Student Health, Athletic Performance, and Education Study: Second Annual Report

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The University of Tulsa Institute of Trauma, Abuse, and Neglect (TITAN)
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**Special Mention**

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Table of Contents

Executive Summary .................................................................................................................. 5

Key findings on Mental Health and Obsessive Compulsive Disorder (OCD) ......................... 6
Key findings on Stress ................................................................................................................. 6
Key findings on Sleep ................................................................................................................. 7
Key findings on SHAPE Sleep Workshops ................................................................................ 7
Key findings on Psychological Service Usage ............................................................................. 8

Introduction ............................................................................................................................... 8

IRB Approval ............................................................................................................................... 9

Method ......................................................................................................................................... 9

Athletes ....................................................................................................................................... 9
Non-athletes ................................................................................................................................. 10

Demographics ............................................................................................................................. 10

Measures Used and Interpretation ............................................................................................ 11

All-Conference Status ................................................................................................................. 11
Stress .......................................................................................................................................... 12
Racism ....................................................................................................................................... 12
Mental Health Profile .................................................................................................................. 13
Obsessive Compulsive Disorder ................................................................................................. 13
Sleep Hygiene ............................................................................................................................. 13
Sleep Quality and Quantity .......................................................................................................... 14
Daytime Sleepiness ...................................................................................................................... 14

Mental Health Profile ................................................................................................................ 15

Mental Health Screening Results ............................................................................................. 15

Obsessive Compulsive Disorder (OCD) ..................................................................................... 18
OCD and Athletic Performance .................................................................................................. 18

Key findings on Mental Health and Obsessive Compulsive Disorder (OCD) .......................... 19
Stress ........................................................................................................................................ 19
Racism ....................................................................................................................................... 20
Stress and Academic Performance ............................................................................................ 21
Stress and Athletic Performance ............................................................................................... 21
Executive Summary

In the Fall of 2011 The University of Tulsa’s Institute of Trauma, Abuse, and Neglect (TITAN) collaborated with The University of Tulsa (TU) Athletics Department to develop the Student Health, Athletic Performance, and Education (SHAPE) project. The goal of the project was to improve the academic and athletic performance of TU’s athletes by addressing the interaction between physical and mental health on overall functioning. Year 1 of the project took place in the 2011-12 academic year, in the form of a needs assessment. Year 2 (2012-13 academic year) involved two interventions based on the initial needs assessment. The following document represents a summary of Year 2 of the project (See Appendix A for Year 2 Timeline).

In order to improve academic and athletic performance of TU’s athletes, SHAPE asked four major questions:

1. What is the mental health profile of student athletes, and what are their current and past life stressors?
2. If there are mental health issues and stressors, how are these related to athletes’ functioning?
3. How are currently available services being utilized? What barriers exist to accessing services, and what additional services are needed?
4. If need-based educational services are offered, what is the effectiveness of educational workshops?

To examine these questions, data from athletes \(n = 270\) were collected in Year 2 of the study (hereafter referenced as Year 2). Anonymous non-athlete \(n = 83\) student data were obtained from the Psychology department’s human subject pool for the purpose of comparison.
Summary of Key Findings

Key findings on Mental Health and Obsessive Compulsive Disorder (OCD)

- In general, SHAPE athletes reported a similar prevalence of common mental health disorder symptoms in the 2 years of the study.
  - However, problems with binge eating, generalized anxiety and post-traumatic stress, were significantly more prevalent Year 2.
- Similar Year 1, athletes reported fewer mental health symptoms than the non-athletes.
- A little more than a third of the sample endorsed at least one obsession or compulsion.
- No athletes reported an OCD diagnosis or ever receiving treatment for OCD.
- No relationships were observed between OCD symptoms and academic performance.
- All-conference athletes reported significantly fewer symptoms of OCD than athletes without all-conference honors.

Key findings on Stress

- Injury during the Fall 2012 semester was positively associated with self-reported stress such that athletes who were injured reported more stress or alternatively, more stress was associated with an increased likelihood for injury.
  - Several physical health variables were positively associated with reported stress scores including: days in treatment, visits to the training room, unique injuries and use of prescription medication.
- There were no differences in reported stress between athletes selected to an all-conference team versus those who were not.
- The majority of the sample (67%) reported occasionally experiencing racism in the past year and 75% of the sample endorsed an experience of racism in their lifetime.
Key findings on Sleep

➢ More than two-thirds (67%) of the SHAPE athletes reported experiencing some sleep dysfunction.

➢ Compared to the non-athlete comparison sample, athletes reported significantly more daytime sleepiness than did non-athletes.

➢ Two of the self-reported measures of sleep were associated with Fall 2012 Grade Point Average (GPA).
  o Only sleep efficiency (i.e., ratio of number of hours spent in bed to number of hours sleeping) and daytime dysfunction were associated with academic performance.
    ▪ Higher sleep efficiency and more daytime dysfunction were associated with higher Fall GPAs.
      • It is possible that obtaining higher GPAs required more work, which resulted in greater sleepiness during the day (i.e., greater daytime dysfunction).

➢ All-conference athletes reported significantly better sleep hygiene and less daytime fatigue and sleepiness than did non-all conference athletes.

Key findings on SHAPE Sleep Workshops

➢ Both SHAPE sleep workshops were well attended by athletes and attendees represented every sport on campus.

➢ About half of SHAPE athletes reported changing a sleep-related behavior after each of the two workshops.
Objective measures indicated that athletes experienced less daytime fatigue and less sleepiness after attending the first sleep workshop offered by the SHAPE team.

- The improvements were maintained over time, with similar reduced levels of fatigue and sleepiness noted a few months after the first workshop.

Athletes’ knowledge of sleep topics improved significantly after both workshops and knowledge gained at the first workshop was maintained over time.

On feedback questionnaires, athletes reported that they enjoyed the sport-specific information and interactive portions of the SHAPE sleep workshops.

**Key findings on Psychological Service Usage**

- A small proportion (10.6%) of athletes self-reported using psychological services in the past 6 months.

- Of those who screened positive on a mental health screening instrument, athletes were less likely than their non-athlete peers to report using a psychological service.

**Introduction**

During the 2011-2012 academic year, The University of Tulsa Institute of Trauma, Abuse and Neglect (TITAN) conducted a mental health needs assessment of the University’s student-athletes. Results of this assessment provided a baseline for an on-going longitudinal study known as the Student Health, Athletic Performance, and Education (SHAPE) project. SHAPE’s goal is to improve TU athletes’ academic and athletic performance by addressing the interplay of health and stress on functioning.

