Mental Health Issues in Student-Athletes: Clinical Screening Implications and Prevalence Investigations

Lindsey C. Keenan, PhD, LAT, ATC
Department of Sports Medicine
Mental Health Issues in Collegiate Athletes

- Sport participation has been shown to both hinder and improve the mental health of athletes (Proctor & Boan-Lenzo, 2010; Storch et al., 2005)

- Participating as a collegiate athlete may cause excessive stress from:
  - time constraints
  - other required academic/athletic related commitments
  - the transitional period of the first year of college
  - first collegiate sport season
  - high risk of injury in collegiate sports

→ imbalance of pressures → anxiety, depression

(Yang et al., 2007; Brewer, 2001; Smith, 1996; Udry et al., 1997)
Depression in Athletes

- Minimal research on depression in student-athletes
  - Reported prevalence: 10% to 26%
  - Utilizing various self-report depression symptom measures & methods
    (Hammond, Gialloreto, Kubas, & Davis, 2013; McGuire, Ingram, Sachs, & Tierney, 2017; Nixdorf, Hautzinger, & Beckmann, 2013; Proctor & Boan-Lenzo, 2010; Storch, Storch, Killiany, & Roberti, 2005; Wolanin, Hong, Marks, Panchoo, & Gross, 2016; Yang et al., 2007)

- NATA & NCAA recommendation: screen collegiate student-athletes for mental health issues within preparticipation exams

- Researchers have yet to validate any depression screening tool within a student-athlete population

(Neal et al., 2013) (NCAA, 2016)
PURPOSE

Validate the Patient Health Questionnaire-9 (PHQ-9) depression screening tool in collegiate student-athletes
Methodology

PPE Mental Health Screening: PHQ-9
2 NCAA Division II Universities

- Identified red-flags
- Followed MH referral protocol

Random stratified sampling technique:
Selected participants for follow-up MINI clinical interview

- Clinical neuropsychiatric interview = gold standard comparison
- MINI = validated brief standardized version
  (Sheehan, 1998)

290 completed MINI clinical interview

- Graduate MS Counseling, Social Work, School Counseling RAs
- Blind to PPE screening results
Results 4
DEMOGRAPHICS

N = 881

48.4% Male
51.6% Female

Figure 1. Percentage SAs by Sport (N = 881)
## Results

<table>
<thead>
<tr>
<th>PHQ-9 Symptoms</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decreased interest / pleasure</td>
<td>32</td>
<td>3.7</td>
</tr>
<tr>
<td>Feeling down, depressed, hopeless</td>
<td>36</td>
<td>4.1</td>
</tr>
<tr>
<td>Sleep issues</td>
<td>86</td>
<td>9.7</td>
</tr>
<tr>
<td>Decreased energy</td>
<td>61</td>
<td>6.9</td>
</tr>
<tr>
<td>Poor appetite / overeating</td>
<td>54</td>
<td>6.2</td>
</tr>
<tr>
<td>Feeling bad about yourself</td>
<td>34</td>
<td>3.9</td>
</tr>
<tr>
<td>Trouble concentrating</td>
<td>41</td>
<td>4.7</td>
</tr>
<tr>
<td>Decreased movement/agitation</td>
<td>16</td>
<td>1.8</td>
</tr>
<tr>
<td>Suicidal ideation / self-harm*</td>
<td>5</td>
<td>0.6</td>
</tr>
</tbody>
</table>

*Suicidal ideation included several days*
<table>
<thead>
<tr>
<th>Level</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>412</td>
<td>46.8</td>
</tr>
<tr>
<td>Minimal</td>
<td>313</td>
<td>35.5</td>
</tr>
<tr>
<td>Mild</td>
<td>120</td>
<td>13.6</td>
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<tr>
<td>Moderate</td>
<td>25</td>
<td>2.8</td>
</tr>
<tr>
<td>Moderately-Severe</td>
<td>10</td>
<td>1.1</td>
</tr>
<tr>
<td>Severe</td>
<td>1</td>
<td>.1</td>
</tr>
<tr>
<td>Total</td>
<td>881</td>
<td>100</td>
</tr>
</tbody>
</table>
MINI Results

