**ABSTRACT**

The Multidimensional Behavior Rating Scale (MBRS) was constructed to assess symptoms of depression across seven modalities: behavior, affect, sensation, imagery, cognition, interpersonal relationships, and drugs. Subjects (N=33) were matched by level of depression on the Minnesota Multiphasic Personality Inventory Depression Scale to either a behavioral self-control, behavioral therapist control, or attention-placebo group. Subjects completed the MBRS, three traditional measures of depression, and a test of motor speed before treatment, after the sixth week of treatment, and at one- and three-month maintenance periods. The MBRS was also completed by an "observer" spouse or friend of each subject during the same assessment intervals. Significant assessment period main effects were apparent for the total score of the MBRS and for the Behavior, Affect, Sensation, Cognition, and the Interpersonal subscales, indicating that more comprehensive behavioral measures can be used to assess depression. There were significant differences at posttreatment and maintenance for subjects on the MBRS as well as on traditional measures and the overt behavioral measure. Friends and relatives of the depressed subjects were also accurate assessors of the level of depression. (NRB)
The Multidimensional Behavior Rating Scale:  
An Assessment Device for Depression  

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Depression has been one of the last categories of psychopathology to be seriously investigated by behavior therapists and researchers. Relatively recently, however, there have been increasing attempts at operationalizing depression. Theories based upon a behavioral model include those provided by Beck (1967), Costello (1972), Ferster (1965), Lazarus (1968), Lewinsohn (1974), Rehm (1977), Seligman (1975) and Wolpe (1971).

A major problem in the assessment of depression is the lack of actual behavior that can be quantified. Research in depression based on the above models has typically used three measures for assessment: the MMPI Depression (D)-Scale, a traditional measure; the Beck Depression Inventory (Beck, Ward, Mendelson, Mock & Erbaugh, 1961), a cognitive-behavioral measure; and the Lewinsohn Pleasant Events Schedule (Lewinsohn & Gráf, 1973), a behavioral measure of activity level and reinforcement potential. It is debatable whether these scales are assessing symptoms in the areas of affect, sensation or interpersonal behavior often reported by depressed individuals.

The Multidimensional Behavioral Rating Scale (Green, Rothblum, and Grossi, Note 1) was constructed to provide a systematic and consistent means for assessing depression in accord with a multimodal behavior therapy approach. The scale's seven modalities are: behavior, affect, sensation, imagery, cognition, interpersonal relationship and drugs. The hallmark of this approach is that it provides a systematic and comprehensive means for assessing and treating the major problematic areas in a client's life (Lazarus, 1976).

The symptoms listed under each of the seven categories were selected from a list of symptoms of depression reported by Levitt and Lubin (1975). Levitt and Lubin selected all symptoms of depression that were mentioned in at least two measures of the sixteen inventories they reviewed. These
inventories and scales consisted of state and trait measures and self- and professional-administered measures. The authors eliminated repetitive expressions of a particular symptom and excluded nonspecific psychotic symptoms. Out of fifty-four symptoms reported, fifty-three were included in the MBRS. These symptoms ranged from being reported in two to sixteen inventories (Median=6). Four additional symptoms were added to the fifty-three symptoms: I.V.B. reduction in positive imagery, III E. sensation of emptiness, VII A. excessive intake, and VII B. medication. Several of the symptoms obtained from Levitt and Lubin's (1975) list were rewritten in more observable or behavioral language (e.g., "retarded psychomotor" was changed to "slowed motor behavior"). These changes were made on approximately 25% of the sample.

For each symptom, at least one example is provided to clarify the meaning of the symptom. Some examples were taken from the examples provided in Levitt and Lubin's list. All examples are written in behavioral or observable-event language. Each symptom is rated in terms of frequency on a seven-point scale from 1 (never happens) to 7 (always happens or happens very often). Examples are written in a manner which allows both depressed clients and observers to utilize the scale to rate behavioral referents of depression. Depressed clients are instructed to rate each symptom on the basis of how often they have felt or behaved in the manner indicated by the examples or talked about the stated feeling or behavior. Raters are instructed to rate how often they have observed the client behave in the manner indicated or heard the client express the stated feeling or cognition.

