Depression with Chronic Medical Conditions: It’s predictive role for increased urgent and unscheduled care and implications for functioning & activity level

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August 30, 2017
Agenda

Chronic Diseases: Facts – Prevalence, etc.

Vital Link between Chronic Disorders & Depression

What if you don’t treat Depression?

What if you do treat Depression?

How does inactivity or activity restriction relate to chronic conditions?

Implications of Depression

Screening, Assessment & Monitoring of Depression becomes essential

Instrument Considerations and Examples
Chronic Diseases: CDC Facts.

Chronic diseases and conditions—such as heart disease, stroke, cancer, type 2 diabetes, obesity, and arthritis—are among the most common, costly, and preventable of all health problems.

• **Surprisingly common:** As of 2012, (in the USA) about half of all adults—117 million people—had one or more chronic health conditions. One in four adults had two or more chronic health conditions.

• **Seven of the top 10 causes of death in 2014 were chronic diseases.** Two of these chronic diseases—heart disease and cancer—together accounted for nearly 46% of all deaths.
Obesity is a serious health concern. During 2011–2014, more than one-third of adults (36%), or about 84 million people, were obese (defined as body mass index [BMI] ≥30 kg/m²). About one in six youths (17%) aged 2 to 19 years was obese (BMI ≥95th percentile).

Arthritis is the most common cause of disability. Of the 54 million adults with doctor-diagnosed arthritis, more than 23 million say they have trouble with their usual activities because of arthritis.

Diabetes is the leading cause of kidney failure, lower-limb amputations other than those caused by injury, and new cases of blindness among adults.
Eighty-six percent of the nation’s $2.7 trillion annual health care expenditures are for people with chronic and mental health conditions. These costs can be reduced.

Total annual cardiovascular disease costs to the nation averaged $316.1 billion in 2012–2013. Of this amount, $189.7 billion was for direct medical expenses and $126.4 billion was for lost productivity costs (from premature death).

The total estimated cost of diagnosed diabetes in 2012 was $245 billion, including $176 billion in direct medical costs and $69 billion in decreased productivity. Decreased productivity includes costs associated with people being absent from work, being less productive while at work, or not being able to work at all because of diabetes.

Cancer care cost $157 billion in 2010 dollars.

Medical costs linked to obesity were estimated to be $147 billion in 2008. Annual medical costs for people who were obese were $1,429 higher than those for people of normal weight in 2006.
National Vital Statistics Reports (NVSS)
15 leading Causes of death in 2013.

1. *Diseases of heart (heart disease) 23.5% of total deaths.
2. Malignant neoplasms (cancer) 22.5%
3. Chronic lower respiratory diseases 5.7%
4. **Accidents (unintentional injuries)** 5.0%
5. *Cerebrovascular diseases (stroke) 5.0%
6. *Alzheimer’s disease 3.3%
7. *Diabetes mellitus (diabetes) 2.9%
8. **Influenza and pneumonia** 2.2%
9. Nephritis, nephrotic syndrome and nephrosis (kidney disease) 1.8%
10. **Intentional self-harm (suicide)** 1.6% - obviously related to depression.
11. Septicemia 1.5%
12. Chronic liver disease and cirrhosis 1.4%
13. Essential hypertension and hypertensive renal disease (hypertension) 1.2%
14. Parkinson’s disease 1.0%
15. Pneumonitis due to solids and Liquids .7%
16. All other causes 20.7%

Approximately 50% of deaths due to the top three chronic medical conditions.

Approximately 70% of deaths due to chronic medical conditions.

https://www.cdc.gov/nchs/data/nvsr/nvsr64/nvsr64_02.pdf
Prevalence of Chronic Disease: Increases with age.

