FACTORS THAT INFLUENCE ATHLETIC TRAINERS' ABILITY TO RECOGNIZE, DIAGNOSE, AND INTERVENE: DEPRESSION IN ATHLETES

Thomas TN Nguyen

Thesis Prepared for the Degree of

MASTER OF SCIENCE

UNIVERSITY OF NORTH TEXAS

August 2014

APPROVED:

Trent A. Petrie, Major Professor
C. Ed Watkins, Committee Member
Joshua Hook, Committee Member
Vicki L. Campbell, Chair of the Department of Psychology
Mark Wardell, Dean of the Toulouse Graduate School
Athletic trainers (ATs) are professionals who are most directly responsible for athletes’ health care in a sport environment. ATs work with athletes on prevention, diagnosis, and treatment of athletic injury; it is through these interactions that put ATs in an ideal position to recognize the psychological and emotional distress that athletes may suffer. Consequently, the National Athletic Trainer’s Association (NATA) has called for ATs to be competent in implementing psychosocial strategies and techniques (e.g., goal-setting, imagery, positive self-talk), recognizing basic symptoms of mental disorders, and identifying and referring athletes in need of psychological help. I explored ATs’ ability to recognize, diagnose, and provide a referral for collegiate athletes who were presenting with symptoms of depression across three different scenarios. The study examined factors that may impact ATs’ abilities in these areas, including AT gender, athlete gender, and type of presenting problem (e.g., athletic injury, romantic relationship, or sport performance issue). Overall, female ATs were better at recognizing depressive symptoms than male ATs, though both were equally proficient at diagnosing depression. Regardless of gender of the AT, gender of the athlete, and presenting problem, ATs were most likely to refer the athletes to a counselor/psychologist, and to a lesser extent sport psychology consultant (SPC). ATs viewed referrals to an SPC as most appropriate for presenting problems related to sport (i.e., performance problem or injury). The results highlight a possible bias in referrals to an SPC, in that SPCs may not be considered an appropriate referral source for romantic relationship problems. Implications for ATs and recommendations for future research are discussed.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>LIST OF TABLES</th>
<th>iv</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHAPTER 1 INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>Study Aims and Hypotheses</td>
<td>6</td>
</tr>
<tr>
<td>CHAPTER 2 METHOD</td>
<td>9</td>
</tr>
<tr>
<td>Participants</td>
<td>9</td>
</tr>
<tr>
<td>Measurements</td>
<td>10</td>
</tr>
<tr>
<td>Procedure</td>
<td>12</td>
</tr>
<tr>
<td>CHAPTER 3 RESULTS</td>
<td>17</td>
</tr>
<tr>
<td>Symptom Ratings</td>
<td>17</td>
</tr>
<tr>
<td>Diagnosis Ratings</td>
<td>18</td>
</tr>
<tr>
<td>Referral Ratings</td>
<td>19</td>
</tr>
<tr>
<td>CHAPTER 4 DISCUSSION</td>
<td>23</td>
</tr>
<tr>
<td>Symptom Ratings</td>
<td>23</td>
</tr>
<tr>
<td>Diagnosis Ratings</td>
<td>24</td>
</tr>
<tr>
<td>Referral Ratings</td>
<td>25</td>
</tr>
<tr>
<td>Limitations and Directions for Future Research</td>
<td>27</td>
</tr>
<tr>
<td>Practical Implications</td>
<td>28</td>
</tr>
<tr>
<td>Conclusion</td>
<td>29</td>
</tr>
<tr>
<td>APPENDIX A THESIS PROPOSAL</td>
<td>32</td>
</tr>
<tr>
<td>APPENDIX B DEMOGRAPHIC DATA SHEET</td>
<td>57</td>
</tr>
<tr>
<td>APPENDIX C ATHLETE SCENARIOS</td>
<td>59</td>
</tr>
<tr>
<td>APPENDIX D SYMPTOM, PROBLEM, DIAGNOSIS, AND REFERRAL RATINGS</td>
<td>66</td>
</tr>
<tr>
<td>REFERENCES</td>
<td>69</td>
</tr>
<tr>
<td>Table</td>
<td>Description</td>
</tr>
<tr>
<td>-------</td>
<td>------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Table 1</td>
<td>ATs’ Rating of Each Diagnostic Category</td>
</tr>
<tr>
<td>Table 2</td>
<td>ATs’ Referral Ratings to a Sport Psychology Consultant</td>
</tr>
<tr>
<td>Table 3</td>
<td>ATs’ Referral Ratings</td>
</tr>
</tbody>
</table>
CHAPTER 1
INTRODUCTION

Athletic trainers (ATs) are the professionals who are most directly responsible for athletes’ healthcare (Prentice, 2006). ATs collaborate with physicians to optimize the physical health and performance of athletes and often are focused on the prevention of, or recovery from, sport injuries. Their specific job responsibilities include “prevention, diagnosis, and intervention of emergency, acute, and chronic medical conditions involving impairment, functional limitations, and disabilities” [National Athletic Trainers’ Association (NATA), 2011]. Through the Athletic Training Educational Competencies (Competencies), the NATA has outlined the minimum standards of knowledge, skills, and clinical abilities required to be an AT (NATA, 2011). The Competencies have evolved throughout the years to reflect the changing role of ATs and the increasing awareness of mental health issues in athletes (Mensch & Miller, 2008; Neal et al., 2013), as well as the fact that they are on the front line in terms of recognizing athletes’ health-related problems. ATs are present at most, if not all, team practices and competitions and have frequent contact with athletes in the athletic training room, during practices, when traveling to competitions, etc. (Lockard, 2005). This time allows ATs to get to know their athletes personally and thus puts them in an ideal position to identify and respond to difficulties in their social, emotional, and mental functioning (Mensch & Miller, 2008). Consequently, the latest version of the Competencies not only covers the prevention, treatment, and rehabilitation of injuries, but also identifies the need for ATs to be able to implement psychosocial strategies and techniques (e.g., goal-setting, imagery, positive self-talk), recognize basic symptoms of mental disorders, and identify and refer athletes in need of psychological help (NATA, 2011).
Because the NATA has become increasingly aware of the importance of the psychological aspects of injury prevention, treatment, and rehabilitation as well as athletes’ overall mental health, athletic training educational programs (ATEPs) have modified curricula and begun to include practica that address psychosocial intervention and referral (Mensch, 2008). Such changes are important when it comes to the practice of athletic training as the NATA mandates that ATs be competent in those areas in order to obtain licensure (NATA, 2011). Most ATEPs now include courses that cover psychosocial issues, such as sport psychology, mental illness (e.g., depression), and the mental health referral process (Stiller-Ostrowski & Ostrowski, 2009; Stiller-Ostrowski & Hamson-Utley, 2010). ATs themselves recognize the importance of using psychological strategies and techniques (e.g., goal-setting, positive self-talk) to help athletes maintain motivation to adhere to their injury rehabilitation program and cope with the emotional consequences of injury (Hamson-Utley, Martin, & Walters, 2008). ATs also believe that the psychological consequences of injury can have negative effects on athletes’ emotions, which can influence the rehabilitation process (Larson, Starkey, & Zaichkowsky, 1996). As such, many (79%) ATs perceive their roles as extending beyond the prevention and care of athletic injuries and into the role of counselor or referrer because student-athletes often approach them for personal issues not related to athletic injury (Moulton, Molstad, & Turner, 1997).

Even when ATs are not adequately trained, or legally, ethically, and professionally permitted, they are often in situations to counsel athletes who are experiencing a wide range of emotional and psychosocial issues (Mensch, 2008). Moulton et al. (1997) assessed 14 (8 men and 6 women) Division I ATs to obtain their perceptions regarding their role in counseling athletes, how qualified they were to do so, and how they could gain the knowledge and skills necessary to feel competent in counseling. Although all of the ATs said that they were willing to
counsel their clients, they expressed a lack of adequate training in the ability to effectively deal with psychological and emotional problems. Only 36% believed they had received training in basic counseling techniques; 79% expressed a need to enroll in continuing education credits to learn more about counseling techniques.

ATs are expected to refer athletes when there are threats to their (or others) health, safety, and welfare, when the ATs (or their supervisors) do not have the expertise to address the psychological needs of the athlete, and when the ATs do not have the time or resources to meet the needs of the athlete (Mensch & Miller, 2008). Very few ATs, however, have referred athletes to counseling to deal more effectively with their psychological distress; in fact, less than 25% have ever referred an athlete to a mental health professional (Larson et al., 1996). Through semi-structured interviews with 18 ATs employed at different colleges/universities, LaRue (2010) examined the factors that influence their recognition and referral of various mental health issues (e.g., eating disorders, attention deficit and hyperactivity disorder, depression, substance abuse). She identified several themes that contributed to the successful recognition and referral of mental health issues, including convenience of campus counseling centers, recognition of a decline in athletic performance, and ATs’ prior experience with the issue. Lack of confidence with recognizing mental health issues, lack of resources to access team physicians on a frequent basis, and highly visible location of campus counseling where athletes could be identified by their peers were considered negative aspects (i.e., factors that led to a poorer chance of recognition and referral of athletes). The ATs reported that if they did identify a disorder, they would refer the athletes to team physicians, on and off-campus counseling centers, neuropsychologists, clergy, sport psychologists, psychiatrists, nutritionists and substance abuse counselors, depending on the situation. ATs who were interviewed expressed being
uncomfortable and unconfident in dealing with psychological concerns because they thought they were not adequately trained. This lack of self-efficacy may contribute to the difficulties ATs experience around identifying psychological symptoms, determining a correct diagnosis, and referring athletes to receive the appropriate care.

The lack of confidence to identify mental disorders or provide appropriate mental health referrals when necessary may be attributed to the fact that ATs receive few opportunities for clinical training during their education and have limited experiences with making psychological/psychiatric referrals (LaRue, 2010; Stiller-Ostrowski & Ostrowski, 2009). ATs may be most comfortable counseling or referring athletes in certain situations, such as during injury recovery (Misasi et al., 1996), but when athletes are experiencing severe psychological distress, such as disordered eating, substance abuse, and/or suicide, ATs are not likely to have been adequately trained and a referral to a mental health provider becomes necessary. For example, Vaughan, King, and Cottrell (2004) surveyed 171 collegiate ATs from across the US to examine their confidence in helping female athletes with eating disorders. Most (91%) of the ATs reported that they had worked with female athletes who had an eating disorder and 90% stated that they believed they would refer an athlete to a psychologist or nutritionist if identified with an eating disorder. However, only 27% expressed being confident in their ability to identify female athletes suffering from this condition.

Much like ATs’ educational preparation, their views on mental health as well as their own and their athletes’ gender may influence their ability to recognize and diagnose psychological distress in athletes, and decide how to intervene if at all. ATs, like other healthcare professionals (e.g., physicians), may hold negative attitudes towards mental illness and/or help-seeking, which may then impact their willingness to refer athletes for psychological
treatment (Beacham et al., 2012; Pryor & Knowles, 2001; Westheimer, Steinley-Bumgarner & Brownson, 2008). Because women generally have more positive perceptions of mental health services than men, the practitioners’ gender can influence their views of help-seeking and affect to whom they would refer the athlete if they found it necessary to do so (Eriksen & Kress, 2008; Martin, 2005; Wang et al., 2005). The athletes’ gender also may affect how well ATs recognize psychological symptoms and then provide an accurate diagnosis. Research has shown that mental health professionals diagnose certain mental health disorders (e.g., depression, anxiety) more readily in women than in men (Eriksen & Kress, 2008), which may occur among ATs who are engaged in similar diagnostic processes.

One study has assessed ATs’ abilities to recognize psychological distress in athletes, in this case athletes who had been injured, varying in terms of injury diagnosis, stage of rehabilitation, and athletic involvement. In this study, Brewer, Petitpas, Van Raalte, Sklar, and Ditmar (1995) surveyed 200 patients at an orthopedic physical therapy clinic and the physical therapists or ATs responsible for treating them. Patients completed a measure of psychological distress and, from a list of behaviors signifying poor psychological response to athletic injury, the physical therapists/ATs reported what they had observed in their patients. Brewer et al. found no correlation between physical therapist/ATs’ ratings of patients’ behaviors during injury rehabilitation and patients’ self-reported psychological distress. They concluded that sports medicine practitioners appear to have difficulty identifying clinically meaningful emotional disturbance in patients, which may be a detriment in rehabilitation and recovery.

To date, there has been a very limited number of studies that have examined ATs’ responses to athletes’ psychological distress in terms of symptom recognition, mental diagnosis, and referral recommendations. Yet, dealing with mental health issues in athletes, from diagnosis
to referral, has become a primary area of concern for ATs, particularly at the collegiate level (Neal et al., 2013). Thus, the purpose of this study was to assess ATs’ abilities to recognize depressive symptoms in a male or female athlete who was experiencing different problems (i.e., injury, performance decline, or relationship concerns), diagnose the athletes’ condition correctly, and determine which referral agents (e.g., psychologist, team physician, coach) would be most appropriate. Specifically, I wanted to determine how AT gender, athlete gender, and type of presenting problem affected the ATs’ ability to determine (a) the presence and severity of the athlete’s psychological symptoms, (b) the psychological diagnosis of the athlete, (c) and the likelihood of referring the athlete to different individuals for assistance.

Study Aims and Hypotheses

The primary focus of this study was to examine ATs’ ability to recognize, diagnose, and provide psychological referrals for collegiate athletes. More specifically, this study examined how AT gender, athlete gender, and type of presenting problem (i.e., athletic injury, romantic relationship, or sport performance issue) affected the ATs’ choices. Based on the existing literature (Brewer et al., 1995; Eriksen & Kress, 2008; LaRue, 2010; Misasi, 1996; Stiller-Ostrowski & Hamson-Utley, 2010), I hypothesized that:

1. Regardless of the presenting problem, there would be a significant 2-way interaction between AT gender and athlete gender for ratings of Depressive Symptoms. Female ATs would be more likely to recognize Depressive Symptoms in female athletes compared with male ATs and male athletes. There would be no difference between male ATs and female athletes compared with female ATs and male athletes.

