén, 1989). Gibbons & Hedeker (1992) showed that paragraph comprehension tests, where the primary dimension represents the targeted process skill and additional factors describe content area knowledge within paragraphs, were described well by the bi-factor model. In this context, they showed that items were conditionally independent between paragraphs, but conditionally dependent within paragraphs.

The bi-factor restriction leads to a major simplification of likelihood equations that (1) permits analysis of models with large numbers of group factors since the integration always simplifies to a two-dimensional problem, (2) permits conditional dependence among identified subsets of items, and (3) in many cases, provides more parsimonious factor solutions than an unrestricted full-information item factor analysis.

3 The Bi-factor Model

In the bi-factor case, the graded response model is

$$z_{jh}(\theta) = \sum_{v=1}^{d} a_{jv}\theta_v + c_{jh}\,, \tag{1}$$

where only one of the $v = 2,\ldots,d$ values of a_{jv} is non-zero in addition to a_{j1}. Assuming independence of the θ, in the unrestricted case, the multidimensional model above would require a d-fold integral in order to compute the unconditional probability for response pattern $\mathbf{u}$, i.e.,

$$P(\mathbf{u} = \mathbf{u}_i) = \int_{-\infty}^{\infty}\int_{-\infty}^{\infty}\ldots\int_{-\infty}^{\infty} L_i(\theta)g(\theta_1)g(\theta_2)\ldots g(\theta_d)d\theta_1 d\theta_2\ldots d\theta_d\,, \tag{2}$$

for which numerical approximation is limited as previously described. Gibbons & Hedeker (1992) showed that for the binary response model, the bi-factor restriction always results in a two-dimensional integral regardless of the number of dimensions, one for θ_1 and the other for $\theta_v, v > 1$. The reduction formula is due to Stuart (1958), who showed that if n variables follow a standardized multivariate normal distribution where the correlation $\rho_{ij} = \sum_{v=1}^{d}\alpha_{iv}\alpha_{jv}$ and α_{iv} is nonzero for only one v, then the probability that respective variables are simultaneously less than γ_j is given by,

$$P = \prod_{v=1}^{d}\int_{-\infty}^{\infty}\left\{\prod_{j=1}^{n}\left[\Phi\left(\frac{\gamma_j - \alpha_{jv}\theta}{\sqrt{1-\alpha_{jv}^2}}\right)\right]^{u_{jv}}\right\}g(\theta)d\theta, \tag{3}$$

where $\gamma_j = -c_j/y_j$, $\alpha_{jv} = a_{jv}/y_j$, $y_j = (1 + a_{j1}^2 + a_{jv}^2)^{1/2}$, $u_{jv} = 1$ denotes a nonzero loading of item j on dimension v ($v = 1,\ldots,d$), and $u_{jv} = 0$ otherwise. Note that for item j, $u_{jv} = 1$ for only one d. Note also that γ_j and α_{jv} used by Stuart (1958) are equivalent to the item threshold and factor loading, and are related to the more traditional IRT parameterization as described above.

This result follows from the fact that if each variate is related only to a single dimension, then the d dimensions are independent and the joint probability is the product of d unidimensional probabilities. In this context, the result applies only to the $d-1$ content dimensions (i.e., $v = 2,\ldots,d$). If a primary dimension exists, it will not be independent of the other $d-1$ dimensions, since each item now loads on each of two dimensions. Gibbons & Hedeker (1992) derived the necessary two-dimensional generalization of Stuart's (1958) original result as

$$P = \int_{-\infty}^{\infty}\left\{\prod_{v=2}^{d}\int_{-\infty}^{\infty}\left[\prod_{j=1}^{n}\left(\Phi\left[\frac{\gamma_j - \alpha_{j1}\theta_1 - \alpha_{jv}\theta_v}{\sqrt{1-\alpha_{j1}^2-\alpha_{jv}^2}}\right]\right)^{u_{jv}}\right]g(\theta_v)d\theta_v\right\}g(\theta_1)d\theta_1\,, \tag{4}$$

For the graded response model, the probability of a value less than the category threshold $\gamma_{jh} = -c_{jh}/y_j$ can be obtained by substituting γ_{jh} for γ_j in the previous equation. Let $\delta_{ijh} = 1$ if person i responds positively to item j in category h and $\delta_{ijh} = 0$ otherwise. The unconditional probability of a particular response pattern $\mathbf{u}_i$ is then

$$P(\mathbf{u} = \mathbf{u}_i) = \int_{-\infty}^{\infty} \left\{ \prod_{v=2}^{d} \int_{-\infty}^{\infty} \left[\prod_{j=1}^{n} \prod_{h=1}^{m_j} \left[\Phi_{jh}(\theta_1, \theta_v) - \Phi_{jh-1}(\theta_1, \theta_v) \right]^{\delta_{ijh} \cdot u_{jv}} \right] g(\theta_v) d\theta_v \right\} g(\theta_1) d\theta_1 , \tag{5}$$

which can be approximated to any degree of practical accuracy using two-dimensional Gauss-Hermite quadrature, since for both the binary and graded bi-factor response models, the dimensionality of the integral is 2 regardless of the number of subdomains (i.e., $d - 1$) that comprised the scale.

4 Parameter Estimation

Gibbons & Hedeker (1992) showed how parameters of the item bi-factor model for binary responses can be estimated by maximum marginal likelihood using a variation of the EM algorithm described by Bock & Aitkin (1981). For the graded case, the likelihood equations are derived as follows.

Denoting the vth subset of the components of θ as $\theta_v^* = \begin{bmatrix} \theta_1 \\ \theta_v \end{bmatrix}$, let

$$\begin{aligned} P_i &= P(\mathbf{u} = \mathbf{u}_i) \\ &= \int_{\theta_1} \left\{ \prod_{v=2}^{d} \int_{\theta_v} \left[\prod_{j=1}^{n} \prod_{h=1}^{m_j} \left(\Phi_{jh}(\theta_v^*) - \Phi_{jh-1}(\theta_v^*) \right)^{\delta_{ijh} \cdot u_{jv}} \right] g(\theta_v) d\theta_v \right\} g(\theta_1) d\theta_1 \\ &= \int_{\theta_1} \left\{ \prod_{v=2}^{d} \int_{\theta_v} L_{iv}(\theta_v^*) g(\theta_v) d\theta_v \right\} g(\theta_1) d\theta_1 , \end{aligned} \tag{6}$$

where

$$L_{iv}(\theta_v^*) = \prod_{j=1}^{n} \prod_{h=1}^{m_j} \left(\Phi_{jh}(\theta_v^*) - \Phi_{jh-1}(\theta_v^*) \right)^{\delta_{ijh} \cdot u_{jv}} .$$

Then the log-likelihood is

$$\log L = \sum_{i=1}^{s} r_i \log P_i , \tag{7}$$

where s denotes number of unique response patterns, and r_i the frequency of pattern i. As the number of items gets large, s typically is the number of respondents and $r_i = 1$. Complete details of the likelihood equations and their solution are provided in Gibbons et.al. (2007).