Chronic Disease Demographics Among Americans Age 18 and Older, 2007

<table>
<thead>
<tr>
<th>Chronic Disease</th>
<th>Entire Population</th>
<th>Age 45-64</th>
<th>65-74</th>
<th>75+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetes</td>
<td>8%</td>
<td>11%</td>
<td>19%</td>
<td>18%</td>
</tr>
<tr>
<td>Hypertension</td>
<td>24</td>
<td>33</td>
<td>53</td>
<td>54</td>
</tr>
<tr>
<td>Asthma</td>
<td>7</td>
<td>8</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>CPD</td>
<td>6</td>
<td>8</td>
<td>11</td>
<td>13</td>
</tr>
<tr>
<td>Arthritis</td>
<td>21%</td>
<td>29%</td>
<td>48%</td>
<td>51%</td>
</tr>
<tr>
<td>CHD</td>
<td>6</td>
<td>7</td>
<td>7</td>
<td>26</td>
</tr>
<tr>
<td>Obesity</td>
<td>26</td>
<td>31</td>
<td>28</td>
<td>18</td>
</tr>
</tbody>
</table>

Exceptions: Asthma & Obesity, for now.

CPD: Chronic Pulmonary Disease
CHD: Chronic Heart Disease

Health Affairs: [http://content.healthaffairs.org/content/28/1/64/T1.expansion.html](http://content.healthaffairs.org/content/28/1/64/T1.expansion.html)
Comparison of Physical Health Conditions among Adolescents Aged 12 to 17 with and without Major Depressive Episode (MDE).
(Hedden, et al., 2017)

• National Surveys on Drug Use and Health: Asthma, bronchitis, pneumonia, obesity (in females only), and diabetes are associated with past year MDE among adolescents.

• Adolescents with past year MDE were significantly more likely to self-report having fair or poor overall health than those without MDE in the past year.

• Estimates of past year and lifetime asthma, bronchitis, and pneumonia were all higher among adolescents with past year MDE compared with those without past year MDE.

• Lifetime diabetes estimates were significantly higher among adolescents with MDE compared with those without MDE.

• Female adolescents with MDE were more likely to be obese than those without MDE.

Health risk behaviors are unhealthy behaviors you can change. Four of these health risk behaviors — lack of exercise or physical activity, poor nutrition, tobacco use, and drinking too much alcohol — cause much of the illness, suffering, and early death related to chronic diseases and conditions.

• In 2015, 50% of adults aged 18 years or older did not meet recommendations for aerobic physical activity. In addition, 79% did not meet recommendations for both aerobic and muscle-strengthening physical activity.

• More than 1 in 3 adults (about 92.1 million) have at least one type of cardiovascular disease. About 90% of Americans aged 2 years or older consume too much sodium, which can increase their risk of high blood pressure.
In 2015, more than 37% of adolescents and 40% of adults said they ate fruit less than once a day, while 39% of adolescents and 22% of adults said they ate vegetables less than once a day.

An estimated 36.5 million adults in the United States (15.1%) said they currently smoked cigarettes in 2015. Cigarette smoking accounts for more than 480,000 deaths each year. Each day, more than 3,200 youth younger than 18 years smoke their first cigarette, and another 2,100 youth and young adults who smoke every now and then become daily smokers.

Drinking too much alcohol is responsible for 88,000 deaths each year, more than half of which are due to binge drinking. US adults report binge drinking an average of 4 times a month, and have an average of 8 drinks per binge, yet most binge drinkers are not alcohol dependent.
“The Vital Link between Chronic Disease and Depressive Disorders”

(Chapman, et al., 2005)

“Without treatment, depressive disorders characteristically assume a chronic course and are expected, by 2020, to be second only to heart disease in the global burden of disease.” (Chapman, et al., 2005).

Since depression itself can become a chronic disorder, and it is treatable, the interaction between depressive disorders and chronic disorders becomes a critical consideration in treatment and prevention.
The link between depression and chronic disease is complex.

“Mental illnesses — most specifically, depressive disorders — were associated with increased prevalence of chronic diseases. This association between depression and chronic disease appears attributable to depressive disorders precipitating chronic disease and to chronic disease exacerbating symptoms of depression.”

