# ON THE FRONTLINE OF ATHLETE MENTAL HEALTH: THE MENTAL HEALTH LITERACY OF NCAA COACHES

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Coaches' knowledge, attitudes, and beliefs about mental health – the construct of mental health literacy (MHL) – affects teams' mental health (MH) climates and the early detection, referral, and treatment of athletes' MH concerns. Thus, assessing collegiate coaches' MHL, and the factors related to its presence, is critical. Using the Mental Health Literacy Scale, I surveyed 1,571 NCAA coaches ($M_{age}$ = 37.5 years, *SD* = 11.8; 51.4% cisgender female; 85.9% White) regarding their MHL and related demographic and MH-experience factors, including their belief regarding MH and sport performance. Overall, 99.9% of the coaches believed that athletes' MH affected their sport performances. Through hierarchical regression analyses, I found that coaches' exposure to MH treatment, their perceived helpfulness of MH treatment, their gender (i.e., woman), number of years coaching (i.e., fewer years), and NCAA Division in which they currently coach (i.e., DIII) were related significantly to their MHL, explaining 15.5% of variance. Coaches' race/ethnicity was not related to MHL. These findings provide insight on hiring and educating coaches, and hiring appropriately trained and licensed MH and sport psychology professionals. Specifically, coach education should be focused and practical: signs and symptoms of common MH concerns disorders; the ubiquity of MH concerns among athletes; how to talk to athletes about MH and suicide; and how to make timely, efficient, and respectful referrals following that system's specific procedures. Such education would be particularly beneficial for male coaches or those who have been coaching longer.

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*Define those disorders for me and I'll gladly finish the survey.*
- Anonymous

I arrived to sport psychology a physicist, a scientist. As but one voice in any given room of sport scientists, I quickly realized – and became frustrated by – the limitations of sport psychology to prove – in numbers – its usefulness, its undeniable impact often experienced intangibly. Strength coaches could say "with 3 Smith racks, 4 athletes, 5 muscle biopsies, and 6 weeks, it'll be a 7% reduction in end-to-end sprint time." Sport psychologists couldn't make such claims in numbers the gatekeepers understood. But couldn't didn't mean can't. I got 3 Masters and a PhD to address that "can't", to give mental health (MH) and sport psychology the same seat at the table that athletic training, physical medicine, nutrition, and strength and conditioning – all the previous newbies to the human performance team – now have. I – like many many others – have experienced first-hand as NCAA athletes what happens when it doesn't.

My thesis with NCAA athletes exposed near-universal belief that MH affects sport performance. So, my dissertation necessarily interrogated the beliefs of NCAA coaches. The result is dedicated to all the coach-participants who were confronted with questions they didn't know the answers to, then confronted their own insecurity about that, and then completed my survey. These coaches are the way forward in sport as it relates to athlete MH.

To my advisor, Trent Petrie: I never know if you are saying "it's been an adventure" in a good way or bad. The only way I have surpassed my parents is to combine our family's two specialties, until this point only done separately: sports and psychology. Several peers deserve specific mention for their help: Heather Kiefer, Lindsey Slavin, Macey Arnold, Alexa Brantley, Andrea Arenz. To the others who shall not be named, who have come and gone along the trial of miles, miles of trials: may we meet again only after you have received high-quality therapy.

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# CHAPTER 1

# INTRODUCTION

The prevalence of mental health symptoms and disorders among high-level athletes is similar to, and may be higher than, what has been documented in the general population (Chow et al., 2020; Gouttebarge et al., 2019). In the U.S., 30.6% of young adults aged 18-25 years (i.e., the age cohort of many high-level athletes) experience a mental illness (National Institutes of Mental Health [NIMH], 2022). Recent reviews of self-report data from elite, international athletes found that 19.6% of these athletes were experiencing distress; more specifically, they noted that 26.4% reported sleep disturbances, 33.6% anxiety/depression, and 18.8% alcohol misuse (Gouttebarge et al., 2019; Rice et al., 2016). In samples of NCAA student-athletes and their non-athlete age-matched peers, prevalence rates have been similar for anxiety and depression, both in cross-sectional (16.8%-33.2%; Cox et al., 2017; Weigand et al., 2013; Wolanin et al., 2016; Yang et al., 2007; Yang et al., 2014) and longitudinal (31%-48%; Davoren & Hwang, 2014) studies.

Given the prevalence of mental health concerns among athletes, stakeholders' (e.g., coaches, athletic trainers) awareness of, and knowledge about, psychological disorders, treatment, stigma, and well-being becomes important in contextualizing and supporting athletes' mental health and related help-seeking behaviors. That is, stakeholders' "mental health literacy" (MHL), which Jorm et al. (1997) defined as "knowledge and beliefs about mental disorders which aid their recognition, management, and prevention" (p. 182), must be studied to better understand their potential influence. Initially, MHL was conceptualized as being comprised of six components: recognition of psychological disorders and distress; knowledge and beliefs about risk factors, self-help interventions, and professional help available; knowledge about how

to seek help; and attitudes that facilitate appropriate help-seeking (Jorm, 2000). However, in 2012, Jorm added a seventh component – mental first aid skill – to cover the support individuals might provide for those developing, or in, a mental health crisis. In adding this component, Jorm affirmed the idea that turning knowledge into action was an essential part of MHL. Within this theoretical framework, individuals with higher MHL would be expected to create and support environments that have positive views of mental health and treatment; identify signs and symptoms of mental health concerns; seek help for their own mental health concerns; and be supportive of, and offer direct assistance to, other individuals experiencing mental health concerns.