In a final section of the scale, clients and raters are instructed to rate their perception of their accuracy in reporting on the symptoms. Both are asked to list the three most typical and frequent symptoms, provide
an overall rating of the severity of depression, and compare this rating with their last rating. Finally, raters and clients are asked to compare their level of depression with their perception of the others' level of depression.

It was hypothesized that MBRS ratings by depressed individuals would correspond with the three measures described above. Furthermore, it was hypothesized that the MBRS would correspond with overt behavioral measures of depression. The Digit Symbol subscale of the Wechsler Adult Intelligence Scale (WAIS) and the Fingertapping Task of the Halstead-Reitan Neuropsychological Battery were chosen, both of which measure impaired or slowed motor performance.

It could also be argued that those measures that indicated assessment period or treatment group improvement in other studies were self-rating scales and thus of questionable objectivity. Thus, the present study asked subjects to indicate a relative or friend who knew them well, and asked these "observers" to complete the MBRS at all assessment periods as well.

Method

Subjects. 33 subjects, 10 males and 23 females, were matched by level of depression on the MMPI Depression (D) Scale to either a Behavioral Self-Control (SC), Behavioral Therapist Control (TC) or Attention-Placebo (AP) Group.

Procedure. Subjects completed the MMPI D-Scale, the Beck Depression Inventory, Lewinsohn Pleasant Events Schedule and the MBRS at pretreatment, post-treatment after six weeks of group therapy, at the one-month maintenance period and at the four-month maintenance period. The MBRS was also mailed out to an "observer" spouse or friend at these assessment periods. Finally, subjects took the Digit Symbol Subscale and the Fingertapping Task at these periods.
Results

A repeated measures analysis of variance was performed on the data of subjects for all dependent variables. The dependent variables consisted of the score on the Beck Depression Inventory, the Activity Level score and Reinforcement Potential score on the Lewinsohn Pleasant Events Schedule, the T score on the Depression (D) Scale of the MMPI, the score for right and left hands on the Fingertapping Task of the Halstead-Reitan Test, and the scaled score of the Digit Symbol Subscale of the WAIS.

On the Multidimensional Behavior Rating Scale (MBRS), subjects had significant assessment period main effects on their Total score (F (3,51) = 7.40, p < .0005), as well as on the subscales of Behavior (F (3,51) = 5.86, p < .005), Affect (F (3,51) = 9.33, p < .0001), Cognition (F (3,51) = 5.92, p < .005), Interpersonal (F (3,51) = 3.00, p < .05), and Sensation (F (3,51) = 5.06, p < .005). Subjects also showed a significant testing session main effect (F (3,46) = 4.09, p < .01) on their perceived level of depression. The means are shown in Table 1. Scheffe multiple comparisons show pretest scores to be significantly higher than scores at post-test or maintenance for the Total score on the MBRS. On the Behavior subscale, pretest scores were significantly higher than scores at maintenance, and post-test scores were significantly higher than maintenance three. On the Affect subscale, pretest scores were significantly higher than scores at post-test or maintenance, and maintenance one was significantly higher than maintenance three. For Cognition, pretest scores were significantly higher than scores at post-test or maintenance. For Interpersonal, scores at maintenance three were significantly lower than scores at all other assessment periods. Finally, for Sensation, pretest scores were significantly higher than scores at maintenance.
There was also a significant assessment period main effect for the Lewinsohn Pleasant Events Reinforcement Potential (F (3,49) = 3.24, p < .05), for the Beck Depression Inventory (F (3,51) = 9.13, p < .0001), for the D-Scale of the MMPI (F (3,51) = 16.37, p < .0001) and for the Digit Symbol Subscale of the WAIS (F (3,49) = 13.49, p < .0001). There were no significant effects for the Lewinsohn Activity Level or the Finger tapping Task. The means are shown in Table 1. Scheffe multiple comparisons show that on the Lewinsohn Pleasant Events Reinforcement Potential, post-test scores are significantly higher than scores at pretest or maintenance one, and that maintenance three scores are significantly higher than pretest scores. On the Beck scale, pretest scores are significantly higher than scores at post-test or at maintenance one or three. On the D-scale, pretest scores are significantly higher than maintenance three scores, which in turn are significantly higher than post-test and maintenance one scores. Finally, on the Digit Symbol, performance at pretest is significantly less than at post-test and follow-up.