The following document discusses relevant information from literature reviews, key findings from the second data collection, and recommendations for future interventions.
IRB Approval

The initial SHAPE research study was approved by the University of Tulsa Institutional Review Board (IRB # 12-04) on October 18, 2011. During the Summer of 2013, we revised the IRB for the study to consolidate the non-athlete and athlete protocols as well as revised study measures as indicate by Year 2 of data collection. This revision was approved on July 8, 2013 and the study continues under the current protocol number (IRB # 13-84).

Method

During the Summer of 2011, the research team met with the athletic director to discuss goals for the assessment. Ultimately, the identified goal was to improve athletic and academic performance for TU athletes by addressing behavioral health related concerns. The research team brainstormed key areas to target and generated a list of measures. The 2012-2013 research team was interdisciplinary and comprised of: one undergraduate student, two graduate assistants, two psychology faculty and one nursing faculty member (two of which were former NCAA Division I athletes). Additional assistance with data entry, coding, and study maintenance was offered from the SPARTA lab directed by Dr. Cromer, which included undergraduates representing diverse academic backgrounds (e.g., economics, sociology and sports medicine). After Year 1 of the study, as indicated by the results of the first needs assessment, the research team revised the questionnaire packets administered to student athletes to target areas of concern observed in Year 1. Updates included: a more comprehensive assessment of sleep concerns including daytime dysfunction, obsessive compulsive symptoms, and racism.

Athletes

Data collection was organized in consultation with coaches and training room staff and occurred either during teams’ weight training sessions or team meetings. Each team completed
the measures as a group. During the scheduled session, a member of SHAPE introduced the purpose of the study and emphasized the voluntary nature of the project. Athletes who chose to participate ($N = 270$) signed an informed consent and indicated if researchers had permission to access their academic record through the athletics department. The majority of athletes ($n = 256, 95\%$) gave permission for researchers to access their academic records. More than half of the current sample ($n = 141, 56\%$) had also completed baseline measures in the previous academic year (Fall 2011).

After the initial data collection session was completed, the graduate assistant (GA) reviewed athletes’ medical charts. Indicators of psychological and medical service use and health status (e.g., clinic visits, weight, height, medication use) were recorded for analyses, along with the electronically generated list of injuries from the training room’s database. The athletics department also provided Fall 2012 GPAs and the cumulative GPA for athletes who had consented to this data being released for the study.

**Non-athletes**

A comparison sample of non-athlete students was recruited using the Department of Psychology Human Subjects Research Pool (HSP). Non-athletes ($N = 83$) volunteered to fill out a similar assessment battery as the SHAPE athletes. In contrast to the athletes, non-athletes completed questionnaires anonymously and online through an electronically administered HSP. Non-athletes were able to log onto the system at any time during the semester and complete the questionnaires alone at a computer of their choosing.

**Demographics**

A total of 270 (68\%) student-athletes volunteered to participate in the SHAPE study. Participants represented all of the NCAA Division I teams on campus. Athletes were
approximately 20 years of age ($M = 19.6, SD = 1.8$) and approximately equal men (47%) and women (53%). Almost all of the participants reported their marital status as single (99%) and one-third (32.5%) reported having a boyfriend or girlfriend. Participants’ self-reported ethnicity and year in school are displayed in Figures 1 and 2 below.

Similar to athletes, non-athletes were approximately 20 years of age ($M = 20.88, SD = 1.7$). In contrast to athletes, the non-athlete sample was primarily female (80%) and ethnically less diverse than the SHAPE athletes (85% Caucasian). Time of day, time of the semester, participant demographics, and perceived anonymity could have influenced between group differences scores.

**Figure 1.**

![Year in School](image)

**Figure 2.**

![Self-reported Race](image)

**Measures Used and Interpretation**

**All-Conference Status.** To obtain an objective indicator of athletic performance, athletes who participated in the SHAPE project and who were also selected to an All-Conference team (All-Conference USA) during the 2012-2013 athletic seasons were identified through the Conference USA website. Specifically, athletes who received any level of All-Conference honors (1st team, 2nd team, all-freshman etc.) were noted by researchers. In sum, around one-fifth of athletes earned All-Conference honors ($n = 53, 19.6\%$). Approximately the same number of male athletes (51%) earned All-Conference honors as did females (49%). All-Conference honorees tended to be older ($M_{age} = 20.20, t(264) = -3.06, p = .002$) and more likely to report
being an ethnic or racial minority (39.6%) than those without honors (21.7%, $\chi^2 = 7.30, p = .007$).

**Stress.** To assess the level of current stress, athletes completed a modified version of the Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelstein, 1983). The PSS is a 10-item self-report questionnaire that measures an individual’s evaluation of the level of stress of situations in the past month of their lives. Each item is ranked on a 5-point Likert-type scale indicating how often an individual felt or thought a certain way during the past month (e.g., How often have you felt nervous or stressed?”) on a scale ranging from 0 (Never) to 4 (Very often). Values are then summed to compute a total stress score where higher scores indicate more current stress.

**Racism.** From Year 1 of the project we had learned that TU athletes appeared to over-represent ethnic diversity on campus. As such, we speculated that there may be additional stressors experienced by athletes who identified as an ethnic minority. In order to assess the potential impact of perceived discrimination, all athletes completed the Schedule of Racist Events (SRE; Landrine & Klonoff, 1996). The SRE is an 18-item self-report inventory that assesses the frequency of racist discrimination (specific, stressful racist events) in the past year as well as in one's entire life (e.g., How many times have you been treated unfairly by strangers because of your race?), and measures the extent to which this discrimination was evaluated as stressful. Each item is answered on a scale that range from 1 (the event never happened) to 6 (event happens almost all of the time). The SRE yields three different subscales: recent racist events, lifetime racist events, and appraised racist events. Recent and lifetime racist event scores range from 18-108, and appraised racist events ranges from 17-108. Higher scores on the SRE indicate a higher frequency of discrimination and distress.
Mental Health Profile. To assess the mental health profile of the SHAPE athletes, participants completed the Psychiatric Diagnostic Screening Questionnaire (PDSQ). The PDSQ is a validated measure commonly used in clinical settings for symptom screening (Zimmerman, 2002). The PDSQ has 14 subscales that screen for Axis I disorders commonly encountered in primary care and has been shown to have good sensitivity to detecting clinical concerns (Zimmerman & Chelminski, 2006). On each of the 14 subscales a cut off score was used to determine if an athlete met PDSQ symptom threshold that is suggestive of a given disorder. However, it is important to note that the PDSQ cannot make diagnostic determinations and serves only as a screener for self-reported symptomatology.

