Disordered Eating Screen for Athletes (DESA-6):

Addressing Accessibility, Technology, and Public Health

Ryley Mancine OMS-II; Donald Gusfa OMS-II; Jacob Babb OMS-II; Catelyn Zuhl B.S.; Samantha Kennedy D.O.

Introduction

- Disordered eating (DE) is a problem among adolescent athletes. DE often results in low energy availability, electrolyte abnormalities, and dehydration.[1] If untreated, DE could progress to a clinical eating disorder (ED), which means adolescents are at an increased risk for many mood, anxiety, impulse-control, and substance use disorders.[2, 3] Additionally, EDs have the highest mortality rate of all mental disorders.[1]
- According to the National Institute of Mental Health, the lifetime prevalence of DE is 2.7%.[5] Alternatively, our research estimates 24% of adolescent athletes in the midwest have or will develop disordered eating patterns. Of these students, 14% may progress to an eating disorder. With an average of 376 adolescent athletes per school, 90 will have DE and 13 will have a clinical ED.
- Fortunately, this progression is entirely preventable with early detection and intervention. This is why our new tool, the DESA-6, will be available online for anyone to use in order to facilitate screening in as many athletes as possible.

Methods

- **Phase 1:** n=308 participants recruited from 9 high schools in a Midwestern High School population. Participants were given the Eating Attitudes Test (EAT-26) and the Disordered Eating Screen for Athletes (DESA-6).
- **Phase 2:** n=82 participants were randomly selected for clinical interview following phase 1. Participants were interviewed using the Eating Disorder Examination v17 (EDE-17), which is considered the "gold standard" for diagnosis of ED.

Figures

Figure 1:

General Adolescent Population

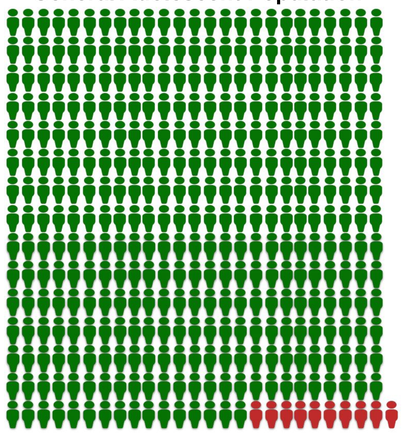
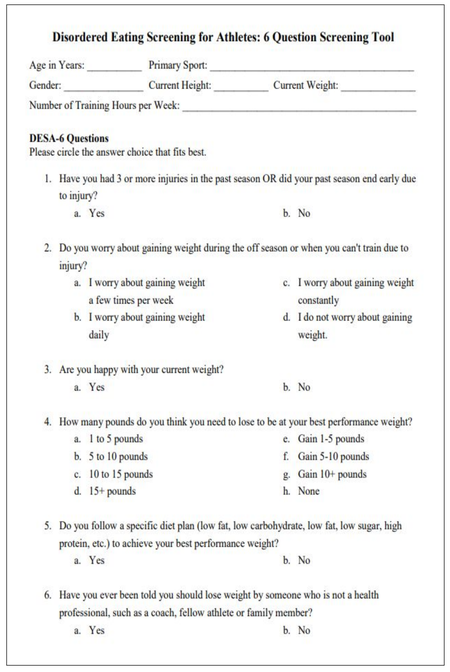


Figure 2:

Adolescent Athlete Population

Figure 1 and 2: This image uses the state of Michigan as an example. There are a total of *281,992* high school athletes in *749* different schools in Michigan.[4] This averages out to 376 athletes per school. These figures are graphical representations of the average high school's athlete population and a comparable adolescent population. **Green** represents no ED or DE, **orange** represents those with DE who identifiably were at risk for progression to ED, and **red** represents someone who currently has or definitely did progress from DE to an ED.

Materials



Disordered Eating Screening for Athletes: 6 Question Screening Tool

Age in Years: _____ Primary Sport: _____

Gender: _____ Current Height: _____ Current Weight: _____

Number of Training Hours per Week: _____

DESA-6 Questions

Please circle the answer choice that fits best.

1. Have you had 3 or more injuries in the past season OR did your past season end early due to injury?
   a. Yes b. No
2. Do you worry about gaining weight during the off season or when you can't train due to injury?
   a. I worry about gaining weight a few times per week
   b. I worry about gaining weight daily
   c. I worry about gaining weight constantly
   d. I do not worry about gaining weight.
3. Are you happy with your current weight?
   a. Yes b. No
4. How many pounds do you think you need to lose to be at your best performance weight?
   a. 1 to 5 pounds
   b. 5 to 10 pounds
   c. 10 to 15 pounds
   d. 15+ pounds
   e. Gain 1-5 pounds
   f. Gain 5-10 pounds
   g. Gain 10+ pounds
   h. None
5. Do you follow a specific diet plan (low fat, low carbohydrate, low fat, low sugar, high protein, etc.) to achieve your best performance weight?
   a. Yes b. No
6. Have you ever been told you should lose weight by someone who is not a health professional, such as a coach, fellow athlete or family member?
   a. Yes b. No

Phase I

N = 308 athletes ages 12 to 19, n = 78 screened positive

Phase II

N = 41 with EAT-26 ≥ 13 were invited to participate in a clinical interview

N = 41 negative scores were invited (control group)

Results

Sports Included

Basketball, Baseball, Cheer, Cross Country, Football, Gymnastics, Ice Hockey, Lacrosse, Rugby, Soccer, Softball, Swimming, Tennis, Track, Volleyball, Water polo, Wrestling

Phase II: Demographics	
Female	N = 58
Male	N = 23
Mean Age	16.17 years
Mean BMI	23.9

Phase II: Reliability	
Specificity	85.96%
Sensitivity	92.00%
Concurrent r	0.8014
Pearson r	0.7824

Discussion

- The prevalence of DE throughout adolescent athletes in the midwest is apparent. The DESA-6 can accurately identify DE in athletes who may be at risk for developing an ED.
- With only 6 questions, the DESA-6 is an effective screening tool that can easily be implemented.
- The DESA-6 is pertinent for physicians, athletic trainers, or other sports personnel to quickly and efficiently screen an athlete. This resource will be readily available online at www.desa6.com following peer review.
- Implementing the DESA-6 in adults and professional athletes may provide further research opportunities.

References

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College of Osteopathic Medicine
MICHIGAN STATE UNIVERSITY

MICHIGAN STATE UNIVERSITY
College of Human Medicine

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