

# Mental Health Referral for Student-Athletes: Web-Based Education and Training

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Physically and mentally healthy student-athletes are in a good position to thrive academically, socially, and athletically. Unfortunately, many student-athletes fail to get the mental health help they need due to factors such as lack of knowledge and mental health stigma. The purpose of this research was to create and evaluate a multimedia, interactive website ([www.SupportForSport.org](http://www.SupportForSport.org)) to enable student-athletes to gain the necessary knowledge and confidence to make effective mental health referrals. Study 1 was conducted to determine if the website functioned as intended. In Study 2, 27 intercollegiate athletic directors and coaches evaluated the website. Their favorable evaluations led to Study 3, a controlled field trial with a national sample of 153 student-athletes. Results indicated that viewing the [www.SupportForSport.org](http://www.SupportForSport.org) site resulted in enhanced mental health referral knowledge and efficacy relative to a control group. These results suggest that tailored online programming can affect outcomes for student-athletes across geographic regions and resource availability levels.

*Keywords:* referral efficacy, referral knowledge, Internet, mental health stigma

The U.S. Substance Abuse and Mental Health Services Administration reported that over 43 million adults experienced a mental illness in 2012, more than 19 million of whom were traditional college-aged adults, 18–25 years old

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(Substance Abuse and Mental Health Services Administration, 2013). National Collegiate Athletic Association (NCAA) student-athletes face stresses beyond those of their nonathlete peers, including regimented schedules; physical stress and fatigue; practice and game commitments; stereotyping by the media, faculty, and students; and the dual role of student and athlete (Brewer & Petrie, 2014; Martin & Andersen, 2014; Van Rensburg, Surujlal, & Dhurup, 2011). Sometimes, these additional pressures contribute to deadly outcomes. From 2004–2008, suicide was the third leading cause of death for NCAA student-athletes (Noren, 2014). The NCAA and National Athletic Trainers Association (NATA) are making efforts to address the mental health concerns of student-athletes (Neal et al., 2013; Noren, 2014), but progress in this area is complicated by mental health stigma (Corrigan, Mueser, Bond, Drake, & Solomon, 2008). Although research indicates that NCAA student-athletes vary in stigmatizing attitudes related to those who seek mental health help (Linder, Brewer, Van Raalte, & DeLange, 1991; Steinfeldt & Steinfeldt, 2012) and do not tend to derogate athletes who consult sport psychologists, they do hold negative attitudes toward athletes who consult psychiatrists (Van Raalte, Brewer, & Linder, 1992).

To address the mental health needs of students, many colleges and universities have created and offer preventive psychoeducational workshops (Conley, Durlak, & Dickson, 2013). Psychoeducational programs that are interactive and include cognitive interventions to affect maladaptive attitudes and behaviors have been shown to reduce symptoms and risk factors for psychological disorders (Stice & Shaw, 2004; Stice, Shaw, & Burton, 2006). Mental health interventions that target specific psychological processes and include feedback have also been shown to be particularly effective (Donohue, Pitts, Gavrilova, Ayarza, & Cintron 2013; Scott-Sheldon, Carey, Elliott, Garey, & Carey, 2014; Walton, 2014).

Addressing the mental health needs of collegiate student-athletes via psychoeducational workshops can be difficult, however, because of scheduling challenges and because only a limited number of student-athletes can participate in any given workshop. Further, shame and secrecy often associated with mental health concerns can serve as barriers to attendance and treatment seeking (Garvin & Striegel-Moore, 2001).

Web-based psychoeducational interventions offer solutions to some of the limitations of face-to-face approaches to mental health education. That is, web-based programs can offer rich content, tailored to student needs, in a cost-effective, confidential, and anonymous manner (Rhodes, Fishbein, & Reis, 1997). A meta-analysis involving over 11,000 participants conducted by Wantland, Portillo, Holzemer, Slaughter, and McGhee (2004) compared the effectiveness of web-based and non-web-based interventions and found significant improvement in outcomes for individuals using web-based interventions. Lustria et al. (2013) conducted a meta-analysis of web-based interventions (with over 20,000 participants) and found that those tailored for particular populations led to significantly greater improvements in health outcomes than did control conditions. The web-based intervention developed by Gulliver et al. (2012) tailored for elite athletes showed a trend indicative of increased mental health literacy and destigmatization relative to a control group. Thus, web-based, tailored programming pertaining to referral for mental health issues may be a promising approach for intercollegiate student-athletes.

