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Tackling Difficult Conversations: Student-Athletes, Mental Health, and Emerging Technology

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Abstract

Given the exponential growth of mental health issues on college campuses and the concerns regarding mental health disorders among elite level athletes, the NCAA (2016) has made recommendations to support and promote student-athlete mental health. However, to successfully address the increase in mental health issues, the development of effective communication skills is required. To address this, the researchers developed and built an immersive learning experience focused on “difficult conversations” using Mursion® technology. This pilot study contributes to this important conversation by analyzing the influence of an immersive experience on the student-athletes’ communication skills. Using a quasi-experimental design, 79 NCAA Division I student-athletes took part in the study (40 control; 39 Mursion®). Both groups completed a pre-survey to assess their ability to deal with “difficult” scenarios, and a post-survey 3-5 weeks after the pre-test. Results indicate that Mursion® participants experienced, although not statistically significant, an increase in interpersonal communication competence. The results also demonstrated differences across gender and racial/ethnic categories. This study provides the initial evidence that Mursion® is an effective, timely, cost-effective tool to enhance athletes’ communication skills; consequently, it is critical to not only improving the student-athlete experience but also to addressing future student-athlete mental health and well-being.

Keywords: *cognitive flexibility theory, communication competence, difficult conversations, immersive learning experience, student-athlete mental health*

Humans are more technologically connected than ever before, yet finding effective ways to communicate with others remains fundamental to the human condition. For college students, effective communication has been linked to success (Rubin, Graham, & Mignerey, 1990). The ability to effectively communicate is especially important for student-athletes considering previous research indicates campus community members often hold negative perceptions of them (Comeaux, 2011, 2012). This is just one of many obstacles that student-athletes face during their time on campus.

It also is clear there has been an exponential growth in reported mental health issues on college campuses as college students experience stress due to academic, social, and financial issues as well as time management and relationship challenges (Clough, Nazareth, Day, & Casey, 2019; National Institute of Mental Health, 2019; Xiao et al., 2017). In particular, there are growing concerns regarding the risk of mental health disorders among elite-level athletes

(Aldridge, 2018; M. Moore, 2017; Rice et al., 2016), as student-athletes are not immune to the stressors of college life. Researchers have suggested that college student-athletes may experience an increased level of stress when compared to non-athletes, as well as additional stressors due to increased time demands, difficulties with academics, and relationships with coaches (NCAA, 2016; NCAA Sport Science Institute, 2016; Wilson & Pritchard, 2005). In response, student-athletes often choose either healthy (e.g., communicating with friends and family, exercise) or unhealthy (e.g., alcohol and drug consumption) coping activities and seek information on how to reduce stress (Pierceall & Keim, 2007; Waller, Martin, & Morgan, 2017; Warner, Sparvero, Shapiro, & Anderson, 2017).

Rice and colleagues (2016) contend that “there is enormous scope for programs to boost athlete well-being” (p. 1349), with both researchers and practitioners recommending that prevention programs be implemented to help athletes manage sources of

stress (NCAA Sport Science Institute, 2016; Wilson & Pritchard, 2005). For example, the NCAA, in partnership with researchers at the University of Michigan, sought ways to increase awareness of mental health issues among college student-athletes and promote coping skills (Eisenberg, 2014). More recently, the NCAA (2016) published a *Mental Health Best Practices guide*, which was “designed to provide athletics and sports medicine departments – regardless of size and resources – with recommendations for supporting and promoting student-athlete mental health” (p. 2), and specifically highlights the role of coaches and administrations. Athletic staff must be included in this support system as they have responsibilities beyond winning and losing that must include “guidance for developing useful skills for life” (Bell, 1997, p.517). When athletic departments create a supportive environment, student-athletes are able to successfully cope with stressors and mitigate potential mental health issues (Rice et al., 2016).

To successfully address the increase in mental health issues, and numerous other student-athlete concerns, the development of effective communication skills is required. Of utmost importance is the development of “difficult” communication skills involving both hearing and being heard (Bell, 1997). Everything from minor concerns about playing time to more serious concerns such as health and well-being can be addressed more effectively if they are confidently communicated. Of course, communication competence can vary across situations and among individuals, yet it is important to recognize that this competence can and should be developed during college (Rubin et al., 1990). Unfortunately, though, following trends in the larger U.S. population, many student-athletes, coaches, administrators, and faculty lack the knowledge and training on how to communicate difficult issues (Bolton, 2009; Patterson, 2002). Specifically, student-athletes are not equipped to communicate their concerns and often struggle to initiate difficult conversations with coaches, professors, and administrators (Grisham, 2017).