What are the implications for both managing both chronic disease and depression?
12-month prevalence and age/sex-adjusted odds of major depression by chronic conditions

<table>
<thead>
<tr>
<th>Condition</th>
<th>(Edege, 2007)</th>
<th>Prevalence</th>
<th>Odds Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endstage renal disease</td>
<td></td>
<td>17.0%</td>
<td>3.56</td>
</tr>
<tr>
<td>Chronic obstructive pulmonary disease</td>
<td></td>
<td>15.4%</td>
<td>3.21</td>
</tr>
<tr>
<td>Stroke or cerebrovascular accident</td>
<td></td>
<td>11.4%</td>
<td>3.15</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td></td>
<td>9.3%</td>
<td>1.96</td>
</tr>
<tr>
<td>Coronary artery disease</td>
<td></td>
<td>9.3%</td>
<td>2.30</td>
</tr>
<tr>
<td>Hypertension</td>
<td></td>
<td>8.0%</td>
<td>2.00</td>
</tr>
<tr>
<td>Any chronic condition</td>
<td></td>
<td>8.8%</td>
<td>2.61</td>
</tr>
<tr>
<td>Congestive heart failure</td>
<td></td>
<td>7.9%</td>
<td>1.96</td>
</tr>
</tbody>
</table>

Prevalence rates vary from different studies.
Yet, these numbers start to give some context.
Co-occurrence of depression with medical conditions notably affects everyday lives. (Edege, 2007)

Ambulatory visits, emergency room visits (urgent & unscheduled visits), and functional disability were all significantly increased for those who had comorbid depression.

Edege concludes that the “12-month prevalence and odds of major depression are high in individuals with chronic medical conditions, and major depression is associated with significant increases in (health care) utilization, lost productivity, and functional disability” (2007).

Additionally, the increased utilization of the health care system increases the financial burden on all parties involved.

Ultimately, this highlights the importance of assessing chronically ill patients for depression. Yet there are more reasons why depression should be assessed and treated in the chronically ill.
Prevalence of depression in single and multiple morbidity: Pop. Based cohort study.  
(Bhattarai, et al., 2013)

<table>
<thead>
<tr>
<th>Condition</th>
<th>Prevalence Men</th>
<th>Prevalence Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standardized prevalence of depression</td>
<td>7%</td>
<td>14%</td>
</tr>
<tr>
<td>Diabetes Mellitus (DM)</td>
<td>13.0%</td>
<td>22%</td>
</tr>
<tr>
<td>Chronic heart Disease (CHD)</td>
<td>15%</td>
<td>24%</td>
</tr>
<tr>
<td>Stroke</td>
<td>14%</td>
<td>26%</td>
</tr>
<tr>
<td>Colorectal Cancer</td>
<td>10%</td>
<td>21%</td>
</tr>
<tr>
<td>DM, CHD &amp; stroke</td>
<td>23%</td>
<td>49%</td>
</tr>
</tbody>
</table>

The relative rate of depression for **one morbidity was 1.63** [95% confidence interval (CI) 1.59–1.66], **two morbidities 1.96** (95% CI 1.89–2.03) and **three morbidities 2.35** (95% CI 2.03–2.59).

**Compared to those with no morbidity, depression was associated with higher rates of health-care utilization and increased costs at any level of morbidity.**
What if you don’t treat depression?

1. **It may subside.**
   1. Children & Adolescents are more likely to have depression go into remission (Whiteford, et al., 2013)
   2. Among adults about 23% remitted within 3 months and slightly more over longer time periods (Whiteford, et al., 2013). Posternak & Miller (2001) found lower rates of remission (11.9%-15.7%) when using the Hamilton Rating Scale for Depression or the Beck Depression Inventory and as many as 20% who experience spontaneous remission in a short-term antidepressant trial.

2. **However, untreated depression may become chronic** (Chapman, et al., 2005).

3. **Depression is a risk factor for a number of chronic medical conditions...**
What if you don’t treat depression?

*Risk for Chronic Diseases goes up.*

Depression is a risk factor for chronic medical conditions according to meta-analyses:

1. **Diabetes** (Rotella & Edordo, 2013; Vancampfort, et al., 2015; Hasan, et al., 2015; Valkanova & Ebmeier, 2013), but Hasan, et al., 2013 found the risk to be small without significant impact on “absolute risk indices”.