Individuals who are knowledgeable and efficacious about making referrals for mental health concerns are better equipped to help others than are those without knowledge and efficacy (Neal et al., 2013). Knowledge pertaining to referral skills can be conveyed via didactic and interactive techniques (Stanton, Atherton, Toriello, & Hodgson, 2012). Athletes also learn by watching and modeling the behavior of comparable others (McCullagh, Ste-Marie, & Law, 2014). Indeed, Bandura (1986) noted that modeling is one of the most effective means of transmitting patterns of thought and behavior. Buckley and Malouff (2005) proposed that the social learning theory principles, such as vicarious reinforcement explain the positive attitudinal changes toward mental health treatment that result from viewing tailored videos. A mental health website that uses didactic, interactive, and modeling approaches can build upon social learning theory principles, and can be used to deliver effective programming for student-athletes to facilitate mental health referrals.

In summary, student-athletes have mental health issues that have led to troubling outcomes including high suicide rates. Tailored, web-based programs have been found to positively affect health outcomes (Lustria et al., 2013; Wantland et al., 2004). Therefore, web-based interventions may be an effective way to reach student-athletes with regard to mental health issues and to help them gain the necessary knowledge, confidence, and skills to make mental health referrals. Further, web-based programming constitutes an economical option that can reach student-athlete mental health across geographic regions and resource availability levels. Consequently, the purpose of this research is to explore the effectiveness of a student-athlete focused web-based program designed to enhance student-athlete knowledge and efficacy with regard to mental health referral.

## Study 1

The purpose of Study 1 was to conduct one-to-one testing with the website prototype. Information gleaned from Study 1 enabled the investigative team to ensure that members of the target population could use the website as intended and to identify aspects of the prototype in need of clarification or modification.

### Participants

A diverse convenience sample of 10 student-athletes (5 men and 5 women) from four states (i.e., Massachusetts, New Jersey, North Carolina, and Utah) were selected to participate in this study. Participants represented six sports (i.e., basketball, cross-country, gymnastics, soccer, tennis, and track and field) and five years of study, and were an average of 20.40 ( $SD = 1.17$ ) years of age. Most participants were non-Hispanic ( $n = 8$ ) with one person identifying as Hispanic and one not responding to the question of ethnicity. The participants were primarily Caucasian ( $n = 8$ ), with one person identifying as African-American/Black and one person indicating “other” on the item assessing race.

### Procedure

The website prototype was developed by professionals with expertise in mental health referral, multimedia development, intercollegiate athletics, and coaching.

Content for the [www.SupportForSport.org](http://www.SupportForSport.org) site was created based upon foundational materials such as the intercollegiate-athlete specific handbook, *Managing Student-Athlete Mental Health Issues* (Thompson & Sherman, 2007), scientific articles related to making mental health referrals (e.g., Stanton, Atherton, Toriello, & Hodgson, 2012), and government-sponsored and noncommercial websites related to mental health (e.g., [www.adaa.org](http://www.adaa.org), [www.apa.org](http://www.apa.org), and [www.nimh.nih.gov](http://www.nimh.nih.gov)). Program content developed for the [www.SupportForSport.org](http://www.SupportForSport.org) site included interactive exercises, photographic images, text, and video clips depicting student-athletes making referrals for substance abuse, eating disorders, depression, and anxiety.

As part of the development process, the accuracy and usability of the materials was examined by a counseling center director, athletic directors, coaches, and student-athletes. Information that was not deemed accurate, scientifically valid, and appropriate for the student-athletes was updated or removed. Alpha testing of the website was completed to ensure the technology worked as intended.

When the prototype was deemed ready for review, student-athletes were invited to attend individual sessions. After giving informed consent, they navigated through the prototype website. The website includes “Get Support,” “Facts,” “About,” “Contact,” “What Would You Do?” and “Having a Conversation” sections.

The “Get Support” section provides information about emergency services and mental health resources on college campuses, in the community, and on the web. The resources suggested for on campus and in the community refer viewers to government-sponsored and other expert and noncommercial websites (e.g., [www.ulifeline.org/static/must\\_select\\_a\\_school](http://www.ulifeline.org/static/must_select_a_school), <https://findtreatment.samhsa.gov>) that update relevant information on a regular basis. The online mental health resources provided include a link to screening tools (e.g., [www.ulifeline.org/self\\_evaluator](http://www.ulifeline.org/self_evaluator)) and helplines and hotlines related to anxiety and depression (e.g., [www.adaa.org](http://www.adaa.org)), eating disorders (e.g., [www.anad.org](http://www.anad.org)), substance abuse (e.g., <http://drugabuse.com/library/drug-abuse-hotlines>), and suicide prevention (e.g., <http://www.suicidepreventionlifeline.org/GetHelp/LifelineChat.aspx>).