Virtual world simulation has become widely recognized as a useful practice tool because of its immersive engagement and the critical reflection it prompts (Bogost, 2010; Straub, Dieker, Hynes, &

Hughes, 2015). For example, mixed reality teaching simulators have been designed to improve access to safe spaces for deliberate practice with immediate feedback for educators. This is reshaping teacher education, as well as communication-heavy professions in industries like medicine, leadership, and hospitality management (Dieker, Rodriguez, Lignugaris/Kraft, Hynes, & Hughes, 2014). More importantly, research has established that immersive simulation technology provides a unique opportunity for the practice of complex skills, which cannot be replicated otherwise (Straub et al., 2015). Given that effective communication skills are essential to addressing most issues that student-athletes face, it is paramount to provide them with an opportunity and safe space to refine these skills. Communication skills are essential to a student-athlete’s overall academic and professional preparation and well-being. Improving student-athletes’ communication skills and their self-efficacy in terms of initiating conversations is fundamental to enhancing the collegiate experience. Thus, the purpose of this research is to test the efficacy of an immersive learning experience on the communication skills of student-athletes.

Student-Athletes and Communication

Student-athletes often are considered well-rounded individuals who possess transferable characteristics. Common traits often identified include motivation, aggressiveness, interpersonal skills, and the ability to handle different situations (Lee, 1991). In particular, the ability to perform routine communication is considered an especially important indicator of professional competency. Communication and interpersonal skills are consistently cited as top skills that employers seek (Robles, 2012; Smith, 2007). Although they are sharpened through sport participation, many have noted the widening gap between employer expectations and college graduates’ communication skills (Bedwell, Fiore, & Salas, 2014; Dean, 2017; St. Louis Community College & Workforce Solutions Group, 2013; Steward, Wall, & Marciniak, 2016). Communication competency is necessary for nearly every career, from service-oriented jobs to more executive-level roles (Morreale & Pearson, 2008). However, a recent survey of hiring managers indicated that 46% felt graduates lacked necessary communication

skills, and 36% reported deficient interpersonal skills (Payscale, 2016). Simply put, many college students are unprepared and lack the communication skills needed to be successful.

Communication and interpersonal proficiencies have additional importance for student-athletes. Between 1985 and 2004, the number of individuals who reported that they do not have anyone to discuss important matters with tripled (McPherson, Smith-Lovin, & Brashears, 2006). This is especially problematic for student-athletes who face more scrutiny due to their athlete role and feel an increased pressure to perform (Godfrey, 2011). During college, many student-athletes live away from home for the first time and have been shown to face greater athletic and academic stress due to their sport participation (Beauchemin, 2014; Lu, Hsu, Chan, Cheen, & Kao, 2012). Student-athletes also report high levels of personal, social, future, and career uncertainty (Romo, Davis, & Fea, 2015). Coupling this reality with the pressure of scholarship renewal and academic requirements, difficult conversations with coaches, professors or even teammates regarding injuries, academics concerns, playing time, stress, or relational issues often seems impossible.

Communication is a critical first step in addressing issues that could develop into a mental health concern (Pedrelli, Nyer, Yeung, Zulauf, & Wilens, 2015). Berg and Warner (2019) recently suggested the critical role athletics administrators can play in lessening stress while improving well-being for student-athletes. Interestingly, their results related to openness and honesty and informal interaction highlight the importance of interpersonal communication. Unfortunately, many student-athletes are inadequately equipped to communicate about issues they encounter and finding the time, expert resources, and appropriate manner to train student-athletes is challenging.

