

The Development and Evaluation of a Web-Based Program Empowering NCAA Coaches to Effectively Communicate with Student-Athletes of Concern and Make Mental Health Referrals: A Pilot Study

PROBLEM STATEMENT

A growing number of student-athletes are in need of mental health services, and appropriately identifying and addressing these issues in the natural training environment can promote help-seeking behaviors and reduce stigma within sports.

SAMPLE, TRAINING CONTENT, & PROJECT MEASURES

14 Head & 16 Assistant Coaches at an NCAA Division III school were invited to participate in the study.

A Pre- and Post-Course Survey was used assess self-reported comfort levels with each learning objective (18 items)

A measure of stigma towards a case of a student with depression was used to assess self-stigma and the perceived stigma of others at pre- and post-course (14 items)

Six web-based modules, each lasting approximately 15 minutes, focused specifically on the topics of:

- Warning signs and help seeking behaviors
- Barriers to seeking help
- Coach-athlete relationships
- Case studies: Applying content knowledge to real-life examples
- Taking action: Referring a student-athlete
- Taking action: Talking to the student-athlete

MAIN FINDINGS

Coaches' perceptions of their ability to build rapport with student-athletes, recognize barriers when seeking mental health treatment, and recognize an at-risk student-athlete significantly increased following an online course. In accordance with their response to a number of survey items, following six web-based modules, coaches felt more confident recognizing barriers and at-risk athletes, as well as implementing verbal and non-verbal strategies suggested within the course.

RECOMMENDATIONS

Schools should be generous with their timeline. Although coaches can complete this specific training at their own pace, it takes time to fill out surveys, watch content, reflect, and submit feedback. Build a relationship with your counseling center, and with providers in your area. Encouragement to participate should come from a variety of sources, including researchers, administrators, and peers.

For Further Info, Please Contact:

Mary Jo Loughran, Ph.D.
mloughran@chatham.edu

Leigh Skvarla, Ph.D., NCC
L.Bryant@chatham.edu

The Development and Evaluation of a Web-Based Program Empowering NCAA Coaches
to Effectively Communicate with Student-Athletes of Concern and
Make Mental Health Referrals: A Pilot Study

2018 NCAA Innovations in Research and Practice Grant

Final Report

Mary Jo Loughran, Ph.D.

Leigh Skvarla, Ph.D., NCC

Chatham University

Pittsburgh, Pennsylvania

The Development and Evaluation of a Web-Based Program Empowering NCAA Coaches to Effectively Communicate with Student-Athletes of Concern and Make Mental Health Referrals: A Pilot Study

Problem Statement

In recent years, far too many headlines have highlighted cases of student-athletes struggling with mental health concerns. Currently, rates of depression in college student-athletes range from 15.6% to 21% (Sudano, Miles, & Collins, 2016). Within the general adolescent and young adult population, prevalence rates of mental health issues are estimated at about 30% (Gulliver, Griffiths, & Christensen, 2012). In addition, the literature supports high rates of anxiety, substance abuse, and eating disorders among adolescent student-athletes (Sudano et al., 2016). With a growing number of student-athletes in need of mental health services, it is imperative that help-seeking behaviors and early signs of psychological issues be recognized and appropriately addressed in the student-athlete's natural training environment.

Although prevalence rates of mental health issues among student-athletes are high, many do not seek professional help. Help-seeking behaviors amongst student-athletes are often hindered by negative attitudes towards mental health services-- which, in turn, reinforce perceived stigmas (Gulliver, Griffiths, & Christensen, 2012). For the minority of student-athletes who do seek services, stigmatization can occur via peers and coaching staff who perceive these student-athletes as weak. Additionally, these student-athletes may fear that their coaches and/or athletic administrative members will be unsupportive (Sudano et al., 2016). Research indicates that, in addition to athletic trainers (e.g., Sherman, Thompson, Dehass, & Wilfert, 2005), coaches, teammates, and family members frequently serve as student-athletes' initial point of contact for help-seeking behaviors. This stands in contrast to the traditional assumption that student-athletes will initially reach out to campus counseling centers or their student affairs office.

As such, coaches may serve as a first line of response when student-athletes engage in help-seeking behavior or appear to be in need of mental health assistance. Coaches are crucial to constructing student-athlete culture. Therefore, when the coaching staff perceives their athletes' mental health as vital to performance, campuses can hopefully expect to see a shift in attitudes towards student-athlete wellness and an increase in the use of mental health services.