2. Independent of the presenting problem, there would be a significant 2-way interaction between AT gender and athlete gender for the diagnosis of depression. Female ATs would be
more likely to diagnose female athletes with depression than male ATs with male athletes. There
would be no difference between male ATs and female athletes compared with female ATs and
male athletes.

3. Regardless of presenting problem, there would be significant 2-way interactions
between AT gender and athlete gender for referral ratings to a counselor/psychologist,
psychiatrist, and SPC. Female ATs would be more likely to refer female athletes to each of the
mental health professionals compared with male ATs and male athletes. There would be no
difference between male ATs and female athletes compared with female ATs and male athletes.

4. Independent of AT gender and the presenting problem, ATs would be better at
recognizing symptoms and diagnosing depression among female athletes compared with male
athletes.

5. Regardless of athlete gender and AT gender, ATs would be more likely to identify
symptoms and diagnose the athlete with depression in cases of athletic injury compared with
scenarios of a poor athletic performance or romantic breakup.

6. Regardless of the athlete gender and the presenting problem, male ATs would be
more likely than their female counterparts to treat athletes themselves.

7. Independent of the athlete gender or AT gender, ATs would be more likely to refer
athletes in the romantic relationship scenario to a counselor/psychologist or psychiatrist
compared to any other referral recommendations.

8. Independent of the athlete gender or AT gender, ATs would be more likely to refer
athletes in the poor performance scenario to an SPC compared to any other referral
recommendations.
9. Regardless of AT gender and athlete gender, ATs would be more likely to treat the athlete experiencing injury complications themselves compared to referrals to any other professionals.
CHAPTER 2

METHOD

Participants

The study included 640 ATC (270 men and 370 women) recruited from the National Athletic Trainers’ Association (NATA). Athletic trainers’ (ATs) mean age was 34.1 years ($SD = 8.9$; men – $M = 36.4$ years, $SD = 9.5$; women – $M = 32.3$ years, $SD = 8.1$); 605 (94.5%) identified themselves as White, non-Hispanic, 4 (0.6%) as Black, non-Hispanic, 13 (2.0%) as Hispanic, 9 (1.4%) as Asian American, and 5 (0.8%) as “other;” 4 (0.6%) did not provide information about their race/ethnicity. The majority of the participants’ highest degree was at the master’s level (i.e., MA/MS/Med; $n = 423$; 66.1%), though 28.1% ($n = 180$) had bachelor degrees, 2.5% ($n = 16$) doctoral degrees (i.e., PhD/PsyD/EdD), 0.2% ($n = 1$) MD degrees, and 2.3% ($n = 15$) “other” degrees (e.g., MPT, DPT). Approximately half (46.1%; $n = 295$) of the participants earned their degrees within the past 5 years, 23.4% ($n = 150$) 6-10 years ago, 11.7% ($n = 75$) 11-15 years ago, 8.1% ($n = 52$) 16-20 years ago, and 9.5% ($n = 61$) more than 20 years ago.

Most participants earned their degrees in athletic training ($n = 217$; 33.9%), but a variety of other degrees were represented as well, including: “other” (e.g., human performance, sports medicine; $n = 125$; 19.5%), physical education ($n = 81$; 12.7%), education ($n = 73$; 11.4%), exercise science ($n = 65$; 10.2%), kinesiology ($n = 50$; 7.8%), and physical therapy ($n = 27$; 4.2%). Most participants ranked “athletic trainer” as their current occupation - 72.8% ($n = 466$) identified it as their primary occupation and 17.8% ($n = 114$) as their secondary occupation. Nearly all participants ($n = 638$; 99.7%) reported being certified by NATA; 76.4% ($n = 489$) and 24.5% ($n = 157$), respectively, indicated that they also held a state or other license. As ATs, most worked in either a 4-yr college/university ($n = 202$; 31.6%) or public high school ($n = 193$;
30.2%) setting; the remaining ATs indicated they worked in “other” settings (e.g., splitting time between a clinic and high school setting, working at an industrial clinic; \( n = 63; \ 9.8\% \)), sports medicine clinics (\( n = 56; \ 8.8\% \)), private high schools (\( n = 43; \ 6.7\% \)), community colleges (\( n = 24; \ 3.8\% \)), amateur or professional sports organizations (\( n = 22; \ 3.4\% \)), private practices (\( n = 16; \ 2.5\% \)), and hospitals (\( n = 15; \ 2.3\% \)). ATs worked with multiple or all sports offered at their institutions (\( n = 201; \ 31.4\% \)); some did report working primarily with football (\( n = 166; \ 25.9\% \)), “other” (e.g., hockey, lacrosse; \( n = 80; \ 12.5\% \)), basketball (\( n = 76; \ 11.9\% \)), soccer (\( n = 26; \ 4.1\% \)), baseball (\( n = 15; \ 2.3\% \)), volleyball (\( n = 11; \ 1.7\% \)), cross country/track (\( n = 9; \ 1.4\% \)), or softball (\( n = 8; \ 1.3\% \)). A small percentage (<1%) worked primarily with other teams such as wrestling, gymnastics, swimming and diving, ski, tennis, golf, and crew teams.

This sample of ATs was characteristic of the membership demographics of the NATA. In terms of race/ethnicity, 80.5% of the NATA members are Caucasian, 4% Hispanic, 3.5% Asian or Pacific Islander, 3% Black, non-Hispanic, 2.5% multi ethnic, American Indian or Alaskan Native, and “other”, and 6.5% unspecified. With regard to work settings, 25.1% are students, 19% of the members worked at a university/college, 17.5% at secondary schools, 16% at a clinic, 9% at a high school/clinic, 4.2% as an “other professional,” 3.3% as unemployed, and the rest worked at a variety of settings (e.g., hospital, junior college, unspecified). With regard to sex, NATA membership is primarily men (53%; R. Lowe, personal communication, April 25, 2013).

Measurements

Demographic Questionnaire

The demographic questionnaire included questions regarding basic background information. Participants provided information about their sex, age, race/ethnicity, highest
academic degrees earned, current certifications or licenses held, current occupation(s) (e.g., athletic trainer, high school teacher), sport teams worked with, and employment setting as an AT (e.g., high school, 4-yr college/university).

**Symptom Ratings**

Participants rated the presence of 20 cognitive, affective, behavioral, and physical symptoms in a male or female athlete depicted in a vignette (see Appendix B). The list of symptoms was created such that some of the symptoms were explicitly depicted in the vignette (e.g., “fatigue,” “social isolation”), whereas others were more ambiguous (e.g., “suicidal thinking,” “hopelessness”) or not indicated at all (e.g., “perceptual disturbances,” “eating disturbance”). Participants answered the question, “To what extent are the following symptoms present for Mike (Michelle)?” on a 5-point scale ranging from 1, *not at all* to 5, *extremely*.

**Diagnosis Ratings**

To indicate their psychological diagnosis for the athlete, participants responded to the following statement, “Please indicate the extent to which Mike (Michelle) appears to have each of the following types of psychological disorders,” on a 5-point Likert scale ranging from 1, *disorder not at all likely* to 5, *disorder extremely likely*. ATs rated the presence of 5 categories of psychological disorders, including anxiety disorder, sleep disorder, adjustment disorder, depressive disorder, and substance abuse. Because ATs were not expected to know the technical terms (e.g., generalized anxiety disorder) for diagnoses established by the American Psychiatric Association (1994), they instead responded to general classes of disorders (e.g., anxiety disorder).

**Recommendations for Referral**

On a 5-point scale ranging from 1, *not at all likely* to 5, *extremely likely*, participants
indicated the likelihood of referring the athlete in the vignette to each of the following types of professionals: (a) coach/assistant coach, (b) counselor/psychologist, (c) physical therapist, (d) physician, (e) psychiatrist, and (f) sport psychology consultant (see Appendix C). Participants also provided similar ratings for the statements, “I would treat Mike (Michelle) myself” and “I would do nothing.”

Problem Ratings

Serving as a manipulation check, each participant was asked to rate, on a 5-point scale ranging from 1, not at all, to 5, extremely, the extent to which the athlete experienced each of the problems comprising the experimental conditions following his/her reading of his/her randomly assigned vignette. These items included, “Mike (Michelle) is experiencing romantic relationship problems,” “Mike (Michelle) is experiencing difficulties with injury rehabilitation,” and “Mike (Michelle) is having sport performance problems.”

Procedure

Athlete Vignettes

Six vignettes were created that depicted a male (Mike) or female (Michelle) athlete competing at the university level who was experiencing a difficult rehabilitation from a sport injury, a significant decline in his or her sport performance, or a painful ending to a romantic relationship. The six vignettes were equivalent in all aspects except for the sex of the athlete and the three presenting problems, creating male-injury, female-injury, male-performance, female-performance, male-romantic relationship, and female-romantic relationship conditions. In the romantic relationship condition, the male athlete experienced the ending of a relationship with his girlfriend, and the female athlete experienced the ending of a relationship with her boyfriend. In each vignette, the same background information was provided about the athlete’s sex, age,
race/ethnicity, family and social relationships, current living situation, year in college, sport type, sport and academic performance history, current playing position and status (i.e., starter), time in competitive season, and performance statistics for the current season.

Following the background information was a description of the athlete’s presenting problem, which varied according to condition (i.e., injury, performance, or romantic relationship problem). For the injury condition, this description included: “Three weeks ago, Mike (Michelle) suffered a third degree ankle sprain while rebounding during the second half of a close game. Since that time, he (she) has been unable to practice or compete with the team and spends most of the team’s practice time in the training room completing rehabilitation exercises. When he (she) visited the training room yesterday, Mike (Michelle) told you that he (she) was devastated by his (her) slow recovery and was worried about not regaining his (her) edge or starting position.” For the performance problem condition, this description included: “Three weeks ago, Mike’s (Michelle’s) sport performance began to significantly decline. During the past seven games, his (her) performance has been consistently poor, with his (her) seven-game field goal average dropping to just under 30% and his (her) free throw average to 65%. As a result of his (her) poor performance, he (she) lost his (her) starting position and has received substantially less playing time. When he (she) visited the training room yesterday, Mike (Michelle) told you that he (she) was devastated by his (her) slump and was worried that he (she) would not be able to get out of it.” Finally, for the romantic relationship condition, this description included: “Three weeks ago, Mike’s (Michelle’s) girlfriend (boyfriend) of the last three years, broke up with him (her). Mike (Michelle) thought she (he) was ‘the one’ and hoped to marry her (him) one day. When he (she) visited the training room yesterday, Mike (Michelle) told you that he (she) was devastated by the breakup and was worried that he (she) would never
find another girlfriend (boyfriend) like her (him).” These descriptions of the athlete’s presenting problem were followed by identical descriptions of symptoms associated with major depressive disorder (American Psychiatric Association, 1994) of moderate severity. Symptoms included depressed mood, irritability, hypersomnia, fatigue, concentration problems, anhedonia, and suicidal ideation, which caused significant disruption to the athlete’s social (i.e., became socially withdrawn, experienced social conflict) and academic functioning (i.e., stopped attending classes).

Pilot Testing

Prior to soliciting ATs’ participation in this study, a panel of experts determined the strength of the effect of the stimulus material. A total of 18 faculty and advanced doctoral students in clinical and counseling psychology from the University of North Texas Department of Psychology read one of the athlete vignettes and completed the symptom and diagnosis questionnaires (as described previously). This information was gathered to obtain a consensus from trained mental health professionals about the nature of the symptoms and diagnoses depicted in the vignette. Results indicated that the experts agreed that the symptoms (i.e., rated symptoms such as concentration problems, irritability, sleep difficulties, fatigue, sadness, anhedonia, restlessness/agitation, and social isolation as moderately present to extremely present) and likely diagnosis (for “Depressive Disorder,” \( M = 4.06, SD = 0.73 \)) depicted in the stimulus material were consistent with depression. Additional analyses examining any significant differences in symptom or diagnosis ratings based upon the sex of the athlete or the athlete’s presenting problem revealed few significant results. Given the small sample size, multivariate analyses of variance (MANOVAs) were not conducted. Instead, several 2 (sex of athlete) by 3 (presenting problem) ANOVAs were conducted separately with the symptoms and diagnoses,
with each item of these measures serving as the dependent variable for each analysis. Alpha was set at .01 to control for the familywise error rate. Results indicated that the experts rated sadness significantly lower in the injury condition ($M = 3.00, SD = 0.58$) than in romantic relationship ($M = 4.50, SD = 0.58$) condition, $F (2, 11) = 9.60, p < .01, \text{partial } \eta^2 = .64$; there were no significant differences in sadness ratings between the injury and performance ($M = 3.83, SD = 0.75$) conditions or between the performance and romantic relationship conditions. A significant difference also was obtained between the injury and romantic relationship conditions for physical pain, with the injured athlete ($M = 3.29, SD = 0.95$) receiving significantly higher ratings than the athlete experiencing a romantic relationship problem ($M = 1.25, SD = 0.50$), $F (2, 10) = 9.13, p < .01, \text{partial } \eta^2 = .65$. There were no significant differences in physical pain ratings between the injury and performance ($M = 2.20, SD = 0.84$) conditions or between the performance and romantic relationship conditions, however. Based on these results, minor modifications were made to the description of the athlete’s presenting problem in each of the vignettes to make them as consistent as possible in their wording while providing sufficient information to differentiate the nature of each presenting problem.