The “Facts” section provides an overview of mental health, a video related to mental health stigma, and detailed information about anxiety, depression, eating disorders, and substance abuse, including links to government-sponsored and other expert and noncommercial websites on these topics. The message “People who get help with mental health tend to get better faster and stay better longer” is highlighted throughout this section. The “Contact” section provides links to mental health emergency services and emphasizes that the contact e-mail is a mechanism for offering comments with regard to technical difficulties or suggestions for improving the website. The “What Would You Do?” section is presented in the form of a “create your own adventure” story, where viewers can select choices for an athlete concerned about the mental health of a teammate and see videos and read text related to the outcomes of those choices. This section also includes information about what a typical counseling session is like and provides examples of how to use “I statements” when talking to others about mental health concerns. The “Having a Conversation” section provides a series of short video vignettes and written content with video examples of student-athletes making mental health referrals for anxiety, depression, eating disorders, and substance abuse. Both the “What Would You Do?” and “Having a Conversation” sections highlight the acronym REFER that can be used to remember how to make a referral:

- Recognize—What’s going on in this situation?
- Extend knowledge—Learn more.
- Facilitate a conversation—Start talking.
- Evaluate the experience—How did things go?
- Revise and revisit—Continue the conversation with follow up as needed.

Consistent with one-to-one testing methodology (Dick & Carey, 1990; Gagné, Briggs, & Wager, 1992), a researcher sat behind participants and observed them to ensure that they were using the website as intended and asked questions to confirm that participants understood the website organization and material. The researchers recorded observations and probed participants for additional comments following their experience with the website.

## Results

Observations from the one-to-one testing sessions resulted in a number of recommendations to improve the website. Participants suggested the addition of a clear starting point on the “create your own adventure” segment to enhance navigability. They noted that it was difficult to move between video vignettes and didactic content and suggested solutions to this shortcoming. They recommended labeling of student-athlete video vignettes with issues of concern (e.g., anxiety, substance abuse) as well as student-athlete names. Typographical errors and problems with hyperlinks were noted. Modifications to the website were made in accordance with participant feedback and researcher observations before conducting Study 2.

## Study 2

In Study 2, athletic directors and coaches—those professionals most likely to facilitate use of the website by their student-athletes—reviewed the online [www.SupportForSport.org](http://www.SupportForSport.org) site and completed an evaluation of the program’s perceived effectiveness.

### Participants

Participants were athletic directors ( $n = 11$ ) and coaches ( $n = 16$ ) from nine states representing NCAA Division I ( $n = 6$ ), Division II ( $n = 2$ ), and Division III ( $n = 19$ ) institutions. Sports coached were basketball, cross country, fencing, golf, lacrosse, soccer, softball, tennis, track and field, and volleyball. The mean age of the 15 female and 11 male participants (one respondent did not provide information on gender) was 45.92 ( $SD = 11.67$ ) years. The sample was primarily non-Hispanic ( $n = 24$ ), with one person self-identifying as Hispanic and two not responding to the ethnicity item. The sample was primarily White ( $n = 23$ ), with two people reporting their race as Asian and two not indicating race.

### Procedure

Athletic directors and coaches gave informed consent online and then were directed via an Internet link to the research website. After reviewing the online referral

program, they completed the six-item Treatment Acceptability Questionnaire (TAQ; Hunsley, 1992) with regard to the acceptability of the [www.SupportForSport.org](http://www.SupportForSport.org) site for the student-athletes they serve. The TAQ provides a total score ranging from 6–42, with higher scores indicating greater treatment acceptability. Participants were also asked open- and closed-ended questions with regard to the content, ease of use, and applicability of the website for student-athletes.

## Results

Internal consistency for the TAQ was .85, and the mean for the TAQ for this study was 29.96 ( $SD = 4.21$ ). The magnitude of this value is in agreement with values for acceptable behavioral interventions (Hunsley, 1993).

Several open-ended questions were asked to solicit feedback about the website. In response to the question “What are your overall impressions of [www.SupportForSport.org](http://www.SupportForSport.org)?”, most athletic directors and coaches responded with positive feedback. For example, several participants referred to the meaningful content and usefulness of the website, especially the videos. These themes were best captured by one respondent who stated, “I like the videos as they are better drawing in the viewer [rather] than just reading the information. I thought that the topics were excellent.”