Current Social Environment

The current social environment creates additional stressors for today's student-athlete. "Direct stressors (for example, time demands, performance pressures, coaching style); interactions with others in their environment that encourage risk behaviors and discourage individuals from seeking help; harassment

and discrimination related to personal characteristics such as race/ethnicity or sexual orientation; and exposure to interpersonal or sexual violence" (Kroshus, 2014, p. 73) play a role. In addition to the growth of social media, which allows many to interact with student-athletes directly, these stressors result in an increase in stress and leave many feeling vulnerable (Eisenberg, Lipson, & Posselt, 2016; Kroshus, 2014; Ryan, Gayles, & Bell, 2018). Many of the stressors student-athletes face can be mitigated with effective communication. As cognitive flexibility theory has indicated, flexibility is considered critical for communication competence. Cognitive flexibility "refers to a person's (a) awareness that in any given situation there are options and alternatives available, (b) willingness to be flexible and adapt to the situation, and (c) self-efficacy in being flexible" (Martin & Rubin, 1995, p.623). A positive relationship between cognitive flexibility and interpersonal communication competence exists, but a negative link has been found between this flexibility and an unwillingness to communicate (Martin & Anderson, 1998). That is, those with low cognitive flexibility are more unwilling to communicate. Additionally, Martin and Anderson (1998) argued that increased flexibility in individuals can lead to more communication confidence and effectiveness.

This is important given the growing popularity of text messaging and current social environment. Texting offers an easy form of communication but does not offer as much of an opportunity to enhance cognitive flexibility and communication competence. Thus, traditional face-to-face discussions are increasingly "difficult, even frightening" for young people because they "take place in real time, and you can't control what you're going to say" (Harford, 2017, p. 256). While most college students agree face-to-face communication is more helpful than texting, they still favor text messaging (Hudson, Bliss, & Fetro, 2012). They value its ability to help "maintain relationships ... share exciting and new experiences... thus retaining the closeness of the friendships" (Horstmannshof & Power, 2005). They also like how texting provides an enhanced sense of control and protection, even though Horstmannshof and Power (2005) found text messaging was linked to increased stress levels. Social media and technology continue to create an en-

vironment where we are electronically connected yet detached from in-person conversations, which remain intimidating.

Interestingly, one of the best ways to ensure student-athletes become competent communicators may be to embrace emerging technologies. In the traditional university setting, role playing is one of the few tools available to fine tune this skill. In role play, participants identify that they not only have an opportunity to learn, they also find the interactivity an essential part of the activity, giving them opportunities to have experiences they otherwise would not have to practice skills in authentic contexts (Cook, Dow, & Hammer, 2017). Unfortunately, traditional role playing among student-athletes typically would occur with individuals who are in the same age bracket. Thus, limiting its effectiveness because it does not provide the opportunity to interact with individuals who are of different ages and/or provide variety in gender or ethnicity. A student can pretend to be a different gender, race, age, or combination of those, but the authenticity is left behind. Another difficulty found with traditional role play is determining who plays what role and the connotation that brings with it, especially if, for example, the professor plays the CEO or person with power (Kerr, Troth, & Pickering, 2003). Clarification of roles is where virtual simulation potentially can provide a solution. Millennials already are accustomed to video games, so interacting with an avatar and embracing new technologies may be a small leap, although it may not have crossed students' minds as a learning opportunity (e.g., Cook et al., 2017; Moore, 2007; Park et al., 2011). Virtual role play participants have reported that they feel less anxious and more in control of their practice and learning, as well as able to try different approaches, refine skills, and correct mistakes. Virtual role play puts participants in an immersive environment that allows for social interaction with avatars or virtual humans (Park et al., 2011).

This virtual role play may especially be relevant for enhancing student-athletes' communication, especially when considering the power dynamics of coach-athlete or professor-student relationships. Power is defined as "the ability to influence the attainment of goals sought by yourself or others" (Rothwell, 2016, p. 302). Power imbalances often cause conflict in relationships

(McCornack, 2013) and even though conflict is a natural, normal, and healthy dimension of all relationships, important conversations can become intimidating and even fear-inducing when power dynamics are introduced (Canary, 2003). Even under normal pressure and stress, individuals report spending 2.8 hours per week on conflicts (Overton & Lowry, 2013), and student-athletes engage in a multitude of difficult conversations wrapped in unique power imbalances that often induce conflict. Consequently, communication skills significantly influence how a variety of important relationships evolve. For athletes, we know that these relationships are fundamental to addressing mental health issues and fostering a healthy environment (Berg & Warner, 2019; Warner, 2019; Warner et al., 2017).

This pilot study contributes to this important conversation by analyzing the influence of an immersive experience on the communication skills of student-athletes. Specifically, the analysis was guided by the following research questions:

1. Does the immersive experience influence student-athletes' communication skills?
2. Does the immersive experience influence student-athletes' cognitive flexibility?
3. Does the immersive experience influence student-athletes' perception of institutional support?
4. Do significant differences exist across demographic subgroups?

