



## DEVELOPMENT AND VALIDATION OF A MULTIDIMENSIONAL MENTAL HEALTH SCREENING INSTRUMENT

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### **Introduction**

COVID-19 has had a significant impact on the mental health of 18- to 25-year olds (Czeisler et al. 2020), including collegiate student-athletes (Perna et al. 2003; Stewart et al. 1999). Presently, identifying student-athletes with mental health needs is inconsistent across college athletic programs (Sudano and Miles 2017; Kroshus 2016). It is vital that student-athletes needing mental health support are quickly identified so appropriate steps can be taken. A consistent and coordinated approach is needed to better identify those student-athletes who are dealing with mental health issues, especially now as they deal with the impact of COVID-19 as well as traditional causes of stress and anxiety.

Most current mental health instruments are unidimensional, addressing a single issue (e.g., depression). Those that are multidimensional are time-consuming to administer. The goal of this project is to develop a short, multidimensional screening tool which can be used by athletic departments to monitor student-athlete mental health. Here we report preliminary results on item collection, subject recruitment, and initial data analyses on data collected from ACC student-athletes during the summer and fall of 2021.

### **Methodology**

#### *Questionnaire development*

Our inventory for student-athletes focuses on core mental health facets: anxiety, depression, and addictive behaviors. With the objective of monitoring several mental health issues in a single tool, questions were obtained from multiple sources:

- PHQ-9: Depression (Kroenke, Spitzer, and Williams 2001)
- GAD-7: Anxiety (Spitzer et al. 2006)
- Severity of Dependence Scale (SDS) (Gossop et al. 1995)
- BIS-11: Impulsiveness (Patton, Stanford, and Barratt 1995)

In addition, the NCAA recently ran two surveys for assessing the impact of COVID-19 on student athlete mental health, facility availability, student activism, communication, and others. In collaboration with the NCAA Research team, we analyzed the responses to these survey items to identify items that might be relevant for our study.

### **Questionnaire Implementation**

We implemented our research instrument in Qualtrics. We designed the instrument to be easy-to-use and mobile friendly to ensure ease of use. The final question pool for our exploratory data



collection included 51 items. The breakdown of items according to mental health construct evaluated is as follows: depression/anxiety (10), COVID (6), eating disorders (5), living situation (4), team communications (4), training limits (6), external issues (2), drug/alcohol use (4), care (2), classes (2), and other (6).

### Recruitment Strategy

We worked with ACC member institutions, through the Faculty Athletic Representatives (FARs), to recruit our selected student-athletes for our study. FARs interested in participating put us into contact with representatives from athletics departments. Second, we drafted a “project packet” to share with each athletic department. The packet consisted of an information sheet for athletic departments, a list of students from each institution recruited for the study, and a draft email to be sent from the athletic department to the selected students to help increase turnout of recruited subjects. The packet included the IRB approval for the project and the estimated time it would take to complete the survey.

Institutions had the option of a) sending our recruitment packet to all of their student athletes or b) sending the packet to a randomly sampled population of student athletes. Per-university sampling was done in accordance with the breakdown of sports according to that institution.

### **Data Analyses**

In our first wave of data collection, 160 students started the survey, with only 122 completing the survey in its entirety. We received responses from Boston College ( $n = 51$ ), North Carolina State ( $n = 54$ ), and Syracuse ( $n = 44$ ). 11 respondents did not specify a university.

The focus of this study was on identifying items with a high degree of discriminatory power. The low response rates offered challenges for performing traditional psychometric analyses (e.g., factor analysis). Instead, response distribution-based visualizations were used to determine items where participants offered responses across the entire range of the item scale.

### **Results**

Across all respondents (including those who did not fully complete the survey), the average age was 19.71 years, with a standard deviation of 1.54 years. Class and gender proportions are noted in Table 1.

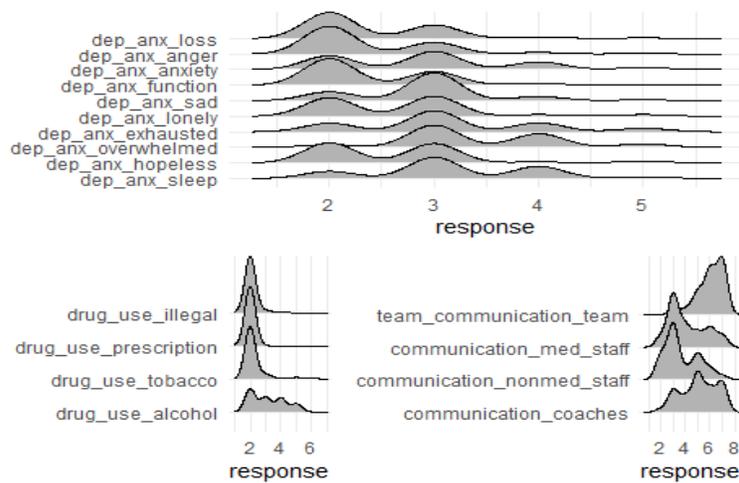
Table 1: Demographic information of survey respondents

	Gender	Gender n	Gender %	Class	Class n	Class %
1	Male	55	0.37	Freshman	51	0.34
2	Female	94	0.63	Sophomore	33	0.22
3				Junior	24	0.16
4				Senior	26	0.17
5				Graduate student	15	0.1



Athletes from 20 sports offered responses to the survey, with the highest proportion of responses coming from Track & Field (n = 32) and Rowing (n = 16).

The responses show a few interesting things (Figure 1). First, within the depression and anxiety items, questions related to sleep, being overwhelmed, exhausted, and generally anxious had more dispersion across the response options than the rest of the items. Drug and tobacco use is uncommon within our sample, but there is clear dispersion across alcohol use. Nearly every facet of communication exhibited dispersion across the response options. Finally, several facets of eating (losing control of eating, negative body image, and food dominating life) showed higher proportions of “Yes” responses than items such as rapid weight loss (plot not shown due to space limitations).



From these 51 items we can see that a certain subset will be useful for our aims. For our second wave of data collection we will select a subset of items from this pool and show the subset to student-athletes from other ACC institutions to confirm the items’ usefulness in our screener. At this time 3 institutions are enrolled in Wave 2 and we hope to increase that number so that we have enough data for our analyses.

## Conclusions

In this work we have developed a multi-dimensional screening tool which can be used to assess student-athletes for multiple mental health issues. Additionally, due to the concise nature of the tool the screening process can be applied on a regular basis (i.e., at a pre-determined interval or on-demand) allowing athletic departments to monitor the mental health status of their athletes in a consistent and routine fashion. Using this tool will enable athletic departments to take action in a timely manner in response to a degradation of student-athlete mental health.

With this instrument, screening for mental health issues in student-athletes will be consistent conference-wide, allowing for conference-level testing and understanding of student-athlete mental health.



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