In answer to the question “What did you like about [www.SupportForSport.org](http://www.SupportForSport.org)?”, respondents highlighted the ease of navigation, the importance and seriousness of the issues presented, the role-plays and videos, and the facts and figures presented. When asked, “What would improve [www.SupportForSport.com](http://www.SupportForSport.com)?” respondents suggested: (a) more detail in some areas, particularly mental illness; (b) providing an example of a negative response to an intervention; and (c) more minority representation in the videos. One respondent suggested, “Get feedback from student-athletes to see if it is something they would actually use and if the content seems realistic for them.” When asked “What else would you like to know about [SupportForSport.org](http://SupportForSport.org)?”, participants inquired when the website would be available, if coaches would be involved in distribution of the website, and if the website was being distributed to athletic training staff.

Finally, participants were asked “How useful would web-based materials for NCAA student-athletes be on the following topics?” with a list of topics provided following the question. The topics that were most highly rated as being potentially useful for student-athlete web-based programming were body image/eating disorders, leadership, concussion, substance abuse, sport performance enhancement, hazing, study skills, transitions, and injury. Modifications to the [www.SupportForSport.org](http://www.SupportForSport.org) website were made based upon the feedback from Study 2.

## Study 3

The [www.SupportForSport.org](http://www.SupportForSport.org) website was subjected to controlled field trial in Study 3 to gain an understanding of the extent to which the program was acceptable and effective in practice, specifically in producing the desired changes in mental health referral knowledge and mental health referral efficacy in student-athletes.

## Participants

Student-athletes ( $N = 197$ ) responded online to an emailed request to participate in the study; 180 consented to participate, and 153 student-athletes from NCAA Divisions I, II, and III representing eight states, completed the research protocol (103 females, 46 males, 4 participants did not provide information on gender). The mean age of this group was 19.63 ( $SD = 1.76$ ) years. Participants were predominantly non-Hispanic (91%) and described themselves as being African-American/Black (8%), Asian (11%), Hawaiian or other Pacific Islander (2%), Native American (4%), Caucasian/White (83%), or no response or Other (6%). Numbers for race do not add up to the total 100% because participants could endorse more than one option. Student-athletes reported participating in the sports of baseball, basketball, cross country, fencing, football, golf, gymnastics, lacrosse, rugby, skiing, soccer, softball, squash, swimming and diving, tennis, track and field, and volleyball.

## Procedure

After giving informed consent, student-athletes provided demographic information (i.e., age, gender, race/ethnicity, and sport) and completed questionnaires assessing their knowledge of the mental health referral process and their mental health referral efficacy. Mental health referral efficacy items included items such as: How confident are you that you can do the following: (a) Find resources related to mental health referrals?; (b) Find a professional who can help with a mental health problem?; (c) Help a friend who has a mental health problem?; and (d) Refer a friend to a professional for help with mental health issues? Items were rated on a scale from 0 (*not at all confident*) to 10 (*very confident*). Next, participants were randomly assigned to view [www.SupportForSport.org](http://www.SupportForSport.org) (experimental condition) or [www.ncaa.org/student-athletes](http://www.ncaa.org/student-athletes) (control condition) websites. Upon completion of online sessions, which were at least 10 min in length, participants completed mental health referral knowledge, mental health referral efficacy, program content, ease of use, and treatment acceptability questionnaires (Hunsley, 1992).

## Results

### Preintervention Examination of Measures

**Mental health referral efficacy.** Eight items composed the mental health referral efficacy scale. The items were intended to capture two aspects of mental health referral efficacy—resource/professional identification efficacy and peer assistance/referral efficacy. An exploratory factor analysis revealed the most parsimonious interpretation was a one-factor scale, so all eight mental health referral items were scored as a single scale. The eight items on the preintervention assessment had a coefficient alpha of .95 and an average total score of 8.23 ( $SD = 1.99$ ) on a scale of 0–10. To determine if the experimental ([www.SupportForSport.org](http://www.SupportForSport.org)) and control ([www.ncaa.org/student-athletes](http://www.ncaa.org/student-athletes)) groups had similar mental health referral efficacy at baseline, a *t*-test was conducted. As expected, scores for mental health referral efficacy at preintervention were not significantly different between the experimental ( $M = 8.30$ ,  $SD = 1.94$ ) and control ( $M = 8.15$ ,  $SD = 1.99$ ) groups, Welch  $t(145) = -0.57$ ,  $p = .57$ .