Coaches, as team, and sometimes organizational, leaders, are key stakeholders in sport and axiomatically a factor in athletes' mental health. Coaches define the team's culture, which includes attitudes towards mental health and help-seeking (Bissett et al., 2020; Castadelli-Maia et al., 2019; Gulliver et al., 2012; Henriksen et al., 2019; Moreland et al., 2018; Purcell et al., 2019; Rice et al., 2016; Schinke et al., 2018). For example, through interviews with 15 elite Australian athletes about help-seeking barriers, Gulliver and colleagues (2012) found that the athletes believed "it was vital their coach had a positive attitude [towards seeking help]" (p. 12). Further, in separate studies of elite Australian athletes, talent-development-focused coaches, and NCAA football coaches, researchers found that it was coaches' regular contact with athletes over a prolonged period of time that contributed to early detection, or to facilitating early detection, of athletes' mental health concerns, and to increased help-seeking behaviors by athletes (Gulliver et al., 2012; Halterman et al., 2020; Lebrun et al., 2020). Relatedly, coaches who do not display an understanding of, or level of support for, mental health concerns are very likely to be seen as a barrier to help-seeking by athletes (Lopéz & Levy, 2013). Through interviews with nine NCAA

football coaches ($M$ = 17.5 years coaching), Halterman et al. (2020) found that the coaches connected a willingness to refer athletes to mental health services to their (a) knowledge about and awareness of mental health signs and symptoms, (b) ability and comfort in assessing their athletes first before referral, (c) knowledge that the mental health concern is beyond their ability to help, and (d) knowledge about, and comfort with, the referral procedure to a mental health professional. Coach MHL appears to be influential in athletes' help-seeking attitudes and behaviors and may serve to either facilitate or block/dissuade them from obtaining the help they need for their psychological concerns.

Given the centrality of coaches' MHL in creating environments that support athletes' help-seeking, determining the factors related to its presence is essential. For example, in studies conducted with non-sport samples, MHL has been associated with select demographics and psychological constructs, including: general education and age (Furnham & Swami, 2018; Twenge, 2017); education specifically about identifying, supporting, and treating mental health disorders (Kitchener & Jorm, 2002, 2004; Jorm et al., 2004; Sebbens et al., 2016;); and personal and proximate history of – or exposure to – mental health diagnosis and treatment (Jorm, 2000; Jorm et al., 2000; Jung et al., 2016; Mnich et al., 2014). Research that has used the Mental Health Literacy Scale (MHLS; O'Connor & Casey, 2015), a primary tool to assess this construct, also has supported relationships between MHL and these and other factors. For example, in both Australian and British samples of mental health professionals and college students, individuals with more training related to mental health had significantly higher MHL than individuals with less or none; individuals with exposure to mental health concerns (e.g., received a diagnosis or treatment, or had a family member or friend who had) had significantly higher MHL than individuals with less or no exposure; and females had significant higher MHL than males

(Gorczynski et al., 2017; O'Connor & Casey, 2015). In a sample of Christian clergy in the United States, MHL again was related to mental health training, exposure, and identifying as female (Vermaas et al., 2017). Across these studies, age was either inversely or not related to MHL (Gorczynski et al., 2017; Vermaas et al., 2017), whereas neither sexual and ethnic identity (Gorczynski et al., 2017) nor years of postsecondary school or degree type (Vermaas et al., 2017) were.

In addition to these general demographic and psychological factors (e.g., exposure, gender), which may apply equally in understanding coaches' MHL, there are likely factors specific to their profession that need to be considered. Using the MHLS, two studies have considered the MHL of athletic coaches and sport support staff and their results shed light on which coach-specific factors may be salient. For example, in a sample of 103 coaches in the United Kingdom (UK), half of whom had been coaching for three or fewer years, Gorczynski et al. (2020) found that the coaches' MHL was significantly and inversely related to their years coaching, but was not associated with their ethnicity, sexual identity, age of athletes coached, coaching education (e.g., having a UK Coaching Certificate), or having had a previous diagnosis of a mental health disorder themselves. Regarding gender, female coaches had significantly higher MHL than male coaches. They did not, however, consider coaches' age. Sullivan et al. (2019) sampled 80 Canadian college coaches and athletic therapists (ATs) regarding their MHL, finding that coaches' and ATs' scores were comparable. They also found that the female, compared to male, participants reported higher MHL. As they expected, age and total years in the profession were negatively correlated with participants' MHL. Although not specific to MHL, Smedley (2013) assessed NCAA Division I golf coaches' ($M$ = 10.68 years coaching) experience with, and perceptions of, sport psychology consultants. He concluded that "exposure

to sport psychology consultation and satisfaction with the experience seems to play a vital role in influencing their attitudes toward and willingness to utilize sport psychology service" (p. 44).