**Experimental Procedure**

Following this initial testing of the stimulus material, the national office of the NATA was solicited for assistance with contacting potential participants via e-mail to participate in the study. The NATA randomly selected a total of 3600 participants (300 males and 300 females for each of the six experimental conditions) who fit the study criteria (i.e., ATs who represented the membership of the NATA with respect to age and race/ethnicity, and who earned a variety of academic degrees and were employed in a variety of work settings) and e-mailed them a brief letter composed by the investigator describing the general purpose of the study and the request
for their participation. In this letter, participants were told that their participation in the study was completely voluntary and that their completion of the online survey implied their informed consent to participate. Each letter included a link to one of six Websites corresponding to one of the six experimental conditions. Three to four weeks after the initial e-mails were sent to solicit participants, a second e-mail was sent to all potential participants again requesting their participation and/or thanking them for already having completed the study.

To ensure confidentiality, participants provided no identifying information in the survey. Participants indicated their informed consent by completing the questionnaires after reading the consent form on the first page of the Website. The order of the questionnaires was counterbalanced such that half of the Websites asked the participants to complete the demographic questionnaire first, read the vignette, and then answer the questions regarding symptoms, presenting problems, diagnoses, and referrals, and the other half asked participants to read the vignette and complete the symptoms, problems, diagnoses, and referrals first and the demographic section last. Once data collection was completed, the participants’ data were downloaded directly from the Websites into a spreadsheet software program and then analyzed with a statistical software program.
CHAPTER 3

RESULTS

Symptom Ratings

The 20 symptoms from the rating scale were factor analyzed using the principal axis factoring extraction procedure with squared multiple correlations as the communality estimates. The Kaiser-Meyer Olkin measure of sampling adequacy (KMO = .857) and Bartlett’s test of sphericity ($\chi^2 (190) = 3153.58, p < .001$) suggested that the sample was factorable. Based on parallel analysis (Hayton, Allen, & Scarpello, 2004), a three-factor solution was recommended. The three factors were rotated using the Promax option and items with factor loadings greater than .40 (with communalities > .30) were retained (Tabachnik & Fidell, 2013). The three factors, which explained 42% of the variance, were: (1) Depressive Symptoms (8 items; lack of interest in activities, social isolation, sadness, hopelessness, helplessness, suicidal thinking, fatigue, self-esteem), (2) Anger/Agitation Symptoms (4 items; anger, restlessness/agitation, irritability, and tension), and (3) Compulsive Behavioral Symptoms (2 items; eating disturbance, increased use of substances). Six items’ (concentration problems, hallucinations/delusions, sleep difficulties, personality disturbance, worry, and physical pain) did not load significantly on any factor. Cronbach’s alphas were .77, .67, and .53 for the Depressive, Anger/Agitation, and Compulsive Behavioral factors, respectively. Because of the low reliability for the third factor, I dropped it from subsequent analyses. The remaining two factors were moderately correlated (Depressive Symptoms and Anger/Agitation Symptoms, $r = .55$).

The 2 [athletic trainer (AT) gender] X 2 (athlete gender) X 3 (presenting problem) MANOVA conducted with the two symptom factors as the dependent variables revealed no significant 3-way interaction, Wilks’ $\lambda = .99, F(4, 1254) = 1.04, p = .384$, partial $\eta^2 = .003$, nor
any 2-way interactions (AT gender by athlete gender, Wilks’ λ = 1.00, F(2, 627) = 0.48, \( p = .620 \), partial \( \eta^2 = .002 \); athlete gender by presenting problem, Wilks’ λ = 1.00, F(4, 1254) = 0.33, \( p = .855 \), partial \( \eta^2 = .001 \); and AT gender by presenting problem, Wilks’ λ = 1.00, F(4, 1254) = 0.33, \( p = .855 \), partial \( \eta^2 = .001 \)). There were, however, significant main effects for AT gender, Wilks’ λ = .98, F(2, 627) = 6.93, \( p = .001 \), partial \( \eta^2 = .02 \), and presenting problem, Wilks’ λ = .97, F(4, 1254) = 4.31, \( p = .002 \), partial \( \eta^2 = .014 \); athlete gender was not significant, Wilks’ λ = 1.00, F(2, 627) = 1.30, \( p = .274 \), partial \( \eta^2 = .004 \).

Univariate ANOVAs revealed that female ATs (\( M = 3.66, SD = 0.61, d = 0.25 \)), compared to their male counterparts (\( M = 3.51, SD = 0.60 \)), rated the athletes significantly higher on Depressive Symptoms, F(1, 628) = 8.65, \( p = .003 \), partial \( \eta^2 = .01 \). For Anger/Agitation symptoms, there were no significant differences between male (\( M = 3.29, SD = 0.74 \)) and female (\( M = 3.26, SD = 0.77 \)) ATs, F(1, 628) = .47, \( p = .493 \), partial \( \eta^2 = .001 \).

Although the multivariate main effect for presenting problem was significant, the differences between the scenario groups were nonsignificant at the \( p < .01 \) level across ratings of Anger/Agitation symptoms, F(2, 628) = 3.65, \( p = .03 \), partial \( \eta^2 = .01 \), (injury [\( M = 3.39, SD = 0.78 \]), performance problem [\( M = 3.16, SD = 0.78 \]), and romantic relationship problem [\( M = 3.25, SD = 0.71 \]) and Depressive symptoms, F(2, 628) = 1.77, \( p = .17 \), partial \( \eta^2 = .006 \) (injury [\( M = 3.52, SD = 0.62 \]), performance problem [\( M = 3.59, SD = 0.62 \]), and romantic relationship problem [\( M = 3.64, SD = 0.58 \])).

Diagnosis Ratings

The 2 (AT gender) X 2 (athlete gender) X 3 (presenting problem) MANOVA was conducted with diagnostic ratings as the dependent variables revealed no significant 3-way interaction, Wilks’ λ = .99, F(10, 1248) = 0.39, \( p = .951 \), partial \( \eta^2 = .005 \), nor 2-way interactions
for AT gender by athlete gender, Wilks’ $\lambda = .99, F(5, 624) = 1.78, p = .114, \text{partial } \eta^2 = .01$; athlete gender by presenting problem, Wilks’ $\lambda = .98, F(10, 1248) = 1.17, p = .309, \text{partial } \eta^2 = .009$; and for AT gender by presenting problem, Wilks’ $\lambda = .98, F(10, 1248) = 1.03, p = .415,$ partial $\eta^2 = .008$). All main effects were also non-significant [AT gender, Wilks’ $\lambda = .98, F(5, 624) = 2.34, p = .041, \text{partial } \eta^2 = .02$; athlete gender, Wilks’ $\lambda = .98, F(5, 624) = 2.75, p = .018, \text{partial } \eta^2 = .02$; and presenting problem, Wilks’ $\lambda = .97, F(10, 1248) = 2.05, p = .026, \text{partial } \eta^2 = .02$].

Even though AT gender, athlete gender, and presenting problem did not significantly influence ATs’ diagnosis of an athlete, we conducted a one-way repeated measures ANOVA to determine how accurate the ATs were in their differential diagnosis of the problem. Mauchly’s test indicated that the assumption of sphericity had been violated, $\chi^2 (9) = 71.14, p < .001,$ therefore degrees of freedom were corrected using Huynh-Feldt estimates of sphericity ($\varepsilon = 0.96$). The analysis was significant, Wilks’ $\lambda = 0.14, F(3.84, 2451.73) = 798.82, p < .001, \text{partial } \eta^2 = .56$. Post hoc pairwise comparisons using a Bonferroni adjustment indicated that each diagnosis rating was significantly different from the other and the ATs were able to correctly diagnosis the problem as depression. See Table 2 for means and standard deviations of the ATs’ diagnostic assessments.

**Referral Ratings**

The 2 (AT gender) X 2 (athlete gender) X 3 (presenting problem) MANOVA was used with referral ratings for the various referral options as the dependent variables. The 3-way interaction was nonsignificant, Wilks’ $\lambda = .99, F(14, 1244) = 0.68, p = .798, \text{partial } \eta^2 = .008$, as were the 2-way interactions between AT gender and athlete gender, Wilks’ $\lambda = .99, F(7, 622) = 1.34, p = .228, \text{partial } \eta^2 = .02$, and between AT gender and presenting problem, Wilks’ $\lambda = .98,$
$F(14, 1244) = 1.03, p = .420$, partial $\eta^2 = .01$. The athlete gender by presenting problem interaction, however, was significant, Wilks’ $\lambda = .95$, $F(14, 1244) = 2.15, p = .008$, partial $\eta^2 = .02$, as well as the main effect for presenting problem, Wilks’ $\lambda = .74$, $F(14, 1244) = 16.76, p < .001$, partial $\eta^2 = .16$. There were no significant main effects for AT gender, Wilks’ $\lambda = .98$, $F(7, 622) = 1.83, p = .080$, partial $\eta^2 = .02$, or athlete gender, Wilks’ $\lambda = .98$, $F(7, 622) = 1.53, p = .153$, partial $\eta^2 = .02$.

Univariate ANOVAs revealed that the athlete gender by presenting problem interaction was significant for referral to an SPC, $F(2, 628) = 5.78, p = .003$, partial $\eta^2 = .02$, but not referral to the coach, $F(2, 628) = 1.09, p = .338$, partial $\eta^2 = .003$, counselor/psychologist, $F(2, 628) = 2.89, p = .056$, partial $\eta^2 = .009$, physical therapist, $F(2, 628) = 1.04, p = .354$, partial $\eta^2 = .003$, physician, $F(2, 628) = 2.30, p = .101$, partial $\eta^2 = .007$, psychiatrist, $F(2, 628) = 0.46, p = .631$, partial $\eta^2 = .001$, or treating the athlete him or herself, $F(2, 628) = 0.60, p = .549$, partial $\eta^2 = .002$.

Post hoc Scheffé analyses for the referral to an SPC revealed that ATs were significantly more likely to refer a male athlete with performance problem ($M = 4.12, SD = 1.07$) than either a male ($M = 2.89, SD = 1.45, d = 0.97$) or female ($M = 3.29, SD = 1.16, d = 0.74$) athlete with a romantic problem; there were no significant differences in referral likelihood with athletes with an injury (female, $M = 3.91, SD = 1.17$; male, $M = 3.72, SD = 1.35$) or a female athletes with a performance problem ($M = 3.71, SD = 1.26$). ATs were equally more likely to refer a female athlete with an injury, a male athlete with an injury, or a female athlete with a performance problem to an SPC than a male athlete with a romantic problem. A referral to an SPC was equally unlikely by the ATs for male and female athletes with romantic problems (see Table 2).
Follow-up ANOVAs for the main effect of presenting problem revealed significant differences the ATs’ ratings in relation to a counselor/psychologist, $F(2, 628) = 5.72, p = .003$, partial $\eta^2 = .02$, psychiatrist, $F(2, 628) = 5.01, p = .007$, partial $\eta^2 = .02$, SPC, $F(2, 628) = 28.98$, $p < .001$, partial $\eta^2 = .08$, physician, $F(2, 628) = 17.62, p < .001$, partial $\eta^2 = .05$, physical therapist, $F(2, 628) = 51.74, p < .001$, partial $\eta^2 = .14$, and treating the athlete themselves, $F(2, 628) = 15.49, p < .001$, partial $\eta^2 = .05$. The main effect for referral to the coach, $F(2, 628) = 1.21, p = .299$, partial $\eta^2 = .004$, was non-significant for presenting problem.

Scheffé post hoc comparisons indicated that the ATs were significantly more likely to refer the athlete with a romantic relationship problem ($M = 4.52, SD = 0.72, d = 0.27$) than the injured athlete ($M = 4.29, SD = 0.96$) to a counselor/psychologist; referral to a counselor/psychologist for a performance problem ($M = 4.46, SD = 0.74$) did not significantly differ from the other two. Although the ANOVA was significant for referral to a psychiatrist, at the $p < .01$ level there were no significant differences between the presenting problem groups: athlete with relationship problem ($M = 2.81, SD = 1.37$), performance problem ($M = 2.80, SD = 1.29$), and with an injury ($M = 2.45, SD = 1.37$).

A similar set of results existed for referral to a physician (more likely to refer an athlete experiencing an injury [$M = 2.82, SD = 1.33, d = 0.55$] or performance problems [$M = 2.66, SD = 1.35, d = 0.42$] than one with a relationship problems [$M = 2.11, SD = 1.25$]) and referral to a physical therapist (most likely to refer an athlete with an injury [$M = 1.67, SD = 1.01$] than athletes with relationship [$M = 1.07, SD = 0.30, d = 0.92$] or performance [$M = 1.11, SD = 0.42, d = 0.78$] problems). Finally, the ATs were significantly more likely to work with an injured athlete ($M = 2.32, SD = 1.14$) than with an athlete who has relationship ($M = 2.03, SD = 1.05, d =
0.26) or performance (M = 1.73, SD = 0.83, d = 0.60) problems; but they also were more likely to work with relationship than performance problems with their athletes (d = 0.32).