**Mental health referral knowledge.** Ten true-false items composed the mental health referral knowledge scale. The mean for this sample at preintervention was 6.92 ( $SD = 1.46$ ) questions correct out of 10. To determine if the experimental ([www.SupportForSport.org](http://www.SupportForSport.org)) and control ([www.ncaa.org/student-athletes](http://www.ncaa.org/student-athletes)) groups had similar mental health referral knowledge at baseline, a  $t$ -test was conducted. As expected, scores for mental health referral knowledge at preintervention were not significantly different between the experimental ( $M = 6.83$ ,  $SD = 1.54$ ) and control ( $M = 7.06$ ,  $SD = 1.38$ ) groups, Welch  $t(144) = 0.94$ ,  $p = .35$ .

## Postintervention Differences in Self-Efficacy and Knowledge

**MANCOVA analysis.** There were 139 student-athletes with complete data on both the self-efficacy and knowledge scales. After determining the data met assumptions for multivariate analysis, a multivariate analysis of covariance (MANCOVA) was calculated to compare the experimental and control groups on their mental health referral efficacy and mental health referral knowledge after viewing the research websites (means and standard deviations are presented in Table 1). Preintervention mental health referral efficacy and mental health referral knowledge scores served as covariates. Results of this analysis indicated a significant difference between the experimental ([www.SupportForSport.org](http://www.SupportForSport.org)) and control ([www.ncaa.org/student-athletes](http://www.ncaa.org/student-athletes)) groups postintervention, Wilks's  $\Lambda = .70$ ,  $F(1,135) = 9.71$ ,  $p < .001$ . Follow-up separate ANCOVAs were conducted on mental health referral efficacy and mental health referral knowledge scores to further explore the differences between the groups.

**Mental health referral efficacy ANCOVA.** There were 146 student athletes with complete data on preintervention and postintervention mental health referral efficacy measures. The mental health referral efficacy data were screened for assumptions for ANCOVA analysis (e.g., homogeneity of variance, homogeneity of regression slopes) and were deemed suitable for analysis. ANCOVA analysis comparing mental health referral efficacy scores at postintervention between the experimental

**Table 1 Means (SD) for Mental Health Referral Efficacy and Mental Health Referral Knowledge**

| Mental Health Referral Measure | Assessment Time  | <a href="http://www.SupportForSport.org">www.SupportForSport.org</a><br>$n = 76$ | <a href="http://www.NCAA.org">www.NCAA.org</a><br>$n = 70$ | Group Difference <sup>a</sup> |
|--------------------------------|------------------|--|--|-------------------------------|
| Self-efficacy                  | Preintervention  | 8.30 (1.94)  | 8.15 (1.99)  | 1.25<br>CI [0.62, 1.87]**     |
|                                | Postintervention | 9.03 (1.67)  | 7.69 (2.77)  |                               |
|                                |                  | $n = 75$   | $n = 69$   |                               |
| Knowledge                      | Preintervention  | 6.83 (1.54)  | 7.06 (1.38)  | 0.57<br>CI [0.12, 1.02]*      |
|                                | Postintervention | 7.26 (1.72)  | 6.85 (1.70)  |                               |

Note. CI = 95% confidence interval. \* $p < .05$  \*\* $p < .001$ . <sup>a</sup>Difference of means adjusted for the preintervention covariate.

([www.SupportForSport.org](http://www.SupportForSport.org)) and control ([www.ncaa.org/student-athletes](http://www.ncaa.org/student-athletes)) groups with pretreatment levels of mental health referral efficacy as a covariate revealed a significant difference between the groups,  $F(1,143) = 15.48, p < .001$ , partial  $\eta^2 = 0.1$ . These results showed that viewing the [www.SupportForSport.org](http://www.SupportForSport.org) site increased the mental health referral efficacy of participants more than viewing [www.ncaa.org/student-athletes](http://www.ncaa.org/student-athletes), a significant and medium-sized effect (Cohen, 1988).

**Mental health referral knowledge ANCOVA.** There were 144 student athletes with complete data on preintervention and postintervention mental health referral knowledge measures. Knowledge data were screened for assumptions for ANCOVA analysis (e.g., homogeneity of variance, homogeneity of regression slopes) and were deemed suitable for analysis. ANCOVA analysis comparing mental health referral knowledge at postintervention between the experimental ([www.SupportForSport.org](http://www.SupportForSport.org)) and control ([www.ncaa.org/student-athletes](http://www.ncaa.org/student-athletes)) groups with pretreatment levels of mental health referral knowledge as a covariate revealed a significant difference between the groups,  $F(1,141) = 6.37, p = .01$ , partial  $\eta^2 = .04$ . This significant and small effect (Cohen, 1988) showed that viewing [www.SupportForSport.org](http://www.SupportForSport.org) increased the mental health referral knowledge of participants to a greater extent than viewing [www.ncaa.org/student-athletes](http://www.ncaa.org/student-athletes).