Despite their involvement with approximately 450,000 athletes each year, and despite different factors being related to MHL among non-U.S. coaches (e.g., gender, years coaching; Gorczyncki et al., 2020; Sullivan et al., 2019), no MHL study has yet been conducted with U.S. collegiate coaches. Thus, drawing on findings from non-sport and sport MHL studies (e.g., Gorczyncki et al., 2020; O'Connor & Casey, 2015; Smedley, 2013; Sullivan et al., 2019; Vermaas et al., 2017), I examined the relationships of MHL with coach demographics (e.g., age, gender, race/ethnicity), educational experiences around mental health (e.g., academic courses taken), personal or proximate history with mental illness and treatment (e.g., exposure to mental health care), and perceived helpfulness with received MH treatment. I hypothesized that having taken more mental health-related training courses, had more previous personal and proximate exposure to licensed mental health and/or sport psychology professionals, and perceived the previously received treatment as more helpful would each be related to higher levels of MHL. Further, I hypothesized that older, and more experienced, coaches would report lower levels of MHL. Due to a lack of prior research examining MHL and coach race/ethnicity, NCAA Division, and sex of athletes coached, and equivocal results for the gender-MHL relationship, these analyses were exploratory.

# CHAPTER 2

# METHODS

## Participants

Coaches from NCAA Division I, II, or III (N = 1,571; $M_{age}$ = 37.5 years, *SD* = 11.8; 51.4% cisgender female; 85.9% White) athletic departments participated. The participating coaches represented all NCAA sanctioned sports. See Table 1 for detailed demographic data.

Table 1

*Frequencies, Means, and Standard Deviations of Demographic Variables*

| Variable | | *n* | % | Mean | SD |
|---|---|---|---|---|---|
| Coach Age | | 1563 | - | 37.5 | 11.78 |
| Total Years Coached | | 1571 | - | 11.7 | 9.7 |
| Courses Total Score | | 1571 | | 2.3 | 1.7 |
| Current NCAA Division | Division I | 615 | 39.1 | - | - |
| | Division II | 348 | 22.2 | - | - |
| | Division III | 608 | 38.7 | - | - |
| Current Coaching Position | Head Coach | 678 | 43.2 | - | - |
| | Paid Assistant Coach | 840 | 53.5 | - | - |
| | Volunteer Assistant Coach | 53 | 3.4 | - | - |
| Race/Ethnicity | White | 1335 | 85.9 | - | - |
| | Coach of Color | 219 | 14.1 | - | - |
| Coach Gender | Cisgender Man | 763 | 48.6 | - | - |
| | Cisgender Woman | 808 | 51.4 | - | - |
| Sex of Athletes Coached | Male | 349 | 22.2 | - | - |
| | Female | 934 | 59.5 | - | - |
| | Male and Female | 288 | 18.3 | - | - |
| Sport | Volleyball (indoor) | 199 | 12.7 | - | - |
| | Soccer | 189 | 12.0 | - | - |
| | Basketball | 183 | 11.6 | - | - |
| | Softball | 150 | 9.5 | - | - |

*(table continues)*

| | Variable | *n* | % | Mean | SD |
|---|---|---|---|---|---|
| | Track & Field (in/outdoor) | 145 | 9.2 | - | - |
| | Swimming & Diving | 123 | 7.8 | - | - |
| | Lacrosse | 99 | 6.3 | - | - |
| | Football | 77 | 4.9 | - | - |
| | Golf | 68 | 4.3 | - | - |
| | Baseball | 60 | 3.8 | - | - |
| | Cross Country | 59 | 3.8 | - | - |
| | Field Hockey | 55 | 3.5 | - | - |
| | Tennis | 51 | 3.2 | - | - |
| (Sport- con't.) | Rowing | 42 | 2.7 | - | - |
| | Ice Hockey | 23 | 1.5 | - | - |
| | Gymnastics | 15 | 1.0 | - | - |
| | Wrestling | 9 | 0.6 | - | - |
| | Skiing | 5 | 0.3 | - | - |
| | Volleyball (beach) | 5 | 0.3 | - | - |
| | Water Polo | 5 | 0.3 | - | - |
| | Bowling | 3 | 0.2 | - | - |
| | Fencing | 3 | 0.2 | - | - |
| | Rifle | 3 | 0.2 | - | - |

*Note.* Courses Total Score represents how many of six MHL-relevant courses a participant had have taken at either the undergraduate or graduate levels. Possible scores range from 0, *no courses*, to 6, *courses across all content areas.*

## Instruments

### Demographics, Sport, and Education/Training

Participants provided data regarding their gender, age, race/ethnicity, and highest degree earned. Modified from past research (Vermaas et al., 2017), coaches were asked to respond (YES/NO) to each of six MHL-relevant courses they may have taken at either the undergraduate or graduate levels (e.g., Abnormal Psychology or Psychopathology, Counseling Skills). Courses Total Score was the sum of the YES responses, and could range from 0, *no courses*, to 6, *courses across all content areas.*

Coaches also reported their Current NCAA Division, the sport and Sex of Athletes they currently coached (e.g., Men's Swimming & Diving, Women's Swimming & Diving, Men's and Women's Swimming & Diving), and their Current Coaching Position (i.e., head coach, paid assistant coach, volunteer assistant coach, graduate assistant). They also provided the total years coaching at the college level across each of the four different coach positions (e.g., head coach, paid assistant coach, etc.). Total Years Coached was the sum across all coaching positions.