Similar to the analysis of the diagnostic ratings, one-way repeated measures ANOVA was conducted to evaluate ATs’ recommendations for intervention regardless of the gender of the AT, gender of the athlete, or presenting problem. Mauchly’s test indicated that the assumption of sphericity had been violated, χ²(14) = 1049.07, p < .001, therefore degrees of freedom were corrected using Huynh-Feldt estimates of sphericity (ε = 0.76). The analysis was significant, Wilks’ λ = 0.05, F(5.31, 3395.145) = 723.85, p < .001, partial η² = .531, suggesting that the ATs were not equally likely to make referrals to the different professionals. Post hoc pairwise comparisons using a Bonferroni adjustment indicated that ATs would be significantly more likely to refer athletes to a counselor or psychologist (M = 4.43, SD = .82) than to any other group, including SPC - M = 3.57, SD = 1.32, d = 0.78. See Table 3 for the rank ordering of the referral options.
CHAPTER 4
DISCUSSION

Symptom Ratings

Athletic trainers (ATs) identified lack of interest in activities, social isolation, sadness, hopelessness, helplessness, suicidal thinking, fatigue, self-esteem as symptoms that are consistent with depression. This finding matches how experts typically view the symptoms of depression (American Psychiatric Association, 2013). Overall, ATs were able to identify that the athletes in the scenarios were experiencing depressive symptoms more so than anger/agitation. Although both female and male ATs rated the athlete’s depressive symptoms as “moderately present” (mean scores of 3.66 and 3.51, respectively, on the 1 to 5 point scale), the female ATs rated the athletes’ depressive symptoms more highly than the male ATs, which may be attributable to the socialization of gender roles. Women and men differ in the intensity of emotional experience due to roles they fill in society (Grossman & Wood, 1993). Women traditionally enact caretaker roles, which typically involve being sensitive to the needs and emotions of others, whereas men often take on roles that de-emphasize emotional responsiveness and encourage stoicism and the suppression of emotion (Cochran & Rabinowitz, 2003). Women, possibly due to their greater comfort with emotion than men, also may create conditions more conducive to disclosure, including being more empathic. In support of this assertion, Pollner (1998) found that male and female respondents, when interviewed by women, reported more symptoms of depression, substance abuse, and conduct disorders than when a man was the interviewer. Thus, female ATs may be more attuned to emotional cues and be able to notice more symptoms associated with athletes’ mental health concerns. Such awareness may bode well for athletes who are suffering from psychological distress and under the care of female ATs.
Diagnosis Ratings

Regardless of the presenting problem, athlete gender, or AT gender, ATs selected depression, and then an adjustment disorder, as the primary diagnoses, which was consistent with the symptoms presented within the scenarios they were given. This finding is heartening given that ATs report generally lacking confidence in their abilities to diagnose psychological disorders. For example, 91% of the ATs surveyed had experience working with female athletes who had suffered from an eating disorder, but only 27% felt confident identifying those who have an eating disorder (Vaughn, King, & Cottrell, 2004). Although the majority of the ATs reported having been educated on the basic signs and symptoms of psychoses and neuroses during their training, the modal response for their satisfaction with this training was “neutral” (i.e., a score of 5 on a 1, completely satisfied, to 9, completely dissatisfied, scale; Stiller-Ostrowski & Hamson-Utley, 2010). Further, 40% to 45.7% stated that they were unconfident in their abilities to counsel athletes who might be experiencing these disorders.

Despite this low confidence, recent changes in ATs’ preparation for and involvement in mental health issues may be assisting them in improving their diagnostic abilities. For example, the NATA recently released a Consensus Statement calling attention to the mental health of college student athletes and the importance of early recognition of a potential psychological problem and referral to a mental health provider (Neal et al., 2013). Consequently, Athletic Training Educational Programs (ATEPs) are beginning to focus more on training ATs to evaluate the signs and symptoms of psychological distress, conduct a clinical evaluation, and determine the best course of action (Stiller-Ostrowski & Ostrowski, 2009). Several studies have pointed to the fact that additional opportunities for training in sport psychology or psychology in general can increase ATs’ knowledge, confidence, and usage of psychosocial strategies and
referral for injured athletes (Harris, Demb, & Pastore, 2005; Stiller-Ostrowski, Gould, & Covassn, 2009). In this study, ATs were able to accurately diagnose the psychological disorder based on the symptoms presented, which suggests that training efforts have increased their confidence, knowledge, and understanding of psycho-diagnosis.

Referral Ratings

With regards to a referral to a SPC, the athletes’ gender and their problem influenced the outcome. A male athlete with a performance problem was more likely to be referred than either a male or female athlete experiencing a romantic breakup to a SPC. Further, both male and female athletes experiencing a performance problem and male and female injured athletes were more likely to be referred to an SPC compared with a male athlete experiencing a romantic breakup. There were no differences in the strength of the referral rating to an SPC between a male and female athlete experiencing a romantic problem.

ATs seemed to understand or have the perspective that it would be most appropriate to refer athletes with performance problems and athletes with injuries to an SPC, but not those athletes who were experiencing romantic problems. Such a view about SPCs’ competency and scope of service is consistent with professional descriptions:

AASP Certified Consultants (CC-AASP) and specially trained licensed psychologists are typically the most competent practitioners working in the field of applied sport and exercise psychology. Although there are many specific concepts within applied sport and exercise psychology (e.g., goal setting, concentration, motivation, relaxation, imagery), the general goal is to teach mental skills necessary to perform consistently in training and competition, increase adherence to exercise programs, and to help individuals realize their potential. (Association for Applied Sport Psychology, n.d.)

Depending on the training, though, SPCs might be viable resources for athletes who are experiencing relationship problems and are in need of more traditional counseling and/or psychotherapy. For example, many psychologists (a) consult with individual athletes or sports
teams (22%) and (b) provide individual (48%) or group therapy (8%) to athletes (Petrie & Diehl, 1995), and because of their training, would be able to assist with traditional mental health concerns. Thus, it becomes important for ATs to understand the background and training of the SPCs in their referral networks. If the SPC also is trained as a psychologist, then he/she may be an appropriate referral for athletes who are experiencing inter or intra-personally based problems.

There also were main effects for presenting problem across several of the referral options, including: counselor/psychologist, psychiatrist, physician, physical therapist, and treating the athlete themselves. Specifically, ATs were most likely to refer the athlete with a romantic relationship problem to a counselor/psychologist. For physicians and physical therapists, ATs were most likely to refer the athletes who were injured, which makes sense given the background and training of these professionals. Of the three problem areas, ATs were most likely to treat an injured athlete themselves followed by helping the athlete with a relationship problem.

ATs appear to be aware of the roles of different health providers and make distinctions as to the appropriateness of referrals based on the presenting problems of their athletes. This finding is consistent with what is expected within competency requirements for ATs, that is, being be able to “describe the role of various mental healthcare providers (e.g., psychiatrists, psychologists, counselors, social workers) that comprise a mental health referral network” (NATA, 2011, p.27). Although there were significant differences in referral ratings for a counselor/psychologist across the three scenarios (i.e., injury, performance or romantic problem), the means were all above four on a five-point rating scale, suggesting that they view a counselor or a psychologist as a viable referral option for all three problems. In fact, their perceptions of counselors, and to a lesser extent SPCs, were the most positive, viewing them as the only two
consistently viable referral sources for the athletes. In addition, because ATs were significantly less likely to treat the athlete on their own compared with making a referral to a mental health provider, ATs appear to know that the treatment of depression in an athlete, regardless of their presenting problem, is best handled by psychologists/counselors and thus should make referrals to those professionals.

Limitations and Directions for Future Research

The current study had several limitations that warrant discussion. First, the race/ethnicity of the participants was primarily White (94.5%), whereas only 80.5% within the larger population of NATA are White. Given the salience of race/ethnicity in mental health service seeking (Adebimpe, 1981; Alegria et al., 2008; Masuda et al., 2009; Neighbors, Trierweiler, Ford, & Muroff, 2003; Snowden, 2003), my findings may overestimate how often (and for whom) ATs actually would recognize symptoms, diagnose, and refer athletes. White ATs, like other healthcare providers, may be more likely to endorse referring athletes to mental health professionals (i.e., counselor/therapist, sport psychologist) than ATs from other racial/ethnic groups. Future research should address how the race/ethnicity of the AT may relate to their ability to accurately diagnose and refer athletes with mental health concerns.

Second, the race of the hypothetical athlete was White, so no determination could be made as to how ATs would treat racial/ethnic minority athletes who were reporting similar symptoms. Past research has shown that Whites are diagnosed at significantly higher rates for major depressive disorder than African Americans or Mexican Americans (e.g., Neighbors et al., 2003; Riolo, Nguyen, Greden, & King, 2005), so it is unclear how ATs may have diagnosed a Black athlete, for example. Consequently, future studies could vary the racial makeup of the hypothetical athlete to determine if such diagnostic bias exists among ATs.
Third, I only examined the symptoms and diagnosis of depression, thus we cannot generalize to how ATs would work with athletes who report symptoms of other psychological disorders (e.g., eating disorder, anxiety). Future studies should examine ATs abilities to differentially diagnose athletes across a range of mental disorders. Last, although ATs were randomly assigned to condition (i.e., athlete gender and presenting problem), all data collected were self-report, which is subject to response bias, and referral data were only intentions to refer, not actual referral practices. ATs’ actual referrals of athletes with mental health disorders may be higher or lower than what I found. In future studies, it might be useful to examine actual referrals of ATs practicing in different sport contexts (e.g., college, clinics, high schools).

Practical Implications

My findings suggest that ATs are competent in their assessment of a depressed athlete regarding symptom recognition and psychological diagnosis. ATEPs should continue to provide in-depth training on psychological disorders and to discuss what referral options are most appropriate for different psychological and physical disorders. In such training, educators should provide psychoeducation to reduce potential gender bias in symptom recognition, diagnosis, and intervention. For those ATs whose undergraduate or graduate education in this area was inadequate, they might seek additional training through continuing education courses at national or regional conferences. Given the centrality of ATs in the identification and treatment of college student athletes’ mental health issues (Neal et al., 2013), being competent is paramount for ATs.

Given the diversity of training for SPCs, it will be important for ATs to understand the background and competencies of any SPCs with whom they work. Some SPCs will not only be able to provide mental skills training, but if they are licensed psychologists they may be trained
to work with athletes who suffer from various mental health issues, such as depression. If ATs are unaware of the SPC’s level of training, they may make an inappropriate referral to an SPC who is not trained to handle such psychosocial issues or an unnecessary referral to a counselor/psychologist if the SPC could have handled the mental health issue. Professional organizations in athletic training (i.e., the NATA) and sport psychology (e.g., Association of Applied Sport Psychology, American Psychological Association Division 47 [Exercise and Sport Psychology]) might collaborate and develop programming to address this issue on how ATs and SPCs can work more closely together within sports medicine environments to provide the best possible care for athletes.

Conclusion

I explored ATs’ ability to recognize, diagnose, and provide a referral for collegiate athletes who were presenting with symptoms of depression across three different scenarios. The study examined factors that may impact ATs’ abilities in these areas, including AT gender, athlete gender, and type of presenting problem (e.g., athletic injury, romantic relationship, or sport performance issue). Overall, female ATs were better at recognizing depressive symptoms than male ATs, though both were equally proficient at diagnosing depression. Regardless of gender of the AT, gender of the athlete, and presenting problem, ATs were most likely to refer the athletes to a counselor/psychologist, and to a lesser extent an SPC. ATs viewed referrals to an SPC as most appropriate for presenting problems related to sport (i.e., performance problem or injury). The results highlight a possible bias in referrals to an SPC, in that SPCs may not be considered an appropriate referral source for romantic relationship problems. Future studies should further examine how other demographic factors, such as race/ethnicity and
socioeconomic status, may influence ATs’ abilities to accurately diagnose psychological problems within their athletes and then make appropriate referrals for them.

Table 1

*ATs’ Rating of Each Diagnostic Category (N = 640)*

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depressive Disorder</td>
<td>4.15a</td>
<td>1.12</td>
</tr>
<tr>
<td>Adjustment Disorder</td>
<td>3.60b</td>
<td>1.16</td>
</tr>
<tr>
<td>Anxiety Disorder</td>
<td>2.76c</td>
<td>1.06</td>
</tr>
<tr>
<td>Sleep Disorder</td>
<td>2.47d</td>
<td>.93</td>
</tr>
<tr>
<td>Substance Abuse Disorder</td>
<td>1.51e</td>
<td>.72</td>
</tr>
</tbody>
</table>

*Notes.* Means with differing superscripts are significantly different at the *p* ≤ .01 based on Bonferroni post hoc paired comparisons. The rating scores ranged from 1, *disorder not likely*, to 5, *disorder extremely likely*.

Table 2

*ATs’ Referral Ratings to a Sport Psychology Consultant (N = 640)*

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male athlete with performance problem</td>
<td>4.12a</td>
<td>1.07</td>
</tr>
<tr>
<td>Female athlete with injury</td>
<td>3.91ab</td>
<td>1.17</td>
</tr>
<tr>
<td>Male athlete with injury</td>
<td>3.72ab</td>
<td>1.35</td>
</tr>
<tr>
<td>Female athlete with performance problem</td>
<td>3.71ab</td>
<td>1.26</td>
</tr>
<tr>
<td>Female athlete with romantic problem</td>
<td>3.29bc</td>
<td>1.16</td>
</tr>
<tr>
<td>Male athlete with romantic problem</td>
<td>2.89c</td>
<td>1.45</td>
</tr>
</tbody>
</table>

*Notes.* Means with differing superscripts are significantly different at the *p* ≤ .01 based on Bonferroni post hoc paired comparisons. The referral rating scores ranged from 1, *not at all likely*, to 5, *extremely likely*.
Table 3

*ATs’ Referral Ratings (N = 640)*

<table>
<thead>
<tr>
<th>Referral</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Counselor or Psychologist</td>
<td>4.43a</td>
<td>.82</td>
</tr>
<tr>
<td>Sport Psychologist</td>
<td>3.57b</td>
<td>1.32</td>
</tr>
<tr>
<td>Psychiatrist</td>
<td>2.69c</td>
<td>1.36</td>
</tr>
<tr>
<td>Physician</td>
<td>2.50c</td>
<td>1.34</td>
</tr>
<tr>
<td>Coach</td>
<td>2.44c</td>
<td>1.24</td>
</tr>
<tr>
<td>Treat Yourself</td>
<td>2.04d</td>
<td>1.05</td>
</tr>
<tr>
<td>Physical Therapist</td>
<td>1.28e</td>
<td>.71</td>
</tr>
<tr>
<td>Do Nothing</td>
<td>1.04e</td>
<td>.256</td>
</tr>
</tbody>
</table>

*Notes.* Means with differing superscripts are significantly different at the \( p \leq .01 \) based on Bonferroni post hoc paired comparisons. The referral rating scores ranged from 1, *not at all likely*, to 5, *extremely likely.*
APPENDIX A

THESIS PROPOSAL
Factors that Influence Athletic Trainers’ Ability to Recognize, Diagnose, and Intervene: Depression in Athletes

According to the Bureau of Labor Statistics (2012), currently there are 18,200 athletic trainers (ATs) in the United States and that number is expected to increase by 30% by the year 2020. Athletic training is the province of ATs, the professionals who are most directly responsible for athletes’ healthcare (Prentice, 2006). ATs collaborate with physicians to optimize the physical activity of athletes and often are focused on the prevention of, or recovery from, sport injuries. Their specific job responsibilities include “prevention, diagnosis, and intervention of emergency, acute, and chronic medical conditions involving impairment, functional limitations, and disabilities” (National Athletic Trainers’ Association, 2011). ATs, along with coaches, are on the front line in terms of recognizing difficulties athletes may suffer. They are present at most, if not all, team practices and competitions and have frequent contact with athletes in the athletic training room, during practices, when traveling to competitions, etc. (Lockard, 2005). This time allows ATs to get to know their athletes personally and thus puts them in an ideal position to identify and respond to difficulties in their social, emotional, and mental functioning (Mensch & Miller, 2008).