The purpose of this study was to introduce coaches to the constructs of rapport building, help-seeking behaviors, and mental health warnings signs, as well as to increase their awareness of the referral process. Through participation in six web-based modules, coaches were asked to reflect upon their student-athletes' athletic, academic, and social experiences as well as to become more familiar with observable normative and problematic behaviors. The major aims of this study were to increase coaches' perceived competence and confidence in an effort to shift the perception of mental health and to positively impact the Chatham student-athlete experience.

In accordance with the aforementioned problem and major aims, the research questions were: What is the impact of a brief web-based educational module on coaches' self-

reported knowledge of (a) rapport building with student-athletes, (b) help seeking behaviors of student-athletes, (c) and the mental health referral process? (**RQ1**); and What is the feasibility of the online training program? (**RQ2**)

Literature Review

Martens (2004) encourages all coaches to follow the American Sport Education Program's motto: "every decision you make and every behavior you display should be based first on what you judge is best for your athletes." However, the current literature points to a lack of knowledge among athletic department staff regarding resources outside of their offices. Even for those aware of these resources, it is often insufficient to present options to student-athletes and assume that they will seek them out independently. Semaia (2014) states that resources should be delivered more effectively to the student-athlete through existing rapport and an individualized focus. Through developing a trusting relationship with a student-athlete, there is a greater likelihood the student-athlete will disclose in times of need, and perhaps follow-up on the referral. Additionally, by establishing these relationships and decreasing stigma at the outset of a college student-athlete's development, athletic programs can continue to move from a reactive to a proactive model of student-athlete wellness (Kliegman, 2017).

Determining when a student-athlete may be in need varies, as student-athletes experience a variety of stressors. These include intense time demands, travel, burn-out, concussive episodes, perceived pressure to achieve, conflicts with coaching staff members or teammates, as well as injuries (Sudano et al., 2016). If left unattended, these stressors can increase an already present risk of a student-athlete developing mental health issues, as well as a greater risk of suicidality (Sudano et al., 2016). Additionally, transitions may serve as a time of increased stress or adjustment.

Transitions can be strenuous for many student-athletes, whether they be from high school to college, from one institution to another, or between competitive seasons (Pearson & Petipas, 1990). For instance, student-athletes who are navigating the NCAA transfer process will likely experience changes in environment, novel peer cohorts, and new academic coursework. Coaches and athletic department staff can play an integral role in student-athlete development, thus it is important to support student-athletes during such transitions. Furthermore, the relationships built with student-athletes during non-stressful instances can help coaches and other athletic staff members to identify when a student-athlete's behavior is uncharacteristic or concerning (Semaia, 2014). Trends over the past decade point to more universities moving to a model where athletic department staff now include an in-house psychologist or shared personnel from the counseling center so as to create a more open culture of support, with sport psychology and mental health services being offered literally next-door to coaches' offices (Kliegman, 2017).

In order to break down the stigma of mental health services and make appropriate referrals, coaches must be included in the cultural shift, and feel equipped to assist their student-athletes in more than a physical performance capacity. Relatively absent within the current literature are research questions specifically addressing coaches and their perceived abilities to handle student-athlete distress. In contrast, there is an abundance of literature investigating not only athlete distress but also their hesitancy and resistance towards seeking treatment. Thus,

providing psychoeducation to coaches, much like is done within athletic training competencies, will assist with positive student-athlete development, especially due to ease of access or proximity at large and small NCAA institutions.

Currently, the integrative care model (Sudano et al., 2016) does not identify coaches as a member of the mental health services team. This is most likely due to the lack of competencies that coaches have when it comes to addressing psychologically-based concerns, and also the need to ethically and legally protect a student-athlete's privacy. Nevertheless, if coaches remain an initial contact for help-seeking behaviors, then at the very least they must be empowered to carry out requests for help, and use language and nonverbal behavior that promotes healthy physical and psychological development. The mental health checklists published by the NCAA's Sport Science Institute highlight the need for athletics department staff members to demonstrate compassion, honor the student-athlete's courage to ask for help, and make an appropriate referral to a competent professional (Goldman, 2015).

The coach-athlete relationship is a crucial, foundational piece for how a student-athlete's sporting experience will progress throughout their college career, both on and off the field. In order to best address these difficult topics surrounding mental health struggles or concerns both the student-athlete and the coach need to be comfortable with one another. Across the literature, trust, respect and support from both parties are identified as some of the main aspects to successful coach-athlete relationships. Jowett and colleagues have identified the three C's as important components for a strong relationship between coach and student-athlete: commitment, complementarity, and closeness. (Jowett & Clark-Carter, 2006; Jowett, & Cockerill, 2002).