Personal and Proximate History of Mental Illness and Related Treatment and Helpfulness

Modified from past research (Jung et al., 2016; Mnich et al., 2014; Smedley, 2013; Stanton et al., 2019; Wrisberg et al., 2010), coaches were presented five situations to determine their exposure to mental health care, either directly or indirectly through other individuals. Specifically, exposure (or proximity) to mental health services was determined through questions regarding whether they, a family member, a colleague/peer/former teammate, and an athlete "on any team you have coached" had ever sought services with a mental health professional (e.g., sport psychologist, clinical/counseling psychologist, licensed counselor; YES/NO); for the fifth question, they indicated whether (YES/NO) they had personally referred an athlete on their team for mental health care. Exposure was the sum of the YES responses, and could range from 0, *no exposure*, to 5, *exposure across all individuals*.

For each area of exposure (e.g., self, athlete on their team) to which they responded YES, participants rated their perception of how helpful the mental treatment was for that individual. Ratings ranged from 1, *extremely unhelpful*, to 7, *extremely helpful*; coaches also could select "*I don't know"* if they were unsure. Helpfulness was the mean of the rated items and could range from 1, *extremely unhelpful*, to 7, *extremely helpful*.

### Mental Health Literacy

The 35-item Mental Health Literacy Scale (MHLS; O'Connor & Casey, 2015) assesses knowledge about, and attitudes towards, mental health and help-seeking behaviors. Specific areas covered within the MHLS include: ability to recognize specific disorders, knowledge of how to seek mental health information, knowledge of risk factors and causes, knowledge of self-treatments and professional help available, and attitudes that promote recognition and appropriate help-seeking behavior. On items such as "*To what extent do you think it is likely that the diagnosis of drug dependence includes physical and psychological tolerance of the drug (i.e., require more of the drug to get the same effect),*" coaches responded from 1 (*very unlikely*) to 4 (*very likely*). MHLS Total Score is the sum of the items and can range from 35, *no MHL*, to 160, *high MHL*. Per the Consensus-Based Standards for the Selection of Health Measurement Instruments (COSMIN; Terwee et al., 2012), the Scale's content and structural validities were determined to be excellent, and construct validity, fair (O'Connor & Casey, 2015; Wei et al., 2017). Criterion validity could not be assessed for lack of a scale-based measurement of MHL considered the field standard (O'Connor & Casey, 2015). In the current study, Cronbach's alpha was = .83 (95% CI: .819 to .843).

### Mental Health and Sport Performance

Paralleling the question asked of NCAA student-athletes (Beebe et al., 2022), coaches indicated (YES/NO) if they "believe mental health affects student athletes' sport performances."

## Procedure

After obtaining approval from the researchers' university IRB, I contacted participants via publicly available emails (e.g., athletic department websites) or list-servs. In the emails, coaches were (a) informed of the study's purpose (i.e., to assess coach MHL and beliefs about

the connection between mental health and sport performance), and (b) provided with the link to the survey questionnaire, which was hosted on the Qualtrics. Coaches first provided consent in Qualtrics and then completed the survey; no identifying information (e.g., name, contact information) was requested. Coaches were sent four follow-up requests to participate over the course of 5 weeks; data were collected from January 24 through March 7, 2022.

## Data Analysis

Data reflected various degrees of missingness within each type of question (e.g., Exposure, Helpfulness, MHLS Total Score, other demographics). To begin, I focused on missingness within the MHLS and whether participants provided correct responses on the two validity questions (a priori, I determined that participants had to respond correctly to both questions to be included in the study). Of the 3,020 coaches who provided consent, 832 provided no data on the MHLS and another 129 failed one or both of the validity questions; these coaches were deleted. Next, based on previous research using the MHLS (Marwood & Hearn, 2019), I deleted 60 participants who had four or more missing items. Finally, I removed the 62 coaches who indicated they were Graduate Assistants due to the variable roles, responsibilities, and access to athletes that fall within this title across athletic departments. For the remaining 1,887 participants, there were just 0.2% of individual items on the MHLS that were missing. Consistent with past research using the MHLS (Wang et al., 2022) and based the very low percentage of missing values, items were replaced through mean substitution. MHLS Total Score then passed all tests of normality (e.g., skewness, kurtosis).

Missing data for Exposure, Helpfulness, and demographics were not replaced through standard procedures. Instead, I reviewed the missingness across all demographics and other variables that were to be used as independent variables and eliminated cases in a step-by-step

manner so as to allow the largest number of participants across all variables. For example, 196 coaches were excluded due to not providing their gender or providing a gender that could not be re-coded (e.g., “human”). After Coach Gender, cases were removed where data were missing for these variables, in this order: Helpfulness, Total Years Coached, Sex of Athletes Coached, Current Coaching Position, and Current NCAA Division in which they coach; removal of these 304 cases left 1,583 participants. Finally, 12 participants who provided a gender other than cisgender man or cisgender women (e.g., nonbinary) were deleted, leaving the final sample of 1,571 that was used in all subsequent analyses.

I used SPSS 28 (IBM, 2021), and set alpha at .01, for all analyses. For my first research question, I computed Pearson correlations between Courses Total Score, Exposure, Helpfulness, Coach Age, and Total Years Coached with the coaches’ MHLS Total Score. For the variables Current NCAA Division (Division I, Division II, Division III) and Current Coaching Position (Head Coach, Paid Assistant Coach, Volunteer Assistant Coach), I ran separate one-way ANOVAs with MHLS Total Score as the DV. Finally, for Coach Gender (cisgender men, cisgender women) and Race/Ethnicity (White coaches, coaches of color), I ran separate independent samples *t*-tests with MHLS Total Score as the DV. To examine my second research question, I entered all variables that were significant at the bivariate level with MHLS Total Score into the regression model. The categorical variables (Coach Gender, Current NCAA Division) were dummy coded for this analysis.