5 Trait Estimation

In practice, the ultimate objective is to estimate the trait level of person i on the primary trait the instrument was designed to measure. For the bi-factor model, the goal is to estimate the latent variable θ_1 for person i. A good choice for this purpose (Bock & Aitkin, 1981) is the expected *a posteriori* (EAP) value (Bayes estimate) of θ_1, given the observed response vector $\mathbf{u}_i$ and levels of the other subdimensions $\theta_2 \ldots \theta_d$. The Bayesian estimate of θ_1 for person i is:

$$\hat{\theta}_{1i} = E(\theta_{1i} \mid \mathbf{u}_i, \theta_{2i} \ldots \theta_{di}) = \frac{1}{P_i} \int_{\theta_1} \theta_{1i} \left\{ \prod_{v=2}^{d} \int_{\theta_v} L_{iv}(\theta_v^*) g(\theta_v) d\theta_v \right\} g(\theta_1) d\theta_1 . \quad (8)$$

Similarly, the posterior variance of $\hat{\theta}_{1i}$, which may be used to express the precision of the EAP estimator, is given by

$$V(\theta_{1i} \mid \mathbf{u}_i, \theta_{2i} \ldots \theta_{di}) = \frac{1}{P_i} \int_{\theta_1} (\theta_{1i} - \hat{\theta}_{1i})^2 \left\{ \prod_{v=2}^{d} \int_{\theta_v} L_{iv}(\theta_v^*) g(\theta_v) d\theta_v \right\} g(\theta_1) d\theta_1 . \quad (9)$$

These quantities can be evaluated using Gauss-Hermite quadrature as previously described.

In some applications, we are also interested in estimating a person's location on the secondary domains of interest as well. For the vth sub-domain, the EAP estimate and its variance can be written as:

$$\hat{\theta}_{vi} = E(\theta_{vi} \mid \mathbf{u}_i, \theta_{1i}) = \frac{1}{P_i} \int_{\theta_v} \theta_{vi} \left\{ \int_{\theta_1} L_{iv}(\theta_v^*) g(\theta_1) d\theta_1 \right\} g(\theta_v) d\theta_v , \quad (10)$$

and

$$V(\theta_{vi} \mid \mathbf{u}_i, \theta_{1i}) = \frac{1}{P_i} \int_{\theta_v} (\theta_{vi} - \hat{\theta}_{vi})^2 \left\{ \int_{\theta_1} L_{iv}(\theta_v^*) g(\theta_1) d\theta_1 \right\} g(\theta_v) d\theta_v . \quad (11)$$

6 Item Information Functions

Suppose there are $i = 1,2,\ldots N$ examinees, and $j = 1,2,\ldots n$ items. Let the probability of a response in category $h = 1,2,\ldots m_j$ to graded response item j for examinee i with factor θ be denoted by $P_{ijh}(\theta)$. We call $P_{ijh}(\theta)$ a category probability. $P_{ijh}(\theta)$ is given by the difference between two adjacent boundaries.

$$P_{ijh}(\theta) = P(x_{ij} = h \mid \theta) = P^*_{ijh}(\theta) - P^*_{ijh-1}(\theta) \tag{12}$$

where $P^*_{ijh}(\theta)$ is the boundary probability. The boundary probability P^*_{ijh} and category probability $P_{ijh}(\theta)$ are related as:

$$\begin{aligned}
&P^*_{ij0} = 0,\\
&P^*_{ij1} = P_{ij1}(\theta),\\
&P^*_{ij2} = P_{ij1}(\theta) + P_{ij2}(\theta),\\
&\cdots\\
&P^*_{ijh} = P_{ij1}(\theta) + P_{ij2}(\theta) + \cdots + P_{ijh}(\theta),\\
&\cdots\\
&P^*_{ijm_j} = P_{ij1}(\theta) + P_{ij2}(\theta) + \cdots + P_{ijm_j-1}(\theta) + P_{ijm_j}(\theta) = 1.
\end{aligned}$$

In general,

$$P^*_{ijh} = \sum_{g=1}^{h} P_{ijg}(\theta). \tag{13}$$

Let $P_{ij}(\theta)$ be given by the following multinomial probability model:

$$P_{ij}(\theta) = P(x_{ij} \mid \theta) = \prod_{h=1}^{m_j} P_{ijh}^{1_{\{x_{ij}=h\}}} \tag{14}$$

where

$$1_{\{x_{ij}=h\}} = \begin{cases} 1 & \textit{if } x_{ij} = h \\ 0 & \textit{otherwise.} \end{cases}$$

For simplicity, we drop the index i in the subsequent notation.

For the unidimensional model, Samejima (1969) defined the item information function (IIF) as:

$$I_j(\theta) = \sum_{h=1}^{m_j} \frac{1}{P_{jh}(\theta)} \left(\frac{\partial P_{jh}(\theta)}{\partial \theta}\right)^2$$

$$= \sum_{h=1}^{m_j} \frac{(P^{*'}_{jh}(\theta) - P^{*'}_{jh-1}(\theta))^2}{P^*_{jh}(\theta) - P^*_{jh-1}(\theta)} \tag{15}$$

The definition of information for the multidimensional case is the same as that given in the previous equation for the unidimensional case. However, in the multidimensional case, information corresponds to the composite of factors in the θ space. At each point in the θ space, the shape of multidimensional item response surface differs on the direction of the movement from the point. For the multidimensional model with a graded response item, Yao and Schwarz (2006) defined IIF as:

$$I_j(\theta) = \sum_{h=1}^{m_j} \frac{(\nabla_\alpha P_{jh}(\theta))^2}{P_{jh}(\theta))}$$

where

$$\theta : p \ x \ 1 \ vector$$

$$\nabla_\alpha P_{jh}(\theta) = \left(\frac{\partial P_{jh}}{\partial \theta}\right)(\cos\alpha_j)$$

$$\left(\frac{\partial P_{jh}}{\partial \theta}\right)' = \left(\frac{\partial P_{jh}}{\partial \theta_1}, \ldots, \frac{\partial P_{jh}}{\partial \theta_p}\right)$$

$$(\cos\alpha_j)' = (\cos\alpha_{j1}, \ldots, \cos\alpha_{jp}).$$

α is the vector of angles with the coordinate axes that define the direction taken from the θ point, and ∇_α is the directional derivatives in the direction α.