The construct of closeness is of particular importance at present, due to its connection with rapport. When healthy rapport is fostered appropriately, it may help student-athletes to express help-seeking behaviors and aid coaches as they work to address mental health concerns. Closeness is a product of, as well as a contributor to, quality relationships, which provide an abundance of positive effects. These effects may include, but are not limited to: performing at the highest level, increased self-esteem, well-being and happiness, and facilitating and maintaining good mental health (LaVoi, 2007). This connection suggests that, not only will closeness be beneficial when addressing a struggling student-athlete, but that it may act as a protective factor for student-athletes, in a similar manner as parent-child and teacher-student dyads (LaVoi, 2007).

In their surveying of multi-divisional collegiate student-athletes, LaVoi (2007) identified 19 closeness dimensions, including: communication, positive support, caring, understanding, approachable, comfortable, trustworthy, authenticity, open, and boundary maintenance. All of these dimensions are relevant to rapport building with student-athletes and creating an environment in which student-athletes can ask for help. The simple awareness of the importance and influence of these traits in the coach-athlete relationship is helpful, but it is also necessary to identify ways in which these constructs can be created and fostered in the relationship. Coaches may recognize the importance of coach-athlete relationships, and the necessary components that make up a strong relationship, but lack the understanding or capacity to execute them.

Athlete-centered coaching (Rangeon, Gilbert, & Bruner, 2012) provides insight regarding how coaches can behaviorally express caring, understanding, and trustworthy leadership. Magneau and Vallerand (2003) suggest that, because coaches have a stake in the matter, with coaching being their livelihood, their focus is often taken away from an athlete-centered approach to a coach-centered approach. Coaching behaviors can become controlling, demanding, and authoritarian in nature, which then directly impacts student-athlete motivation. These behaviors can also have a trickle-down effect into self-concept, stress levels, and ultimately, overall health and well-being.

Self-awareness is first and foremost the strategy recommended for preventing coaches from heading down this path (Magneau & Vallerand, 2003). The best way to enforce an athlete-centered approach is through autonomy-supportive behaviors, in which coaches take the perspective of the student-athlete to acknowledge their feelings and provide relevant and necessary information. They have the ability, as the person in power, to emphasize the student-athlete's autonomy and choice, and minimize pressure. In the context of mental health, this approach has the potential to provide student-athletes with a sense of control and empowerment at a time when they could also be feeling uncertain or vulnerable.

Research is lacking regarding the skills and strategies coaches can use to initially develop a strong relationship with their student-athletes. However, more research has been done on the maintenance of a successful coach-athlete relationship, which may shed light on some helpful techniques. The COMPASS model identifies seven maintenance strategies: (1) conflict management, (2) openness, (3) motivational strategies, (4) positivity, (5) advice, (6) support, and (7) social networks (Rhind & Jowett, 2010). Within this model, behaviors range from sharing information and goal setting, to upbeat interactions and socializing together. The model suggests that by using these strategies, the quality of the coach-athlete dyad can be maintained (Rhind & Jowett, 2012). However, positivity and advice are thought to be enmeshed with the other COMPASS constructs, which may explain the mixed results in the research surrounding their construct validity. As a result, "preventative strategies" and "assurance" have been integrated into the COMPASS model as replacements. Assurance refers to a student-athlete's belief that support will be there for them, should the need for that support arise (Rhind & Jowett, 2012), which is of particular interest to the current research.

All in all, one hopes that student-athletes will have a positive experience getting an education and competing in their sport. Nevertheless, inherent transitions and stressors in the academic and/or performance environments can affect student-athletes, and in some cases, can lead to or magnify mental health concerns. As persons who see these individuals on a daily basis, coaches must be empowered to learn more about their athletes' unique set of challenges, and be able to identify help-seeking behaviors so that appropriate mental health referrals can be made. It is the aim of this proposed research project to develop a web-based training program to guide coaches through the development of quality relationships with their athletes, and understand how these relationships can allow for help-seeking behaviors to emerge. While several studies have directly addressed student-athletes' perceptions of and behaviors surrounding mental health, little has been done to increase coaches' perceived competence and confidence to create a shift in the traditional perceptions of mental health, and positively impact the student-athlete experience.