# CHAPTER 3

# RESULTS

## Mental Health Literacy and Beliefs about Mental Health and Performance

Means, SDs, and ranges of the NCAA coaches' MHL scores as well as their Exposure and Helpfulness are presented in Table 2. Further, 99.9% ($n$ = 1,570) of the coaches endorsed the belief that athletes' mental health affected their sport performance. The single NO response to this question was provided by a 36-year-old, White, cisgender female who a volunteer assistant coach for female volleyball players in Division II was.

Table 2

*Frequencies, Means, Standard Deviations, and Ranges of Independent Variables*

| Variable | *n* | Mean | SD | Range |
|---|---|---|---|---|
| Mental Health Literacy | 1571 | 128.6 | 10.2 | 84-152 |
| Exposure | 1571 | 3.98 | 0.96 | 1-5 |
| Helpfulness | 1571 | 5.4 | 1.2 | 1-7 |

*Note.* Mental Health Literacy range = 35, *no MHL*, to 160, *high MHL*; Exposure represents coaches' personal and proximal (through salient others) experience with mental health illness and treatment. Possible scores range from 0, *no exposure*, to 5, *exposure across all individuals*; Helpfulness represents coaches' perception of how helpful the mental treatment they or salient others had received. Possible scores range from 1, *extremely unhelpful*, to 7, *extremely helpful.*

## Mental Health Literacy: Bivariate Relationships

There were significant relationships between coaches' MHL and how much mental health exposure a participant reported having, $r(1569) = .278$, $p < .001$, and the perceived helpfulness of the mental health treatment received, $r(1569) = .247$, $p < .001$. Further, there were significant relationships between MHLS Total Score and Total Years Coached, $r(1569) = -.139$, $p < .001$, and Coaches' Age, $r(1561) = -.142$, $p < .001$. The number of mental health related courses a

participant had taken was not related significantly to their MHLS Total Score, $r(1569) = .033$, $p = .192$.

Cisgender women coaches ($M = 130.7$, $SD = 9.7$; $t[1569] = -8.296$, $p < .001$, Cohen's $d = .42$) had significantly higher MHL than cisgender men coaches ($M = 126.5$, $SD = 10.4$. However, there was no significant difference in MHLS Total Scores between White coaches ($M = 128.7$, $SD = 10.2$) and Coaches of Color ($M = 128.5$, $SD = 10.4$; $t[1552] = .285$, $p = .776$).

Sex of Athletes Coached was related significantly to coach MHLS, $F(2, 1568) = 16.258$, $p < .001$. Tukey post hoc comparisons indicated that the MHLS Total Score for coaches of female athletes ($M = 129.8$, SD = 10.1; Cohen's $d = .35$) was significantly higher than for coaches of male athletes ($M = 126.2$, $SD = 10.0$); MHL of coaches of male/female teams ($M = 127.9$, SD = 10.5) was not significantly different from the other two coach groups. Current NCAA Division also reached significance, $F(2, 1568) = 6.033$, $p = .002$. Tukey's post-hoc comparisons revealed significant differences between DII ($M = 127.4$, $SD = 11.0$) and DIII ($M = 129.7$, $SD = 10.3$, Cohen's $d = .22$) coaches on their MHLS Total Scores; DI coaches did not differ significantly from the other two ($M = 128.4$, $SD = 9.6$). Finally, there was no significant differences in MHLS total score based on Current Coaching Position, $F(2, 1568) = 2.417$, $p = .090$.

## Mental Health Literacy: Multivariate Relationships

With the exception of Coach Age and Sex of Athletes Coached, all independent variables that had significant bivariate relationships with MHLS Total Score were included in the regression analysis. I excluded Coach Age because of its high correlation with Total Years Coached and, separately, Sex of Athletes Coached due to its strong overlap with Coach Gender; removing these two variables reduced the multicollinearity that otherwise was present in the

regression model. Thus, the final multiple linear regression model included Exposure, Helpfulness, Coach Gender, Total Years Coached, and Current NCAA Division; MHLS Total Score served as the dependent variable. The overall regression model was significant, $F(6, 1564) = 48.819$, $p < .001$, adj$R^2 = .155$. With the exception of DII status, all variables were significantly related to the coaches' Mental Health Literacy total score in the expected directions (see Table 3). Thus, higher levels of exposure to mental health concerns, perceiving mental health treatment as more helpful, being a woman, having coached for fewer years, and coaching at the DIII level (compared to the DI level), all predicted higher levels of mental health literacy for the coaches.

Table 3

*Beta Coefficients and* p-*Values of Variables Used in Multiple Linear Regression Model*

| | *adjR*$^2$ | *F* | b | SE b | *β* | *t* |
|---|---|---|---|---|---|---|
| Model | | | | | | |
| | 0.155 | 48.819** | | | | |
| Predictors: | | | | | | |
| Exposure | | | 2.422 | .256 | .227 | 9.474** |
| Helpfulness | | | 1.635 | .200 | .193 | 8.168** |
| Coach Gender | | | 1.308 | .249 | .128 | 5.264** |
| Total Years Coached | | | -.101 | .025 | -.095 | -3.980** |
| Division III | | | 1.592 | .541 | .076 | 2.945** |
| Division II | | | -.506 | .634 | -.021 | -.798 |

*Note.* * indicates significance at .05 level, ** indicates significance at .01 level.