Method

Description of Campus-Level Pilot Program

Although communication skills are vital to addressing many student-athletes' concerns, especially those related to mental health, finding the time, expert resources, and appropriate manner to train student-athletes is challenging. To address this, the researchers developed and built an immersive learning experience focused on "difficult conversations" using Mursion® technology. The use of Mursion® provides immersive, interactive learning experiences that enable practice-based development through virtual simulation (Dieker et al., 2014;

O'Callaghan & Piro, 2016). Utilizing Mursion® on a large campus in the Southeast region of the U.S., virtual simulations were created that take student-athletes through five common scenarios deemed to be “difficult” in previous research. These scenarios were determined based on the current literature and secondary focus group data (Berg & Warner, 2019; Warner & Dixon, 2011, 2013). More specifically, these scenarios were determined based on qualitative data from an open-ended survey conducted with student-athletes ($n = 545$) (Warner & Berg, 2018). As part of this survey, student-athletes were asked, “If you could change anything about your sport experience, what would it be?” Responses to this question were analyzed using qualitative content analysis to identify “difficult” scenarios for student-athletes. Following (Schreier, 2014), the coding also was informed by previous literature on student-athlete experiences (e.g., Warner & Dixon, 2011, 2013, 2015). A “structuring” analytic approach was utilized to code data within these main categories, with words, sentences, or phrases connected by substance or meaning representing the primary coding units (Mayring, 2004). Collectively, the results of this process indicated playing time, academic problems, stress and anxiety, and life after sport as key “difficult” issue categories. This data was then used to design the “difficult” scenarios used in the simulation process.

Mursion® is an immersive simulation technology with live interactors that provide an opportunity for participants to approach critical conversation topics in a safe environment. During the interactive simulation, participants enter into a lab with a desk and large computer screen in front of them to interact with an avatar portraying a coach, professor, or potential employer on the screen (see Appendix A). The avatars were operated by an actor, or simulation specialist, specially trained by the researchers to address student-athlete issues. Previous research on immersive, interactive simulation confirms it provides a powerful learning experience that makes skill transfer more likely (Dieker et al., 2014; Elford, Carter Jr, & Aronin, 2013; Ford, Van Sickle, Clark, Fazio-Brunson, & Schween, 2017; Wenger, 1998).

Quasi-Experimental Design Protocol

Prior literature suggests people often experience changes in communication skills and patterns during their college experience (e.g., Wright, Rosenberg, Egbert, Ploeger, Bernard, & King, 2013). In order to account for this variation in our study design and assess the unique influence of the Mursion® experience, a quasi-experimental design was employed. After IRB approval was received, volunteer student-athletes were randomly assigned to treatment ($n = 39$) and control groups ($n = 40$). Both groups completed a pre-survey at the beginning of the Fall 2018 semester. The treatment group entered a 5-week Mursion® experience, which included three immersive simulation experiences with an avatar that focused on conversations regarding playing time, financial problems, stress and anxiety, and/or life after sport issues. The research team provided a script of the initial scenario and then provided the avatar/actor with various ways to respond. The simulation began with an athlete taking a seat at a table in front of a 90-inch television screen that showed a room with the same table and an empty chair. The facilitator asked the athlete some basic questions related to the scenario, such as the gender of their coach, their major, and any real-life experience they might have related to the scenario. Based on this information, an appropriate avatar appeared on screen in front of the student-athlete and played the role of the individual with power in the situation (e.g., coach, potential employer, professor) through interactions and responses to the participants (See Appendix A for examples of the avatar). Each simulation lasted approximately 10 minutes or until it reached a natural conclusion. The control group did not participate in the immersive experience. Post-surveys were administered to both the treatment and control group 3-5 weeks after the simulation. The prolonged period between the end of the simulations and the administration of the post-survey was intended to limit the influence of the “testing effect.”