In the bi-factor model, the IIF expression can be written as:

$$I_j(\theta) = \sum_{h=1}^{m_j}\left(\frac{1}{P_{jh}(\theta)}\right)\left((\frac{\partial P_{jh}}{\partial \theta_1}, \frac{\partial P_{jh}}{\partial \theta_2}) \cdot (\cos\alpha_{j1}, \cos\alpha_{j2})'\right)^2 \quad (17)$$

where θ_1 and θ_2 are primary and secondary factors, respectively. Under the normal ogive model, the boundary probability is given by:

$$P_{jh}^*(\theta) = \Phi(z_{jh})$$
$$= \int_{-\infty}^{z_{jh}} \frac{1}{\sqrt{2\pi}} e^{-\frac{t^2}{2}} dt$$

where

$$z_{jh} = a_{j1}\theta_1 + a_{j2}\theta_2 + c_{jh}.$$

Then, the IIF has a specific form:

$$I_j(\theta) = \sum_{h=1}^{m_j}\left(\frac{1}{P_{jh}}\right)\left[(a_{j1}\phi(z_{jh}) - a_{j1}\phi(z_{jh-1}), a_{j2}\phi(z_{jh}) - a_{j2}\phi(z_{jh-1})) \cdot (\cos\alpha_{j1}, \cos\alpha_{j2})'\right]^2$$

$$= [\sum_{h=1}^{m_j} \frac{[\phi(z_{jh}) - \phi(z_{jh-1})]^2}{\Phi(z_{jh}) - \Phi(z_{jh-1})}][a_{j1}\cos\alpha_{j1} + a_{j2}\cos\alpha_{j2}]^2 \quad (18)$$

where

$$\phi(z_{jh}) = \frac{\partial\Phi(z_{jh})}{\partial z_{jh}} = \frac{1}{\sqrt{2\pi}} e^{-\frac{z_{jh}^2}{2}}.$$

Given θ and a_{j1}, a_{j2} and c_{jh}, the first term of the right hand side of (18)

$$\sum_{h=1}^{m_j} \frac{(\phi(z_{jh}) - \phi(z_{jh-1}))^2}{\Phi(z_{jh}) - \Phi(z_{jh-1})}$$

is constant; so at a fixed point of θ, $I_j(\theta)$ depends only on the direction α. Two special but important cases are

$$I_j(\theta) = \sum_{h=1}^{m_j} \frac{(a_{j1}[\phi(z_{jh}) - \phi(z_{jh-1})])^2}{\Phi(z_{jh}) - \Phi(z_{jh-1})} \quad (19)$$

which is the item information associated with a change in a primary factor, but no change in a secondary factor, and

$$I_j(\theta) = \sum_{h=1}^{m_j} \frac{(a_{j2}[\phi(z_{jh}) - \phi(z_{jh-1})])^2}{\Phi(z_{jh}) - \Phi(z_{jh-1})} \quad (20)$$

which is the item information associated with a change in a secondary factor, but no change in a primary factor. It should be noted that the previous two equations depend on both the primary θ_1 and a_{j1}, and secondary θ_2 and a_{j2} factors and loadings.

When we are interested in estimating the IIF for θ_1 in the presence of other sub-domains, the sub-domains can be integrated out of the objective function. Suppose that for the purpose of computerized adaptive testing (CAT), θ_1 is our focus; however, θ_2 is also present in a bi-factor model. In this case, we are interested in obtaining $I_j(\theta_1)$, which is a function only of θ_1. To get $I_j(\theta_1)$, we integrate the previous bi-factor IIF expression with the conditional distribution $h(\theta_2 \mid \theta_1)$ of θ_2 and obtain

$$I_j(\theta_1) = \sum_{h=1}^{m_j} \int \frac{[\phi(z_{jh}) - \phi(z_{jh-1})]^2}{\Phi(z_{jh}) - \Phi(z_{jh-1})} h(\theta_2 \mid \theta_1) d\theta_2, \quad (2$$

which provides an estimate of the information associated with θ_1 averaged over the θ_2 distribution. It is this expression that we have used as the basis for selecting items with maximal information in the CAT-DI.

7 Computerized Adaptive Testing

The bi-factor model is extremely useful for CAT of multidimensional data. The conditional dependencies produced by the sub-domains can be directly incorporated in trait estimation and item information functions as shown in the previous two sections, leading to improved estimates of uncertainty and elimination of pre-mature termination of the CAT and potential bias in the estimated trait score. After each item administration, the primary ability estimate and posterior standard deviation (PSD) are re-computed, and based on the estimate of θ_1, the item with maximal information is selected as the next item to be administered. This process continues until the PSD is less than a threshold value (*e.g.,* 0.3). Once the primary dimension has been estimated via CAT, sub-domain scores can also be estimated by adding items from the sub-domain that have not been previously administered in evaluating the primary domain, until the sub-domain score is estimated with similarly precision.

When the trait score is at a boundary (i.e., either the low or high extreme of the trait distribution), it may take a large number of items to reach the intended PSD (standard error)convergence criterion (e.g., se=0.3). In such extreme cases, we generally do not require such high levels of precision, since we know that the subject either does not suffer from the condition of interest or is among the most severly impaired. A simple solution to this problem is to add a second termination condition based on item information at the current estimate of the trait score and if there is less information than the threshold, the CAT terminates. The choice of the threshold is application specific and can be selected based on simulated CAT. A good value will affact only a small percentage of cases (*e.g.*, <20%) and only be used in extreme (i.e., high or low) cases.

For large item banks, there may be items that are too similar to be administered within a given session. In these cases, we can declare these as "enemy items" and not administer the other members of the list of enemy items when one of the members has been administered. The idea of enemy items can be extended to the longitudinal case to insure that the same respondent is not repeatedly administered the same items on adjacent testing sessions.

CAT will often result in a subset of the entire item bank be used exclusively, because these items have the highest loadings on primary and sub-domains. Often the difference between the loadings of items that are selected by the CAT versus those that are not, are quite small and the items have similar information. To insure that the majority of the items in the item bank are administered, we can add a probabilistic component in which a selected item is only administered if a uniform random number exceeds a threshold. Typically a threshold of 0.5 works well, but again, the exact choice can be based on simulated adaptive testing, in which the largest set of unique items are used without compromising the other characteristics of the measurement process (i.e., average number of items administered and correlation with the total bank score).