# CHAPTER 4

# DISCUSSION

The mental health literacy of U.S. collegiate coaches is linked directly to their teams' climate around mental health, the early detection of their athletes' mental health concerns, and their athletes' access to, and help-seeking behaviors toward, mental health services (Biggin et al., 2017; Gulliver et al., 2012; Halterman et al., 2020; Lebrun et al., 2020; Lopéz and Levy, 2013). In this way, NCAA coaches are on the frontlines of their athletes' mental health and, as endorsed in this study, believe that mental health directly affects athletes' sport performances.

To contextualize the literacy of NCAA coaches, by direct, non-statistical comparison, NCAA coaches seem to have an amount of mental health literacy greater than coaches in the UK (Gorczynski et al., 2020), but less than college-level Canadian coaches (Sullivan et al., 2019). Further, they demonstrated less literacy than a sample of U.S. clergy members (Vermaas et al., 2017) and, as would be expected, a sample of trained mental health professionals in Australia (O'Connor & Casey, 2015).

Consistent with my hypotheses and past research (Gorczynski et al., 2017; O'Connor & Casey, 2015; Smedley, 2013; Vermaas et al., 2017), the number of previous personal and proximate experiences with mental health professionals (i.e., exposure), as well as their perceptions of such treatment as helpful, were associated with higher levels of literacy. Although they did not directly measure MHL, Halterman et al. (2020) found that among even collegiate football coaches, holding the belief that sport psychology services are useful and effective and having had past personal experiences with such services were related to the coaches being more willing to refer their athletes for mental health care (a component of MHL). Additionally, collegiate golf coaches' willingness to use SP services was related significantly to their previous

use of, and satisfaction with (referred to as helpfulness in my study), such services (Smedley, 2013). Taken together, my and other studies' (e.g., Halterman et al., 2020; Smedley, 2013) findings indicate that experiencing mental health concerns (personally or indirectly through others) or receiving effective care from a mental health professional likely exposes coaches to psychological and mental health information and treatments that would be expected to expand their knowledge, comfort, and/or confidence, and thus increase their MHL.

Consistent with past research using the MHLS (Gorczynski et al., 2017; Gorczynski et al., 2020; O'Connor & Casey, 2015; Sullivan et al., 2019; Vermaas et al., 2017), NCAA coaches who identified as cisgender women reported higher levels of literacy. Such gender differences likely reflect socialization processes in which different ideas, beliefs, attitudes about mental health and help-seeking are communicated to men and women, and are strongly reinforced, and even expanded on, within the sport environment (Steinfeldt et al., 2009; Steinfeldt et al., 2011). For example, gender role conflict within male gender socialization around what it means to be masculine leads to stigmatization of help-seeking and reduction in help-seeking behaviors (Steinfeldt et al., 2009). Comparatively, female gender socialization involves messages to be less resilient and more care-taking of others, leading to more experience with mental illness and treatment (Wong, 2016).

NCAA coaches who had been coaching for fewer years at the collegiate level (regardless of coaching positions) reported higher MHL, which aligns with my hypotheses as well as past research (Gorczynski et al., 2017; Gorczynski et al., 2020; O'Connor & Casey, 2015; Sullivan et al., 2019; Vermaas et al., 2017). For example, among 103 UK coaches, those who had been coaching fewer years had significantly higher MHL than the coaches who had been in the profession for longer periods of time (Gorczynski et al., 2020). Years coaching was highly

correlated with the coaches' age and thus the relation to MHL likely represents generational differences in societal perceptions toward, knowledge about, and acceptance of mental health and related help-seeking (Furnham & Swami, 2018; Twenge, 2017). Simply put, older coaches likely developed their beliefs in adolescence and young adulthood when societal stigma regarding mental health was strong and it was less openly discussed, or accepted, within their personal and social spheres, educational courses at all levels, media, and the sport environment, nor considered a concern for athletes. Further, contemporary messages and education about mental health are not targeted toward older adults or delivered in media not used by older adults (Farrer et al., 2008; Piper et al., 2018). And, without specific personal experiences with mental health concerns or treatment, or perhaps direct education on mental health within their professional roles, the attitudes of these older coaches are not likely to change and thus their MHL may remain relatively low. A second possible explanation, perhaps in combination with generational differences, is that female coaches, especially those at the higher levels of sport, often have been coaching for fewer years. An examination of coach gender by years coached showed a significant difference in years coached; female coaches reported far fewer years. Thus, through powerful and ubiquitous socialization processes and generational experiences, older and male coaches are likely to be limited in their MHL and thus should be targeted for mental health education to expand their MH knowledge and increase the likelihood of their being a facilitator to their athletes' MH help-seeking.