Obsessive Compulsive Disorder. During Year 1 of the project it was noted that athletes reported significantly more obsessive-compulsive symptoms than non-athletes. In order to obtain further information about the frequency and intensity of obsessional thoughts, in Year 2 athletes completed the Florida Obsessive Compulsive Inventory (FOCI; Storch et al., 2007). The FOCI is made up of 20 “yes” or “no” items and 5 symptom severity items rated on a 5-point likert scale (e.g., Have you felt driven to perform certain acts over and over again, such as…). The FOCI yields two subscales (i.e., symptom checklist and symptom severity). A symptom checklist score ranges between 0 and 20, with higher scores indicating more symptoms. The symptom severity score is calculated by summing the 5 severity questions (e.g., How much distress do they cause you?) and scores range from 0 and 25. A score of 8 or higher on the symptom severity subscale has been suggested as a cut off for an individual warranting further clinical attention (Goodman, 1994).

Sleep Hygiene. Sleep hygiene was assessed using the Sleep Hygiene Index (SHI; Mastin, Bryson, & Corwyn, 2006). The SHI is a 13-item self-report instrument designed to assess sleep
hygiene behaviors. Athletes were asked to indicate the frequency with which they engaged in specific sleep hygiene behaviors (e.g., I get out of bed at different times day to day). Items are rated in a Likert-scale ranging from 1 (never) to 5 (always). Items are summed yielding a global score for sleep hygiene ranging from 13 to 65. Higher scores indicate more maladaptive sleep hygiene practices.

**Sleep Quality and Quantity.** To provide detailed information on sleep quality and quantity, SHAPE participants were asked to complete the Pittsburgh Sleep Quality Index (PSQI). The PSQI is a well-validated self-report measure that discriminates poor sleepers from good sleepers (Buysse, Reynolds, Monk, & Berman, 1989). The PSQI is scored to compute seven component scores including: subjective sleep quality (i.e., self-reported sleep quality), sleep latency (i.e., length of time to fall asleep), sleep duration (i.e., number of hours slept), sleep efficiency (i.e., ratio of number of hours spent in bed to number of hours sleeping), sleep disturbances (e.g., snoring roommate), use of sleeping medication, and daytime dysfunction (i.e., daytime sleepiness). Each of these seven components is scored on a 0 to 3 range, with 3 indicating more sleep dysfunction. Summing the seven component scores on the PSQI yields a global score with a range from 0-21, with 21 representing the worst sleep score possible.

**Daytime Sleepiness.** Two measures were used to assess daytime sleepiness and fatigue. First, athletes completed the Epworth Sleepiness Scale (ESS; Johns, 1991). This is a brief, 8-item self-report scale that measures daytime sleepiness (e.g., “How likely are you to doze off while sitting and talking to someone?”). Items are rated on a scale of 0 (would never doze) to 3 (high chance of dozing). For example, total scores range from 0 to 24 with higher scores indicating greater sleepiness. Total scores above 10 are considered generally sleepy.
Athletes also completed the Multidimensional Assessment of Fatigue (MAF; Belza, Henke, Yelin, Epstein, & Gilliss, 1993). The MAF is a 16-item instrument that measures the severity, distress, functional impact, and frequency of fatigue during the past week (e.g., In the past week has fatigue interfered with your ability to cook?). Responses are computed to create a global fatigue index with scores ranging from 1 (no fatigue) to 50 (severe fatigue).

**Mental Health Profile**

**Mental Health Screening Results**

To assess the mental health profile of SHAPE athletes, participants completed the PDSQ. The PDSQ screens for 14 of the most common clinical disorders encountered in clinical practice as outlined by the revised 4th edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR; American Psychiatric Association, 2000). Prevalence rates of positive screens on the PDSQ for athletes during Year 1 and Year 2 of the study are shown in Figure 3. In general, SHAPE athletes had a similar prevalence of symptoms in the 2 years, although problems with binge eating, generalized anxiety and posttraumatic stress were significantly more prevalent in the current year. These differences between Year 1 and Year 2 may represent actual differences in symptoms or they could be an artifact of athletes familiarity with the SHAPE team and process. It is possible that the athletes felt less guarded in the current year. If this is the case they may have been comfortable and more likely to report accurately. Similar to last year, athletes reported significantly fewer symptoms than the non-athletes on all subscales of the PDSQ (See Figure 4).
Figure 3.

Proportion of Athletes Who Screened Positive For Psychopathology

- Alcohol Abuse/Dependence
- Major Depressive Disorder
- Bulimia/Binge-Eating Disorder
- Drug Abuse/Dependence
- Somatization Disorder
- Hypochondria

- Social Phobia
- Posttraumatic Stress Disorder
- Generalized Anxiety Disorder
- Obsessive-Compulsive Disorder
- Panic Disorder
- Agoraphobia

Comparison between 2011-2012 and 2012-2013.
Figure 4. Comparison of Reported Psychopathology Between Athletes and Non-Athletes

- Alcohol Abuse/Dependence
- Major Depressive Disorder
- Bulimia/Binge-Eating Disorder
- Drug Abuse/Dependence
- Somatization Disorder
- Hypochondria

2012-2013 Athletes
2012-2013 Non-Athletes
**Obsessive Compulsive Disorder (OCD)**

OCD is characterized by obsessions (i.e., intrusive thoughts that produce worry and anxiety) and/or compulsions (i.e., acts aimed at reducing associated anxiety). A little more than one-third of the sample (35%, \( n = 92 \)) endorsed at least one obsession or compulsion on the FOCI. Athletes endorsing symptoms on the symptom checklist reported an average of 3.2 (\( SD = 2.7 \)) items. The most commonly endorsed items included, “Have you worried a lot about terrible things happening, such as losing something valuable” and “Have you worried about acting on an unwanted and senseless urge or impulse, such as physically harming a loved one, pushing a stranger in front of a bus, steering your car into oncoming traffic; inappropriate sexual contact; or poisoning dinner guests?” Among athletes endorsing symptoms on the symptom checklist, 23% reported no related distress on the severity scale with the average distress reported being 3.7 (\( SD = 3.2 \)). Further, 5% (\( n = 14 \)) of athletes met the cut off for clinical attention (i.e., severity score greater than 8). Athletes reported a mean age of 14.3 (\( SD = 3.9 \)) years old when they first noticed the symptoms endorsed on the FOCI. No athlete endorsed being diagnosed with or ever having received treatment for OCD.

**OCD and Athletic Performance.** In the current sample, more OCD symptoms were associated with worse athletic performance. For instance, on the PDSQ, All-Conference athletes were significantly less likely to screen positive for OCD than those not selected to an all-conference team (\( \chi^2 = 5.68, p = .017 \)). Further, All-Conference athletes reported significantly fewer symptoms of OCD on the PDSQ when compared to athletes not on an All-Conference team (\( M = .45, M = .14; t (138.6) = 2.69, p = .008 \)).