8 References

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eTable 1. Domain: Depression

Subdomains	Factors	Facets	Example Items
Mood			
	Increased negative affect		
		Sadness Depressed affect	I feel sad I felt depressed
		Lowered threshold for negative affect	Do you frequently get upset over little things? Do you often feel upset for no obvious reason?
		Crying	I cry more now than I used to Crying easily
		Irritability	I am more irritable than usual Have you recently been getting edgy and bad-tempered?
		Moodiness Emotional instability	Have you ever had the feeling you were going to pieces? How much of the time have you felt emotionally stable? (-)
		Poor mood distinct from grief or loss	I feel sad, but this sadness is different from the type of sadness associated with grief or loss
	Decreased positive affect		
		Loss of pleasure	I don't enjoy things the way I used to I do not feel my usual sense of enjoyment from pleasurable activities
		Loss of interest	I notice that I am less interested in people or activities Nothing was interesting or fun
		Loss of positive reactivity	I felt that I could not shake off the blues, even with help from my family or friends How much of the time have you felt so down in the dumps that nothing could cheer you up?
Cognition			
	Deficits in information-processing		
		Problems in attention and concentration	I had trouble keeping my mind on what I was doing Do you have trouble concentrating?
		Problems in decision-making and problem-solving	How much of the time did you have difficulty reasoning and solving problems; for example, making plans, making decisions, learning new things? Trouble making decisions
		Memory problems	Do you feel you have more problems with memory than most? Trouble remembering things
		Mental slowing	I find that my thinking is slowed down or my voice sounds dull or flat How much of the time did you react slowly to things that were said or done?
	Unproductive information-		

Subdomains	Factors	Facets	Example Items
	processing		
		Rumination	Do you worry a lot about the past? Repeated unpleasant thoughts that won't leave your mind
		Pessimism	Pessimistic about the future
	Impaired view of self		
		Self-criticism	I am critical of myself for my weaknesses or mistakes Disappointed in myself
		Worthlessness	Do you feel pretty worthless the way you are now? Have you recently been thinking of yourself as a worthless person?
		Thoughts of being physically unattractive	I am worried that I am looking old or unattractive Felt unattractive
	Negative social cognition		
		Loneliness Decreased sense of closeness and support	How much of the time have you felt loved and wanted? (-) Feeling lonely
		Interpersonal alienation and sensitivity	I have occasionally felt rejected, slighted, criticized, or hurt by others Feeling others do not understand you or are unsympathetic
	Hopelessness		Do you feel that your situation is hopeless? Have you recently felt that life is entirely hopeless?
	Helplessness Loss of mastery and self-efficacy		Do you often feel helpless? Have you recently felt on the whole that you were doing things well?
	Guilt Sense of punishment		I feel guilty a good part of the time Feelings of guilt
Behavior			
	Decreased activity level		
		Decreased general activity	Have you dropped many of your activities and interests? I find it easy to do the things I used to do (-)
		Impaired functioning	How often has feeling depressed interfered with what you usually do? Could do everything I needed to do (-)
	Decreased energy and vitality		

Subdomains	Factors	Facets	Example Items
		Need for increased physical effort	I felt that everything I did was an effort Took extra effort to get started
		Fatigue	I get tired more easily than I used to I get tired more easily than usual
		Physical retardation	I have occasionally experienced periods of feeling physically weighted down and without physical energy…. I feel as if I am slowed down
	Interpersonal changes		
		Interpersonal conflict and impairment	How much of the time did you get along with people in your family? (-) How much of the time did you get along well in social situations? (-)
		Social withdrawal and isolation	Do you prefer to avoid social gatherings? Felt like being alone
	Agitation		Do you often get restless and fidgety? I'm often fidgety, wring my hands, or need to shift how I am sitting
Somatic complaints			
	Sleep problems		
		General sleep difficulties (can include difficulty falling asleep, sleep discontinuity, and early morning awakening)	I don't sleep as well as I used to I have trouble sleeping at night
		Excessive sleep	I sleep no longer than 10 hours in a 24-hour period including naps
		Troubling dreams	Do you have bad dreams which upset you when you wake up?
	Diurnal Variation		Morning is when I feel the best What time of the day does your depression feel worst? Any special times
	Changes in eating		
		Changes in appetite	My appetite is not as good as it used to be I did not feel like eating; my appetite was poor
		Changes in eating behavior	I eat somewhat less often or lesser amounts of food than usual I feel a need to eat more frequently than usual
		Changes in weight	I notice that I am losing weight I feel as if I've had a slight weight loss
	Problems with gastrointestinal functioning		I have trouble with constipation I have intermittent constipation or diarrhea…
	Somatic arousal		My heart beats faster than usual

Subdomains	Factors	Facets	Example Items
			I have some of these symptoms: heart pounding fast, blurred vision, sweating, hot and cold flashes, chest pain, heart turning over in my chest, ringing in my ears, or shaking
	Increased pain		Sometimes I get headaches or pains in my stomach, back or joints….
	Poor perceived health General somatic concerns		I am worried about physical problems such as aches and pains; or upset stomach; or constipation Have you recently felt that you are ill?
Suicidality			
	Suicidal ideation		
		Thoughts that life is not worth living	I feel that life is empty or wonder if it's worth living Have you recently felt that life isn't worth living?
		Thoughts of death or self-injury	I have thoughts of killing myself…. Have you recently found yourself wishing that you were dead and away from it all?
Treatment of Depression			
	Actual treatment		Have you had a significant period (that was not a direct result of drug/alcohol use) in which you have been prescribed medication for any psychological or emotional problem How many times have you been treated for any psychological or emotional problems as an outpatient or private patient
	Perceived need		Have you recently been feeling in need of some medicine to pick you up