Contrary to my hypothesis, the number of MH-related courses (e.g., abnormal psychology, counseling skills and techniques) that a coach may have taken was not related to their MHL. Although this relationship has not been previously studied within samples of sport personnel, MH-related courses have been consistently associated with higher levels of MHL in

samples of UK mental health professionals and U.S. clergy (O'Connor & Casey, 2015; Vermaas et al., 2017). There are two primary explanations for why courses taken were unrelated to MHL in my study. First, the coaches may have simply taken too few courses to reach a critical mass of knowledge and information that would have resulted in higher levels of MHL. In my study, the coaches had taken, on average, 2.34 courses, and 36.1% had taken 1 or fewer. Comparatively, in the study of U.S. clergy, participants had taken 4.63 courses on average and 18.5% had taken 6 or more (Vermaas et al., 2017). Second, historically, there has been a perception or conceptualization among coaches and athletic department administrators that coaches were not responsible for, or did not play a part in, athlete mental health and help-seeking. As such, there were no requirements nor incentives for coaches to take mental-health related courses or increase their MHL. Even if coaches had taken such courses during their higher education, due to this historical conceptualization, coaches likely would not be focusing on athlete mental health, referring athletes for help, or creating a stigma-free mental health climate on their teams. In many athletic departments, there are professionals in place (e.g., sport psychologists) who are trained to take care of athletes' mental health and thus this responsibility could be outsourced to these individuals. In this way, any knowledge obtained likely would have faded due to lack of use. In contrast, clergy are engaged in MH-related tasks/activities as part of their professional role, and thus would have knowledge from MH-related courses reinforced consistently over time. However, in this changing climate of more and more athletes experiencing MH concerns, coaches can no longer just outsource their athletes' psychological well-being. Due to the fact that coaches' take too few MH courses when in college because of the expectation, then reinforced, that their roles and responsibilities do not entail regular MH-related activities, ongoing MH education could help increase their literacy to serve as a resource for their athletes, to be

someone who can create a team climate free of stigma and sensitively refer athletes for care.

Past research regarding the MHL-race/ethnicity relationship in U.S. or sport samples has yielded equivocal findings (Cheng et al., 2017; Gorczynski et al., 2020), so my non-significant results were not unexpected. For example, assessing U.S. college student MHL with two vignettes, non-Hispanic Whites had the highest rates of both recognizing and correctly attributing the cause of GAD, followed by Latino Americans; both were higher than all other racial/ethnic groups (Cheng et al., 2017). However, the ethnicity of U.K. coaches was unrelated to their MHL, which also was assessed by the MHLS (Gorczynski et al., 2020). At present, there are very few MHL studies regarding race/ethnicity with coaches and other sport professionals that have used the MHLS and, in those that have, there is no consistency in how racial/ethnic groupings have been determined. For example, due to the small numbers of coaches who identified in any racial/ethnic group other than White, I was only able to make a dichotomous comparison (White vs. Coach of color), thus missing the opportunity to test more specific racial and/or ethnic classifications. Gorczynski et al. (2020) compared the following groups: White, Asian, Black, Arab, and "Other". However, given the existing racial/cultural differences in stigmas around mental health and help-seeking (Anglin et al., 2008; Furnham & Swami, 2018; Rao et al., 2007; Villatoro et al., 2018), researchers should continue to explore the potential relationship of race and ethnicity to MHL. Further, such studies might take a qualitative approach, interviewing coaches of color on their experiences with mental health education, stigma, help-seeking, etc., to determine if the manner in which they obtain their understandings of mental health is unique and, if so, in what ways.

Finally, coaching at the DIII level, compared to DI, was associated with higher MHL. As no prior study had investigated potential differences in MHL related to competition level, there

are no data to which to directly compare my findings. However, consideration of the sport landscapes of the three NCAA Divisions offers perspective. Unlike their DI counterparts, many DIII coaches also have responsibilities related to teaching students at their colleges/universities, which provides a more expansive, and balanced, set of priorities. Further, as noted within the Division III Philosophy Statement (NCAA, 2013), athletic departments seek to "establish and maintain an environment in which a student-athlete's athletics activities are conducted as an integral part of the student-athlete's educational experience" and to "assure that athletics participants are not treated differently from other members of the student body." This focus on the whole person of the student-athlete contradicts the idea that mental health has no place in sport; undermines the conceptualization that coaches are not involved in, or responsible for, student-athletes' mental health; and lowers the stigma related to referrals for mental health services. From this focus and the exposure that results DIII coaches may gain higher levels of MHL.

## Limitations and Directions for Future Research

Despite the many strengths of this study, including a large, nationally-based sample of convenience, there were limitations that warrant discussion. First, coaches self-selected into the study and the majority of those who were solicited did not participate. Thus, my sample may have represented coaches who held strong beliefs about the importance of mental health broadly and student-athlete mental health specifically. For example, as part of the data collection, I received hundreds of emails from participants indicating they had completed the survey and expressing their strong support for the topic. Further, coaches who chose not to participate may have done so because they believed that their knowledge about mental health was inadequate or they were simply not as concerned about the topic; I received emails from non-participating

coaches stating such. Second, although most coaches were deleted from the final sample due to not having provided any responses, hundreds were eliminated due to selective responding across the survey. For example, some chose not to provide their age, gender, race, and/or sport they coached, all of which may have reflected a concern about being identified through their demographics. Again, this selective responding may have led to a final sample that held more positive views of MH than may otherwise exist among NCAA coaches.