Differences were also observed on the FOCI, a more detailed measure of OCD. An independent-samples \( t \)-test revealed that All-Conference athletes reported significantly fewer
symptoms of OCD ($M = 0.63$) than athletes without All-Conference honors ($M = 1.25; t(119.6) = 2.36, p = .02$). Despite differences in the frequency of OCD symptoms reported, among those reporting OCD symptoms no differences were observed in the severity of symptoms on the FOCI, ($t(90) = .77, p = ns$). No relationship was observed between OCD symptoms and academic performance.

**Key findings on Mental Health and Obsessive Compulsive Disorder (OCD)**

- In general, SHAPE athletes reported a mental health profile in Year’s 1 and 2 of the study.
  - However, problems with binge eating, generalized anxiety and posttraumatic stress, were significantly more prevalent in Year 2.
- Consistent with Year 1, athletes reported fewer mental health symptoms than did the non-athletes.
- A little more than a third of the athlete sample endorsed at least one obsession or compulsion.
- No athletes reported an OCD diagnosis or ever receiving treatment for OCD.
- No relationships were observed between OCD symptoms and GPA.
- All-Conference athletes reported significantly fewer symptoms of OCD than athletes without All-Conference honors.

**Stress**

On the measure of current perceived stress (PSS), athletes reported moderate levels of stress ($M = 15.1, SD = 5.7$). No differences in perceived stress were observed between non-athletes and athletes. Female athletes reported significantly more stress ($M = 15.84$) than did male athletes ($M = 14.2, t(255) = 2.22, p = .03$). Athletes who reported being an ethnic and/ or a
racial minority reported significantly more stress than those who were not an ethnic or racial minority (\(M = 16.6, M = 14.5, t(238) = -2.65, p = .09\)).

**Racism**

The majority of the sample (67%) reported experiencing racism at least once in a while in the past year and 75% of the sample endorsed an experience of racism in their lifetime. There was considerable variability in reported experiences with racism, resulting in a wide range of lifetime racism scores (18-74) on the SRE. Overall, among the entire sample, athletes reported low rates of recent racism (\(M = 23.4, SD = 9.3\)) and low rates of lifetime experiences of racism (\(M = 26.0, SD = 12.1\)) as well as of appraised racist events (\(M = 23.5, SD = 11.6\)). See Table 1 for a summary of the most common racist experiences reported by athletes in the past year.

**Table 1.**

*Prevalence of Racist Events Reported by Athletes in the Past Year*

<table>
<thead>
<tr>
<th>Treated unfairly by… because of your race</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strangers</td>
<td>24.2</td>
</tr>
<tr>
<td>Coworkers, fellow students, or colleagues</td>
<td>18.6</td>
</tr>
<tr>
<td>People in service jobs (e.g., store clerks, waiters)</td>
<td>17.8</td>
</tr>
<tr>
<td>People that you thought were your friends</td>
<td>14.0</td>
</tr>
<tr>
<td>Teachers or professors</td>
<td>13.2</td>
</tr>
<tr>
<td>Institutions (e.g., schools, universities, the police)</td>
<td>12.5</td>
</tr>
<tr>
<td>Employers, bosses, or supervisors</td>
<td>8.3</td>
</tr>
<tr>
<td>Neighbors</td>
<td>8.3</td>
</tr>
<tr>
<td>People in helping jobs (e.g., doctors, school counselors)</td>
<td>6.1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>How many times have/ did you…. because of your race</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Want to tell someone off for being racist but didn’t say anything</td>
<td>53.0</td>
</tr>
<tr>
<td>Gotten into an argument or fight about something racist</td>
<td>26.6</td>
</tr>
<tr>
<td>Been really angry about something racist that was done to you</td>
<td>18.6</td>
</tr>
<tr>
<td>People misunderstood your intentions or motives</td>
<td>17.9</td>
</tr>
<tr>
<td>Called racist or culturally insensitive names</td>
<td>17.8</td>
</tr>
<tr>
<td>Been made fun of, picked on, pushed, shove, hit or threatened with harm</td>
<td>11.1</td>
</tr>
<tr>
<td>Accused or suspected of doing something wrong</td>
<td>11.0</td>
</tr>
<tr>
<td>Forced to take drastic steps (e.g., lawsuit, moving) to deal with sanctions against you</td>
<td>3.8</td>
</tr>
</tbody>
</table>
Athletes who identified as a racial or ethnic minority reported significantly more recent racism, lifetime racism and appraised racist events than did athletes who did not identify as a racial or ethnic minority (See Table 2 below).

Table 2.

**Comparison Schedule of Racist Events between Minority and Non-Minority Athletes**

<table>
<thead>
<tr>
<th>Subscale of SRE</th>
<th>Ethnic/ Racial Minority M (SD)</th>
<th>Non-Ethnic/ Racial Minority M (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recent Events</td>
<td>28.1 (12.2)</td>
<td>21.6 (7.3)</td>
</tr>
<tr>
<td>Lifetime Racist Events</td>
<td>33.0 (15.6)</td>
<td>23.5 (9.4)</td>
</tr>
<tr>
<td>Appraised Racist Events</td>
<td>28.8 (15.8)</td>
<td>21.8 (9.0)</td>
</tr>
</tbody>
</table>

*Note.* All differences significant $p < .001$. Higher scores are interpreted as more experienced racism.

**Stress and Academic Performance**

As a whole, athletes performed well academically during the Fall 2012 academic year ($M_{GPA} = 3.16, SD = .75$). Among the entire sample, stress was negatively associated with Fall GPA such that athletes with lower GPAs reported more stress than those with higher GPAs ($r = -.19, p = .003$). Notably, the association between stress and academic performance became more pronounced when explored among athletes receiving lower GPAs. For instance, among the athletes who earned a 2.0 or lower GPA in the Fall semester, stress was more strongly associated with GPA ($n = 17, r = -.65, p = .004$) than those students who earned less than a 2.5 ($n = 48, r = -.32, p = .03$). This supports the idea that athletes who are earning the lowest GPAs are experiencing more stress than those receiving higher GPAs.

**Stress and Athletic Performance**

Being injured during the Fall 2012 semester was positively associated with self-reported stress ($r = .165, p = .008$) such that athletes who were injured reported more stress. Additionally,
more days in treatment ($r = .15, p = .025$), visits to the training room ($r = .157, p = .017$), number of different injuries ($r = .203, p = .002$), and use of prescription medication ($r = .16, p = .01$) were all positively associated with reported stress. In other words, athletes who are injured and using health services reported more stress. Lastly, no differences in perceived stress scores were found between All-Conference athletes and non-all conference athletes.

**Key findings on Stress**

- Injury during the Fall 2012 semester was positively associated with self-reported stress such that athletes who were injured reported more stress.
  