Consequently, the National Athletic Trainer’s Association (NATA) has identified the need for ATs to be competent in implementing psychosocial strategies and techniques (e.g., goal-setting, imagery, positive self-talk), recognizing basic symptoms of mental disorders, and identifying and referring athletes in need of psychological help (NATA, 2011). Most athletic training educational programs (ATEPs) include courses that cover psychosocial issues, such as sport psychology, mental illness (e.g., depression), and the mental health referral process (Stiller-Ostrowski & Ostrowski, 2009; Stiller-Ostrowski & Hamson-Utley, 2010); however, many ATs
are not given clinical training opportunities to implement psychological strategies or identify mental disorders (Stiller-Ostrowski & Hamson-Utley, 2010). Also, ATs are expected to be trained in the knowledge and skills surrounding athletes’ mental health and well-being, yet very few (< 25%) have ever referred an athlete to a mental health professional (Larson, Starkey, & Zaichkowsky, 1996). Thus, an overwhelming majority of ATs have limited firsthand experience in dealing with psychosocial issues. Only one study to date has assessed ATs’ abilities to recognize psychological distress by examining the correlation between athletes’ reported mood with ATs’ observation of their behaviors during injury rehabilitation (Brewer, Petitpas, Van Raalte, Sklar, & Ditmar, 1995). What is unknown is how ATs would respond upon their direct observation of athletes who present with symptoms of psychological disorders, namely depression. Would ATs respond similarly to athletes with identical symptoms across different scenarios? Across male and female athletes with the same symptoms? These questions have yet to be answered. Thus, the purpose of this study is to assess ATs’ abilities to recognize psychological symptoms, diagnose appropriately, and intervene (e.g., provide psychological/psychiatric referrals, treat the athletes themselves) in a case with an athlete experiencing psychological distress. Using an analogue research design from a previous study (Albinson, 2006), ATs were asked to recognize symptoms associated with moderate to severe major depressive disorder (American Psychiatric Association, 1994) and identify an athlete’s primary diagnosis, based upon their reading of a detailed vignette depicting either a male or female athlete having difficulties coping with a particular problem (i.e., sport injury, sport performance, or romantic relationship problem). Then, ATs were asked to determine recommendations for psychological referral or treatment. The primary research questions investigated whether the sex of the AT, the sex of the athlete, and/or the athlete’s type of
presenting problem influenced the ATs’ ability to determine (a) the presence and severity of the athlete’s symptoms, (b) the psychological diagnosis of the athlete, (c) and the necessity of referring the athlete to a mental health professional.

**Athletic Training Competencies**

Founded in 1950, NATA is the professional membership association for ATs and its supporters and has grown to 35,000 members worldwide. The organization defines the role of an AT to encompass the prevention, diagnosis, treatment, and rehabilitation of emergency, acute, and chronic conditions and certain medical conditions involving impairments, functional limitations, and disabilities. Their publication, The Athletic Training Educational Competencies (Competencies; NATA, 2011), outlines the minimum standards of knowledge, skills, and clinical abilities required to be an AT. NATA acknowledges that the competencies are merely minimum requirements, and thus calls ATEPs to design curricula that allow ATs to exceed them. In its 5th edition (2011), the Competencies cover eight content areas: evidenced-based practice; prevention and health promotion; clinical examination and diagnosis; acute care of injuries and illnesses; therapeutic interventions; psychosocial strategies and referrals; healthcare administration; professional development and responsibility; and clinical integration proficiencies.

The NATA Board of Certification (BOC) serves as the only national certification program for ATs (BOC, 2013). Their publication, the *Role Delineation Study/Practice Analysis* (RD/PA), evaluates the eight content areas of the Competencies to determine content validity (Mensch, 2008). The RD/PA thus provides consistency between the BOC certification examination and the tasks, knowledge, and skills identified by practicing ATs. The Competencies and the RD/PA act as guides for ATs to identify potential areas of weakness.
within their knowledge and skills. If identified, ATs can remediate these deficits through continuing education courses and workshops. The Professional Education Committee (PEC) continually evaluates and revises the Competencies; therefore, it is incumbent upon ATs to keep up-to-date on the information regarding current best practices.

Of the eight content areas, psychosocial strategies and referral, is particularly relevant as it relates to the overlap in the roles of sport psychologists and ATs in the sport environment. However, since most athletic programs do not have access to a sport psychologist (Arvinen-Barrow, Hemmings, Weigand, Becker, & Booth, 2007; Misasi et al., 1996), NATA has thus integrated this content area into the role of practicing ATs. Psychosocial strategies and referral been defined by NATA as the knowledge and skills regarding psychological and social issues (NATA, 2011), and includes: (a) the ability to recognize clients who exhibit abnormal social, emotional, and mental behaviors; (b) the ability to intervene and refer clients to mental health professionals; and (c) an appreciation for and the utilization of interventions that connect mental health to recovery from athletic injury. Psychosocial strategies and referral is composed of 18 cognitive competencies that emphasize the importance of ATs intervening in specific situations (e.g., “Describe the role of various mental healthcare providers…that may comprise a mental health referral network.”; “Identify and describe the basic signs and symptoms of mental health disorders... that may indicate the need for referral to a mental healthcare professional”). In addition, the clinical integration proficiencies (CIP) represent the decision-making process and application of the learned skills in an actual client care scenario. The two CIPs in the psychosocial strategies and referral content area incorporate the cognitive competencies as well as evidenced-base practice to optimize clients’ outcomes. The first CIP calls for ATs’ selection and integration of psychological skills into injury rehabilitation programs to enhance adherence,
motivation, overall outcomes of treatment. The second CIP is central to the current study and is as follows:

Demonstrate the ability to recognize and refer at-risk individuals and individuals with psychosocial disorders and/or mental health emergencies. As a member of the management team, develop an appropriate management plan (including recommendations for patient safety and activity status) that establishes a professional helping relationship with the patient, ensures interactive support and education, and encourages the athletic trainer’s role of informed patient advocate in a manner consistent with current practice guidelines. (NATA, 2011, p. 32)

Because no study thus far has examined ATs’ efficacies in the CIP, future research may want to examine the factors that influence whether or not ATs are able to competently recognize mental health symptoms and refer them to appropriate health-care professionals.

ATs’ Use of Psychosocial Interventions

ATs also are expected to demonstrate knowledge of how athletic injuries may play a role in athletes’ overall mental health (NATA, 2011), because injured athletes often experience psychological and emotional reactions, ranging from minor mood disturbances to major depressive symptoms (Cramer Roh & Perna, 2000; Maniar et al., 2005; Putukian & Wilfert, 2004; Wiese-Bjornstal et al., 1998). Student-athletes who have been seriously injured have been found to experience significant increases in depression, anger, and tension, and decreases in vigor in comparison to the general college population (Smith & Milliner, 1994; Smith, Scott, & Wiese, 1990). Furthermore, injured athletes often suffer from a loss of physical self-esteem, a common predictor of depression (Chan & Grossman, 1988). Appaneal, Levine, Perna and Roh (2009) administered a self-rated checklist and a semi-structured interview to 164 athletes (108
men and 56 women) ranging in age from 14 to 24 years to examine symptoms of depression. Measures were taken 1 week, 1 month, and 3 months post-injury from an injury group (n = 84) and during the same timeframe from a healthy control group (n = 80). When comparing symptoms of depression between the injured group and the non-injured group, results demonstrated a decline over time by a greater degree for those in the injured group compared with the control participants. Findings were consistent with past research (Leddy et al., 1994; Manuel et al., 2002), which demonstrated that depressive symptoms were most elevated within the first month post-injury and decreased over time. Athletes were more likely to warrant a clinical diagnosis of Major Depressive Disorder (MDD) during the first month post-injury than after three months (9.6% vs. 4.4%; Appaneal et al., 2009).

Anxiety is also common among injured athletes (Mellalieu, S.D., Hanton, S., & Thomas, O., 2009; Monsma Mensch, & Farroll, 2009; Petrie, 1993). A recent study examined 36 collegiate athletes (14 men and 22 women) who had experienced injuries that ranged from fractures, overuse, sprains and strains, and more severe injuries that required surgery to examine the presence of psychological distress (e.g., anxiety) and their use of imagery (Monsma et al., 2009). Many athletes reported that they used some sort of imagery during rehabilitation, even if they were not specifically trained to do so. However, some of the images that the athletes created for themselves were self-debilitating (i.e., return-to-practice anxiety producing). Men reported using significantly more imagery than women, particularly early in the injury rehabilitation process. As a result, men reported less worrying and concentration disruption in comparison to women. Moreover, the researchers found that the longer the athletes were injured, the less likely they were to use imagery and the more likely they were to experience anxiety, namely somatic. This anxiety may be related to a fear of re-injury, actual physical pain,
decrement in pre-injury performance capabilities, loss of status on the team, letting down their coaches and teammates, and a variety of other concerns (Gould, Greenleaf, & Krane, 2002; Podlog & Eklund, 2006). Monsma et al. (2009) suggest that practitioners should assess the debilitative images used by athletes, because images that have a motivational function may be associated with anxiety. To reduce some of the anxiety surrounding return-to-practice, the authors recommend athletes utilize sport specific images that include both cognitive and motivational functions of imagery as well as healing imagery.

Given that athletes often experience negative emotions in relation to their injuries and, without the proper guidance, may possibly evoke even more anxiety, ATs can use psychological strategies and techniques to injured athletes feel more positively, reduce anxiety, and return to their sports more quickly (Cupal, 1998; Donahue, 2009; Francis, Anderson, & Maley, 2000; Hamson-Utley, Martin, and Walters, 2008; McCarthy, Jones, Harwood, & Davenport, 2010; Washington-Lofgren, Westerman, Sullivan, & Nashman, 2004; Wiese, Weiss, and Yukelson, 1991). For example, Wiese et al. (1991) surveyed 115 ATs regarding their perceived importance of knowledge about strategies for dealing with injured athletes. Responses were on a 5-point scale and ranged from 1, “not at all important”, to 5, “very important.” According to the ATs, the top three strategies were using a positive and sincere communication style ($M = 4.57$), setting realistic goals ($M = 4.53$), and encouraging positive self-thoughts ($M = 4.34$). In comparison, ATs rated teaching mental imagery ($M = 3.34$), teaching emotional control strategies ($M = 3.59$), and teaching relaxation techniques ($M = 3.60$) as the lowest. ATs believed that reducing depression ($M = 4.16$) was an important technique to know in relation to helping injured athletes in rehabilitation.
In 2000, Francis et al. replicated Wiese et al.’s study in a sample of Australian physiotherapists (i.e., ATs). Again, the physiotherapists (n = 57) rated the perceived importance of strategies that they should know when treating injured athletes, but used a slightly different rating scale to do so – 1, “not at all effective” to 5, “very effective.” Similarly, setting realistic goals ($M = 4.62$), using a positive communication style ($M = 4.47$), and understanding individual motivation ($M = 4.35$) were rated as the most effective techniques. Once again, teaching relaxation techniques ($M = 3.34$), mental imagery ($M = 3.55$), and emotional control ($M = 3.64$) were rated lower, and reducing depression ($M = 4.08$) were viewed as a moderately effective strategies.

More recently, Hamson-Utley et al. (2008) surveyed ATs from across the U.S. in regards to their attitudes on the effectiveness of psychological skills in injury rehabilitation and recovery. Three hundred and nine ATs were randomly selected through the NATA database and given the Attitudes About Imagery (AAI) survey, which measures attitudes about the effectiveness of imagery, positive self-talk, goal setting, and pain tolerance to improve adherence to injury rehabilitation and speed of recovery. For example, ATs were asked to rate how strongly they agreed (from 1, “strongly disagree”, to 7, “strongly agree”) to items such as “The use of mental imagery to increase relaxation is an effective way to reduce anxiety prior to and following surgery.” Attitudes toward the four categories of psychosocial strategies were generally positive and considered effective for reducing stress or anxiety, promoting and maintaining a positive mindset, and healing the injured body part: mental imagery ($M = 5.39$), goal-setting ($M = 6.43$), positive self-talk ($M = 6.09$), and methods to control the pain ($M = 6.35$). Furthermore, ATs held more positive attitudes toward the psychological skills in comparison to a group of physical therapists.
In a more current study, 180 athletic training students (76 men and 104 women) were given the AAI Survey and a demographic section that included questions about their educational preparation, interest in and use of psychological skills (Kamphoff, Hamson-Utley, Antoine, Knutson, Thomae, & Hoenig, 2010). A little over half of the students (50.6%) had received training in sport psychology or psychological skills; however, no differences were found regarding students’ perceptions of the effectiveness of psychological skills in improving performance or to aid injury rehabilitation between those who had formal training and those who did not. Results of the AAI Survey showed that the students thought that goal setting was the most effective skill in aiding athletes’ recovery from injury ($M = 6.02$), followed by pain management strategies ($M = 5.71$), positive self-talk ($M = 5.67$), and imagery ($M = 5.11$).