Instrument

The same survey instrument was used at both time points. Questions pertaining to communication skills focused on both positive and negative aspects. Rubin and Martin's (1994)

Interpersonal Communication Competence Scale (ICCS) short form was utilized to assess student athletes' ability to manage interpersonal relationships in communication settings (10-items; $\alpha_{T0} = .741$, $\alpha_{T1} = .768$). Conversely, Burgoon's (1976) Unwillingness-to-Communicate scale assessed student-athletes' apprehension to communication (6 items; $\alpha_{T0} = .660$, $\alpha_{T1} = .767$). Questions pertaining to student's cognitive flexibility were derived from Martin and Rubin's (1995) Cognitive Flexibility Scale, which assessed student-athletes' awareness of alternative options, adaptability, and willingness to be flexible (12-items; $\alpha_{T0} = .717$, $\alpha_{T1} = .708$). Finally, Eisenberger and colleagues' (1986) Perceived Organization Support scale was utilized to understand student-athletes' perceptions of support from institutional authorities within the collegiate context. Specifically, questions were adapted to understand perceptions of support from both the university (3 items; $\alpha_{T1} = .841$, $\alpha_{T1} = .903$) and the athletic department (3 items; $\alpha_{T0} = .923$, $\alpha_{T1} = .892$), respectively. In addition, qualitative feedback via an open-ended question was gathered as part of the post-survey. The Cronbach's alpha scores were between .660 and .923, indicating acceptable internal reliability for each scale at both time points (Hair, Black, Babin, Anderson, & Tatham, 2010).

Participants

A total of 79 NCAA Division I student-athletes took part in the study. Forty were assigned to the control group, and the remaining 39 completed the Mursion® experience. As shown in Table 1, the majority of student-athlete participants were female (65%), White (68%), and from Olympic sports (86%). Most respondents were Freshman (76%), and only one respondent had transferred from another university. The college majors of participants varied considerably, with 12% 'Undeclared' and no more than 12% in any single field of study (e.g., Exercise Physiology, Communications, Sport Studies).

Table 1

Descriptive Statistics

Groups	Control n (%)	Mursion® n (%)	Total n (%)
Gender			
Female	31 (78%)	20 (51%)	51 (65%)
Male	9 (22%)	19 (49%)	28 (35%)
Race/ Ethnicity			
White	29 (72%)	25 (64%)	54 (68%)
Non-White	11 (28%)	14 (36%)	25 (32%)
Race/ Ethnicity			
Revenue Generating	3 (8%)	8 (21%)	11 (14%)
Olympic	37 (92%)	31 (79%)	68 (86%)
Total (n)	40	39	79
<i>Note: % equals column percent for each variable</i>			

Data Analysis

All analyses were performed using IBM SPSS Statistics 25. A repeated measures multivariate analysis of variance (MANOVA) was utilized to test for changes in the dependent variables, with time (i.e., pre- and post-survey) entered as the within-subjects factor, and group (i.e., Mursion® and control), gender, and race entered as between-subjects factors. Post-hoc analyses of multiple comparisons were conducted with Bonferroni adjustments to adjust for Type I error.

Results

Skewness and kurtosis values for all dependent variables were within +/- 1 and +/- 3, respectively, indicating no outliers in the data. Bivariate correlations ranged from .226 to .789, indicating moderate associations to support the appropriateness of MANOVA (Meyers, Gamst, & Guarino, 2009), yet no evidence of multicollinearity (Hair et al., 2010). Box's M test was not significant

($M=229.04$, $p > .05$), indicating the covariance matrices between groups were approximately equal (Huberty & Petoskey, 2000). Levene's tests for the equality of variances was not statistically significant ($p < .05$), indicating the homogeneity of variance assumption was satisfied.

As shown in Table 2, multivariate tests indicated the interactions between time and group were not statistically significant for any dependent variables ($p > .05$), indicating changes between the pre- and post-survey were not significantly different between the Mursion® and control group. It is perhaps interesting to note that pairwise comparisons did reveal an increase in interpersonal communication competence for the Mursion® group between the pre- ($M=3.72$, $SE=.07$) and post-survey ($M=3.83$, $SE=.08$) that was nearly significant ($p < .10$). Conversely, there was no significant change between the pre ($M=3.79$, $SE=.08$) and post-survey ($M=3.79$, $SE=.08$) for the control group.

