PSYCHOLOGICAL CHALLENGES OF DIABETICS

Does Depression Correlate to Diabetic Foot Ulcer Outcomes?

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Diabetes Overview

• In the US 29.1 million diabetics
  – 21 million diagnosed
  – 8.1 million undiagnosed
• By 2030 DM Type 2 will be 7th leading cause of death worldwide
• Estimated annual cost of care = $245 billion
  – $176 billion → direct medical costs
  – $69 billion → productivity lost

Maydick et al, 2016
Diabetic Foot Ulcers

- Between 15 and 25% of diabetics will develop a DFU
  - Only two-thirds of heal within 6 months
  - Approx. 60% patients have a recurrence within 12 months
- Mortality following amputations range from 39 to 80% at 5 years
  - Within 3 years up to 50% of amputees experience amputation on the contralateral limb

Pearson, et al, 2014
Depression Overview

Statistics
• Affects 6.7% of American adults (National Institute of Mental Health)
• 4th leading cause of disability worldwide
  – 2nd by 2020 (Kessler, et al, 2013)

Diagnosis
• Gold standard
  – Structured patient interview
  – Diagnosis that conforms to Diagnostic and Statistical Manual of Psychiatric Disorders, 5th edition (DSM-V)
• Assessment via self-administered questionnaires
Patient Health Questionnaire (PHQ-9)

- Patients rate how often in past 2 weeks they experienced depressive feelings or thoughts
- Studies show excellent correlation between PHQ-9 and clinician structured interview
- Total scores range from 0-27
  - Scores >7 have sensitivity of 91.9% and specificity of 59.4%

Pearson, et al, 2014
# Patient Health Questionnaire (PHQ-9)

**Patient Name:** ________________________________  **Date:** ______________

<table>
<thead>
<tr>
<th></th>
<th>Not at all</th>
<th>Several days</th>
<th>More than half the days</th>
<th>Nearly every day</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Over the <em>last 2 weeks</em>, how often have you been bothered by any of the following problems?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Little interest or pleasure in doing things</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>b. Feeling down, depressed, or hopeless</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>c. Trouble falling/staying asleep, sleeping too much</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>d. Feeling tired or having little energy</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>e. Poor appetite or overeating</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>f. Feeling bad about yourself or that you are a failure or have let yourself or your family down</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>g. Trouble concentrating on things, such as reading the newspaper or watching television.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>h. Moving or speaking so slowly that other people could have noticed. Or the opposite; being so fidgety or restless that you have been moving around a lot more than usual.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>i. Thoughts that you would be better off dead or of hurting yourself in some way.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>

2. If you checked off any problem on this questionnaire so far, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?  

<table>
<thead>
<tr>
<th></th>
<th>Not difficult at all</th>
<th>Somewhat difficult</th>
<th>Very difficult</th>
<th>Extremely difficult</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>
For physician use only

Scoring:
Count the number (#) of boxes checked in a column. Multiply that number by the value indicated below, then add the subtotal to produce a total score. The possible range is 0-27. Use the table below to interpret the PHQ-9 score.

Not at all (###) x 0 = ______
Several days (###) x 1 = ______
More than half the days (###) x 2 = ______
Nearly every day (###) x 3 = ______

Total score: ______

<table>
<thead>
<tr>
<th>Interpreting PHQ-9 Scores</th>
<th>Score</th>
<th>Actions Based on PH9 Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimal depression</td>
<td>0-4</td>
<td>&lt; 4</td>
</tr>
<tr>
<td>Mild depression</td>
<td>5-9</td>
<td>The score suggests the patient may not need depression treatment</td>
</tr>
<tr>
<td>Moderate depression</td>
<td>10-14</td>
<td>&gt; 5 - 14</td>
</tr>
<tr>
<td>Moderately severe depression</td>
<td>15-19</td>
<td>Physician uses clinical judgment about treatment, based on patient's duration of symptoms and functional impairment</td>
</tr>
<tr>
<td>Severe depression</td>
<td>20-27</td>
<td>&gt; 15</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Warrants treatment for depression, using antidepressant, psychotherapy and/or a combination of treatment.</td>
</tr>
</tbody>
</table>

Depression and Diabetes

• Depression is twice as common in patients with DM
• Prevalence is 11%; up to 32% in patients with DFU
• DM patients with depressive symptoms
  – Poorer glycemic control
  – Poorer self management behavior
  – Increased risk of morbidity and mortality
• Major depression associated with 2-fold higher risk of DFU incidence
• How does depression correlate to DFU outcomes?