  - Higher usage of athlete health services due to injury was associated with more reported stress. More days in treatment, visits to the training room, unique injuries, and use of prescription medication, all were associated with more psychological stress.

- All-Conference athletes and the other athletes had similar levels of stress.

- The majority of the sample (67%) reported experiencing racism at least once in a while in the past year and 75% of the sample endorsed an experience of racism in their lifetime.

**Sleep**

The average global sleep score for all SHAPE athletes was 6.04 ($SD = 3.12$). On this scale, higher numbers indicate worse quality of sleep. The SHAPE average exceeds 5 which is typically considered the cut-off distinguishing good and poor sleep quality (Buysse et al., 1989). Further, 67% of the SHAPE athletes reported a global sleep score above 5, indicating the majority of athletes are experiencing some level of sleep dysfunction. No gender, ethnicity, or age differences emerged. However, when compared to healthy controls (in the published
literature), SHAPE athletes reported worse scores on each sleep subscale on the PSQI (see Table 3). These high scores further indicate the relatively poor sleep quality among athletes.

Table 3.

Means and Standard Deviations on the Pittsburgh Quality of Sleep Index for Comparison

<table>
<thead>
<tr>
<th>Component</th>
<th>Healthy Controls</th>
<th>Depressed Patients</th>
<th>SHAPE Year 1</th>
<th>SHAPE Year 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subjective Sleep Quality</td>
<td>.40</td>
<td>1.92</td>
<td>1.06</td>
<td>1.08</td>
</tr>
<tr>
<td>Sleep Latency</td>
<td>.70</td>
<td>1.96</td>
<td>1.22</td>
<td>1.12</td>
</tr>
<tr>
<td>Sleep Duration</td>
<td>.31</td>
<td>1.74</td>
<td>0.59</td>
<td>0.51</td>
</tr>
<tr>
<td>Habitual Sleep Efficiency</td>
<td>.11</td>
<td>1.63</td>
<td>0.47</td>
<td>0.42</td>
</tr>
<tr>
<td>Sleep Disturbances</td>
<td>.95</td>
<td>1.45</td>
<td>1.20</td>
<td>1.11</td>
</tr>
<tr>
<td>Sleeping Medication</td>
<td>.12</td>
<td>0.08</td>
<td>0.31</td>
<td>0.30</td>
</tr>
<tr>
<td>Daytime Dysfunction</td>
<td>.44</td>
<td>1.83</td>
<td>1.75</td>
<td>1.52</td>
</tr>
<tr>
<td>PSQI Global Score</td>
<td>2.67 ± 1.70</td>
<td>11.09 ± 4.31</td>
<td>6.64 ± 2.75</td>
<td>6.04 ± 3.12</td>
</tr>
</tbody>
</table>

Note. Adjusted means from Buysse et al., 1998. Higher scores indicate worse sleep.

On the ESS, a measure of daytime sleepiness, athletes reported an average score of 9.17 (SD = 4.7) indicating a moderate level of daytime sleepiness. Female athletes reported significantly higher ESS scores (M = 9.89, SD = 4.6) than did male athletes (M = 8.32, SD = 4.7) indicating that females had more daytime sleepiness than males (t(261) = 2.7, p = .007). No differences were observed between upper and lowerclassmen. Compared to the non-athlete comparison sample, athletes reported significantly more daytime sleepiness (M = 7.86, SD = 4.10 compared to M = 9.17, SD = 4.73), t(342) = -2.24, p = .026). On the other measure of daytime
fatigue (MAF), athletes indicated a moderate level of daytime fatigue $M = 23.4$ (SD = 9.0). No differences were found between the comparison sample by athlete status or gender.

Additional comparisons were conducted between athletes (All-Conference and non-all conference) and non-athletes. In general, All-Conference athletes emerged as the best sleepers of the three groups. To compare mean levels on each sleep measure between All-Conference athletes, non-All-Conference athletes, and non-athletes a series of one way ANOVAs with Bonferroni comparisons were performed. ANOVAs revealed that:

- All-Conference athletes reported significantly less sleepiness than did non-All-Conference players. No difference was observed between All-Conference athletes and non-athletes.
- All-Conference athletes reported significantly less daytime fatigue than non-All-Conference players and no differences were observed between All-Conference athletes and non-athletes.
- All-Conference athletes reported significantly better sleep hygiene than both non-athletes and non-All-Conference athletes (no difference was observed between non-all conference and non-athletes).
- Both All-Conference athletes and non-All-Conference athletes reported significantly better sleep scores on the PSQI than did non-athletes (see Figure 3).
Table 4.

All-CUSA compared to Non All-CUSA on Sleep Measures

<table>
<thead>
<tr>
<th></th>
<th>All-CUSA</th>
<th>Non All-CUSA</th>
<th>Non-Athlete</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHI</td>
<td>15.46</td>
<td>18.84</td>
<td>19.38</td>
</tr>
<tr>
<td>ESS</td>
<td>7.65</td>
<td>9.55</td>
<td>7.86</td>
</tr>
<tr>
<td>MAF</td>
<td>19.28</td>
<td>24.27</td>
<td>21.98</td>
</tr>
<tr>
<td>PSQI</td>
<td>5.78</td>
<td>6.11</td>
<td>7.14</td>
</tr>
</tbody>
</table>

Note. *p < .05, **p < .001, SHI = Sleep Hygiene Index, ESS = Epworth Sleepiness Scale, MAF = Multidimensional Assessment of Fatigue, PSQI = Global Pittsburgh Sleep Index
**Sleep and Academic Performance**

Interestingly, not all self-reported measures of sleep were associated with Fall 2012 GPA. Sleep efficiency was negatively correlated with Fall 2012 GPA ($r = -.21, p = .002$) meaning that those with a lower sleep efficiency (i.e., ratio of number of hours spent in bed to number of hours sleeping) earned lower GPAs. Also on the PSQI the daytime dysfunction subscale was significantly correlated with Fall 2012 GPA ($r = .17, p = .007$) such that more daytime dysfunction was associated with higher Fall GPAs. This is similar to findings documented in Year 1 of the study. As these data are cross-sectional, it is impossible to determine the direction of this finding. It is possible that obtaining higher GPAs required more work that resulted in greater sleepiness during the day (i.e., greater daytime dysfunction). However, the more specific measures of daytime sleepiness (ESS and MAF) were not associated with GPA.

**Sleep and Athletic Performance**

All-Conference athletes reported significantly better sleep habits and less daytime sleepiness than did non-all conference athletes. In fact, All-Conference athletes reported significantly better scores on the ESS, MAF, SHI (Table 4). No difference was observed on the global PSQI between All-Conference and non-All-Conference athletes.