Table 2

Multivariate Tests from Repeated Measure MANOVA

Effect	F	df	Sig.	η_p^2
<i>Between Subjects</i>				
Intercept	3193.47	5(71)	<.001	.996
Group	1.031	5(71)	.406	
Gender	1.188	5(71)	.324	
Race/Ethnicity	2.425	5(71)	.044	.146
<i>Within Subjects</i>				
Time	.647	5(71)	.665	
Time*Group	.778	5(71)	.569	
Time*Gender	2.743	5(71)	.025	.162
Time*Race/ Ethnicity	.698	5(71)	.627	

There was one significant between-subjects effect related to race/ethnicity ($F(5, 71) = 2.43$, $p < .05$; Wilk's $\Lambda = .854$, $\eta_p^2 = .146$). Tests of between-subjects effects indicated the significant effect was related to perceived support from the university ($F(1, 75) = 4.50$, $p < .05$), perceived support from the athletics department ($F(1, 75) = 5.14$, $p < .05$), and unwillingness-to-communicate ($F(1, 75) = 5.59$, $p < .05$). Specifically, pairwise comparisons revealed that Non-White students reported lower perceived support from the university ($M=3.98$, $SE=.13$) than White students ($M=4.36$, $SE=.09$) on the pre-survey, and this difference was statistically significant ($p < .05$). Non-White students also reported lower perceived support from the athletic department ($M=4.08$, $SE=.13$) than White students ($M=4.41$, $SE=.09$) on the post-survey, and this difference was statistically significant ($p < .05$)¹. Finally, Non-White students reported greater unwillingness-to-communicate ($M=2.32$, $SE=.10$) than White students ($M=2.00$, $SE=.07$) on the pre-survey, and this difference was statistically significant ($p < .05$)². None of these effects were influenced by participation in the Mursion® program.

There also was one statistically significant within-subjects effect related to gender ($F(5, 71) = 2.74$, $p < .05$; Wilk's $\Lambda = .838$, $\eta_p^2 = .162$). Tests of within-subjects effects indicated the significant effect was related to unwillingness-to-communicate ($F(1, 75) = 7.98$, $p < .01$). Specifically, pairwise comparisons revealed that female students reported a decrease in unwillingness-to-communicate between the pre- ($M=2.25$, $SE=.08$) and post-survey ($M=2.12$, $SE=.09$) and this change was statistically significant ($p < .05$). Conversely, male students reported an increase in unwillingness-to-communicate between the pre- ($M=2.06$, $SE=.101$) and post-survey ($M=2.24$, $SE=.11$), and this change was also statistically significant ($p < .05$). Figure 2 provides a graphical depiction of this interaction, which was not influenced by participation in the Mursion® program.

¹Non-White students also reported lower perceived support from the athletic department ($M=4.03$, $SE=.14$) than White students ($M=4.32$, $SE=.10$) on the pre survey, but the difference was nearly significant ($p < .10$)

²Non-White students also reported higher unwillingness-to-communicate ($M=2.31$, $SE=.12$) than White students ($M=2.06$, $SE=.08$) on the post survey, but the difference was nearly significant ($p < .10$)

Figure 1

Unwillingness-to-Communicate Within-Subjects Interaction

Discussion and Practical Implication

The data from this pilot study provides interesting preliminary findings that warrant further research. Specifically, Mursion® participants experienced significant increases in interpersonal communication competence. While these increases were not statistically significant as compared to the control group, the data was trending toward significant findings. Further, the pre-survey observed differences across gender and racial/ethnic categories indicating that females and Non-White student-athletes especially would benefit from the Mursion® simulations. The findings that Non-White student-athletes perceived less support from the university and athletic department as well as reported a greater unwillingness-to-communicate is supported by previous literature. Given stereotypes and attitudes surrounding African-American student-athletes (Cunningham, 2011; Sartore & Cunningham, 2006), this finding is not surprising. Singer's (2005) work found that African-American athletes believed they were treated differently than White athletes in terms of academic path and targeted more for drug testing. Researchers also have demonstrated that African-American student-athletes often are assumed to be on campus for athletic, and not academic, endeavors (Harrison Jr, Sailes, Rotich, & Bimper Jr, 2013). This collegiate experience has the potential to become hostile and insensitive (Sadberry & Mobley, 2013). This reality creates an institutional environment that, including the classroom, has been described as a "twilight zone

of uncertainty, where antagonism can occur at any moment" (Perlmutter, 2003). Ultimately, universities must help minority athletes by creating environments that reduce minority student stress and support their navigation of the college experience (Sadberry & Mobley, 2013).

Additionally, the fact that female student-athletes initially reported a greater unwillingness to communicate also is supported by the literature. Specifically, communication research has found one feature of women's speech is tentativeness. This tentativeness sometimes can be understood as a lack of confidence, but also can be seen as a willingness to create more inclusive conversations (Wood, 1999). In the classroom, research has shown that even when outnumbered by women, men often find themselves designated as "spokesperson" in small group class discussions (Tannen, 1994).