Larson et al. (1996) surveyed 482 ATs regarding what intervention techniques they used in their work with injured athletes. ATs rated 13 different psychological skills (e.g., reducing depression, using/teaching relaxation techniques, teaching emotional control strategies) whether or not they had actually used the skills, on a scale that ranged from 1, “never”, to 5, “100% of the time.” The top five skills/techniques used in rehabilitation were: (a) keep the athlete involved with the team ($M = 4.41$), (b) use short-term goals ($M = 4.34$), (c) create variety with the rehabilitation exercises ($M = 4.17$), (d) encourage positive self-talk ($M = 4.07$), and (e) encourage good communication with the AT and/or coach ($M = 3.93$). These results suggest that not only are ATs’ attitudes and perceptions of sport psychology techniques generally positive (Frances et al., 2000; Hamson-Utley et al., 2008; Wiese et al., 1991), they use certain ones more frequently than others.

Athletes often experience emotional and psychological distress, such as anxiety and depression, in response to being injured (Appaneal et al., 2009; Monsma et al., 2009; Wiese-
Bjornstal et al., 1998). Given that injured athletes often experience negative psychological reactions that can interfere with their rehabilitation and recovery, ATs may use psychosocial interventions to help facilitate motivation to adhere to rehabilitation, emotional coping to injury, and quicker physical recovery (NATA, 2011), and have indicated the importance of certain strategies and techniques (e.g., goal-setting, positive communication, enhancing motivation to adhere to recovery protocol; Francis et al., 2000; Wiese et al., 1991). Larson et al. (1996) examined the frequency of psychological strategy utilization, and found that ATs’ usage of psychosocial strategies is related to their perceived effectiveness. These studies show that ATs are moderately receptive to select and integrate certain psychosocial techniques into athletes’ injury rehabilitation program. The question becomes “in what situations are ATs willing to implement psychological skills themselves or decide that other professionals are more suited to do so and thus refer the athletes out?”

ATs’ Role in Counseling and Psychosocial Referrals

Because of the frequent contact with one another, ATs are able to observe athletes closely and make determinations about their social, emotional, physical and/or behavioral functioning. They also are able to provide athletes with information and advice and listen to them as they confide personal matters. When it comes to psychological issues involved with returning to play after an injury, athletes are more willing to seek help from ATs than mental health professionals or sport psychology consultants (Maniar et al., 2001; Robbins & Rosenfeld, 2001). Thus, ATs must be able to recognize basic symptoms of mental health disorders, such as depression and anxiety, and be able to make referrals to mental health professionals as needed (NATA, 2011). And yet, ATs’ educational training and practica may be inadequate, leaving many unable to identify and deal effectively with athletes’ psychological problems. Brewer et al. (1995) found
no correlation between ATs’ ratings of patients’ behaviors during injury rehabilitation and patients’ self-reported psychological distress. Further, ATs may be hesitant to refer athletes for mental health services because they are not able to accurately recognize or diagnose clinical symptoms, do not know appropriate referral sources, lack referral protocols, are overly confident in their abilities to deal with the problem themselves, and/or believe that treating the physical injury would be sufficient for ameliorating the emotional concerns/issues (Mensch & Miller, 2008).

Regarding the referral practices of ATs, Larson et al. (1996) found that 90% rated treating the psychological aspect of an injury as “relatively important” or “very important” in athletes’ overall recovery. However, the majority of the ATs (76.1%) indicated that they had never referred an injured athlete to mental health counseling to treat the emotional consequences of injury. In fact, the ATs reported referring injured athletes in only 8.2% of their cases. Furthermore, only 8.8% of the ATs had a written procedure to guide this referral process. Referrals to mental health practitioners are not made solely in the case of injury, but also for issues related to eating disorders, substance abuse, and mental disorders (LaRue, 2011; Mensch & Miller, 2008; Stiller-Ostrowski & Ostrowski, 2009; Whitson et al., 2006). One study to date that has examined the various mental health issues among athletes that ATs are seeing in their practice (e.g., eating disorders, attention deficit and hyperactivity disorder, depression, anxiety and panic, self-injury, substance abuse, posttraumatic stress disorder, other mood disorders, and violence) and the role ATs assume in recognition and referral of such issues (LaRue, 2010). Additionally, this study investigated ATs’ educational training to recognize, intervene, and refer athletes to mental health professionals. The author used a semi-structured interview with 18 ATs employed at different colleges and universities and identified several themes that contributed to
the successful recognition and referral of mental health issues, including convenience of campus counseling centers, recognition of a decline in athletic performance, and ATs’ prior experience with the issue. Familiar, free, and easily accessible counseling centers had a positive impact on mental health referrals. According to the ATs, a decline in athletes’ performance indicated that something was unusual, thus made it easier to initiate a conversation with athletes to seek out the reasons that caused the downfall. If ATs had friends, family, or personal experiences with mental health issues, they also expressed a greater willingness to talk with athletes. Lack of confidence with recognizing mental health issues, lack of resources to access team physicians on a frequent basis, and highly visible location of campus counseling where athletes could be identified by their peers were considered negative aspects i.e., factors that led to a poorer chance of recognition and referral of athletes. Some of the ATs that were interviewed expressed that they were uncomfortable and unconfident in dealing with psychological concerns. This lack of self-efficacy can be problematic if they are unable to identify symptoms, diagnose correctly, and refer athletes to receive the appropriate care. Further, in discussing to whom they made referrals when athletes were experiencing certain mental health issues, ATs reported that they referred athletes who are depressed to team physicians, off-campus and on-campus counseling centers and neuropsychologists. In extreme cases of student-athletes who were suicidal, they were referred to emergency rooms.

ATs are expected to refer athletes when there are threats to their (or others) health, safety, and welfare, when the ATs (or their supervisors) do not have the expertise to address the psychological needs of the athlete, and when the ATs do not have the time or resources to meet the needs of the athlete (Mensch & Miller, 2008). Yet, even when ATs are not adequately trained, or legally, ethically, and professionally permitted, they often are asked to counsel
athletes who are experiencing a wide range of emotional and psychosocial issues (Mensch, 2008). Moulton, Molstad, and Turner (1997) assessed 14 (8 men and 6 women) Division I ATs’ perceptions regarding their role in counseling athletes, how qualified they were to do so, and how they could gain the knowledge and skills necessary to feel competent in counseling. A majority of ATs (79%) noted that counseling the athletes on personal issues was necessary in their role, but 86% indicated that they would rather counsel athletes concerning injuries. Although the ATs said that they were willing to counsel their clients, they expressed a lack of adequate training in the ability to effectively deal with psychological and emotional problems. Only 36% believed they had received training in basic counseling techniques; 79% expressed a need to enroll in continuing education credits to learn more about counseling techniques. Further, 71% stated they referred athletes to on-campus professional counseling services (e.g., counseling center) for their personal issues (about 1 to 6 athletes per semester). One third of the ATs made off-campus referrals, but the article was not clear to whom they referred.

When making a referral, Lemberger (2008) argued that ATs must take into consideration the presenting problem of the athlete as well as the expertise, personal style, and theoretical orientation of the mental health provider. In some instances a referral to a psychiatrist may be most appropriate, but in other situations the athlete might benefit most from working with a psychologist. Misasi et al. (1996) surveyed ATs and asked where or to which professionals they referred student-athletes – sport psychologist, counselors on campus, health center, or outside agency, such as a community mental health center. Almost one fourth of ATs sampled (27%) responded that they always referred athletes to a counselor on campus, whereas 31% indicated that they “often” do. Approximately one fifth of ATs (21%) responded “sometimes”, and even fewer (8%) stated that they rarely refer to a counselor. Almost half of the ATs (48%) “often”
referred athletes to the health center; 23% did so “sometimes.” With respect to sport psychologists, 52% reported rarely referring to them; 48% “rarely” referred to outside agencies.

Because of their frequent contact with athletes, ATs often are the first professionals to notice and then provide physical, emotional, and psychological assistance to athletes. Moreover, ATs are expected to implement psychosocial interventions, including counseling, and know when to provide referrals to mental health providers (NATA, 2011). ATs have indicated that they believe that the psychological consequences of injury can negatively affect athletes and that their mental well-being can be important in the rehabilitation process; however, very few ATs have referred athletes to counseling to deal more effectively with their psychological distress (Larson et al, 1996). There are many reasons why ATs generally do not refer athletes for mental health services, such as being either overly confident in their abilities to deal with the athletes’ problems themselves (Cramer & Perna, 2000) and lack of confidence in their recognition of psychosocial issues (LaRue, 2010). ATs have reported that, by and large, they are not trained to provide counseling (Misasi et al., 1996); yet, research also shows that ATs perceive their roles as extending beyond the prevention and care of athletic injuries and into the role of counselor (Moulton et al., 1997). However, they may be more comfortable counseling or referring in certain situations than others, such as when athletes are injured. If ATs decide to refer athletes to counseling, they must decide who and where might be good “fit” for the athletes’ presenting problem and personality. Thus, future studies may want to examine more closely ATs referral practices in relation to different scenarios they may experience with athletes (e.g., decrement in athletic performance, struggle with personal issues, display of signs and symptoms consistent with various mental health disorders).
Potential Factors that Influence Symptom Recognition, Diagnosis, and Intervention

ATs’ Educational Training.

To examine their academic preparation as counselors, a sample of 90 ATs were chosen at random from different universities and colleges (Misasi et al., 1996), and asked to rank order 11 topic areas in terms of prior counseling experience. Additionally, they were asked if their ATEP prepared them to counsel in those areas. Counseling athletes in the areas of injury rehabilitation and injury prevention were ranked 1 and 2 in terms of past experiences, followed by nutrition, alcohol, drug use/abuse, sexual issues, relationship issues, racial issues, family matters, financial issues, and suicide. In regards to whether or not they believed that their ATEP had prepared them to counsel in certain areas, 94% of ATs responded yes to being prepared in the area of injury prevention, 93% in injury rehabilitation, and 78% in nutrition. Few reported being prepared to counsel regarding family matters (9%), financial issues (9%), racial issues (6%), and suicide (5%).

Stiller-Ostrowski and Ostrowski (2009) examined ATs’ perceptions of the adequacy of their undergraduate ATEPs in regards to psychosocial strategies, such as counseling and social support development, and psychosocial referral in such instances as eating disorders, emotional issues, and psychological issues (e.g., depression). Eleven ATs, drawn from 11 different undergraduate ATEPs from across the U.S., were interviewed and asked to rank how well their ATEP prepared them in the content area of psychosocial strategies and referral (e.g., communication, athlete motivation and adherence, social support and counseling, mental skills training such as relaxation and imagery, and psychosocial referral). In regards to communication, the ATs believed they were best prepared to create injury reports, talk with coaches, attend physician appointments, and report to their supervisor. However, all 11 ATs
indicated that they did not receive any training on how to communicate information regarding the athletes’ emotional and psychological well-being to the athletes’ parents or legal guardians because they were not given opportunities to do so. Regarding the use of strategies to enhance athletes’ motivation and adherence to rehabilitation, ATs’ training varied considerably, particularly in relation to the use of goal setting strategies. All ATs reported learning goal setting to some extent; however, 91% said they were not given in-depth practice and none could recall the components of goal-setting. None of the ATs recalled learning about the benefits of social support for their athletes, and they were not given opportunities to develop counseling skills. Furthermore, although the ATs recalled learning about psychological and emotional responses to injury, stress management, relaxation, and visualization/imagery in their classes, they did not think they were adequately prepared to handle these issues or use these strategies in clinical settings. Lastly, although all ATs noted that they understood when to refer in potential situations, such as eating disorders, emotional issues, and depression, 91% indicated they were not adequately trained in the actual process to make a mental health referral. All ATs believed that they knew when to refer but felt uncomfortable in approaching athletes about the problems and/or making the actual referral to a mental health care provider. Results of this study mirrored LaRue’s (2010) in that ATs stated that their educational preparation was inadequate in terms of mental health recognition and referral. One aspect of the current study will examine whether or not athletes can identify symptoms of depression and diagnose appropriately.

Stiller-Ostrowski and Hamson-Utley (2010) examined satisfaction of the educational preparation on psychological issues and their confidence in implementing related techniques in a sample of 1701 ATs who had graduated within the past 7 years. ATs were asked to rate statements taken from the psychosocial strategies and referral content area of the Competencies
(e.g., describe the basic signs and symptoms of emotional disorders; conduct appropriate referral procedures for accessing health service agencies; 2011) from 1, “completely dissatisfied/unconfident”, to 9, “completely satisfied/confident. Although a majority of ATs (59.9% to 74.66%; n = 1019 to 1270) recalled being educated on psychoses, neuroses, and mental skills training techniques (e.g., visualization/imagery, relaxation, self-talk/cognitive restructuring), “neutral satisfaction” was the highest frequency of response when asked about their ability to describe the basic signs and symptoms of psychoses (19.2%; n = 327) and neuroses (17.8%; n = 303). Furthermore, ATs rated themselves unconfident to counsel psychoses (45.7%; n = 777) and neuroses (40.0%; n = 680).