Conceptual Framework

Web-based education and/or online training platforms are typically established in module formats (Rychtarik et al., 2015, Glang et al., 2017, Kauth et al., 2017). Most often, researchers looking to collect and then analyze research do so via pre- and post-module scoring, where participants are asked to complete a survey regarding the topic, and then, following the modules, are tested on their knowledge retention (Pham et al., 2016). Follow up questionnaires are normally completed in the subsequent year of training to assess long-term knowledge retention rates (Rychtarik et al., 2015, Kauth et al., 2017). In addition to the subject matter, many web-based platforms also assess the willingness to adopt web-based practices. It also should be noted that the attitude towards web-based learning determines the effectiveness of the training (Zhan et al., 2016). In cases where participants favor the web-based methodology, researchers have found that learners are more likely to incorporate their new knowledge into their work (Welch et al., 2014).

Currently, web-based initiatives are being employed in athletics, most notably in the form of concussion awareness programs. These modules aim to increase knowledge and management practices for concussions among coaches, parents, and athletic personnel (Glang et al., 2014). This has spearheaded the nationwide use of online concussion training programs, such as HEADS UP to Youth Sports and ConcussionWise (Centers for Disease Control and Prevention, 2017).

Web-based modules allow for the creation and implementation of proactive initiatives that are not strictly student-athlete driven, but centered on training those professionals who have direct contact with student-athletes on a daily basis, specifically coaching staff. An advantage of web-based platforms is that they are easily accessible. In this way, for the present study proposal, this format can provide foundational knowledge regarding the importance of the coach-athlete relationship, an overview of help-seeking behaviors, and guide the mental health referral processes. In addition, it will allow the research team to collect baseline quantitative and qualitative information about the program content.

Healthcare professionals, especially those working with populations at risk of developing mental health concerns, frequently rely on the Internet to provide them with information about diagnoses, or with resources for their patients (Clarke et al., 2017). Of these professionals, 86% use the internet on a daily basis in their work environment. As this trend consumes the mental health field, it is logical to employ a web-based initiative to coaches in order to enhance their awareness about mental health concerns. Clarke et al. found that web-based resources increase knowledge of mental health issues, and better equip psychologists, psychiatrists, general medical practitioners, and health promotion officials to talk about and refer persons to support providers and/or materials.

This research team's review of a half-dozen recent publications shows that six modules, or scenarios, is generally used as a basis for web-based education (Glang et al., 2014, Reichardt et al., 2017, Kauth et al., 2017). Best practices for length vary among existing research. Web-based practices previously observed are available between four to six weeks (Glang et al., 2014), with some available for up to nine months. The varying lengths of these platforms allows for

many programs to be completed at the user's desired pace (Reichardt et al., 2017, Pham et al., 2015, Rivard et al., 2014). This also allows users to revisit material and to explore affiliated links and resources (Rivard et al., 2014).

Kauth reported that the biggest barrier to web-based training was the ability to find time to complete modules during clinical hours (2017). As college coaches are subject to long work hours (Lumpkin et al., 2012), the self-paced format, within a formal timeline/deadline, may be most effective. Pham et al. (2016) utilized Microsoft PowerPoint to create module content. Employing Adobe Connect and Adobe eLearning software suite, the researchers' slides were converted to accessible modules. The present study will adopt a similar style of content development and delivery, starting with PowerPoint and then moving to more advanced software to engage coaches in the content.

In the present study, modules focused on three main topics. These were (1) developing rapport between coaches and student-athletes, (2) identifying and responding to help-seeking behaviors, and (3) making appropriate referrals to healthcare professionals and/or higher levels of care. Module content addressed questions such as: (a) How can coaches destigmatize the need to see a counselor, psychologist, or performance enhancement professional? (b) What rapport building strategies can assist in the coach-athlete relationship? (c) What are some of the main barriers/obstacles that student-athletes face when considering mental health services? (d) What are some best-practices for making a referral outside of the athletic department?, and (e) How do coaches identify help seeking behaviors when they're present?

The information in the training program was presented to coaches over a series of six modules. Modules #1 and #2 acted as an introductory pair. Module #1 introduced coaches to general warning signs and help-seeking behaviors often exhibited by student-athletes, as well as some risk and protective factors that exist in college athletics. Module #2 introduced barriers and obstacles student-athletes face. These included, for example, lack of time, concerns about privacy, lack of perceived need for help, skepticism about treatment effectiveness, and stigma. Module #3 focused on rapport building and identifying behaviors for coaches to develop strong relationships with their student-athletes. Module #4 served as a practice module and included case studies for coaches to review. Case studies tested their knowledge, thus far, in identifying adaptive and maladaptive behaviors in student-athletes. Finally, Modules #5 and #6 addressed the referral process. In Module #5, coaches were introduced to the referral process and what referral options may be available to their students. Module #6 worked to bring the referral process full-circle by teaching coaches how to navigate the conversation of providing the necessary resources for student-athletes of concern.