## Treatment Acceptability

The six-item Treatment Acceptability Questionnaire (TAQ; Hunsley, 1992) was used to examine the acceptability of the [www.SupportForSport.org](http://www.SupportForSport.org) and [www.ncaa.org/student-athletes](http://www.ncaa.org/student-athletes) websites. The TAQ provides a total score ranging from 6–42, with higher scores indicating greater treatment acceptability. Internal consistency for this set of data were .87. The mean for the TAQ was 29.52 ( $SD = 4.47$ ) for the [www.SupportForSport.org](http://www.SupportForSport.org) group and 29.37 ( $SD = 5.40$ ) for the [www.ncaa.org/student-athletes](http://www.ncaa.org/student-athletes) group. Both websites were rated by student-athletes as acceptable, in agreement with treatment acceptability values for other behavioral interventions (Hunsley, 1993). The websites were then compared in terms of their treatment acceptability, Welch  $t(138) = -0.18, p = .85$ . These results suggest that [www.SupportForSport.org](http://www.SupportForSport.org) was perceived as being as acceptable to student-athletes as [www.ncaa.org/student-athletes](http://www.ncaa.org/student-athletes).

## Qualitative Feedback

Several open-ended questions were asked to solicit feedback from the student-athletes about the website. In response to the question “What are your overall impressions of [www.SupportForSport.org](http://www.SupportForSport.org)?”, the majority of the responses could be characterized by the terms *useful* and *effective*. Student-athletes reported that they liked the site and found the information helpful and educational. Further, they described [www.SupportForSport.org](http://www.SupportForSport.org) as easy to navigate, well-organized, and well designed. A few commented that they would have liked more information and a few others noted that the website offered too much information. With regard to the video clips depicting student-athletes making referrals for substance abuse, eating disorders, depression, and anxiety, student-athletes described the videos as relevant and accurate in terms of the dilemmas portrayed. A few described the videos as “cheesy,” but these comments were balanced by observations about how the videos drove key points home.

In answer to the question “What did you like about [www.SupportForSport.org](http://www.SupportForSport.org)?”, respondents highlighted the ease of navigation, the quality of the information, and the videos. A few commented that the approach was effective, in that it was tailored to athletes and could be viewed privately.

When asked “What would improve [www.SupportForSport.org](http://www.SupportForSport.org)?”, many respondents indicated that nothing additional was needed. Those respondents who suggested changes tended to focus on requesting more of what was already provided. That is, more videos, more mental health problems discussed, inclusion of more serious or complex issues, and more detailed academic information. A few expressed concerns that the information and video presentations were oversimplified for such a potentially complex topic, but others appreciated the concise delivery and manageable size of the site. Some suggestions for enhanced delivery, such as a mobile option and easier navigation, were made.

When asked “What else would you like us to know about [www.SupportForSport.org](http://www.SupportForSport.org)?”, participants inquired when the website would be available and how it would be promoted to students and endorsed by universities, if coaches would be involved in dissemination of the information, and if it was being distributed to athletic training staff. Athletes who were currently experiencing mental health concerns or those of friends had particularly favorable feedback about the website.

Finally, participants were asked “How useful would web-based materials for NCAA student-athletes be on the following topics?” The topics that were most highly rated as being potentially useful by student-athletes were injury, leadership, concussion, transitions, sport performance enhancement, substance abuse, career issues, study skills, and media communication skills.

## Discussion

College student-athletes have academic, personal, and sport responsibilities beyond those of their nonathlete peers (Brewer & Petrie, 2014; Martin & Andersen, 2014). In addition to these responsibilities, time constraints, mental health stigma, and worries about others’ perceptions of them if they use mental health services may help explain why college student-athletes are less likely than their nonathlete peers to use mental health services (Watson, 2006). Underutilization of mental health resources may contribute to negative mental health outcomes. Research suggests that mental health outcomes can be positively affected by web-based programs, particularly if such programs are tailored to a specific population (Lustria et al., 2013; Wantland et al., 2004). Therefore, an Internet resource related to mental health for student-athletes can be an effective way to help student-athletes gain the knowledge, confidence, and skills necessary for making effective mental health referrals.