ATs are supposed to be competent in applying psychological strategies and techniques in their practice, as well as understand when a referral to a mental health professional is appropriate and be able to act accordingly (NATA, 2011). Because ATs work closely with athletes and oversee not only their medical care but are attuned to their emotional and psychosocial functioning, they are considered the gatekeepers to the general health care services (e.g., physical therapists, physicians, and mental health professionals; Prentice, 2006). Thus, over the past decade, ATEPs have started incorporating courses that cover psychosocial issues, such as sport psychology, mental illness (e.g., depression), and developing a referral network of mental health providers (Stiller-Ostrowski & Ostrowski, 2009; Stiller-Ostrowski & Hamson-Utley, 2010). Unfortunately, even with the inclusion of such coursework, ATs often do not get clinical practice or experience in how to recognize mental issues in order to counsel or refer to a mental health professional (Stiller-Ostrowski & Hamson-Utley, 2010). The results of these studies demonstrate that ATs are confident in dealing with issues such as injury prevention and
rehabilitation, but are less so when it comes to recognizing, diagnosing, and intervening with athletes’ emotional and psychosocial functioning.

**Attitudes towards Mental Health and Psychological Services.**

There are no studies that examine ATs’ attitudes towards mental health and psychological services. Researchers, however, have examined these attitudes with professionals in a very closely related role to ATs, primary care physicians (PCPs; Beacham et al., 2012; Pryor & Knowles, 2001; Westheimer, Steinley-Bumgarner & Brownson, 2008). Just like ATs, PCPs are regarded as being the initial point of entry into the healthcare system. Although some studies have shown that PCPs favor mental health services (Pryor & Knowles, 2001), other research results indicate that PCPs may hold less positive views (Kainz, 2004; Kessler, 2005).

Attitudes and perceptions of, and access to, mental health services influence referral practices of PCPs and integrated primary care (i.e., a collaborative approach in patient care, involving the PCP with other professionals including those in mental health; Beacham et al., 2012; Westheimer et al., 2008). Beacham et al. (2012) examined PCPs’ referral rates and perceived need for and helpfulness of mental health professionals in two groups – one community-based without integrated primary care and one health center that had integrated primary care. When asked what percentage of patients needed mental health services, the health center clinic PCPs reported 59.17% as compared with 41.03% in the community-based group. There was even more variability in the PCPs’ ratings of helpfulness and referral likelihood for issues of depression: the health center PCPs (97%) perceived more helpfulness and endorsed more referrals than the community-based sample (41%). PCPs with more positive attitudes of mental health services, even across sex, were more likely to provide referrals to psychological providers than those who hold more negative perceptions.
Studies also suggest that sex may be related to attitudinal differences in mental health treatment and referral. In general, women tend to hold more positive perceptions towards seeking mental health treatment than men (Gonzalez, Alegria, Prihoda, Copeland, & Zeber, 2011; Nam et al., 2013). Men have also reported using mental health services less frequently than women (Wang et al., 2005). Men, in comparison to women, have less positive perceptions of sport psychology and of working with sport psychologists and other mental health professionals (e.g., Brewer et al., 1994; Linder et al., 1991; Maniar et al., 2001; Martin, 2005). For example, high school (159 boys and 203 girls) and college (247 men and 184 women) athletes were administered a form that measured their attitudes towards sport psychology consulting (Martin, 2005). High scores on the stigma tolerance factor indicated possible negative attitudes, and responses were on a 7-point scale and ranged from 1, “strongly disagree”, to 7, “strongly agree.” Male athletes ($M = 3.12$) were significantly more likely to stigmatize (i.e., have negative perceptions of) sport psychology consultants than female athletes ($M = 2.47$). In addition, high school students ($M = 3.07$) and physical contact sport athletes ($M = 3.14$) were more likely to have negative attitudes towards sport psychology than college students ($M = 2.75$) and physical non-contact athletes ($M = 2.63$). Future studies may want to look at sex of the ATs and how it relates to ATs’ views towards psychological services, symptom recognition and diagnosis of mental disorders, and treatment of psychosocial issues.

**Sex Differences on Mental Health.**

Women report more depressive symptoms and are diagnosed with clinical depression more often than men (Appaneal et al., 2009; Armstrong and Oomen-Early, 2009). For example, a sample of college athletes and non-athletes (136 women and 91 men) were administered measures of depression, social connectedness, and self-esteem (Armstrong & Oomen-Early,
Female college students had higher levels of depression ($M = 16.69$) than their male counterparts ($M = 13.41$); however, men and women did not differ on self-esteem or connectedness. The researchers also discovered that college athletes rated themselves as having more self-esteem, more social connectedness, and lower depression than non-athletes, regardless of sex.

Not only do women report more depressive symptoms than men, mental health professionals may be biased towards diagnosing women with depression when presented with similar symptoms (Angermeyer, Matschinger, & Holzinger, 1998; Becker & Lamb, 2004). Eriksen and Kress (2008) reviewed the literature on the prevalence of diagnoses by sex, sex bias in diagnosis, the impact of diagnoses on women, and the relationship between diagnosis and socialization. They argued that sex bias in diagnosis represented a socialization in which masculine traits (e.g., independent, assertive, active, autonomous) were viewed as an indication of mental health, whereas feminine traits (e.g., dependent on others, weak, passive, compliant) were seen as more psychologically unhealthy. As such, women tended to be over diagnosed or more readily diagnosed with mood and anxiety disorders, whereas men generally are underdiagnosed.

Maniar et al. (2001) examined whether or not sex influenced athletes’ willingness to seek help from various sources (e.g., coach, psychologist, AT) when faced with different presenting problems. NCAA Division I athletes (32 men and 28 women) were recruited to complete a questionnaire while imagining three scenarios: a performance slump, recovery from a serious injury, and a desire to perform more optimally. Overall, the female athletes were more willing to seek help than the male athletes, especially in cases of performance slumps and optimal performance ($d = .72$, and $.63$, respectively). In addition, the female athletes indicated
significantly higher preferences to seek help from sport counselors and sport psychologists than male athletes (d = .62, and .58, respectively); however, the male athletes were more willing to seek help from clinical psychologists and minister/pastor than their female counterparts (d = .55, and .54 respectively).

Women, in comparison to men, generally have more positive perceptions about sport psychology, and may be more likely to seek psychological help from a sport psychologist (Martin, 2005). Although women tend to report more depressive symptoms and have higher prevalence rates of depression, they also are more likely to receive a diagnosis under identical symptomatology than men due to societal conditions and perceptions (Eriksen & Kress, 2008). Results of these studies demonstrate the importance of taking personal characteristics such as sex of the athlete, years of sport experience, and attitudes of sport psychology into account when providing psychosocial interventions or referrals to mental health professionals. However, to date, no studies have examined the potential sex bias that might exist in ATs in their work with male and female athletes, particularly as it relates to their abilities to recognize symptoms of psychological distress and provide appropriate referrals for treatment.

**Summary.**

Since the late 1990s, NATA has become increasingly aware of the importance of the psychological aspects of injury prevention and rehabilitation (Mensch, 2008). As such, ATEPs have begun to include curriculum and practica that address psychosocial intervention and referral, and NATA mandates that ATs be competent in those areas in order to obtain licensure or practice athletic training (NATA, 2011). ATs have been found to use psychological strategies and techniques (e.g., goal-setting, positive self-talk, counseling, imagery) to help athletes maintain motivation to adhere to their injury rehabilitation program and cope with the emotional
consequences of injury. In cases such as disordered eating, substance abuse, suicide, the situation may extend beyond ATs’ training and a referral may be necessary. However, ATs have reported that they do not feel comfortable to approach the athlete in discussing a referral and do not have experience with making a psychological/psychiatric referral (LaRue, 2010; Mensch & Miller, 2008; Stiller-Ostrowski & Ostrowski, 2009).

ATs’ educational preparation, views on mental health, and sex of the ATs and athletes may influence if they can recognize and diagnose psychological distress in athletes, as well as decide how to intervene if at all. ATs have indicated that they are academically underprepared to recognize and diagnose mental disorders (e.g., depression) and do not have experience in referring athletes for mental health counseling (Stiller-Ostrowski & Ostrowski, 2009). They also believe that they are better trained academically to counsel in certain situations than others, such as injury prevention and rehabilitation over relationship, financial, or family issues (Misasi et al., 1996). ATs, due to their similarities to other healthcare professionals (e.g., PCPs), may hold negative attitudes towards mental illnesses and/or help-seeking, which may then impact their willingness to refer athletes for psychological treatment. Because women generally have more positive perceptions of mental health services than men, sex of the practitioner can also influence negative views of help-seeking, and may influence to whom they would refer the athlete if they found it necessary at all (Eriksen & Kress, 2008; Martin, 2005; Wang et al., 2005). Lastly, sex of the athlete may also skew ATs’ psychological diagnoses, because mental health professionals have been found to diagnose certain mental health disorders (e.g., depression, anxiety) more readily in women than in men (Eriksen & Kress, 2008). Only one study thus far has assessed ATs’ abilities to rate athletes’ behaviors related to psychological distress during injury rehabilitation (Brewer et al., 1995). Future studies will want to examine how ATs’ would
respond when athletes present with depressive symptoms in various scenarios in terms of symptom recognition, mental diagnosis, the decision to make a psychological/psychiatric referral, and the factors that could influence their abilities to do so.

Study Aims and Hypotheses

The primary focus of this study will be to examine ATs’ ability to recognize, diagnose, and intervene in (e.g., provide psychological referral to athletes) the mental health concerns (i.e., symptoms of depression) of a collegiate athlete. More specifically, this study will examine the factors that may influence ATs’ abilities to recognize, diagnose, and intervene, such as sex of the AT, sex of the athlete, and type of presenting problem (e.g., athletic injury, romantic relationship, or sport performance issue). These factors may influence ATs’ (a) perceptions of the presence and severity of the athlete’s depressive symptoms, (b) psychological diagnosis given to the athlete, and (c) belief in the necessity of referring the athlete to a mental health professional (or decision to work with athletes on their own).

My hypotheses are:

1. Due to less positive perceptions of working with mental health professionals, male ATs will be less likely than female ATs to refer the athletes to a sport psychology consultant, counselor/psychologist, or psychiatrist, independent of the type of presenting problem and sex of the athlete. Male ATs will be more likely than their female counterparts to treat athletes themselves.

2. With regard to types of presenting problems, because ATs are confident in their abilities to counsel injured athletes, it is hypothesized that they will be most likely to treat athletes experiencing injury complications themselves.
3. ATs will be most likely to refer athletes in the romantic relationship scenario to a sport psychology consultant, counselor/psychologist, or psychiatrist, given that this problem is more personal and out of the scope of injury.
APPENDIX B

DEMOGRAPHIC DATA SHEET
Thank you for your participation in this project. Please answer ALL questions by clicking on the shaded boxes to enter either an “X” or text response. Please note that the text boxes allow for an unlimited amount of typed information.

General Demographic Information

1. Gender: ☐ Male ☐ Female
2. Age: ________ years

3. Race/Ethnicity: ☐ White, Non-Hispanic ☐ Black, Non-Hispanic ☐ Hispanic
☐ Asian American ☐ Other (please list ________)

4. What is your highest degree? ☐ BA/BS ☐ MA/MS ☐ PhD/PsyD/EdD ☐ MD
☐ Other (please list ________)

5. In what year did you receive your highest degree?

6. In what area was your highest degree awarded?
☐ Athletic training ☐ Physical therapy ☐ Kinesiology
☐ Exercise science ☐ Physical education ☐ Education
☐ Other (please list ________)

7. What is your current occupation(s)? Please rank your occupation(s) based upon the amount of time you dedicate to each one during an average week (e.g., rank “1” for your primary occupation, that is, the one you spend the most time in; “2” for your secondary occupation, etc.). If an occupation does not apply, please leave that item blank.

<table>
<thead>
<tr>
<th>Athletic trainer</th>
<th>Physical therapist</th>
<th>Coach/Asst. Coach</th>
</tr>
</thead>
</table>
| College/University professor | High school Teacher | Other (please list ________)

8. In which of the following settings do you work as an athletic trainer? (please check the one that applies best)
☐ High School (Public) ☐ High School (Private) ☐ Community College
☐ 4-Yr College/Univer. ☐ Hospital ☐ Sports Medicine Clinic
☐ Private Practice ☐ Amateur/Prof. Sports Org. ☐ Other (please list ________)

9. Licenses or current certifications: (check all that apply)

| ☐ State license/certificate (please list area ________) | ☐ NATA BOC Certification |
| ☐ Other (please list ________) |

Over the next few pages, you will be asked to read a scenario involving an athlete and then respond to several questions about the athlete’s symptoms, problems/diagnoses, and treatment options. There are no right or wrong answers, so please respond honestly as to how you would handle this athletic situation.
APPENDIX C

ATHLETE SCENARIOS
Athlete Scenarios

Male-Injury Condition

Please read the following scenario about Mike, a college basketball player that you have been treating. After reading the scenario, please answer the following questions.

Mike is an 18-year-old single, Caucasian male. He is a freshman college student who competes on his university’s Division I basketball team. Over the last few months, you have had the opportunity to get to know Mike pretty well through his daily visits to the training room to ice a previous injury. In general, you think Mike is a hard-working, energetic, and positive person to be around.

By talking with him in the training room, you learn that during high school, Mike was a star basketball player and was heavily recruited by many college programs. So far in college, Mike has continued to be successful in basketball, as well as in academics and friendships. During his first semester of school, Mike earned a 3.6 GPA. Now in his second semester of college, he is in the middle of his first college basketball season. On the basketball team, he is the starting forward, is shooting 60% from the field, and is averaging just over 15 points/game. He is also one of the team’s best free throw shooters, with an 89% average. Mike also is very social at school, forming close friendships with many of his teammates. Currently, he lives in an on-campus dorm with another freshman teammate. Although Mike feels good about the friendships he’s developed at college, he’s stated that he misses his family and wishes he could see them more often. His family still lives in the town where he grew up, which is located over 1000 miles away from where he is going to school.