The aforementioned modules were designed to follow the trajectory of potential mental health concerns from start to finish, or rather, from identification to treatment. The issues addressed in these modules were intended to be applicable to student-athletes across NCAA Divisions I, II, and III. While of course individual universities may have varied access to campus and community providers for student-athletes, it was hoped that a general, practical introduction to the referral process would be applicable regardless of institution size and/or current resources.

Methodology and Data Collection

Participants

Participants were recruited from a Division III athletic department at a university in western PA. Participation was open to both head and assistant coaches. This sample of coaches represented male and female collegiate sports, specifically 10 men's and 10 women's teams. The teams competed across the fall, winter, and spring seasons. Coaches' years of experience at the collegiate level ranged from 1 to 26 total years, and 1 to 7 years of experience at the participating university. The invitation to participate in the six-module online course was offered to 30 total coaches, specifically 14 head coaches and 16 assistants.

Instrumentation

Stigma Towards Depressed Students Measure. The Stigma Towards Depressed Students Measure (Jorm, Kitchener, Sawyer, Scales, & Cvetkovski, 2010) is a 14-item measure developed for use in mental health first aid training courses. The measure was normed and tested with high school teachers who had received a training course focused on mental health stigma. As part of this measure, participants in the present study were asked to read a short vignette about "Jenny," a young woman currently experiencing a major depressive episode. After reading the vignette, participants were asked to answer items designed to assess both personal and perceived stigma surrounding Jenny's case using a 5-point Likert-type scale (1 = *strongly agree*, 5 = *strongly disagree*).

Pre-course survey. The pre-course survey is an 18-item questionnaire developed specifically for this study, and was presented to participants in conjunction with the Stigma Towards Depressed Students Measure. The survey was designed to assess participants' level of comfort related to building rapport with their athletes (LaVoi, 2007; Semaia, 2014), recognizing barriers student-athletes face when seeking mental health treatment (Gulliver, Griffiths, & Christensen, 2012), and recognizing at-risk student-athletes (Sherman, Thompson, Dehass, & Wilfert, 2005). Participants indicated their perceived comfort level with each learning objective via a 5-point Likert-type scale (1 = *extremely comfortable*, 5 = *extremely uncomfortable*). An open-ended prompt was also included in an effort to gather additional information about coaches' expectations of the course prior to viewing the six modules.

Post-course survey. The post-course survey is the same 18-item questionnaire as the pre-course survey, although it was presented at the conclusion of the web-based course. As with the pre-course survey, these items were presented in conjunction with the Stigma Towards Depressed Students Measure. The post-course survey measured learning objectives by utilizing the same 5-point Likert-type scale (1 = *extremely comfortable*, 5 = *extremely uncomfortable*). As with the pre-course survey, an open-ended prompt was included to capture coaches' comments about the course and/or their learning process.

Procedures

Prior to beginning data collection, approval for the proposed project was obtained from the university's Institutional Review Board (IRB). Following approval, the research team began the module development process. Further expansion on the preliminary literature review included pulling content from a number of peer-reviewed articles. This process blended literature from psychology, coaching, sport psychology, and athletic training to create a cohesive resource for coaches. Content development mostly occurred during team meetings, where an average of

five to six research team members were present. In order for content to be added to the modules, consensus was reached via open discussion.

Module content was then finalized, and research team members shifted their focus to scripting the modules, reading aloud what they had written to other members so as to receive feedback on word choice, pacing, and transitions between topics. The scripts were then recorded by two research team members using the free online platform Zoom. The recordings were shared with a small team of website developers who assisted the research team in building a project-specific website for all participants to access.

Once all content was uploaded, the six-module course was pilot tested by a graduate student, who provided feedback on the modules themselves as well as general website navigation. The student's feedback was used to improve the course prior to launch, which occurred in October 2018. Concurrently, the university's coaches were introduced to the project verbally in staff meetings by a principal investigator to promote transparency and understanding of the project. Continued outreach and recruitment was conducted via e-mail by the research team every few weeks. Follow-up communication to encourage participation was also conducted by the department's Athletic Director on behalf of the research team. Throughout the study, participants were reminded that participation was voluntary.

In order to give coaches unique access to course content, the online distribution of individual logins were included via an introductory email from the website developers. Coaches had a specific username and password assigned to them, and were able to reset their password at any time. Reminder emails were sent directly to the coaching staff, as well as from the Athletic Director between October 2018 and January 2019. When the course closed in early January 2019, three research team members engaged in statistical analysis of the pre- and post-course surveys and reviewed all open-ended prompts for further feedback.