**Key findings on Sleep**

- More than two-thirds (67%) of the SHAPE athletes reported experiencing some level of sleep dysfunction.
- Compared to the non-athlete comparison sample, athletes reported significantly more daytime sleepiness.
- Sleep efficiency (i.e., ratio of number of hours spent in bed to number of hours sleeping) and daytime dysfunction were associated with academic performance.
Higher sleep efficiency and more daytime dysfunction was associated with higher Fall GPAs.

- It is possible that obtaining higher GPAs required more work that resulted in greater sleepiness during the day (i.e., greater daytime dysfunction).

- All-Conference athletes reported significantly better sleep hygiene and less daytime fatigue and sleepiness than did non-all conference athletes.

**Mental Health Interventions**

**SHAPE Sleep Workshops**

**Workshop Development.** Year 1 of the study revealed that approximately two-thirds of athletes reported poor sleep quality. Further, several aspects of self-reported sleep related to an increased risk for injury (e.g., athletes who reported worse quality sleep were more likely to be injured). Based on these findings the SHAPE team recommended that workshops be developed to improve sleep through education and awareness.

During the Summer of 2012 the SHAPE team organized three focus groups in order to learn more about athlete culture and the best way to design a sleep intervention for student-athletes. In total, 20 athletes were contacted to take part in the focus groups, representing nine different teams on campus. The focus groups gathered specific feedback on language to use and preferred workshop format. Athlete responses indicated that they preferred a strength-based approach, shorter time (i.e., not longer than an hour), and interactive activities. This feedback was utilized in designing the workshop. In addition to the focus groups, athletes had the opportunity to provide feedback after each workshop about aspects of the workshop that they enjoyed or felt needed improvement.
**Workshop Format.** Two different evidence-based workshops were developed based on feedback from the athlete focus groups. Broadly, both workshops aimed to inform athletes about the importance of sleep for both academic and athletic performance. Each workshop incorporated current research on sleep, performance, and health. The first workshop entitled, *The Power of Sleep*, specifically targeted the impact of sleep on health, injury prevention, and recovery from injury. The second workshop, *Sharpening the Edge*, presented recent research relevant to sleep and athletic and academic performance. Both workshops were designed to last one hour and were comprised of five main components outlined below.

1) **Sleep Score**
   - Before the start of the workshop, athletes were asked to compute their “Sleep Score” using a 10 item modified version of the PSQI (Buysse et al., 1989). The calculated Sleep Score was used to give athletes immediate feedback about their current sleep quality (See Appendix B for Sleep Score form).

2) **PowerPoint**
   - Next, a 25 minute PowerPoint presentation that was customized for Hurricane athletics, using images of campus athletes, athletic department language, colors, and logos was used to convey workshop information.

3) **Clicker technology**
   - Embedded in the PowerPoint presentation were questions which participants used a clicker to respond to. This was interesting and engaging for them, and allowed us to conduct dynamic knowledge assessments throughout the presentation. A sample clicker question was: “You have early practice Monday-Friday. Which
sleep routine likely leads to better functioning?” (They selected one of four multiple choice responses).

4) Interactive demonstration with Drunk Busters Goggles™

- Research suggests that the impairment associated with sleep deprivation is comparable to alcohol intoxication (e.g., Dawson & Reid, 1997; Williamson & Feyer, 2000). We used this analogy to demonstrate sleep impairment. We purchased Drunk Busters Goggles™ and the athletes did simple balance and hand eye coordination tasks, first without and then with the goggles. Athletes found this fun. They were engaged, and the lesson (from their report) was powerful.

5) Sleep Knowledge Quiz

- At the conclusion of the workshop athletes completed a two minute questionnaire assessing knowledge gained from the workshop content. After athletes completed the Sleep Knowledge Quiz the workshop facilitator reviewed the correct answers and corrected any misunderstandings.

**Participation Rate.** Both SHAPE sleep workshops were well attended. Athletes representing all athletics teams on campus attended both workshops. At the first workshop, 253 athletes were present. Of those who attended the first workshop, 98% were also SHAPE participants, meaning these athletes are included in the current data analyses. At the second workshop 200 athletes were present (93% were also SHAPE participants).

**Follow-up Questionnaires.** Approximately two weeks after a team completed a sleep workshop they were asked to complete a brief (5 minute) follow-up questionnaire. These questionnaires queried sleep knowledge, hygiene, daytime fatigue, sleep quality and quantity. In addition to questions about sleep behaviors, athletes were given the chance to provide feedback
about aspects of the workshop they enjoyed or felt needed improvement. We also queried whether athletes changed any sleep habits based on the workshop (e.g., Have you changed any behaviors based on the SHAPE sleep presentation?). Follow-up questionnaires were completed by 154 athletes (57%) after The Power of Sleep workshop. After the Sharpening the Edge workshop 164 athletes (61%) completed the follow-up questionnaires.

**Sleep Hygiene.** Interestingly, on the Sleep Hygiene Index (SHI) athletes reported worse sleep hygiene following the first sleep intervention ($t (146) = -3.738, p < .001$). Based on workshop evaluations, and anecdotal reports from athletes, we suspect that the worsening of sleep hygiene is actually a result of a difference in reporting rather than an actual difference in behavior. It seems that as knowledge about sleep hygiene increased, reports of good sleep hygiene behaviors decreased. This could possibly be due to increased self-awareness and more accurate reporting of their behaviors rather than changes in behaviors. This hypothesis was partially supported by a repeated measures ANOVA exploring the change in SHI scores from baseline, workshop 1 follow-up, and workshop 2 follow-up. Athletes reported no changes in sleep hygiene behaviors from the end of workshop 1 to workshop 2 (see Figure 4).

![Figure 4. Sleep Hygiene Index](image)
**Daytime sleepiness.** Athletes reported less daytime sleepiness. On the MAF athletes reported statistically significant decreases in daytime fatigue from baseline to the first follow-up which was maintained at the second follow-up (see Figure 5). Improvements were also observed among scores on the ESS, where athletes again reported statistically significant drops in their ESS score from baseline to the second follow-up (see Figure 6). Finally, while scores on the PSQI decreased from baseline to follow-up 1 and 2, these reported changes did not reach statistical significance.