On the MBRS, observers showed a significant assessment period main effect on the subscales of Behavior (F (3,40) = 2.82, p < .05), Affect (F (3,40) = 6.15, p < .001) and Sensation (F (3,40) = 3.22, p < .05). The means are shown in Table 1. Scheffe multiple comparisons show that, for the Behavior scale, pretest score and scores at maintenance three are significantly higher than scores at post-test or at maintenance one. For Affect and for Sensation, pretest scores are significantly higher than scores at post-test or at maintenance.

Discussion

Significant assessment period main effects were apparent for the Total score of the MBRS and for the subscales of Behavior, Affect, Sensation, Cognition and Interpersonal. Thus, the results indicate that more comprehensive behavioral measures can be used to assess depression. This greatly enhances the ability to measure improvement in an area as vague and ill-defined
as depression. There were no significant effects for the subscales of Imagery and Physiological on the MBRS. Probably this is because each of these subscales has only three items, and they thus are the shortest and least comprehensive scales.

Significant assessment period main effects were apparent for the Lewinsohn Pleasant Events Reinforcement Potential, the Beck Depression Inventory, the MMPI D-Scale and for the Digit Symbol Subscale of the WAIS. Thus, results indicate that the MBRS corresponds with the measures typically used to assess depression.

There were no significant effects on the Lewinsohn Pleasant Events Schedule Activity Level or on the Fingertapping Task. On Activity Level, the Lewinsohn Scale does not have a ceiling level, and there was great variability on the range of numbers that subjects listed on this scale. The Fingertapping Task may not be sensitive enough to detect differences in psychomotor performance over a period of only five months. It is used as a task of psychomotor retardation in organicity, where impaired performance is much grosser than it is in depression.

Finally, the results indicate that friends and relatives of depressed subjects can accurately assess level of depression. In addition to the significant group difference in perceived level of depression, there were significant assessment period main effects for the MBRS subscales of Behavior, Affect and Sensation. These subscales are probably the most overt and noticeable for outside observers. Furthermore, mean observer ratings are considerably lower than subjects' own ratings. Perhaps depressed subjects, because of lowered self-esteem tend to overrate themselves on degree of pathology. Thus, the results indicate that one does not have to depend solely on depressed subjects' self-report for improvement.

The study demonstrated that it is possible to rely on behavioral measures and on observer ratings for the assessment of depression.
anything, depressed subjects overrate the degree of their own depression compared to the perceptions of friends and relatives. Further research should rely increasingly on such measures for assessment of depression improvement, until such global self-report measures as the MMPI will no longer be necessary. Because depression is reported as a vague, ill-defined and "internal" state is no reason to avoid the use of controlled research in its treatment and assessment.
Reference Note

   Rutgers University, 1978.
References


Table 1
Means of All Significant Assessment Period Main Effects
For Subjects and Observers

<table>
<thead>
<tr>
<th>Measure</th>
<th>Pretest</th>
<th>Posttest</th>
<th>One-Month Maintenance</th>
<th>Four-Month Maintenance</th>
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<tbody>
<tr>
<td>Digit Symbol</td>
<td>10.24</td>
<td>11.70</td>
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<td>D-Scale</td>
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<td>73.10</td>
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<td>78.16</td>
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<td>Lewinsohn</td>
<td>86.84</td>
<td>103.21</td>
<td>91.19</td>
<td>99.33</td>
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<td>MBRS-Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subjects</td>
<td>218.68</td>
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<tr>
<td>Behavior</td>
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<tr>
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<td>35.44</td>
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<td>Affect</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subjects</td>
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<td>25.60</td>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Subjects</td>
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<td>18.76</td>
<td>16.83</td>
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<tr>
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<td>14.06</td>
<td>14.00</td>
</tr>
<tr>
<td>Cognition</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Subjects</td>
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<td>53.20</td>
<td>52.05</td>
<td>50.26</td>
</tr>
<tr>
<td>Interpersonal</td>
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<td></td>
</tr>
<tr>
<td>Subjects</td>
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<td>14.05</td>
<td>15.14</td>
<td>12.00</td>
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<tr>
<td>Level of Dep.</td>
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<tr>
<td>Subjects</td>
<td>67.56</td>
<td>49.35</td>
<td>63.42</td>
<td>42.69</td>
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</table>
Appendix