First, all data was exported from Qualtrics survey software to a Microsoft Excel file, where it was cleaned. Specifically, when multiple responses were recorded for the same participant (determined via code name submitted) within a one-hour time frame, the most recent responses were used for analysis. Ultimately, it was assumed that the survey must have been re-submitted (i.e. answers were saved, and the user went "back" or refreshed the page). When a code name was not provided by a participant, the researchers did not analyze that data so as to not make assumptions about who did and did not complete both the pre- and post-course surveys. Additionally, participant responses were not included in statistical analyses if they did not complete at least some items from both surveys, given the study's repeated measures design.

Results

Overall, the research team identified 39 submissions for the pre-course survey. Of these 39 submissions, 13 were blank, and 3 contained a code name but no item responses. There were 17 submissions for the post-course survey, with two submissions left blank and one incomplete. One submission was complete but had no code name attached to it, and therefore was not considered in any further analyses. In order to answer the proposed research questions,

descriptive statistics on the pre- and post-course survey items were examined, including participants' responses to the Stigma Towards Depressed Students Measure.

Additionally, a paired samples *t*-test was conducted to examine the difference between pre- and post-course mean scores for each learning objective and item on the stigma measure. A paired *t*-test comparing coaches' pre- and post-course scores assessing self-reported ability to build rapport with their athletes, recognize barriers student athletes face when seeking mental health treatment, and their perceived ability to recognize an at risk athlete was significant $t(11) = 5.496, p < .001$. The mean pretest score was 2.18 with a standard deviation of 0.56, and the mean of the posttest was 1.39 with a standard deviation of 0.59. Paired *t*-tests were also run to compare pre- and post-course responses to the Stigma Towards Depressed Student Measure. The paired *t*-test assessing pre- and post-course levels of self-stigma was not significant, $t(10) = -1.63, p > .5$, with the pretest mean of 4.01 ($SD = 0.52$) and a posttest mean of 4.21 ($SD = 0.59$). The paired *t*-test assessing pre- and post-course levels of how participants perceived the stigma held by others was also not significant, $t(10) = .176, p > .05$, with a pretest mean of 2.61 ($SD = 0.59$) and a posttest mean of 2.57 ($SD = 0.87$).

In order to assess feasibility, the research team reviewed the comments shared in the open-ended prompt at the end of the pre- and post-course surveys, and examined the Qualtrics survey software information pertaining to the number of attempts and time spent answering survey items. Overall, implementation of the online training modules was shown to be time-intensive, with over one hour of course content plus two surveys. Nevertheless, selecting an online platform appears to be effective for widespread distribution to a sample of professionals whose schedules and interest levels may be variable. Given the fact that unique logins were created for coaches and distributed via email, this study's participants were able to progress through the modules at their own pace. Indeed, some coaches completed the full course shortly after the project's launch, while others waited until the semester's end and/or the holiday season.

Discussion

Upon completion of the training, coaches reported an increased level of comfort with module content. Coaches reported feeling more comfortable not only recognizing barriers and at-risk athletes, but also feeling more comfortable utilizing the strategies suggested for developing rapport. With improvements in these content areas, the present study's results suggest that, when necessary, coaches will be better able to facilitate conversations about mental health with their student-athletes, and be better equipped to explore and/or make the appropriate referrals.

Despite a lack of significant findings, coaches' responses to the Stigma Towards Depressed Student Measures at pre- and post-course periods presented interesting findings. When comparing themselves to their peers (i.e., other people), coaches reported themselves as having less negative attitudes towards students with depression via the case of "Jenny." Although not significant, posttest scores revealed that self-stigma was improved after completion of the six-module online training, but that stigma held by others actually worsened. This suggests that the present sample of coaches may believe themselves to be more accepting of the challenges that their student-athletes could be facing than other persons in and outside of their profession.

While a mixed bag of significant and not significant findings came from the statistical analyses completed, overall this study's results reveal that coaches felt more educated, prepared, and comfortable managing the potential mental health concerns of their student-athletes following an online course that took less than two hours to complete. The results from this pilot study generate additional research questions and adaptations for future research projects. Future research should look at a wider implementation of web-based training modules across Divisions I, II and III to compare rates of mental health knowledge and comfort on this topic among coaches and other sport administrators. Additionally, it is suggested that participant-centered focus groups be held following the completion of online training modules to allow for a more comprehensive picture of coaches' knowledge of module content and course-related feedback.