eTable 2. Depression and Depression-Related Rating Scales

SCALE NAME	SCALE ABBV	FOCI	CIT YEAR	ART AUTHOR(s)	ARTICLE TITLE	JOURNAL / BOOK INFO	VOL	PAGES
Affect Balance Scale	ABS	Depression, Anxiety	1969	Bradburn NM	Structure of psychological well-being	Chicago: Aldine		267
Altman Self-Rating Scale for Mania	ASRM	Depression	1997	Altman EG, Hedeker DR, Peterson JL, Davis JM	The Altman Self-Rating Mania Scale	Biol Psychiatry	42	948-955
Beck Depression Inventory	BDI	Depression	1961	Beck AT, Ward CH, Mendelson M, Mock J, Erbaugh J	An inventory for measuring depression	Arch Gen Psychiatry	4	53-63
Behavior and Symptom Identification Scale: Depression and Anxiety Subscale	BASIS-32	Depression, Anxiety	1986	Eisen SV, Grob MC, Klein AA	BASIS: The development of a self-report measure for psychiatric inpatient evaluation	Psychiatr Hos	17	165-171
Behavior and Symptom Identification Scale: Revised	BASIS-R	Depression, Anxiety	1994	Eisen SV, Normand SLT, Belanger AJ, Gevorkian S, Irvin EA	BASIS-32 and the Revised Behavioral Symptom Identification Scale (BASIS-R). In: The Use of Psychological Testing for Treatment Planning and Outcome Assessment	Maurish M (Ed.)		
Behavioral Health Screening Measure	BHSM	Depression, Anxiety	2003	Zygowicz KM, Saunders SM	A behavioral health screening measure for use with young adults in priamary care settings	J Clin Psychol Med Sets	10	71-77
Brief Scale for Anxiety and Depression	BSAD	Depression, Anxiety	1988	Goldberg D, Bridges K, Duncan-Jones P, Grayson D	Detecting anxiety and depression in general medical settings	BMJ	297	897-899
Caribbean Culture-Specific Screen for Emotional Distress	CC-SS	Depression	1998	Abas MA, Phillips C, Carter J, Walter J, Banerjee S, Levy R	Culturally sensitive validation of screening questionnaires for depression in older African-Caribbean people living in south London	B J Psychiatry	173	249-254
Carroll Rating Scale for Depression	CRS	Depression	1981	Carroll BJ, Feinberg M, Smouse PE, Rawson SG, Greden JF	The Carroll Rating Scale for Depression: Development, reliability and validation	B J Psychiatry	138	194-200
Center for Epidemiologic Studies Depression Scale	CES-D	Depression	1977	Radloff LS	A self-report depression scale for research in the general population	Appl Psychol Meas	1	385-401

Chinese Polarity Inventory	CPI	Depression	1994	Zheng YP, Lin KM	The reliability and validity of the Chinese Polarity Inventory	Acta Psychiatr Scand	89	126-131
Crown-Crisp Experiential Index	CCEI	Depression, Anxiety	1966	Crown S, Crisp AH	A short clinical diagnostic self-rating scale for psychoneurotic patients: The Middle Sex Hospital Questionnaire (M.H.Q.)	br J Psychiatry	112	917-923
Depression Anxiety Stress Scale	DASS	Depression, Anxiety	1993	Lovibond SH, Lovibond PF	Manual for the Depression Anxiety Stress Scales (DASS)	Australia: Psychology Foundation Mongraph, University of New South Wales		339
Depression Scale	DEPS	Depression	1995	Salokangas RKP, Poutanen O, Stengard E	Screening for depression in primary care: Development and calidation of the Depression Scale, a screening instrument for depression	Acta Psychiatr Scand	92	38641
Depression-Arkansas Scale	D-ARK	Depression	2002	Smith GR, Kramer TL, Hollenberg JA, Mosley CL, Ross RL, Burnam A	Validity of the Depression-Arkansas (D-ARK) Scale: A tool for measuing major depressive disorder	Ment Health Ser Res	4	167-173
Diagnostic Interview for Depression	DID	Depression	1986	Zimmerman M, Coryell W, Corenthal C, Wilson S	A self-report scale to diagnose major depressive disorder	Arch Gen Psychiatr	43	1076-1081
Distressing Thoughts Questionnaire	DTQ	Depression, Anxiety	1985	Clark DA, de Silva P	The nature of depressive and anxious intrusive thoughts: Distinct or uniform phenomena?	Behav Res Ther	23	383-393
Edinburgh Postnatal Depression Scale	EPDS	Depression	1987	Cox JL, Holden JM, Sagovsky R	Detection of postnatal depression: Development of the 10-item Edinburgh Postnatal Depression Scale	B J Psychiatry	150	782-786
Emotional State Questionnaire	ESQ	Depression, Anxiety	1999	Alouoja A, Shlik J, Vasar V, Luuk K, Leinsalu M	Development and psychometric properties of the Emotional State Questionnaire, a self-report questionnaire for depression and anxiety	Nord J Psychiatr	53	443-449
Experiences in Close Relationships	ECR	Depression, Anxiety	1998	Brennan KA, Clark CL, Shaver PR	Self-report measurement of adult attachment. In: Attachment theory and close relationships	Simpson JA, Rholes WS (Eds.), Guilford, New York, NY		46-76

General 5-Spectrum Measure	GSM-V	Depression, Anxiety	2003	Rucci P, Frank E, Fagiolini A, Kupfer DJ, Shear MK, Dell'Osso L, Banti S, Mauri M, Grochocinski VJ, Maser JD, Endicott J, Cassano GB	Development and preliminary testing of the General 5-Spectrum Measure (GSM-V)	Depress Anx	18	109-117
General Health Questionnaire	GHQ	Depression, Anxiety	1972	Goldberg DP	The Detection of Psychiatric Illness by Questionnaire	Oxford University Press, Oxford, England		
Geriatric Depression Scale	GDS	Depression	1983	Yesavage JA, Brink TL	Development and validation of a geriatric depression screening scale: A preliminary report	J Psychiatry Res	17	37-49
Hopelessness Scale	HS	Depression, Anxiety	1974	Beck AT, Weissman A, Lester D, Trexler L	The measurement of pessimism: The Hopelessness Scale	J Consutl Clin Psychol	42	861-865
Hopkins (Modified SCL-90-R)	---	Depression, Anxiety, Anger	1994	Derogatis LR	Symptom Checklist-90-Revised manual	Minnetonka, MN: NCS Assessments		
Hospital Anxiety and Depression Scale	HAD	Depression, Anxiety	1983	Zigmond AS, Snaith RP	The Hospital Anxiety and Depression Scale	Acta Pschiatr Scand	67	361-370
Internal State Scale	ISS	Depression	1991	Bauer M, Crits-Christoph P, Ball W, Dewees E, McAllisrer T, Alahi P, et al.	Independent assessment of manic depressive symptoms by self-rating scale: Characteristics and implications for the study of mania	Arch Gen Psychiatry	48	807-812
Inventory of Depressive Symptomatology - Self Report	IDS-SR	Depression	1986	Rush AJ, Giles DE, Schlesser MA, Fulton CL, Weissenburger J, Burns C	The Inventory for Depressive Symptomatology (IDS): Preliminaryfindings	Psychiatry Res	18	65-87
Inventory to Diagnose Depression	IDD	Depression	1986	Zimmerman M, Coryell W, Corenthal C, Wilson S	A self-report scale to diagnose major depressive disorder	Arch Gen Psychiatry	43	1076-1081
Kellner Symptom Questionnaire	KSQ	Depression, Anxiety, Anger	1987	Kellner R	A symptom questionnaire	J Clin Psychiatr	48	268-274
Major (ICD-10) Depression Inventory	---	Depression	1998	World Health Organization Regional Office for Europe	Wellbeing measures in primary health care: the Depcare Project. In: Report on a WHO Meeting, Stockholm, Sweden, 12–13 February 1998	WHO Regional Office for Europe, Copenhagen		
Manic Depressiveness Scale	MDS	Depression	1998	Thalbourne MA, Bassett DL	The Manic Depressiveness Scale: A preliminary effort at replication and extension	Psych Rpts	83	75-80