The development of effective communication skills is a required and essential component to supporting and promoting student-athlete mental health and addressing mental health issues in this population. That is, the ultimate goal of this project. As student-athletes learn to effectively communicate with coaches, administrators, family, and peers, they will gain self-confidence and a greater willingness to tackle difficult conversations. With this newfound skill, young people will find they have greater control over their social, academic, and athletic collegiate experience. This training also benefits those individuals who interact with student-athletes and work to ensure a positive and supportive environment. Using immersive learning experiences also will allow researchers and practitioners to develop and create unique scenarios targeting certain subgroups within the larger student-athlete population addressing their specific areas of need. Additionally, scenarios built for coaches and administrators will prove valuable in helping these professionals gain a better understanding of the issues facing today's student-athletes (e.g., females, African-Americans, etc.). Ultimately, as college campuses respond to the increase in mental health issues among elite-level athletes, additional research will reveal how this technology can and should play an important role.

Connecting this work to issues surrounding social media and the increase in its usage is valuable for efforts to help improve student-athletes' mental health. As indicated, social media is a preferred form of communication for members of this generation. College students view the internet as a necessary communication tool in the university environment (Jones, Johnson-Yale, Perez, & Schuler, 2007), and they also find it more accessible to disclose intimate information in an online therapeutic setting (Mishna, Bogo, & Sawyer, 2015). Thus, lending support to the use interactive simulation for addressing mental health. This same college population also reported social stigma as the number one reason they don't seek help for mental health issues (NAMI, 2012). As mental health issues increase and this type of interactive virtual and online communication becomes normalized, understanding the impact and devising successful strategies that employ social media while resisting negative side effects will be critical. For example, this can be as simple as tracking user time on social media or even notifying a user after certain time limits have been reached or neared. Or, as more in-depth as providing virtual training opportunities as demonstrated in this research. As a next phase of our research, immersive simulations centered on social media usage, social media evaluation, and the connection between social media and personal feelings can be created. Social media is a constant in the daily lives of most people and that likely will not change. Responding to this reality, truly reflecting on its impact, and establishing easily adopted tactics to counter the negatives is of utmost importance.

To ensure the benefits of emerging technologies are realized, collaborative efforts are required from a diverse group of professionals on college campuses who interact with, teach, advise, and mentor student-athletes. Whatever form of technology is used, the conversation needs to go beyond their athletic accomplishments and pay close attention to their personal development, personal needs, and communication deficiencies. During this critical time on college campuses, enhancing and improving communication competencies will prove vital for the success of today's athletes and we believe this can best be accomplished by embracing new technologies and training methods. This research

hints at the current issues student-athletes face, and illuminates the possibilities for improving their lives through enhanced communication and training.

Accordingly, the results provide preliminary evidence that virtual simulations have the potential to improve interpersonal competence for student-athletes while also enhancing the feeling of being supported by their athletics departments. Given the growing concerns regarding mental health, it is vital that we find ways to encourage greater communication. Improving both interpersonal competence and the perceived organizational support are essential steps in accomplishing that.

Conclusion

The results of this work indicate a potential solution to addressing the exponential growth of mental health issues on college campuses and especially the concerns regarding mental health disorders among elite-level athletes. Unquestionably, the development of effective communication skills and increasing one's willingness to communicate play a role in successfully addressing this increase in mental health issues. Sport organizations find themselves at a crossroads and in search of new and innovative ways to help their athletes. This research suggests that by offering the opportunity for student-athletes to participate in immersive simulation regardless of the difficult conversation topic, the potential to improve athlete mental health exists. From a practical standpoint, this study provides the initial evidence that immersive simulations and technologies can be used as an effective, timely, cost-effective tool to provide athletes with the opportunity to practice communication skills in a safe environment. Consequently, it is critical to not only improving the student-athlete experience, but also addressing future student-athlete mental health and well-being.

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Appendices

Appendix A

Lab Set Up and Avatar Examples

JADE

Journal of Athlete
Development and Experience

PAADS

BGSU[®]
Bowling Green State University

UNIVERSITY OF
ARKANSAS

College of Education
& Health Professions
*Department of Health,
Human Performance &
Recreation*