Multidimensional Behavior Rating Scale - Instructions

The purpose of this questionnaire is to see what specific problems your depression is causing for you along a variety of dimensions. Each item is followed by at least one example to clarify what is meant by that item. Please rate each item on a scale of 1 (never happens) to 7 (always happens, or happens very often) on the basis of how often you have felt or behaved this way or talked about these feelings and behaviors. The last item asks for an estimate of your accuracy in making the ratings. This estimate will let us know if you felt sure or felt you were just guessing in making the ratings. Finally, list what you think are the three most typical or frequent symptoms for you out of all the ones listed.
I. Behavior

A. Slowed motor behavior
(ex. taking longer than usual to walk from one place to another or reflexes are not as quick as they used to be)

B. Loss of appetite
(ex. eating less than usual, or leaving food on plate after meal).

C. Weight loss or gain
(ex. loss or gain of more than 5 pounds in the last month).

D. Inability to sleep
(ex. difficulty falling asleep at night or waking up early in the morning and finding it hard to get back to sleep).

E. Inability to do ordinary work
(ex. putting off tasks that should be done, or leaving tasks incomplete for some time).

F. Problems in speech
(ex. speaking slower than usual or with a quieter voice).

G. Sexual disturbance
(ex. having sexual relations less frequently or difficulty in reaching orgasm).

H. Crying
(ex. crying easily or eyes tearing up)

I. Bowel function disturbance
(ex. having constipation one or more times a week or having diarrhea one or more times a week).
J. Physical complaints
(ex. going to the doctor more often than usual or more frequently seeking the advice of friends about medical problems).

K. Social withdrawal
(ex. seeing friends less frequently than usual or tending to stay alone even when in a crowd or at a party).

L. Agitation, restlessness
(ex. finding it hard to sit still or stay in the same place and/or parts of body shaking or trembling).

M. Neglect of personal appearance
(ex. not taking care of personal hygiene lately or not wearing clean clothes).

N. Suicide attempt
(ex. committing an act which was intended to harm or kill self or having acquired something with which to kill self).

O. Persistent, habitual behavior
(ex. can't seem to get out of the rut of doing the same things the same way, or doing the same thing over and over again for no reason).

P. Reduction in rewarding activities
(ex. engaging in fewer "fun" activities than usual or finding that most activities are no longer interesting).

II. Affect: Emotions and Feelings
Ratings based on what has been observed, stated or experienced.

A. Sadness
(ex. frequently about to cry or rarely smiling or laughing).
B. Lack of interest
(ex. relatively unchanging facial expression when alone or interacting with others, or ignoring attempts by others to get involved in interesting activities).

C. Irritability and anger
(ex. frequently yelling or raising voice to minor events or problems, or finding things more bothersome than usual).

D. Lack of motivation
(ex. expressing or experiencing lack of excitement those days or a lack of concern about most things).

E. Lack of anger
(ex. not expressing anger when insulted or when events occur that should produce anger).

F. Self-devaluation
(ex. expressing or experiencing feelings or uselessness, ugliness or repulsiveness).

G. Feeling of hopelessness or futility
(ex. feeling hopeless, helpless or lonely or not feeling good about anything).

H. Guilt and failure
(ex. feeling or expressing negative feelings when something goes wrong or when performance and achievement is poor).

III. Sensation: Disturbances in Senses
A. Sense of no energy or fatigue
(ex. feeling more tired or weak than usual or needing more sleep than usual).

B. Physical complaints
(ex. having numerous bodily aches and pains or sensations of sickness despite doctor's opinion).
C. Anxiety and Tension
(ex. experiencing or reporting tightness in muscles or chest, having frequently cold or sweaty hands, experiencing aches in joints or head, or experiencing irregular heart function).

D. Disturbances in perception
(ex. perception of things that others do not see or sense, or reporting senses that are different, greater, or more numerous than those of others).

E. Sensations of Emptiness
(ex. sensations of a void inside or sensations of having drained all energy).

IV. Imagery (Ratings based upon what has been stated or experienced).
A. Self devaluation
(ex. imagining self as a failure or visualizing body as physically distorted).

B. Reduction of positive energy
(ex. rarely imagining self as successful or competent or, rarely imagining positive events or being involved in positive events).