Marlowe-Crowne Social Desirability Scale	M-CSDS	Depression	1964	Crowne DP, Marlowe DA	The approval motive: Studies in evaluative dependence	Wiley, New York, NY		
Mental Health Inventory	MHI	Depression, Anxiety, Anger	1983	Veit CT, Ware JE	The structure of psychological distress and well-being in general populations	J Consult Clin Psychol	51	730-742
Minnesota Multiphasic Personality Inventory	MMPI-2	Depression	1989	Butcher JN, Dahlstrom WG, Graham JR, Tellegen A, Kaemmer B	Minnesota Multiphasic Personality-2 (MMPI2): Manual for Administration and Scoring.	University of Minnesota Press, Minnesota, MN		
Montgomery-Asberg Depression Scale	MADS	Depression	1979	Montgomery SA, Asberg M	A new depression scale designed to be sensitive to change	B J Psychiatr	134	382-389
Mood and Anxiety Symptom Questionnaire	MASQ	Depression, Anxiety	1991	Clark LA, Watson D	Tripartite model of anxiety and depression: Psychometric evidence and taxonomic implications	J Abnorm Psychol	100	316-336
Mood Disorder Questionnaire	MDQ	Depression, Anxiety	2000	Hirschfield RM, Williams JB, Spitzer RL, Calabrese JR, Flynn L, Keck PE, Lewis L, McElroy S, Post RM, Rapport DJ, Russell JM, Sachs GS, Zajecka J	Development and validation of a screening instrument for Bipolar Spectrum Disorder: The Mood Disorder Quesitonnaire	Am J Psychiatr	157	1873-1875
MOODS-Self-Report-Lifetime	MOODS-SR	Depression, Anxiety	2002	Dell'Osso L, Armani A, Rucci P, et al	Measuring mood spectrum: Comparison of interview (SCI-MOODS) and self-report (MOODS-SR) instruments	Compr Psychiatry	43	69-73
MOS Depression Screener	MOS	Depression	1988	Burnam MA, Wells KB, Leake B, Landsverk J	Development of a brief screening instrument for detecting depressive disorders	Medical Care	26	775-789
Multiple Affect Adjective Checklist	MAACL-A	Depression, Anxiety, Anger	1965	Zuckerman M, Lubin B	The Multiple Affect Adjective Check List: Manual	Educational and Industrial Testing Service, San Diego, CA		
Negative Affectivity Scale	NAS	Depression, Anxiety	1989	Levin I, Stokes JP	Dispositional approach to job satisfaction: Role of negative affectivity	J Appl Psychol	74	752-758
Obsessive Intrusions Inventory	OII	Depression, Anxiety, Anger	1993	Purdon C, Clark DA	Obsessive intrusive thought in nonclinical subjects. Part I. Content and relation with depressive, anxious and obsessional symptoms	Behav Res Ther	31	713-720

Patient Health Questionnaire-9	PHQ-9	Depression	2001	Kroenke K, Spitzer RL, Williams JB	The PHQ-9: Validity of a brief depression severity measure	J Gen Intern Med	16	606-613
Positive and Negative Affect Schedule	PANAS	Depression, Anxiety, Anger	1988	Watson D, Clark LA, Tellegen A	Development and validation of brief measures of positive and negative affect: The PANAS Scales	J Per & Soc Psychol	54	1063-1070
Postpartum Adjustment Questionnaire	PPAQ	Depression, Anxiety	1992	O'Hara MW, Hoffman JG, Philipps LH, Wright EJ	Adjustment in childbearing women: The Postpartum Adjustment Questionnaire	Psychol Ass	4	160-169
Postpartum Depression Screening Scale	PDSS	Depression	2000	Beck CT, Gable R	Postpartum Depression Screening Scale: development and psychometric testing	Nurs Res	49	272-282
Primary Care Anxiety and Depression Scale	PCAD	Depression, Anxiety	1997	El-Rufaie OEF, Absood GH, Abou-Saleh MT	The Primary Care Anxiety and Depression (PCAD) Scale: A culture-oriented screening scale	Acta Psychiatr Scand	95	119-124
Profile of Mood States	POMS	Depression	1964	McNair DM, Lorr M	An Analysis of mood in neurotics	J Ab & Soc Psychol	69	620-627
Profile of Mood States - Short Form	POMS-SF	Depression	1995	Curran SL, Andrykowski MA, Studts JL	Short form of the Profile of Mood States (POMS-SF): Psychometric information	Psychol Ass	7	80-83
Psychological General Well-being Scale	PGWB	Depression, Anxiety, Anger	1984	Dupuy HJ	The Psychological General Well-Being (PGWB) index. In: Assessment of Quality of Life in Clinical Trials of Cardiovascular Therapies	Wenger NK, Mattson ME, Furberg CD, Elinson J (Eds.), Le Jacq, New York, NY		170-183
Self-Derogation Scale	SDS	Depression, Anxiety	1975	Kaplan HB	Increase in self-rejection as an antecedent of deviant responses	J Youth Adol	4	281-292
Self-Rating Manic Inventory	SRMI	Depression	1992	Shugar G, Schertzer S, Toner BB, et al.	Development, use, and factor analysis of a self-report inventory for mania	Compr Psychiatry	33	325-331
Self-Worth Protection Scale	SWPS	Depression, Anxiety	2003	Thompson T, Dinnel DL	Construction and intial validation of the Self-Worth Protection Scale	B J Ed Psychol	73	89-107
Sensitivity to Put-Down Scale	SPD	Depression, Anxiety, Anger	2000	Gilbert P, Miles JN	Sensitivity to social put-down: It's relationship to perceptions of social rank, shame, social anxiety, depression, anger and self-other blame	Pers Indiv Diffs	29	757-774