2. **Cardiovascular disease** (Valkanova & Ebmeier, 2013; Van der Kooy, et al., 2007)
   1. **Sudden Cardiac Death & Atrial fibrillation recurrence** (Shi, et al., 2017)
   2. **Myocardial infarctions** (Van der Kooy, et al., 2007; Carney, et al., 2004)
   3. **Mortality** increased *2 years after an initial coronary heart disease event* (Barth, et al., 2004)


4. **Dementia** prevention strongest support for depression as a risk factor between the literature and experts (Deckers, et al., 2015).

Data suggests risk for 4 of the top 7 Chronic Diseases goes up if depression is untreated.

1. *Diseases of heart (heart disease) 23.5% of total deaths.
2. Malignant neoplasms (cancer) 22.5%
3. Chronic lower respiratory diseases 5.7%
4. **Accidents (unintentional injuries)** 5.0%
5. *Cerebrovascular diseases (stroke) 5.0%
6. *Alzheimer’s disease 3.3%
7. *Diabetes mellitus (diabetes) 2.9%

*Increased risk with untreated depression.

National Vital Statistics Reports (NVSS)
15 leading Causes of death in 2013 (top 7).

https://www.cdc.gov/nchs/data/nvsr/nvsr64/nvsr64_02.pdf
What if you treat Depression Co-Morbid with Asthma?

(Chapman, et al., 2005)

**Asthma:** “…cognitive behavioral therapy (CBT) in which the individual is instructed to monitor and challenge self negating thoughts – has **yielded significant decrease in asthma symptoms and depression**. “

What about physical inactivity?

“…physical inactivity has been speculated to augment the **strength of the association between perceived stressors and depression and persons with asthma**, suggesting that exercise may ameliorate this association and decrease the likelihood of depression in this population.”

(Chapman, et al., 2005)
What if you treat Depression Co-Morbid with Arthritis?

(Chapman, et al., 2005)

**Arthritis:** Cognitive Behavior Therapy (CBT) “has proven particularly effective in ameliorating depressive symptoms when initiated early in the course of rheumatoid arthritis, such as fatigue, or mood.”

“Similarly, antidepressant medication has been associate with significant improvements in both psychological status and health status and persons with rheumatoid arthritis.”

**What about physical inactivity?**
“Screening of patients with arthritis revealed that depression was associated with activity restriction.”
What if you treat Depression Co-Morbid with Cancer?

(Chapman, et al., 2005)

**Cancer:** “... both antidepressants and psychotherapy are effective in treating depression in patients with cancer, research on antidepressant pharmacotherapy and psychotherapy among persons with cancer has been characterized as largely lacking randomized placebo-controlled trials.” (p. 4). “Research suggests that depression in persons with cancer is amenable to treatment. Among cancer patients with life expectancy of at least 12 months, CBT has been associated with significant decrease depressive symptoms across a four-month interval. CBT has also been associated with decreased pain, reduced symptomatic distress, and subsequent improvement in the cellular immune function… Similarly, placebo-controlled trial of antidepressant medication in advanced Cancer patients demonstrated antidepressant therapy decrease depressive symptoms improved patient assessments of quality of life.”

What about physical inactivity?

“In addition to reducing the risk of depression, data suggests that physical activity may also decrease the risk of colon, breast, and lung cancer.”
What if you treat Depression Co-Morbid with Diabetes?

(Chapman, et al., 2005)

**Diabetes:** “research has revealed that both CBT and antidepressant pharmacotherapy are associated with decreased severity of depression among persons with diabetes and improve glycemic control.” As result. Treatment of depression reduces suffering, and has the potential for financial savings, as well as improve medical care of these patients.”