The purpose of this research was to develop and evaluate the effects of an online, student-athlete-focused, multimedia, interactive mental health referral program designed to enhance mental health referral knowledge and efficacy. A web-based intervention was selected to allow student-athletes the opportunity to view materials (e.g., video, audio, text) in privacy and at their convenience. The website included interactive and tailored activities to enhance student-athlete engagement and improve effectiveness of the intervention.

The first study involved evaluation of the content and design of the web-based program with student-athletes using a one-to-one testing approach that facilitated understanding of how the website was used and were able understand how the website was used and perceived by student-athletes in rich detail. Student-athletes were generally positive about [www.SupportForSport.org](http://www.SupportForSport.org), suggesting that the website had promise, but that modifications related to design and content would enhance the viewing experience. Involving student-athletes in the design and evaluation of the project may have been a critical factor in the website having positive effects on subsequent student-athlete viewers.

Several of the student-athletes commented favorably on the nonlinear design of the website. Allowing student-athletes to click on the aspects of the program that interest them in any order makes it more likely that student-athletes will engage with, recommend, and continue to use the website. It also means, however, that student-athletes might not experience all aspects of the program. Indeed, several of the participants in this study saw only a portion of the material presented. Some of the limitations of nonlinear website design can be overcome by including key information in multiple locations. The website highlighted ideas—such as people who receive mental health help tend to get better faster and stay better longer and the acronym REFER to remind viewers how to make effective mental health referrals—throughout the website.

The second study involved the assessment of the website by coaches and athletic directors. Coaches and athletic directors deal with issues related to student-athletes on a regular basis as part of their job requirements. They have breadth and depth of experience with regard to the student-athlete experience. Indeed, many athletic directors and coaches were student-athletes themselves, before pursuing professional careers in college athletics (Williams & Miller, 1983). Much of the programming available to student-athletes is provided or presented by athletic departments and supported by athletic directors and coaches. Thus, these stakeholders are essential to the approval and dissemination of programming to student-athletes.

The commitment of athletic directors and coaches to their student-athletes was evidenced by the strong response rate and the time taken to evaluate the [www.SupportForSport.org](http://www.SupportForSport.org) website and to provide thoughtful responses. Feedback from athletic directors and coaches was favorable with regard to the website. This may be due in part to their awareness of mental health challenges faced by their student-athletes and their interest in contributing to the development of evidence-based materials that can be used to address mental health concerns. Based on the feedback of athletic directors and coaches, changes were made to [www.SupportForSport.org](http://www.SupportForSport.org). In addition to providing feedback about the website, athletic directors and coaches highlighted their interest in seeing similar materials being made available for student-athletes on body image/eating disorders, leadership, and concussion.

The final study was a randomized controlled trial designed to test the effects of viewing [www.SupportForSport.org](http://www.SupportForSport.org) on the mental health referral knowledge and efficacy of current student-athletes. The website was developed with social learning theory and modeling principles in mind (Buckley & Malouff, 2005; McCullagh et al., 2014). Peer models in video segments provided vicarious reinforcement for student-athletes with regard to mental health referrals and mental health help seeking behavior, both of which may reduce mental health stigma and serve as an impetus for student-athletes to refer and self-refer when needed.

Results indicated that viewing [www.SupportForSport.org](http://www.SupportForSport.org) significantly increased student-athlete mental health referral efficacy and mental health referral knowledge relative to a control group of student-athletes who viewed [www.ncaa.org/student-athletes](http://www.ncaa.org/student-athletes). These results are encouraging, as they suggest that viewing the website may help student-athletes to overcome some of the barriers (e.g., lack of knowledge, lack of efficacy) to seeking professional support for mental health issues.

In terms of the website itself, feedback pertaining to [www.SupportForSport.org](http://www.SupportForSport.org) showed that its acceptability was on par with the [www.ncaa.org/student-athletes](http://www.ncaa.org/student-athletes) website, a standard in intercollegiate sport. The nonlinear design and specific student-athlete content are shared characteristics of both [www.SupportForSport.org](http://www.SupportForSport.org) and [www.ncaa.org/student-athletes](http://www.ncaa.org/student-athletes), which may have contributed to their respective appeal (Cagiltay, Yildirim, & Aksu, 2006; Lustria et al., 2013). These results are promising because websites that are deemed acceptable by their target audiences are more likely to be viewed and recommended to others.