C. Disturbances in perceptions: Weird images
(ed. having images of doing strange things, seeing weird or bizarre mental images, or picturing confinement in a mental hospital).

V. Cognition
Ratings based upon what has been observed, stated or experienced.
A. Self devaluation
(ex. making negative statements about self or disagreeing when other people make compliments).

B. Open suicidal thoughts
(ex. having thoughts of a way to kill self or having discussed plans of killing self with others).

C. Pessimism, hopelessness, and futility
(ex. not making plans for the future or thinking that notions have no effect).

D. Cognitive difficulties
(ex. asking people to repeat themselves or not understanding simple explanations.)

E. Guilt
(ex. blaming self when things go wrong or avoiding discussion of some past actions).

F. Lack of motivation, sense of failure
(ex. not starting any new projects or not managing to fulfill daily responsibilities).

G. Somatic complaints
(ex. doctors can't seem to find any physical disorders or complaining too much about health).

H. Indecisiveness
(ex. taking longer than usual to make up mind or having to weight all alternatives very carefully before doing anything).
# General Worry
(ex. complaining too much about trivial matters)

<table>
<thead>
<tr>
<th>Rating Scale</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
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</thead>
</table>

# Poor Memory
(ex. having to retrace steps or forgetting how to complete a sentence one it's begun)

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<tr>
<th>Rating Scale</th>
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# Expectations or Punishment
(ex. telling people about feeling condemned)

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<tr>
<th>Rating Scale</th>
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<th>3</th>
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<th>7</th>
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# Dullness
(ex. contributing little or nothing to a discussion)

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<tr>
<th>Rating Scale</th>
<th>1</th>
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<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
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</table>

# Suspiciousness
(ex. thinking that others are watching or talking)

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<thead>
<tr>
<th>Rating Scale</th>
<th>1</th>
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<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
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</table>

# Belief that Others Do Not Care
(ex. having no friends or tending to withdraw from people)

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<thead>
<tr>
<th>Rating Scale</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
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</thead>
</table>

# Loss of Insight
(ex. not knowing reasons for own behavior)

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<thead>
<tr>
<th>Rating Scale</th>
<th>1</th>
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<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
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</table>

# Fear of Impending Insanity
(ex. telling people of feelings of going insane)

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<tr>
<th>Rating Scale</th>
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<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
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</thead>
</table>

# Stoicism, Toughness
(ex. stopping self from crying)

<table>
<thead>
<tr>
<th>Rating Scale</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
</table>

## Interpersonal Relationships
Ratings based upon what has been observed, stated, or experienced.

### A. Dependence, Seeking Reassurance, Sensitivity
(ex. trying to get reassurance from others or being excessively hurt by criticism from others)

<table>
<thead>
<tr>
<th>Rating Scale</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
</table>
Rating Scale
1 2 3 4 5 6 7

B. Distrustfulness
(ex. avoiding other people or finding it hard to make new friends in case they're not what they seem to be at first).

C. Belief that others don't care
(ex. seldom going to parties or gatherings, or relating to animals more than to people because animals never "let you down").

D. Lack of eye contact
(ex. rarely looking anyone in the eyes or looking at the floor when superiors are present).

VII. Physiological and Drugs
A. Excessive intake
(ex. inability to function without cigarettes, coffee, alcohol, or other drugs).

B. Medication
(ex. inability to function without pills, medical drugs, etc.).

C. Physical condition
(ex. feeling unwell or in poor physical shape).

Summary
not accurate totally or at all very, accurate

A. How accurate did you feel rating these items?
1 2 3 4 5 6 7

B. Which 3 items out of all the above would you consider the most typical and frequent? Please specify.
1. 
2. 
3. 
C. What is the overall rating of depression on a scale of 0 to 100, where 0 = no depression and 100 = extreme depression? Your rating:

D. How does this rating compare with your last rating? (this does not apply if this is the first time you are filling out this questionnaire).

E. How does your level of depression compare with the person you have listed as a family member or friend who knows you well? (For family members or friends: How does your level of depression compare with the person you are rating?)

Rating Scale

No change Minimum Maximum
1 2 3 4 5 6 7

1 2 3 4 5 6 7
much about much
less than the more
than same than