Williams, et al, 2010
Key Literature

A Cohort Study of People With Diabetes and Their Foot Ulcer (Ismail et al, 2007)

Goal
• Examine whether depression was associated with mortality in patients with their first DFU for an 18 month period

Results
• One-third of patients with first DFU were depressed
• Depression not associated with healing, ulcer recurrence or amputation
• Depression associated with three-fold increase of death

What about mortality at 5 year follow-up? (Winkley et al, 2012)
• Two-fold increased risk of mortality
Key Literature

The Diabetic Person Beyond a Foot Ulcer: Healing, Recurrence, and Depressive Symptoms (Monami et al, 2008)

Goal
• Examine depressive symptoms in healing and recurrence of DFUs in type 2 diabetics age ≥ 60 (via self-report assessment)

Results
• Healed ulcers had significantly lower scores on geriatric depression scale (GDS)
• Scores of ≥ 10 had significantly higher risk of not healing at 6 months
• Patients with recurrent ulcerations had significantly higher GDS scores
Key Literature

Depression and Incident Lower Limb Amputations in Veterans with Diabetes (Williams et al, 2011)

Goal
• Examine association between diagnosed depression and incident non-traumatic lower limb amputations in veterans with DM

Results
• Depression associated with 33% increased risk of non-traumatic major lower limb amputations
  − No increased risk of minor lower limb amputations
Key Literature

Depression Symptoms in People with Diabetes Attending Outpatient Podiatry Clinics for Treatment of Foot Ulcers (Pearson et al, 2014)

Goals
• Examine prevalence of depression
• Determine the effect of depression on diabetes self-management, health related quality of life (HRQoL), and ulcer status at 6 months follow-up

Results
• High prevalence of depressive symptoms (51.7%)
• 28% of patients had undiagnosed depression
• Maintenance pharmacotherapy not effective in treating symptoms
• Depressive symptoms associated poorer DM self-management and HRQoL
• No association between depressive symptoms and ulcer outcomes at 6 month follow-up
Depression or Distress

- Prevalence of depression higher when assessed by patient surveys versus structured interviewing
- Depressive symptoms without clinical depression or distress?

Diabetic Emotional Distress
- “Diabetic Burn-out”
  - Feelings of guilt, overwhelming stress, hopelessness, anxiety, frustration; submission to disease; demoralization
- Affects up to 50% of patients in an 18 month period
- Related to poor health outcomes, i.e. poor self-management

Fisher, et al, 2010
Diabetic Emotional Distress

- Can be formally assessed via the Problem Areas in Diabetes Questionnaire (PAID)

Patient Identification

- Are you having trouble accepting your diabetes?
- Do you feel overwhelmed or burned out by the demands of diabetes management?
- Do you get the support you need from your family for diabetes management?
- Do you worry about diabetic complications?

Peyrot et al, 2007
Depression and Distress Screening

Controversy
• Feasibility, cost-effectiveness, who performs assessment (primary or secondary care)

Reimbursement
• CPT Code 96127
• May be used to report brief behavioral or emotional assessments for reimbursement
  – Include any standardized screening instruments that will provide both scoring and further documentation to the healthcare provider
• Can podiatrists bill?
  – “The short answer is no. DPMs will be flagged for using that code since most payers would consider a foot and ankle specialist not to be the provider type that would typically perform central nervous system assessments/tests, especially for depression.” (Goldsmith, 2017)
Summary

• DFU outcomes related to depression and/or diabetic distress needs more sound research

• Screening techniques and application is controversial

• Both depression and diabetic distress related to poor self management, including podiatric care

• General recognition of psychological challenges deserves attention
The Podiatrist's Role

- Podiatrists don’t treat feet – we treat patients with foot problems
- We have more frequent contacts with our patients
  - Care for patients in transitional health states across continuum of care
  - More sensitive to subtle changes in our patient’s mental health
- Recognize symptoms of psychological distress and depression and refer to mental health
  - Help to mitigate risk factors
  - Aid in overcoming counterproductive behaviors
References

References


THANK YOU