Strain-Free Negative Affectivity Scale	SFNA	Depression, Anxiety	1999	Fortunato VJ, Stone-Romero EF	Taking the strain out of negative affectivity: Development and initial validation of scores on a strain-free measure of negative affectivity	Ed Psychol Meas	59	77-97
Symptom Checklist-90-R	SCL-90-R	Depression, Anxiety, Anger	1994	Derogatis LR	SCL-90-R, Brief Symptom Inventory, and matching clinical rating scales. In: Psychological Testing, Treatment Planning, and Outcome Assessment	Maruish M (Ed.), Erlbaum, New York, NY		
UCLA Loneliness Scale	N/A	Depression, Anxiety	1996	Russell D	The UCLA Loneliness Scale (Version 3): Reliability, validity, and factor structure	J Pers Assess	66	20-40
WHO (Five) Well-Being Questionnaire	---	Depression, Anxiety, Anger	1998	World Health Organization Regional Office for Europe	Wellbeing measures in primary health care: the Depcare Project. In: Report on a WHO Meeting, Stockholm, Sweden, 12–13 February 1998	WHO Regional Office for Europe, Copenhagen		
Worry Scale for Older Adults	WS	Depression, Anxiety	1988	Wisocki PA	Worry as a phenomenon relevant to the elderly	Behav ther	19	369-379
Zung Self-Rating Depression Scale	SDS	Depression	1965	Zung WW	A self-rating depression scale	Arch Gen Psychiatry	12	63-70

SCALE_NAME	*DEPRESSION SUBDISORDER*
Affect Grid	Distress
Affective Reaction Scale	Depression
Anaclitic Dysfunctional Attitudes Scale (ADAS)	Depression
Anhedonia Scale	Depression
Anxiety-Depression-Anger Rating Scale	Depression
Apathy Evaluation Scale (AS)	Quality of Life
Assessment of Risk for Suicide	MDD
Automatic Thoughts Questionnaire (ATQ)	Depression; General Anxiety; Distress
Barthel's Functional Index (BFI)	Social Functioning
Beck Cognitive Insight Scale	Cognition
Beigel Murphy Scale (MSRS)	Mania
Belcher Extended Loneliness Scale (BELS)	Depression
Berlin Mood Questionnaire	MOOD
Bipolar Depression Rating Scale (BDRS)	Mania
Birleson Depression Self-Rating Scale (DSRS)	Depression
Brief Anxiety Scale	MOOD
Brief Depression Rating Scale	Depression
Brief Depression Scale (BDS)	Depression
Brief Disability Questionnaire	MOOD
Brief Outpatient Psychopathology Scale	Elderly Depression
Brief Psychiatric Rating Scale (BPRS)	Mania; Depression; General Physical Health
Brief Symptom Inventory (BSI)	Quality of Life
Bunney-Hamburg Scale	Depression
Calgary Depression Scale	Depression
California Pscyhological Inventory (CPI)	Depression
California Q-Set Alexithymia Prototype	Depression
CBIS Multidimensional Rating Task	Depression
Characterological Self-Blame for Depression	Depression

Chicago Multiscale Depression Inventory (CMDI)	Depression; MOOD
Child Behavior Checklist (CBCL)	Depression
Chronic and Acute Stress Scales	Distress
Clinical Global Impression Scale (CGI)	Mania; Substance Abuse
Clinical Health Assessment Questionnaire (CLINHAQ)	General Physical Health
Clinically Useful Depression Outcome Scale (CUDOS)	Depression
Cognition Checklist	General Anxiety
Cognitive Complaints Inventory	Cognition
Cognitive Function Scale	Mania
Cognitive Problems Checklist	Cognition
Cognitive Triad Inventory	Social Functioning
Comprehensive Psychopathological Rating Scale (CPRS)	Depression; Mania; MOOD
Crandell Cognitions Inventory (CCI)	Agoraphobia
Current Mood	MOOD
Degree of Illness Rating	Depression
Demoralization Scale	Distress
Dependent and Self-Critical Scale	Depression
Depression Adjective Check List (DACL)	Depression; MOOD
Depression Attitude Questionnaire - Adapted	Depression
Depression Information Measure	Depression
Depression Measure	Depression
Depression Outcomes Module	Elderly Depression
Depression Retardation Rating Scale (DRRS)	Cognition
Depression Scale	Distress
Depression Screening Questionnaire	MDD
Depression Status Inventory	Depression
Depression Symptom Survey	Depression
Depression Symptoms	Distress
Depression-Happiness Scale	Depression
Depression-Relevant Mood Dimensions Scale	Depression

Depressive Cognition Scale	Elderly Depression
Depressive Content Scale	Depression
Depressive Experiences Questionnaire (DEQ)	Depression
Depressive Symptom Scale	Cognition
Depressive Symptomology	Depression
Depressive Symptoms Checklist	Elderly Depression
Depressive Symptoms Measure	Depression; Postpartum
Diagnostic and Statistical Manual of Mental Disorders - Self-Rating	Depression
Diagnostic Inventory for Depression	Depression
Dysfunctional Attitude Scale (DAS)	Depression; Social Functioning; Elderly Depression
Dysphoria Scale	Depression
Eight State Questionnaire	MOOD
Emotional Distress	Distress
Energetic Arousal and Exhaustion Scale	Depression
Experience of Depression	Depression
Frankfurt Complaints Questionnaire (FCQ)	Mania
Frequency of Emotional Expressions	Depression
Functioning Outcomes Inventory	Depression
General Behavior Inventory	Depression
Generalized Contentment Scale	Depression; MOOD
Geriatric Hopelessness Scale	Elderly Depression
Global Severity Index (GSI)	Quality of Life
Goldberg Depression Scale	Depression
Groningen Social Disability Schedule	Social Functioning
Happiness and Depression Scale	Depression
Health and Life Experiences Questionnaire (HLEQ)	MDD
Hope/Expectancy Prognostic Index	Depression
Hopelessness Depression Symptom Questionnaire (HDSQ)	Depression
Illness Behavior Questionnaire (IBQ)	General Physical Health
Illness Intrusiveness Rating Scale (IIRS)	Quality of Life