What about physical inactivity?
“depressive symptoms were positively associated with fasting insulin levels and physical inactivity.”
What if you treat Depression?
Co-Morbid with Obesity

(Chapman, et al., 2005)

**Obesity**: CBT interventions “have been useful in managing obesity, largely by modifying eating behaviors and dietary choices. In addition to decreasing psychological distress and sedentary (lifestyle). This in addition to fostering weight loss, CBT has been found improved self-reported mental health among obese persons.” (p. 5)

“…strikingly, children and adolescents with major depressive disorder appear to manifest increased risk for subsequently becoming overweight, suggesting that both depressive disorders and their treatment are relevant to the prevalence of obesity. The relationship between obesity and depressive disorders thus appears to be reciprocal, with advances in the recognition and treatment of each of these diet diseases potentially fostering improved mental and physical health. ” (p. 6).

**What about physical inactivity?**
As is well known a sedentary lifestyle and lack of exercise substantially contributes to obesity.
Cardiovascular diseases: “Antidepressant treatment of, post stroke depression is warranted and, in addition to alleviating depression, may foster recovery of cognitive function, and significantly increase survival….”

“Selective serotonin reuptake inhibitors (SSRI’s) _ may, in addition to their beneficial effect on depression, exert anti-platelet effect protecting against MI. In addition to being safer in overdose. SSRI’s are also less likely to induce arrhythmia than other classes of antidepressant medications. It has been further concluded that the combination of CBT within SSRI is frequently the most effective treatment of depression in persons with cardiovascular disease.”

What about physical inactivity?
“Depressive disorders have been associated with risk factors for cardiovascular disease, such as smoking and physical inactivity…”

What if you treat Depression Co-Morbid with Cardiovascular Diseases?
(Chapman, et al., 2005)
Depression & Cardiovascular Disease: Deeper Dive.

(Chapman, et al., 2005)

• Depression has been linked to cardiovascular disease (CVD) risk factors:
  • Smoking
  • Physical activity.

• Mental illness in general has been associated to increased mortality due to CVD.

• People who are depressed are more likely to develop coronary artery disease.

• Meta-analyses have shown that those with depression or depressive symptoms are 1.6 times more likely to develop CVD than non-depressed people. More than the risk of passive smoking.

• There was a stronger effect size for clinical depression than for depressive symptoms suggesting an increase in incremental risk with more severe depression.

• Depression has been associated with metabolic syndrome among women younger than 40 years old, suggesting that early detection and treatment of depression may forestall the risk of CVD among women.
Striking Finding: CVD sequence of disease onset linked to mental but not physical self-rated health

(O’Neil, et al., 2012)

Australian investigators 1st identified the prevalence of major depressive disorder (MDD) before CVD.

Intent: Determine whether disease onset was associated with mental or physical self-rated health.

Australian National Survey of Mental Health and Wellbeing. Participants included those diagnosed with MDD and “reported ever having a heart/circulatory condition over their lifetime.”

Logistic regression was used to explore the differences in self-rated mental and physical health for those reporting pre-cardiac and post-cardiac depression.

RESULTS: 80.36% reported MDD before CVD! 1/5 (19.64%) reported MDD onset at the time of, or following CVD. Those reporting “post-cardiac depression were significantly less likely to report poor self-rated mental health than those with pre-existing depression”. No differences were found in self-rated physical health between groups.
CONCLUSIONS: MDD is most common prior to the onset of CVD. Further, there is an association between pre-morbid MDD and poorer self-rated mental health. This may be the first time this has been demonstrated in a national, population-based survey. As self-rated health has been shown to predict important outcomes such as survival, we recommend that those with MDD be identified as vulnerable to CVD onset and poorer health outcomes.

This finding that those with MDD are vulnerable to CVD suggests the critical role of screening for MDD and assessing for progress in the treatment of MDD as potentially PREVENTIVE OF CVD.

Striking Finding: CVD sequence of disease onset linked to mental but not physical self-rated health

(O’Neil, et al., 2012)
Caregiver depression related to activity restriction of patient too.
(Mausbach, et al., 2011)

As has been found in the present review, depression commonly occurs co-morbid with a variety of medical conditions, but interestingly there are some broader implications: “…family members who care for patients with medical diagnoses often suffer from depression.”