Third, although I culled email addresses from the athletic department websites of all NCAA Division I, II, and III institutions, there was considerable variability in email availability. For example, within Division I football and baseball programs, individual email addresses for coaches often were not provided. Instead, there would be only a generic, program-level email listed. Further, many university systems mark externally-based emails as "external" and send them to spam/junk folders. Thus, for these reasons, many coaches may not even have received my invitation to participate. To bypass these problems in the future, researchers may want to target subgroups of coaches (e.g., Football) where access may be more challenging, but who also might hold more negative or less informed attitudes about mental health. Finally, although the breakdown of coach race/ethnicity was consistent with the overall population of NCAA coaches (NCAA, 2021), a significantly higher portion of women participated than are employed within the NCAA (51.4% vs. 28%; NCAA, 2021). Although my gender finding was consistent with past research (Gorczynski et al., 2017; Gorczynski et al., 2020; O'Connor & Casey, 2015; Sullivan et al., 2019; Vermaas et al., 2017), researchers might target male coaches to obtain a more proportional sample (compared to NCAA demographics) to learn more about the MHL of this gender. Further, future research might also employ structured interviewing to assess the different ways in which collegiate coaches become educated in MHL and to understand how they view

their MHL in relation to their athletes' mental health, well-being, and sport performances.

Finally, although my survey item regarding the belief that mental health affects student-athletes' sport performances is based on, and meant to be consistent, with prior research, the reality is that the dichotomous answers options (YES/NO) limited what might have been learned from this question. Alternative response options, such a 5- or 7-rating Likert scale, would likely have captured greater variance and allowed for inclusion in the regression analysis and other potential statistical analyses.

## Clinical Implications

Despite my study's limitations, there are several clinical implications supported by my findings. First, despite the relative strength of exposure, the Catch-22 nature of needing to experience mental health concerns personally to improve knowledge about and acceptance of MH means that increasing MHL through this variable cannot be controlled. However, given the prevalence of MH concerns among student-athletes (Chow et al., 2020; Gouttebarge et al., 2019), the chances for coaches to be exposed through their athletes is increasing. Thus, directly assisting coaches in these first and/or early exposures through the referrals they make for mental health care is a way to ultimately improve their MHL. This assistance may involve the sport psychology and mental health staff members, athletic trainers, and/or other team medical staff working closely with coaches, even "coaching" them on how to communicate effectively with their athletes on MH concerns and to refer them sensitively and supportively for care. Conversely, but just as importantly, factors that make exposure through referrals less likely or more difficult (e.g., stigma within the broader athletic system, difficulty contacting needed personnel, limited availability of services) will only limit the development of coaches' MHL to the potential detriment of their team's mental health culture and athletes' help-seeking and, potentially, sport

performance.

In lieu of exposure experiences, coaches would benefit from direct, ongoing MH education within their athletic departments. Such educational workshops should involve active learning modalities, be short and focused (to fit coaches' busy schedules), and cover essential MH content, such as signs and symptoms of, and treatments for, common mental health concerns; stigma reduction; the connection of MH and sport performance; how to have conversations about mental health, self-harm, and suicide; and how to make efficient and effective referrals using the procedures specific to their team and/or department. Additionally, such education could include opportunities for personal disclosures about different experiences with MH concerns and treatments, which would serve as a form of exposure. Further, coaches could be given vignettes of athletes struggling with MH concerns to talk through as a group how they would address the situation and facilitate referral.

Finally, given the effect of perceived helpfulness of received services on MHL, NCAA athletic department personnel responsible for hiring should select professionals who have integrated training in mental health and sport/performance psychology and hold the needed professional licenses (e.g., Licensed Psychologist) and certifications (e.g., Certified Mental Performance Consultant [CMPC]). Further, these mental health professionals must have knowledge of, and experience within, elite sport environments and understand how to work effectively with the systemic complexities that exist within sport (e.g., team ownership structures). This recommendation applies regardless of whether the mental health professional is in-house or drawn from the community. When athletes receive quality mental health care from these professionals, they are likely to experience reductions in symptoms (e.g., less anxiety; more positive mood; improved sleep, focus, and appetite; higher motivation), enhanced ability to

cope with ongoing stressors, more positive attitudes and motivation toward sport training, and possibly improvements in academic and athletic performances. Such changes would likely be noticed by coaches, particularly if they were part of the referral process, and elicit more acceptance, understanding, and support toward mental health concerns and treatment.

## Conclusion

NCAA coaches who had been coaching for fewer years, and separately, were coaching at the DIII level, identified as cisgender women, had previous experiences with mental health concerns and treatment and, separately, perceived such treatment as helpful, reported higher levels of mental health literacy. Because collegiate coaches are now on the frontline regarding their athletes' mental health concerns, their knowledge, beliefs, and attitudes toward mental health become vitally important to their team climate, their athletes' help-seeking behaviors, and even their athletes' sport performances. Although limitations existed, my study was the first on the MHL of U.S. college coaches, and provides clear directions for future research on this topic. For example, in addition to the research recommendations made previously, studies should examine non-White and/or non-Cisgender coaches, as well as intersections of these and other identities, and generational and individual differences in stigma related to mental health. Further, my findings support interventions in sport systems and athletic departments that increase coaches' exposure to mental health, including facilitating early referrals, and separately, hiring practices that prioritize licensed mental health professionals who also have training in sport/performance psychology, experience working with elite athletes, and understanding how complex sport systems operate. Coach education should be focused and practical: how to spot signs and symptoms of common mental health concerns/disorders; the ubiquity of mental health concerns among athletes; how to talk to athletes about mental health and suicide; and how to

make timely, efficient, and respectful referrals following the procedures of the specific systems within which the coaches work. Such education may help reduce system-level stigma that serves as a barrier to athletes' help-seeking.

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