Indicators of Complicated Grief Measure	Depression
Interpersonal Sensitivity Measure	Social Functioning
Inventory of Depressive Symptoms - Modified	Depression
Inventory of General Life Functioning (GLF)	Quality of Life
Inventory to Diagnose Depression (IDD)	Depression
Iowa Self-Assessment Inventory (ISAI)	Depression
IPAT Depression Scale	Depression
Irrational Beliefs Test (IBT)	Cognition
Irritability Depression and Anxiety Scale	Depression
Irritability-Depression-Anxiety Scale (IDA)	Aggression
Job-Related Depression and Anxiety Scales	Depression
Judgments of Emotion	Depression
Ketterer Stress Symptom Frequency Checklist - Revised (KSSFCR)	Distress
Levine-Pilowsky Inventory	Depression
Lifetime Depression Index	Depression
Lifetime History of Depression	Depression
Loss Inventory	Depression
Loss Questionnaire	Depression
Major Depression Questionnaire	Distress
Management of Depression Survey	Depression
Manic Screening Measure	Mania
Measures of Affect	Depression
Measures of Mental Health	Depression
Medical Outcomes Survey - Short Form	Social Functioning
Mental Health Index	Mania
Mental Health Index - 17	Mania
Metacognitive Awareness Questionnaire	Depression
Millon Clinical Multiaxial Inventory (MCMI)	Depression
Modified Barthel Index (MBI)	Quality of Life
Mood Adjective Check List (MACL)	MOOD

Mood Disorders Insight Scale	MOOD
Mood Monitor Measure	MOOD
Mood Profile	MOOD
Mood Scale	Depression
Mosher Guilt Scale	Social Functioning
Multiple Visual Analog Scale (MVAS)	Mania
Multiple Visual Analogue Scales of Bipolarity (MVAS-BP)	Mania
Multiscale Depression Inventory (MDI)	Depression
Nottingham Health Profile (NHP)	General Physical Health; Social Functioning
Oswestry Disability Scale	Social Functioning
Overall Psychological Health Status	Elderly Depression
Peer Nomination Inventory of Depression	Depression
Penate Basic Depression Questionnaire	Depression
Perceived Incontrollability of Depression	Depression
Personal Beliefs Inventory	Depression
Personal Disturbance Scale	Depression
Personal History of Depressive Disorders	Depression
Personality Assessment Inventory (PAI)	Personality; General Anxiety
Philadelphia Geriatric Center Morale Scale	Depression
Postpartum Depression Checklist	Postpartum
Postpartum Depression Screening Scale (PDSS)	Postpartum
Present Day Feelings of Depressed Affect	Elderly Depression
Primary Care Evaluation of Mental Disorders Questionnaire	Depression
Psychological Distress Scale	Distress
Psychological Functioning Index	Substance Abuse
Psychological Self-Rating Form	Depression
Psychological Symptoms Scale	General Physical Health
Psychosomatic Symptoms	Distress
Quality of Life in Depression Scale (QLDS)	Depression; Mania; Quality of Life
Quality of Life in Mental Health	Quality of Life

Rand Depression Screener (RDS)	Depression
Rand Mental Health Inventory	Depression
Raskin Depression Scale	Depression
Recent Appearance of Depression Assessed By Relatives (RADAR)	Depression
Reiss Screen for Maladaptive Behavior	Depression; Aggression
Response to Depression Questionnaire	Depression
Reynolds Adolescent Depression Scale - Child Version	Depression
Reynolds Adolescent Depression Scale - Parent Version	Depression
Role Limitations Scale	Depression
Scale for Suicide Ideation (SSI)	Mania
Schema Questionnaire	Depression
Schwab-Gilleard Depression Scale (SGDS)	Depression
Screener for Depressive Disorders	Depression
Seasonal Pattern Assessment Questionnaire (SPAQ)	Depression
Self-Efficacy	Distress
Self-Labeled Current Depression	Depression
Self-Preoccupation Scale (SPS)	Distress; General Anxiety
Self-Rating Depression Scale (SDS)	Depression; Elderly Depression; Quality of Life
Self-Rating Mania Scale (ASRM)	Mania
Self-Rating Questionnaire	Postpartum
Self-Rating Scale for Affective Syndromes (CPRS-S-A)	Mania; MOOD
Self-Report Depression Questionnaire (SRDQ)	Depression
Self-Reported History of Depression	MOOD
Self-Reported Sadness-Sympathy Measure	MOOD
Shah Depression Scale (SSDS)	Depression
Short Form 12 (SF-12)	Quality of Life
Signs of Depression Scale (SODS)	MOOD
Snaith-Hamilton Pleasure Scale	Quality of Life; Depression
Sociotropy-Autonomy Scale (SAS)	Depression
SPHERE	MOOD

Stanford Health Assessment Questionnaire	General Physical Health
Stress Questionnaire	Distress
Survey Psychiatric Assessment Schedule	Elderly Depression
Symptom Questionnaire (SQ)	Depression
Symptom Rating Test	Distress
Toronto Alexithymia Scale - Revised (TAS-R)	Depression
Toronto Alexithymia Scale (TAS)	Depression; MOOD; General Physical Health
Total Depression Inventory	Depression
Trait Meta-Mood Scale (TMMS)	Depression
Transient Moods	MOOD
University of British Columbia Cognitions Inventory	Cognition
Unpleasantness Scale	Depression
Visual Analogue Mood Scales (VAMS)	MOOD
Vulnerability to Depression Questionnaire (VDQ)	Depression
Wakefield Self-Assessment Depression Inventory	Depression; Elderly Depression
Watson-Glaser Critical Thinking Appraisal	Depression
Weschler Depression Rating Scale	Depression
Whiteley Index	General Physical Health
Young Mania Rating Scale (YMRS)	Mania; General Physical Health
Youth Self-Report (YSR)	Depression

SUBDISORDER	*COUNT BY SUBDISORDER*
Aggression	1
Agoraphobia	1
Cognition	7
Depression	94
Depression; Aggression	1
Depression; Elderly Depression	1
Depression; Elderly Depression; Quality of Life	1
Depression; General Anxiety; Distress	1
Depression; Mania; MOOD	1
Depression; Mania; Quality of Life	1
Depression; MOOD	3
Depression; MOOD; General Physical Health	1
Depression; Postpartum	1
Depression; Social Functioning; Elderly Depression	1
Distress	13
Distress; General Anxiety	1
Elderly Depression	8
General Anxiety	1
General Physical Health	5
General Physical Health; Social Functioning	1
Mania	11
Mania; Depression; General Physical Health	1
Mania; General Physical Health	1
Mania; MOOD	1
Mania; Substance Abuse	1
MDD	3
MOOD	15
Personality; General Anxiety	1
Postpartum	3
Quality of Life	8
Quality of Life; Depression	1
Social Functioning	7
Substance Abuse	1