Intriguingly, but not altogether surprising, is the essential relationship that inactivity plays in relation to the chronic medical conditions considered in this presentation. Even more potently is the empirical relationship shown with a “meta-analysis of the association between activity restriction and depression in medical patients and their caregivers.”

34 studies (N = 8053) documenting the relationship between activity restriction and depression were identified for the period between January 1980 and June 2010.

“Effect sizes were calculated as Pearson r correlations using random effects models. The correlation between activity restriction and depression was positive and of large magnitude (r = 0.39; 95% CI, .34–0.44).”

“Activity restriction was most strongly correlated with depression in medical patients (r = 0.45; 95% CI, 0.42–0.48), followed by caregivers (r = 0.34; 95% CI, 0.28–0.41) and community-dwelling adults (r = 0.28; 95% CI, 0.25–0.31).” Assess family members also?
Evidence-Based Treatments

Medications
Psychotherapy
Combination therapy
Brain Stimulation Therapies
Less common approaches for treating depression have also been found effective.

While psychopharmacology and individual psychotherapy are commonly used to treat depression, even a few less common approaches to treating depression have been found to be effective.

1) **Reminiscence and life review on late-life depression** resulted in an overall effect size of .84, a large effect size. This is an effect size comparable to that found with pharmacotherapy and psychological treatments (Bohlmeijer, et al., 2003)

2) **Group psychotherapy** In a meta-analysis of group psychotherapy for depression a large effect size was found of 1.03 (McDermut, et al., 2001).

3) **Computer therapy**: A meta-analysis of computerized cognitive behavior therapy (CBT) for anxiety and depressive disorders found that it was effective. The mean effect size was .88 (Andrews, et al., 2010). Improvement from computerized CBT was maintained for 26 weeks follow-up (Andrews, et al., 2010).

<table>
<thead>
<tr>
<th></th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>6.7</td>
</tr>
<tr>
<td>Male</td>
<td>4.7</td>
</tr>
<tr>
<td>18-25</td>
<td>10.3</td>
</tr>
<tr>
<td>26-49</td>
<td>7.5</td>
</tr>
<tr>
<td>50+</td>
<td>4.8</td>
</tr>
<tr>
<td>Hispanic</td>
<td>4.8</td>
</tr>
<tr>
<td>White</td>
<td>4.9</td>
</tr>
<tr>
<td>Black</td>
<td>4.1</td>
</tr>
<tr>
<td>Asian</td>
<td>5.2</td>
</tr>
<tr>
<td>NH/OPI*</td>
<td>8.9</td>
</tr>
<tr>
<td>AI/AN**</td>
<td>12.2</td>
</tr>
</tbody>
</table>

*NH/OPI = Native Hawaiian/Other Pacific Islander
**AI/AN = American Indian/Alaska Native

Data courtesy of SAMHSA

National Institute of Mental Health
Implications of Depression

Emotional
Cognitive
Physical
Functional
Screening and assessing for depression among the chronically medically ill is critical.

The common association of depression with these disorders suggests that clinicians, as a matter of the normal course of treatment should screen for and assess depression with these patients.

Secondly, once the decision has been made to treat the comorbid depression ongoing progress monitoring becomes important to gauge whether or not one is successfully treating depression.

Measures with strong psychometric data (e.g. reliability, validity, etc.) are critical to have confidence that these assessments are effectively measuring the target of interest.