Implications for Campus Level Programming

In conjunction with project findings, several implications regarding campus level programming can be made. First, when planning and implementing the project in accordance with a pre-configured timeline, allotment of time should be generous. As with most pilot projects, intended deadlines and expectations for task completion may change. To accommodate potential deadline extensions, it is recommended that research teams schedule more time than needed when developing a proposed project timeline, and begin to recruit participants as soon as the project is approved by the institution's IRB. Communication between research team members and principal investigators should be transparent and frequent in order to navigate updates to the project timeline and delegate project-related tasks.

Second, in relation to recruiting volunteer participants, coach engagement should originate from multiple sources. For instance, in addition to research team members presenting the project at a coaches' meeting, support from administrators and other athletic department personnel may bolster motivation and interest. Furthermore, research teams are encouraged to employ several methods of delivery to encourage participation and potentially yield increased participation. Written and verbal delivery methods can humanize the project, and allow for potential participants to gain a more personal understanding of the project's intended purpose and campus-level impact.

Furthermore, given that the demand for mental health resources may look different across divisions and campuses, this research team recommends that researchers and administrators consider the applicability of training content to their specific institution. For instance, Division III programs, and other small-sized universities, may have limited on-campus counseling resources. Therefore, additional work with the local community may be needed to empower coaches and student-athletes to connect with off-campus providers. At larger universities, the necessary supports may be available within an athletic department and/or campus counseling center; however, it is reasonable to consider that coaches may still benefit from additional training specific to mental health in order to engage with student-athletes in a helpful manner and utilize existing resources properly.

References

- Centers for Disease Control and Prevention. (2017, October). HEADS UP to Youth Sports: Online Training. Retrieved from <https://www.cdc.gov/headsup/youthsports/training/index.html>
- Clarke, A. M., Chambers, D., & Barry, M. M. (2017). Bridging the digital disconnect: Exploring the views of professionals on using technology to promote young people's mental health. *School Psychology International, 38*(4), 380-397. doi:10.1177/0143034317700937
- Creswell, J. W. (2007). *Qualitative inquiry and research design: Choosing among five approaches* (2nd ed). Thousand Oaks, CA: Sage Publications.
- Glang, A. E., Koester, M. C., Chestnutt, J. C., Gioia, G. A., McAvoy, K., Marshall, S., & Gau, J. M. (2014). An Open, Web-Based Ecosystem Management Tool. *Improving Natural Resource Management, 59*-78. doi:10.1002/9780470979334.ch5
- Goldman, S. (2015). *Mind, body, and sport: Mental health checklists*. Retrieved from <http://www.ncaa.org/sport-science-institute/mind-body-and-sport-mental-health-checklists>
- Gulliver, A., Griffiths, K. M., & Christensen, H. (2012). Barriers and facilitators to mental health help-seeking for young elite athletes: A qualitative study. *BMC Psychiatry, 12*(1), 157.
- Jorm, A. F., Kitchener, B. A., Sawyer, M. G., Scales, H., & Cvetkovski, S. (2010). Mental health first aid training for high school teachers: A cluster randomized trial. *BMC Psychiatry, 10*. doi: 10.1186/1471-244X-10-51
- Jowett, S. & Cockerill, I. M. (2002). Incompatibility in the coach–athlete relationship. In I.M. Cockerill (Ed.) *Solutions in sport psychology* (pp.16–31). London: Thomson Learning.
- Jowett, S., & Clark-Carter, D. (2006). Perceptions of empathic accuracy and assumed similarity in the coach-athlete relationship. *British Journal of Social Psychology, 45*(3), 617–637. <http://doi.org/10.1348/014466605X58609>
- Kauth, M. R., Adler, G., McCandless, S. J., & Leopulous, W. S. (2017). Embedding new clinical practices: The role of facilitation in enhancing web-based training for mental health providers. *Journal of Mental Health Training, Education & Practice, 12*(1), 24-32. doi:10.1108/JMHTEP-01-2016-0001
- Klenck, C. (2014). *Mind, body, and sport. Understanding and supporting student-athlete mental wellness*. (G. T. Brown, Ed.), *Mind, body and sport: Understanding and supporting student-athlete mental wellness*. Indianapolis: National Collegiate Athletic Association. Retrieved from <http://www.ncaapublications.com/productdownloads/MindBodySport.pdf>