![Figure 5](image5.png)

**Multidimensional Assessment of Fatigue**

<table>
<thead>
<tr>
<th>Baseline</th>
<th>Workshop 1 Follow up</th>
<th>Workshop 2 Follow up</th>
</tr>
</thead>
<tbody>
<tr>
<td>25.18</td>
<td>22.25</td>
<td>22.19</td>
</tr>
</tbody>
</table>

![Figure 6](image6.png)

**Epworth Sleepiness Scale**

<table>
<thead>
<tr>
<th>Baseline</th>
<th>Workshop 1 Follow up</th>
<th>Workshop 2 Follow up</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.02</td>
<td>9.27</td>
<td>9.14</td>
</tr>
</tbody>
</table>
Sleep Knowledge. After both workshops, knowledge on sleep topics addressed significantly improved. Topics discussed during The Power of Sleep included the importance of sleep for injury and illness prevention as well as recovery from illness. Workshop leaders also provided information about helpful sleep hygiene practices. As you can see from Figure 7, athletes’ knowledge of these topics was minimal before attending The Power of Sleep. In fact, the average score among athletes at baseline was a 39.8%. At the first follow-up, one to two weeks after The Power of Sleep, knowledge improved significantly to an average score of 82.5%. More importantly, knowledge gained from The Power of Sleep was maintained for months as evidenced by a similarly high average score after the second workshop (82%).

Two broad topics were addressed during Sharpening the Edge. Athletes first learned about the importance of sleep for athletic performance and then the importance of sleep for academic performance. Prior to attending Sharpening the Edge athletes earned low scores on knowledge quizzes on these topics (See Figures 8 and 9). At the second follow-up, athletes
earned significantly higher scores on knowledge quizzes on both the importance of sleep for athletic performance ($M = 68.5\%$) as well as academic performance ($M = 77.6\%$).

Figure 8.

**Sleep and Academic Performance Knowledge**

![Graph showing the relationship between sleep and academic performance knowledge.]

Figure 9.

**Sleep and Athletic Performance Knowledge**

![Graph showing the relationship between sleep and athletic performance knowledge.]

*
**Athlete Workshop Feedback.** In addition to improvements noted on objective clinical measures, just over half (50.7%) of the athletes reported that they changed a sleep behavior after attending the first workshop. The most common sleep behavior changed was rearranging one’s schedule to maintain a more consistent sleep-wake cycle (20%). This is an important behavior change given that disrupted circadian rhythms can negatively impact both health and athletic performance and can lead to insufficient or inefficient sleep (Reilly & Edwards, 2007). Athletes also reported restriction of cell phone usage before bed (15%), restriction of blue screen usage before bed (13%), and refraining from checking the time in the middle of the night (6%).

Similarly, after the second workshop 42.7% ($n = 70$) athletes reported making changes to their sleep habits which improve sleep quality. In the future the SHAPE team will assess why some athletes choose to not change behaviors following workshops. This information will be helpful because it will allow us to discern if changes are not made because athletes are already functioning well (e.g., good sleep habits) or if there are additional barriers that the workshops could directly address (e.g., not enough time to change habits).

Athletes were also given a chance to provide open-ended feedback to the SHAPE team based on the workshops. First, athletes were asked what they most enjoyed about the workshops. The athletes’ perception of the intervention was generally positive. Athletes made specific references to the information being relevant and useful to them. Athletes also stated that the SHAPE team taught the importance of sleep as a way to improve their performance to their attention in ways they previously had not considered. They also reported enjoying the activities that included the impairment goggles as well as the interactive learning environment provided by the clicker system.
Athletes were given the opportunity to provide feedback about which areas of the workshops could be improved. A common criticism of the workshops was that they were too long and would benefit from being shortened. We suspect that the issue with the length of the intervention has to do with the many time constraints already being placed on athletes (e.g., classes, practice, and treatment). Additionally, before the first workshop several athletes also worked on their baseline packet of questionnaires which added to the length of the presentation. In the future the SHAPE team plans to rework scheduling to reduce time demands. Also, it was clear that athletes really enjoyed the interactive portions of the workshops because they suggested that even more interaction would improve the workshops.

**Key findings on SHAPE Sleep Workshops**

- Both SHAPE sleep workshops were well attended by athletes and attendees represented every sport on campus.
- About half of SHAPE athletes reported changing a sleep related behavior after each of the two workshops.
- In addition to self-reported changed behaviors, objective measures indicated that athletes reported less daytime fatigue and sleepiness after attending the first workshop.
- Athletes’ knowledge of sleep topics improved significantly after both workshops and knowledge gained at the first workshop was maintained over time.
- Athletes enjoyed the sport-specific information and interactive portions of the SHAPE sleep workshops.
- Athletes suggested that workshops could be improved by being more interactive and shorter.
Psychological Services on Campus

In addition to screening for common psychological disorders, athletes were asked to report their current (i.e., past 6 months) and lifetime use of psychological services. Few athletes ($N = 28, 10.6\%$) reported that they had used a psychological service in the previous 6 months. Among those athletes who reported use of a psychological service, the majority of athletes were only using one type of service ($M = 1.2, SD = .5$). Athletes indicated current use of individual therapy ($n = 20, 7.4\%$), psychotropic medication ($n = 12, 4.4\%$), and inpatient treatment ($n = 2$, $<1\%$).

In addition to self-reported service use, data were obtained from the University Counseling and Psychological Services Center and athletes’ records in the training room. Within the athletic department records, during the Fall 2012 semester, there were two documented referrals to the Counseling Center for psychological services. It is important to note that if referrals to the Counseling Center are not systematically documented the actual number of referrals may be higher. In addition, 12 athletes had psychotropic medicine documented in their athletic department chart. The majority of these medications were prescribed for problems with attention ($n = 8$) while the rest were prescribed for mood or anxiety.

During the Fall 2012 semester, a total of 22 visits were made by student athletes to the TU Counseling Center resulting in an average of 4.4 athlete visits per month. During the same time period, 331 visits were made to the TU Counseling Center by non-athletes. This means that athletes comprised 6\% of the total visits made to the Counseling Center by TU students during the Fall 2012 semester. Since athletes represent approximately 10\% of the student population this provides evidence that athletes may be utilizing psychological services at lower frequency than non-athletes.
Athletes may be more psychologically healthy than non-athletes since the percentage of athletes with at least one positive screen on the PDSQ (50.7%) was lower than non-athletes (69.1%). Encouragingly, for both athletes and non-athletes the number of positive screens on the PDSQ was positively associated with the number of current psychological services, such that more positive screens was related to more service use ($r = .28$, $r = .24$ respectfully). However, athletes with at least one positive screen appeared to be using services at lower frequency than non-athletes. In fact, only 14.9% of the athletes with one positive screen reported using psychological services. In contrast, more than a third of non-athletes with at least one positive screen (37.5 %) reported using psychological services.