Finally, efficiency of administration, scoring and interpretation all become important given the myriad of demands on health care professionals working with these patients and even demands upon patients themselves.
Instrument Considerations

Administration Time
Language(s)
Administration options: Digital vs. Non-digital
Scoring options
Reporting options
Progress Monitoring
Psychometric Data/Norms
Public Domain vs. Private
Self-report vs. other-report
Child vs. adult self-report
Q-global®

• Pearson’s web-based platform for test administration, scoring, and reporting.
• Allows users to administer the assessment 3 different ways:
  • Manual Entry: Paper/pencil administration with Q-global scoring.
  • On-screen Administration: Administer the assessment on the screen of any web-enabled device
  • Remote On-screen Administration: Allows a third party (i.e. parent/teacher) to access the assessment from their own web-enabled device through sending a secure URL via email.
### BECK SCALES

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Ages</th>
<th>Admin Time</th>
<th>Language</th>
<th>Admin. Method</th>
<th>Scoring</th>
<th>Reports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beck Depression Inventory®-II (BDI®-II)</td>
<td>13-80</td>
<td>5</td>
<td>English &amp; Spanish</td>
<td>Manual &amp; Q-global</td>
<td>Manual &amp; Q-global</td>
<td>Interpretive Progress</td>
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<tr>
<td>BDI® - FastScreen for Medical Patients (BDI®)</td>
<td>13-80</td>
<td>5</td>
<td>English &amp; Spanish</td>
<td>Manual</td>
<td>Manual</td>
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<tr>
<td>Beck Hopelessness Scale® (BHS®)</td>
<td>17-80</td>
<td>5-10</td>
<td>English &amp; Spanish</td>
<td>Manual &amp; Q-global</td>
<td>Manual &amp; Q-global</td>
<td>Interpretive Progress</td>
</tr>
<tr>
<td>Beck Scale for Suicide Ideation® (BSS®)</td>
<td>17+</td>
<td>5-10</td>
<td>English &amp; Spanish</td>
<td>Manual &amp; Q-global</td>
<td>Manual &amp; Q-global</td>
<td>Interpretive Progress</td>
</tr>
<tr>
<td>Beck Youth Inventories™ - Second Edition (BYI-2)</td>
<td>7-18</td>
<td>5 per</td>
<td>English &amp; Spanish</td>
<td>Manual &amp; Q-global</td>
<td>Manual &amp; Q-global</td>
<td>Score Progress</td>
</tr>
</tbody>
</table>
Children's Depression Inventory 2™ (CDI 2)

Administration Time: 15-20 minutes

Ages: 7-17

Languages: English

Scoring: hand-scored

Administration options: paper and pencil
### Symptom Checklist-90-Revised (SCL-90-R®)  
Brief Symptom Inventory (BSI®)  
Brief Symptom Inventory 18 (BSI® 18)

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Ages</th>
<th>Admin Time</th>
<th>Language</th>
<th>Adm Method</th>
<th>Scoring</th>
<th>Reports</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSI</td>
<td>13+</td>
<td>8-10 minutes</td>
<td>English &amp; Spanish</td>
<td>Manual &amp; Online</td>
<td>Manual &amp; Digital</td>
<td>Profile, Interpretive, Progress</td>
</tr>
<tr>
<td>BSI-18</td>
<td>18+</td>
<td>4 minutes</td>
<td>English</td>
<td>Manual &amp; Online</td>
<td>Manual &amp; Digital</td>
<td>Profile, Progress</td>
</tr>
</tbody>
</table>
Innerview

Administration Time: 15-30 minutes
Ages: 18+
Languages: English
Administration options: Online
Reporting: Narrative output for clinicians
   Individualized rating scale for symptom severity and monitoring change

*Optional Alerts related to potential harm emailed to clinician
Behavior Assessment System for Children, Third Edition (BASC-3); BASC-3 Flex Monitor

**Administration Time:** 10-20 minutes (TRS and PRS), 30 minutes (SRP)

**Ages:** 2:0 - 21:11 (TRS and PRS); 6:0 through college age (SRP)

**Languages:** English & Spanish (Parent & Self-report)

**Administration options:** Manual & Q-global

**Scoring & Reporting:** Q-global™ Web-based Scoring, and/or Reporting, or Manual Scoring.

**Reports:** Score, Interpretive, Multi-rater, Progress
Minnesota Multiphasic Personality Inventory®-2 (MMPI®-2);
Minnesota Multiphasic Personality Inventory-2- Restructured Form® (MMPI-2-RF®)