Informal feedback from counseling center staff during the creation and evaluation of [www.SupportForSport.org](http://www.SupportForSport.org) indicated additional reasons that student-athletes may be hesitant to make mental health referrals. Some student-athletes don't want to get in trouble and/or they don't know if another person's mental problem is "big enough" to warrant mental health treatment. The brief video scenarios on [www.SupportForSport.org](http://www.SupportForSport.org) highlight student-athlete role models from a variety of sports and racial/ethnic backgrounds and demonstrate that a mental health referral can be made relatively easily, if somewhat awkwardly, without requiring a mental health diagnosis. Further, the video clips demonstrate that even when mental health referral conversations do not go exactly as planned, they can still be valuable. Counseling center staff noted the value of the targeted information regarding resources available on individual campuses and communities and details about mental health counseling (e.g., how to make an appointment, how long a session usually lasts, the price of mental health services).

The results of this research suggest that athletic directors, coaches, and student-athletes are interested in seeing similar online programming being made available on more topics. The topics that were most highly rated as appropriate for this type of programming included leadership, concussion, performance enhancement, and substance abuse. Other issues of interest included injury, eating disorders/body image, transitions, career issues, study skills, hazing, and media communication skills.

## Strengths and Limitations

This is the first study that included the development and assessment of multimedia materials to target the mental health referral knowledge and mental health referral efficacy of student-athletes. Strengths of this research include development of content with input from faculty, counseling center staff, athletic directors, coaches, and athletes, and the use of a controlled trial to evaluate the effects of [www.SupportForSport.org](http://www.SupportForSport.org). The online availability of [www.SupportForSport.org](http://www.SupportForSport.org) increases the potential of the intervention to reach student-athletes across intercollegiate divisions, resource availability levels, and geographical regions. A further strength of the study was the relatively high level of treatment acceptability of the website when compared with the [www.ncaa.org/student-athletes](http://www.ncaa.org/student-athletes) site. This suggests that

the materials were deemed to be credible by student-athletes, coaches, and athletic directors, and may therefore be likely to be used for their intended purpose.

Limitations include the fact that participants represented many, but not all, intercollegiate sports. Therefore, it is not known how effective the website would be for participants in sports not studied. Further, a large majority of the participants were female, which also limits the generalizability of the results. Although the men who evaluated [www.SupportForSport.org](http://www.SupportForSport.org) viewed the website favorably and gained in mental health referral knowledge and efficacy after participating in the research, additional work is needed to determine if alternative recruitment and educational strategies might be more appropriate for male student-athletes.

## Implications and Future Directions

Student-athletes are leaders and role models on many campuses. Programming that helps to increase knowledge and efficacy related to mental health referral among student-athletes might be shared with or extend to the general student-population. As mental health issues are of concern to all students, such programming has the potential to increase mental health referral knowledge and efficacy across campus.

This research suggests that confidential online material tailored to student-athletes may be effective in changing understanding of mental health concerns. The materials presented included both male and female student-athletes in diverse sports and of various racial and ethnic groups. Viewers were free to explore the website in any manner that suited them and they were not required to view any particular pages or aspects of the site. To make it more likely that key points were conveyed, information such as the statement, “People who get mental health help tend to get better faster and stay better longer” and the acronym REFER, a systematic process that delineates how to refer others for mental health help, were strategically placed in multiple locations throughout the website. Because the technology necessary to collect data pertaining to specific web page views was not incorporated into the [www.SupportForSport.org](http://www.SupportForSport.org) design, it is not possible to determine which pages and components of the website were associated with knowledge and efficacy gains. Future research that uses page view technology may help elucidate the components of such programming that are essential to effect knowledge and efficacy changes.

## Conclusions

The studies presented provide evidence that a web-based intervention that is tailored to the needs of student-athletes can enhance mental health referral knowledge and efficacy and have the potential to play an important role in affecting the anxiety, depression, eating disorders, and substance abuse in this population. A mental health referral intervention, created with the input of student-athletes, coaches, athletic directors, counseling center staff, and faculty was deemed acceptable. Further, viewing the website increased student-athletes’ knowledge of the mental health referral process and their efficacy with regard to making mental health referrals for those with anxiety, depression, eating disorders, and substance abuse. Such an online program is freely available and can be incorporated into athletic department and other campus activities for student-athletes. Additional research is required to

determine the behavioral effects of such interventions and to determine if a similar delivery strategy might be effective in providing support to student-athletes on other mental health topics.

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