Similar to Year 1 of the project, while it appears that athletes may be psychologically healthier than non-athletes and therefore have less need for psychological services, only a small proportion of athletes are using psychological services. There may be a variety of reasons for athletes’ underutilization of psychological services. One explanation for underutilization could simply be a lack of awareness of services offered on campus. For example, in Year 1 of the project 42.6% of the athletes surveyed indicated that they had never heard of the TU Counseling Center. Also, 14.8 % of coaches and 5.3% of the support staff surveyed indicated that they had never heard of the TU Counseling Center. If coaches, support staff, and athletes are unaware of campus resources this would certainly contribute to fewer referrals and underutilization of services.

An additional barrier to seeking psychological services may be negative attitudes toward mental health treatment. During Year 1 of the study, athletes reported less positive attitudes about psychological openness and help seeking compared to coaches, support staff and non-athlete peers. Stigma and a lack of psychological openness, as well as a tendency to be self-
reliant and not seek help, may be reasons why athletes are less likely to seek psychological services when they may be helpful.

Aside from potentially less positive attitudes about psychological services, there are unique stressors related to the nature of being a student-athlete that may impede the use of psychological services. Athletes face extensive time demands for competition in sport that reduce available time for schoolwork, class, and other responsibilities. Therefore, time constraints may be an additional factor for why student athletes’ underutilize services compared to their peers.

**Key findings on Psychological Service Usage**

- A small proportion of athletes self-reported using psychological services in the past 6 months.
- Athletes who screened positive on a mental health screening instrument were less likely to be using a psychological service than their non-athlete peers who screened positive.
- Many athletes report being unaware of available resources on campus, which may contribute to lower utilization.
- Possible barriers to receiving psychological services may also include negative attitudes about seeking mental health treatment such as stigma, or appearing “weak.” This had yet to be empirically determined.
- Athletes may underutilize services due to the time constraints involved with participation in a collegiate sport. This had yet to be empirically determined.
Recommendations

Goal: Continue to Improve Sleep Through Education and Awareness.

- Who: first year and transfer students.
- Continue to deliver the Sleep Workshop to incoming students through the Hurricane Athletes Achieving Success (HAAS) program.

Goal: Improve Time and Stress Management Skills

- Who: open to all student athletes and those athletes referred by Hurricane Academic Services (HAAS).
- An interactive workshop discussing the basics of time management skills to be delivered through HAAS’ Lunch and Learn program.

Goal: Increase Psychological Service Utilization Through Collocated Psychological Consultation Services.

- Educate athletes about the types of services, the benefits of services, and their access to free services on campus.
- Provide psychological consultation service delivered in the athletic department to improve access and awareness of services.

Goal: Increase awareness and service delivery for anxiety-related problems.

- Educate coaches and support staff about signs and risk factors involved in the development of anxiety problems that are prevalent in TU’s athlete population, especially Obsessive-Compulsive Disorder, Social Anxiety, and Other Mental Health Concerns.
- Educate athletes, in a manner that increases likelihood of utilization of services to promote awareness of performance impeding anxiety problems.
Timeline of Year 2

Baseline Data Collection → Workshop 1: The Power of Sleep → Follow up 1 → Workshop 2: Sharpening the Edge → Follow up 2

Fall 2012 | Spring 2013
### What's your Sleep Score?

**During the past month...**

<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>1). How often have you had trouble sleeping because you cannot get to sleep within 30 minutes?</td>
<td>Not in past month 3, Less than once a week 2, Once or twice a week 1, Three or more times a week 0</td>
</tr>
<tr>
<td>2). How often have you had trouble sleeping because you wake up in the middle of the night or early morning?</td>
<td>Not in past month 3, Less than once a week 2, Once or twice a week 1, Three or more times a week 0</td>
</tr>
<tr>
<td>3). How often have you had trouble sleeping because you have to get up to use the bathroom?</td>
<td>Not in past month 3, Less than once a week 2, Once or twice a week 1, Three or more times a week 0</td>
</tr>
<tr>
<td>4). How often have you had trouble sleeping because you cannot breathe comfortably?</td>
<td>Not in past month 3, Less than once a week 2, Once or twice a week 1, Three or more times a week 0</td>
</tr>
<tr>
<td>5). How often have you had trouble sleeping because you cough or snore loudly?</td>
<td>Not in past month 3, Less than once a week 2, Once or twice a week 1, Three or more times a week 0</td>
</tr>
<tr>
<td>6). How often have you had trouble sleeping because you feel too cold or too hot?</td>
<td>Not in past month 3, Less than once a week 2, Once or twice a week 1, Three or more times a week 0</td>
</tr>
<tr>
<td>7). How often have you had trouble sleeping because you have pain?</td>
<td>Not in past month 3, Less than once a week 2, Once or twice a week 1, Three or more times a week 0</td>
</tr>
<tr>
<td>8). During the past month, how would you rate your sleep quality overall?</td>
<td>Very good 3, Fairly good 2, Fairly bad 1, Very bad 0</td>
</tr>
<tr>
<td>9). During the past month, how often have you had trouble staying awake while driving, eating meals, or engaging in social activity?</td>
<td>Not in past month 3, Less than once a week 2, Once or twice a week 1, Three or more times a week 0</td>
</tr>
<tr>
<td>10). During the past month, how much of a problem has it been for you to keep up enough enthusiasm to get things done?</td>
<td>Not a problem at all 3, Only a very slight problem 2, Somewhat of a problem 1, A very big problem 0</td>
</tr>
<tr>
<td>11). During the past month, how consistently did you go to bed and get up at the same times?</td>
<td>Every night (7 times per week) 3, Most nights (5-6 times per week) 2, Some nights (3-4 times per week) 1, No consistency (≤ 2 times per week) 0</td>
</tr>
</tbody>
</table>

**ADD UP TOAL SCORE (MAX 33):___________**
What does your Sleep Score mean?

25-33

Congratulations - You win the gold!! You must be a child of Hypnos, the Olympian God of Sleep! You have great sleep habits, get the right amount of sleep, and are at the top of your game! You are in tune with your body and it shows. Keep up the good work!

19-24

Well done! You are sleeping well and probably reaping the health and performance benefits of good sleep. It’s time to set the next goal and kick your sleep quality up a notch. We can help you tweak some aspects of your sleep schedule or habits to maximize your performance.

12-18

You are struggling with getting the best quality and quantity of sleep. Your performance on and off the field is likely suffering as you may be very sleepy during the day. It is time to take a good hard look at your sleep game and make adjustments to improve your health. We can help you identify those areas that need your attention. With a bit of work, we can get you on the right path toward performing at your best!

0-11

You may be sleepwalking through your day! Good sleep eludes you. You are not getting the quality and quantity of sleep you need to lead a healthy and productive life and perform at your best. Whether having difficulty sleeping is a long-term problem or something that just started, there are things we can teach you that will help you learn strategies to improve your sleep game. You can do it! Set at goal for better sleep and see how much better you feel and perform!
References