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Ages</th>
<th>Admin Time</th>
<th>Language</th>
<th>Admin. Method</th>
<th>Scoring</th>
<th>Reports</th>
</tr>
</thead>
<tbody>
<tr>
<td>MMPI-2</td>
<td>18+</td>
<td>60-90 minutes</td>
<td>English, Spanish, French for Canada</td>
<td>Online, Computer, CD or Paper and pencil</td>
<td>Q-global®, Hand Scoring</td>
<td>Extended Score Reports, Adult Clinical Interpretive Reports, Forensic Settings Reports, Personnel Interp. and Adjustment Ratings Reports</td>
</tr>
<tr>
<td>MMPI-2-RF</td>
<td>18+</td>
<td>35-50 minutes</td>
<td>English, Spanish, French for Canada</td>
<td>Online, computer, CD, or paper and pencil</td>
<td>Q-global® Scoring Hand Scoring</td>
<td>Score, Interpretive and Police Candidate Interpretive</td>
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</tbody>
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Minnesota Multiphasic Personality Inventory®-Adolescent (MMPI®-A)
Minnesota Multiphasic Personality Inventory-Adolescent-Restructured Form™ (MMPI-A-RF®)

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Ages</th>
<th>Admin Time</th>
<th>Language</th>
<th>Admin. Method</th>
<th>Scoring</th>
<th>Reports</th>
</tr>
</thead>
<tbody>
<tr>
<td>MMPI-A</td>
<td>14-18</td>
<td>Approx. 60 minutes</td>
<td>English &amp; Spanish</td>
<td>Online administration, Computer, CD, paper and pencil</td>
<td>Q-global® Scoring, Hand Scoring</td>
<td>Adolescent Interpretive, Extended Score</td>
</tr>
<tr>
<td>MMPI-A-RF</td>
<td>14-18</td>
<td>25 to 30 minutes comp; 30-45 minutes PNP</td>
<td>English &amp; Spanish</td>
<td>Web-based (Q-global), paper and pencil</td>
<td>Q-global® Scoring, Hand Scoring</td>
<td>Score, Interpretive</td>
</tr>
</tbody>
</table>
Millon Family of Assessments:
Millon® Clinical Multiaxial Inventory-IV (MCMI®-IV)
Millon® College Counseling Inventory (MCCI®)
Millon® Adolescent Clinical Inventory (MACI®)
Millon® Pre-Adolescent Clinical Inventory (M-PACI®)
Millon® Behavioral Medicine Diagnostic (MBMD®)

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Ages</th>
<th>Admin Time</th>
<th>Language</th>
<th>Admin. Method</th>
<th>Scoring</th>
<th>Reports</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCMI-IV</td>
<td>18+</td>
<td>25-30 mins</td>
<td>English &amp; Spanish</td>
<td>Paper &amp; pencil</td>
<td>Manual &amp; Q-global</td>
<td>Profile Interpretive</td>
</tr>
<tr>
<td>MCCI</td>
<td>College students 16-40</td>
<td>20-25 mins</td>
<td>English</td>
<td>Manual &amp; Q-global</td>
<td>Manual &amp; Q-global</td>
<td>Interpretive</td>
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<tr>
<td>M-PACI</td>
<td>9-12</td>
<td>15-20 mins</td>
<td>English</td>
<td>Manual &amp; Q-global</td>
<td>Manual &amp; Q-global</td>
<td>Profile Interpretive</td>
</tr>
<tr>
<td>MBMD</td>
<td>18-85</td>
<td>20-25 mins</td>
<td>English &amp; Spanish</td>
<td>Manual &amp; Q-global</td>
<td>Manual &amp; Q-global</td>
<td>Interpretive (with Healthcare Provider Summary), and Profile Reports</td>
</tr>
</tbody>
</table>
Additional Measures

- Pain Patient Profile (P-3®)
- Battery for Health Improvement 2 (BHI™ 2)
- Brief Battery for Health Improvement 2 (BBHI™ 2)
- Childhood Trauma Questionnaire: A Retrospective Self-Report (CTQ)
- Eating Inventory
Contact Us:

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