- Kliegman, J. (2017, October). College athletes are only starting to get access to the mental health care they need. *The Ringer*. Retrieved from <https://www.theringer.com/2017/10/26/16535274/ncaa-student-athletes-mental-health-care-initiatives?platform=hootsuite>
- LaVoi, N. M. (2007). Expanding the interpersonal dimension: Closeness in the coach-athlete relationship. *International Journal of Sports Science & Coaching*, 2(4), 497–512. <http://doi.org/10.1260/174795407783359632>
- Lumpkin, K., & Anshel, M. H. (2012). Work addiction among intercollegiate sports coaches. *Journal of Sport Behavior*, 35(4), 406-432.
- Mageau, G. A., & Vallerand, R. J. (2003). The coach-athlete relationship: A motivational model. *Journal of Sports Sciences*, 21(11), 883–904. <http://doi.org/10.1080/0264041031000140374>
- Martens, R. (2004). *Successful coaching* (3rd ed.). Champaign, IL: Human Kinetics.
- Patton, M. Q. (2002). *Qualitative research & evaluation methods*. Thousand Oaks, CA: Sage Publications.
- Pearson, R. E., & Petipas, A. J. (1990). Transitions of athletes: Developmental and preventative perspectives. *Journal of Counseling & Development*, 69(1), 7-10.
- Pham, D., Hardcastle, N., Foroudi, F., Kron, T., Bressel, M., Hilder, B., . . . Siva, S. (2016). A multidisciplinary evaluation of a web-based eLearning training programme for SAFRON II (TROG 13.01): A multicentre randomised study of stereotactic radiotherapy for lung metastases. *Clinical Oncology*, 28(9). doi:10.1016/j.clon.2016.03.005
- Rangeon, S., Gilbert, W., & Bruner, M. (2012). Student athlete wellness: Gender perspectives. *Journal of Coaching Education*, 5(1), 83–113.
- Reichardt, J., Von Lersner, U., Rief, W., & Weise, C. (2017). How to improve cross-cultural competencies in psychotherapists? Introduction of a web-based training program. *Zeitschrift Fur Psychiatrie, Psychologie Und Psychotherapie*, 201765(3), 155-165.
- Rhind, D. J. A., & Jowett, S. (2010). Relationship maintenance strategies in the coach-athlete relationship: The development of the COMPASS model. *Journal of Applied Sport Psychology*, 22(1), 106–121. <http://doi.org/10.1080/10413200903474472>
- Rhind, D. J. A., & Jowett, S. (2012). Development of the Coach-Athlete Relationship Maintenance Questionnaire (CARM-Q). *International Journal of Sports Science & Coaching*, 7(1), 121–137. <http://doi.org/10.1260/1747-9541.7.1.121>
- Rivard, L., Camden, C., Pollock, N., & Missiuna, C. (2014). Knowledge to practice in Developmental Coordination Disorder: Utility of an evidence-based online module for

- physical therapists. *Physical & Occupational Therapy in Pediatrics*, 35(2), 178-194.
doi:10.3109/01942638.2014.985414
- Rychtarik, R. G., McGillicuddy, N. B., & Barrick, C. (2015). Web-based coping skills training for women whose partner has a drinking problem. *Psychology of Addictive Behaviors*, 29(1), 26-33. doi:10.1037/adb0000032
- Semaia, P., (2014). Supporting student-athletes in transition. In *Mind, Body and Sport: Understanding and Supporting Student-Athlete Mental Wellness* (pp. 69-71). Indianapolis, IN: National Collegiate Athletic Association.
- Sherman, R. T., Thompson, R. A., Dehass, D., & Wilfert, M. (2005). NCAA coaches survey: The role of the coach in identifying and managing athletes with disordered eating. *The Journal of Treatment & Prevention*, 13(5), 447-466.
- Sudano, L. E., Collins, G., & Miles, C. M. (2017). Reducing barriers to mental health care for student-athletes: An integrated care model. *Families, Systems, & Health*, 35(1), 77-84.
- Welch, C. E., Lunen, B. L., Hankemeier, D. A., Wyant, A. L., Mutchler, J. M., Pitney, W. A., & Hays, D. G. (2014). Perceived outcomes of web-based modules designed to enhance athletic trainers' knowledge of evidence-based practice. *Journal of Athletic Training*, 49(2), 220-233. doi:10.4085/1062-6050-49.2.14
- Zhan, X., Zhang, Z., Sun, F., Peng, W., Zhang, H., & Yan, W. (2016). Original research: The attitudes of primary healthcare providers towards web-based training on public health services in rural China: A cross-sectional study. *Public Health*, 141, 153-162.
doi:10.1016/j.puhe.2016.09.007

Note: All project related appendices-- including survey items, tables, and figures-- are available upon request. Please contact the authors directly via email to inquire about these materials.