MINIs 290

Met depression criteria 18

56.9% females

age 19.8 ± 1.3 years
Percentage of SAs by Sport

- **Football**: 18 met depression criteria
- **Baseball**: 5
- **Women's Soccer**: 10
- **Men's Soccer**: 3
- **Women's Lacrosse**: 15
- **Field Hockey**: 10
- **Softball**: 15
- **Women's Swimming & Diving**: 4
- **Women's Track & Field**: 2
- **Women's Volleyball**: 3
- **Women's Rugby**: 1
- **Women's Cross Country**: 1
- **Men's Basketball**: 1
- **Men's Track & Field**: 3
- **Men's Wrestling**: 7
- **Men's Cross Country**: 2
- **Women's Basketball**: 2
- **Men's Swimming & Diving**: 2
- **Women's Gymnastics**: 5
- **Cheerleading**: 1
- **Women's Tennis**: 1
- **Men's Golf**: 1
- **Women's Golf**: 1
- **Men's Tennis**: 1

*Total Participants: N = 290*
Figure 5. ROC Curve for the PHQ-9 vs. MINI

AUC = 0.81
<table>
<thead>
<tr>
<th>Score</th>
<th>Sensitivity (%)</th>
<th>Specificity (%)</th>
<th>Youden’s J</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>100</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>94.4</td>
<td>27.2</td>
<td>0.216</td>
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<tr>
<td>2</td>
<td>94.4</td>
<td>37.1</td>
<td>0.315</td>
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<tr>
<td>3</td>
<td>94.4</td>
<td>47.1</td>
<td>0.415</td>
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<tr>
<td>4</td>
<td>83.3</td>
<td>56.2</td>
<td>0.395</td>
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<tr>
<td>5</td>
<td>83.3</td>
<td>66.5</td>
<td>0.498</td>
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<tr>
<td>6</td>
<td>77.8</td>
<td>75.4</td>
<td>0.532</td>
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<td>7</td>
<td>66.7</td>
<td>82.7</td>
<td>0.494</td>
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<tr>
<td>8</td>
<td>50</td>
<td>87.9</td>
<td>0.379</td>
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<tr>
<td>9</td>
<td>38.9</td>
<td>90.8</td>
<td>0.297</td>
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<tr>
<td>10</td>
<td>38.9</td>
<td>94.1</td>
<td>0.33</td>
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<tr>
<td>11</td>
<td>22.2</td>
<td>96</td>
<td>0.182</td>
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<tr>
<td>12</td>
<td>22.2</td>
<td>97.1</td>
<td>0.193</td>
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<tr>
<td>13</td>
<td>16.7</td>
<td>97.4</td>
<td>0.141</td>
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<tr>
<td>14</td>
<td>16.7</td>
<td>97.8</td>
<td>0.145</td>
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<tr>
<td>15</td>
<td>16.7</td>
<td>98.2</td>
<td>0.149</td>
</tr>
<tr>
<td>16</td>
<td>5.6</td>
<td>99.3</td>
<td>0.049</td>
</tr>
<tr>
<td>17</td>
<td>0</td>
<td>99.6</td>
<td>-0.004</td>
</tr>
<tr>
<td>18</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

\[ J = \text{sensitivity} + \text{specificity} - 1 \]
Discussion

Both PHQ-9 and CES-D well documented as valid measures in other populations (Kroenke, Spitzer, & Williams, 2001; Vilagut, Forero, Barbaglia, & Alonso, 2016)

- Student-athletes
  - PHQ-9 for clinical screening

Lower cut-off scores

- Underreporting
  - Anonymous screening
  - Reluctance to report
  - Invisible injury
  - Stigma

Concussion underreporting
Kroshus, Kubzansky, Goldman, & Austin, 2015

Corrigan et al., 2006; Jones, Butryn, Furst, & Semerjian, 2013; Kamm, 2005
Crisis Text Line:
CONNECT to 741741

National Suicide Prevention Lifeline:
1-800-273-8255
THANK YOU

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LKeenan@wcupa.edu


References