Three weeks ago, Mike suffered a third degree ankle sprain while rebounding during the second half of a close game. Since that time, he has been unable to practice or compete with the team and spends most of the team’s practice time in the training room completing rehabilitation exercises. When he visited the training room yesterday, he expressed concern about how slowly his recovery was going and that he would not regain his edge or his starting position. As he talked with you, tears started to form in his eyes. Mike said, “I have not been feeling like myself during the past few weeks.” He commented that despite sleeping almost 10 hours a day, he feels tired most of the time. He stated that he seems to “just lack the motivation for basketball and school.” In fact, he has missed a few classes and when he has attended, he has had considerable difficulty focusing. He often feels “on edge” and is distracted when he sits down to do his homework. He also reported that he spends a lot of time alone in his dorm room because he does not feel like socializing with friends or doing the things he used to enjoy. He has experienced some recent conflicts with his teammates, with several becoming angry because of his attitude. Mike stated that he’s “tired of feeling this way” and wishes “this could all be over.”
Female-Injury Condition

Please read the following scenario about Michelle, a college basketball player. After reading the scenario, please answer the following questions.

Michelle is an 18-year-old single, Caucasian female. She is a freshman college student who competes on her university’s Division I basketball team. Over the last few months, you have had the opportunity to get to know Michelle pretty well through her daily visits to the training room to ice a previous injury. In general, you think Michelle is a hard-working, energetic, and positive person to be around.

By talking with her in the training room, you learn that during high school, Michelle was a star basketball player and was heavily recruited by many college programs. So far in college, Michelle has continued to be successful in basketball, as well as in academics and friendships. During her first semester of school, Michelle earned a 3.6 GPA. Now in her second semester of college, she is in the middle of her first college basketball season. On the basketball team, she is the starting forward, is shooting 60% from the field, and is averaging just over 15 points/game. She is also one of the team’s best free throw shooters, with an 89% average. Michelle also is very social at school, forming close friendships with many of her teammates. Currently, she lives in an on-campus dorm with another freshman teammate. Although Michelle feels good about the friendships she’s developed at college, she’s stated that she misses her family and wishes she could see them more often. Her family still lives in the town where she grew up, which is located over 1000 miles away from where she is going to school.

Three weeks ago, Michelle suffered a third degree ankle sprain while rebounding during the second half of a close game. Since that time, she has been unable to practice or compete with the team and spends most of the team’s practice time in the training room completing rehabilitation exercises. When she visited the training room yesterday, she expressed concern about how slowly her recovery was going and that she would not regain her edge or her starting position. As she talked with you, tears started to form in her eyes. Michelle said, “I have not been feeling like myself during the past few weeks.” She commented that despite sleeping almost 10 hours a day, she feels tired most of the time. She stated that she seems to “just lack the motivation for basketball and school.” In fact, she has missed a few classes and when she has attended, she has had considerable difficulty focusing. She often feels “on edge” and is distracted when she sits down to do her homework. She also reported that she spends a lot of time alone in her dorm room because she does not feel like socializing with friends or doing the things she used to enjoy. She has experienced some recent conflicts with her teammates, with several becoming angry because of her attitude. Michelle stated that she’s “tired of feeling this way” and wishes “this could all be over.”
Male-Performance Condition

Please read the following scenario about Mike, a college basketball player that you have been treating. After reading the scenario, please answer the following questions.

Mike is an 18-year-old single, Caucasian male. He is a freshman college student who competes on his university’s Division I basketball team. Over the last few months, you have had the opportunity to get to know Mike pretty well through his daily visits to the training room to ice a previous injury. In general, you think Mike is a hard-working, energetic, and positive person to be around.

By talking with him in the training room, you learn that during high school, Mike was a star basketball player and was heavily recruited by many college programs. So far in college, Mike has continued to be successful in basketball, as well as in academics and friendships. During his first semester of school, Mike earned a 3.6 GPA. Now in his second semester of college, he is in the middle of his first college basketball season. On the basketball team, he is the starting forward, is shooting 60% from the field, and is averaging just over 15 points/game. He is also one of the team’s best free throw shooters, with an 89% average. Mike also is very social at school, forming close friendships with many of his teammates. Currently, he lives in an on-campus dorm with another freshman teammate. Although Mike feels good about the friendships he’s developed at college, he’s stated that he misses his family and wishes he could see them more often. His family still lives in the town where he grew up, which is located over 1000 miles away from where he is going to school.

Three weeks ago, Mike’s sport performance began to significantly decline. During the past seven games, his performance has been consistently poor, with his seven-game field goal average dropping to just under 30% and his free throw average to 65%. As a result of his poor performance, he lost his starting position and has received substantially less playing time. When he visited the training room yesterday, he told you he was worried about his slump and wondered what he had to do to get out of it. As he talked with you, tears started to form in his eyes. Mike said, “I have not been feeling like myself during the past few weeks.” He commented that despite sleeping almost 10 hours a day, he feels tired most of the time. He stated that he seems to “just lack the motivation for basketball and school.” In fact, he has missed a few classes and when he has attended, he has had considerable difficulty focusing. He often feels “on edge” and is distracted when he sits down to do his homework. He also reported that he spends a lot of time alone in his dorm room because he does not feel like socializing with friends or doing the things he used to enjoy. He has experienced some recent conflicts with his teammates, with several becoming angry because of his attitude. Mike stated that he’s “tired of feeling this way” and wishes “this could all be over.”
Female-Performance Condition

Please read the following scenario about Michelle, a college basketball player. After reading the scenario, please answer the following questions.

Michelle is an 18-year-old single, Caucasian female. She is a freshman college student who competes on her university’s Division I basketball team. Over the last few months, you have had the opportunity to get to know Michelle pretty well through her daily visits to the training room to ice a previous injury. In general, you think Michelle is a hard-working, energetic, and positive person to be around.

By talking with her in the training room, you learn that during high school, Michelle was a star basketball player and was heavily recruited by many college programs. So far in college, Michelle has continued to be successful in basketball, as well as in academics and friendships. During her first semester of school, Michelle earned a 3.6 GPA. Now in her second semester of college, she is in the middle of her first college basketball season. On the basketball team, she is the starting forward, is shooting 60% from the field, and is averaging just over 15 points/game. She is also one of the team’s best free throw shooters, with an 89% average. Michelle also is very social at school, forming close friendships with many of her teammates. Currently, she lives in an on-campus dorm with another freshman teammate. Although Michelle feels good about the friendships she’s developed at college, she’s stated that she misses her family and wishes she could see them more often. Her family still lives in the town where she grew up, which is located over 1000 miles away from where she is going to school.

Three weeks ago, Michelle’s sport performance began to significantly decline. During the past seven games, her performance has been consistently poor, with her seven-game field goal average dropping to just under 30% and her free throw average to 65%. As a result of her poor performance, she lost her starting position and has received substantially less playing time. When she visited the training room yesterday, she told you she was worried about her slump and wondered what she had to do to get out of it. As she talked with you, tears started to form in her eyes. Michelle said, “I have not been feeling like myself during the past few weeks.” She commented that despite sleeping almost 10 hours a day, she feels tired most of the time. She stated that she seems to “just lack the motivation for basketball and school.” In fact, she has missed a few classes and when she has attended, she has had considerable difficulty focusing. She often feels “on edge” and is distracted when she sits down to do her homework. She also reported that she spends a lot of time alone in her dorm room because she does not feel like socializing with friends or doing the things she used to enjoy. She has experienced some recent conflicts with her teammates, with several becoming angry because of her attitude. Michelle stated that she’s “tired of feeling this way” and wishes “this could all be over.”
Male-Romantic Relationship Condition

Please read the following scenario about Mike, a college basketball player that you have been treating. After reading the scenario, please answer the following questions.

Mike is an 18-year-old single, Caucasian male. He is a freshman college student who competes on his university’s Division I basketball team. Over the last few months, you have had the opportunity to get to know Mike pretty well through his daily visits to the training room to ice a previous injury. In general, you think Mike is a hard-working, energetic, and positive person to be around.

By talking with him in the training room, you learn that during high school, Mike was a star basketball player and was heavily recruited by many college programs. So far in college, Mike has continued to be successful in basketball, as well as in academics and friendships. During his first semester of school, Mike earned a 3.6 GPA. Now in his second semester of college, he is in the middle of his first college basketball season. On the basketball team, he is the starting forward, is shooting 60% from the field, and is averaging just over 15 points/game. He is also one of the team’s best free throw shooters, with an 89% average. Mike also is very social at school, forming close friendships with many of his teammates. Currently, he lives in an on-campus dorm with another freshman teammate. Although Mike feels good about the friendships he’s developed at college, he’s stated that he misses his family and wishes he could see them more often. His family still lives in the town where he grew up, which is located over 1000 miles away from where he is going to school.

Three weeks ago, Mike’s girlfriend of the last three years, broke up with him. Mike thought she was “the one” and hoped to marry her one day. When he visited the training room yesterday, Mike told you how devastated he was by the breakup and how he felt lost without her. As he talked with you, tears started to form in his eyes. Mike said, “I have not been feeling like myself during the past few weeks.” He commented that despite sleeping almost 10 hours a day, he feels tired most of the time. He stated that he seems to “just lack the motivation for basketball and school.” In fact, he has missed a few classes and when he has attended, he has had considerable difficulty focusing. He often feels “on edge” and is distracted when he sits down to do his homework. He also reported that he spends a lot of time alone in his dorm room because he does not feel like socializing with friends or doing the things he used to enjoy. He has experienced some recent conflicts with his teammates, with several becoming angry because of his attitude. Mike stated that he’s “tired of feeling this way” and wishes “this could all be over.”
Please read the following scenario about Michelle, a college basketball player. After reading the scenario, please answer the following questions.

Michelle is an 18-year-old single, Caucasian female. She is a freshman college student who competes on her university’s Division I basketball team. Over the last few months, you have had the opportunity to get to know Michelle pretty well through her daily visits to the training room to ice a previous injury. In general, you think Michelle is a hard-working, energetic, and positive person to be around.

By talking with her in the training room, you learn that during high school, Michelle was a star basketball player and was heavily recruited by many college programs. So far in college, Michelle has continued to be successful in basketball, as well as in academics and friendships. During her first semester of school, Michelle earned a 3.6 GPA. Now in her second semester of college, she is in the middle of her first college basketball season. On the basketball team, she is the starting forward, is shooting 60% from the field, and is averaging just over 15 points/game. She is also one of the team’s best free throw shooters, with an 89% average. Michelle also is very social at school, forming close friendships with many of her teammates. Currently, she lives in an on-campus dorm with another freshman teammate. Although Michelle feels good about the friendships she’s developed at college, she’s stated that she misses her family and wishes she could see them more often. Her family still lives in the town where she grew up, which is located over 1000 miles away from where she is going to school.

Three weeks ago, Michelle’s boyfriend of the last three years, broke up with her. Michelle thought he was “the one” and hoped to marry him one day. When she visited the training room yesterday, Michelle told you how devastated she was by the breakup and how she felt lost without him. As she talked with you, tears started to form in her eyes. Michelle said, “I have not been feeling like myself during the past few weeks.” She commented that despite sleeping almost 10 hours a day, she feels tired most of the time. She stated that she seems to “just lack the motivation for basketball and school.” In fact, she has missed a few classes and when she has attended, she has had considerable difficulty focusing. She often feels “on edge” and is distracted when she sits down to do her homework. She also reported that she spends a lot of time alone in her dorm room because she does not feel like socializing with friends or doing the things she used to enjoy. She has experienced some recent conflicts with her teammates, with several becoming angry because of her attitude. Michelle stated that she’s “tired of feeling this way” and wishes “this could all be over.”
APPENDIX D

SYMPTOM, PROBLEM, DIAGNOSIS, AND REFERRAL RATINGS
# Symptom Ratings

1. To what extent are the following symptoms present for this athlete:
   (check ONE box for EACH ITEM)

<table>
<thead>
<tr>
<th></th>
<th>Not at All</th>
<th>A little</th>
<th>Moderately</th>
<th>Quite a bit</th>
<th>Extremely</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>g.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>h.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>i.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>j.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>k.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>l.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>m.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>n.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>o.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>p.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>q.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>r.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>s.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>t.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

# Problem Ratings

2. Which of the following problems is this athlete currently experiencing?

<table>
<thead>
<tr>
<th></th>
<th>Not at All</th>
<th>A little</th>
<th>Moderately</th>
<th>Quite a bit</th>
<th>Extremely</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Diagnosis Ratings

3. Please indicate the extent to which this athlete appears to have each of the following types of psychological disorders: (check **ONE** box for **EACH** item)

<table>
<thead>
<tr>
<th>Disorder Not At All Likely</th>
<th>Disorder Somewhat Likely</th>
<th>Disorder Extremely Likely</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Disorder</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anxiety Disorder</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sleep Disorder</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjustment Disorder</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depressive Disorder</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Substance Abuse</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Recommendations for Referral

4. Based upon the information provided in the scenario and your perception of this athlete’s primary problem/diagnosis, how likely would you refer the athlete to:

<table>
<thead>
<tr>
<th>Not at all Likely</th>
<th>Somewhat Likely</th>
<th>Extremely Likely</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Refer to</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coach/Assistant Coach</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Counselor/Psychologist*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical Therapist</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physician</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychiatrist**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sport Psychology Consultant***</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>I would treat the athlete myself</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Please briefly discuss your recommendations regarding referral:**

*Counselors/psychologists are professionals who provide counseling or psychotherapy to individuals experiencing psychological disorders and other cognitive, behavioral, emotional, and social concerns.*

**A psychiatrist is a professional who evaluates and treats individuals with mental and emotional disorders, primarily with medication.*

***A sport psychology consultant is a professional who educates others about the role of psychological factors in exercise, physical activity and sport, and teaches them specific cognitive, behavioral, emotional, and psychosocial skills to use in these contexts.*

If you marked **one of the three circled boxes** for question #4g., “I would treat the athlete myself,” please answer questions #5 and #6. If you did not mark one of the circled boxes, you have finished the questionnaire.
REFERENCES


