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Examination of a Screening Tool for Athletes' Mental Health and its Direct Implications to Sport Training and Competition

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EXAMINATION OF A SCREENING TOOL FOR ATHLETES' MENTAL HEALTH AND
ITS DIRECT IMPLICATIONS TO SPORT TRAINING AND COMPETITION

By

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Bachelor of Arts – Psychology
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A thesis submitted in partial fulfillment of the requirements for the

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ABSTRACT

Examination of a Screening Tool for Athletes' Mental Health and its Direct Implications to Sport Training and Competition

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The Sport Interference Checklist (SIC) is a psychometrically validated instrument designed to assess how often cognitive and behavioral factors interfere with athletes performance during training and/or competition as well as the extent to which athletes are interested in pursuing sport psychology to address these problems. The success of this scale inspired an interest in developing new items that assess the influence of specific mental health concerns on sport performance using the SIC format. The Sport Interference Checklist's Sport Specific Screen for Mental Health (SIC-SSSMH) was empirically developed using 259 athletes to assist in the identification of mental health problems explicitly reported to influence sport performance in both training (SIC-SSSMH-T) and competitive settings (SIC-SSSMH-C). An additional scale was developed to determine athletes' desire to pursue services from a sport psychologist for endorsed sport-specific mental health factors (SIC-SSSMH-DSP).

Factor analyses of SIC-SSSMH-T and SIC-SSSMH-C items reveal one factor for each scale, accounting for 38% of the total variance on the Training scale and 36% of the total variance on the Competition scale. SIC-SSSMH-DSP items also yielded one factor accounting for 54% of total variance. Factor scores for each of these scales exhibit acceptable internal consistency. In addition, these scales demonstrate high convergent validity when compared to the Symptom Checklist 90-Revised (SCL-90-R), a well-established screen for general mental health

factors. Recommendations for future screening sport-specific mental health factors are discussed in light of the results.

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TABLE OF CONTENTS

| | |
|---|-----|
| ABSTRACT..... | iii |
| ACKNOWLEDGEMENTS..... | v |
| CHAPTER 1 INTRODUCTION..... | 1 |
| CHAPTER 2 LITERATURE REVIEW..... | 4 |
| Mental Health of Student-Athletes..... | 4 |
| Identification of Mental Health Problems in Student-Athletes..... | 5 |
| Current Practices in Athlete Mental Health Screening..... | 6 |
| CHAPTER 3 THE PRESENT STUDY..... | 10 |
| Methods..... | 10 |
| Participants..... | 10 |
| Measures..... | 10 |
| Demographics Form..... | 10 |
| Sport Interference Checklist Sport Specific Screen for Mental Health..... | 11 |
| Symptom Checklist-90-Revised..... | 11 |
| Procedure..... | 12 |
| Study Hypothesis and Statistical Plan..... | 13 |
| CHAPTER 4 ANALYSIS..... | 16 |
| Results..... | 16 |
| Descriptive Results..... | 16 |
| SIC-SSSMH-T (Problems in Sport Training Scale)..... | 17 |
| SIC-SSSMH-C (Problems in Sport Competition Scale)..... | 18 |
| SIC-SSSMH-DSP (Desire for Sport Psychology Scale)..... | 20 |
| Analysis of Possible Gender and Athlete Type Effects..... | 20 |
| CHAPTER 5 DISCUSSION..... | 22 |
| Limitations and Future Directions..... | 23 |
| TABLES..... | 27 |
| APPENDIX..... | 37 |
| REFERENCES..... | 38 |
| CURRICULUM VITAE..... | 47 |

LIST OF TABLES

| | | |
|----------|--|----|
| Table 1 | Demographic Information..... | 27 |
| Table 2 | Means and Standard Deviations of Study Variables..... | 27 |
| Table 3 | First Principal Component (SIC-SSSMH-Training)..... | 28 |
| Table 4 | Item Correlations with SCL-90-R (SIC-SSSMH-Training)..... | 29 |
| Table 5 | Item-Total Statistics (SIC-SSSMH-Training)..... | 30 |
| Table 6 | First Principal Component (SIC-SSSMH-Competition)..... | 31 |
| Table 7 | Item Correlations with SCL-90R (SIC-SSSMH-Competition)..... | 32 |
| Table 8 | Item-Total Statistics (SIC-SSSMH-Competition)..... | 33 |
| Table 9 | First Principal Component (SIC-SSSMH-Desire for Sport Psychology Scale)..... | 34 |
| Table 10 | Item Correlations with SCL-90R (SIC-SSSMH-Desire for Sport Psychology Scale)..... | 35 |
| Table 11 | Item-Total Statistics (SIC-SSSMH-Desire for Sport Psychology Scale)..... | 36 |

CHAPTER 1: INTRODUCTION

Sport participation is an important element in the development of many young adults. The National Collegiate Athletics Association (NCAA, 2016a) indicated that over 486,000 athletes participated in athletics at the collegiate level in 2015-2016. Annually, an estimated two million student-athletes compete in intercollegiate club sports (Pennington, 2008) and over eight million university students participate in intramural sports (Dugan, Torrez, & Turman, 2014). The mental health of collegiate athletes is a concern, as athletes display an elevated risk for academic difficulties, physical injury, and mental health issues, such as eating disorders, depression, excessive substance use, anxiety, and sleep problems (Barry, Howell, Riplinger, & Piazza-Gardner, 2015; Bratland-Sanda & Sundgot-Borgen, 2013; Mclester, Hardin, & Hoppe, 2014; Brown et al., 2014). Yet, despite these risks, it seems that current screening and referral practices may be contributing to an underutilization of mental health services by student-athletes (Eisenberg, Golberstein, & Gollust, 2007).

Based on the success of the Sport Interference Checklist (SIC; Donohue et al., 2007), the development of a sport-specific mental health assessment tool was expected to make the referral of student-athletes to mental health services easier and more efficient. In developing the items for the Sport Interference Checklist – Sport Specific Screen for Mental Health (SIC-SSSMH), individuals with experience in competitive sports, created the original items in a 90-minute focus group. The group consisted of 8 individuals because this number of contributors has been shown to encourage maximum individual participation (Bloor, 2001). The focus group engaged in brainstorming sessions and participants were encouraged to discuss their opinions with other group members in order to enhance outcomes (Ritchie & Lewis, 2003). An expert in the field (clinical psychologist) acted as a moderator, largely concerned with guiding the discussion and

helping to identify important themes and ideas (Krueger & Casey, 2000). Utilizing the low content/high process control facilitation approach discussed by Milward (1995), the moderator was tasked with ensuring the efficiency and adequate depth of discussion, but his control over the content of the discussion was minimal. It was determined that three inventories would be attempted for development. Two inventories would screen mental health factors that may interfere with sport training (SIC-SSSMH-T) and competition (SIC-SSSMH-C), and the third inventory would assist in determining a respondent's desire to pursue intervention with a sport psychologist if the mental health factors were present (SIC-SSSMH-DSP). The group's first task was to develop a list of behavioral and cognitive responses, each summarizing a mental health syndrome in the Diagnostic and Statistical Manual – 5th edition (DSM-5). Using this method, 14 items were produced (see Appendix). The Training (SIC-SSSMH-T) and Competition scales (SIC-SSSMH-C) were developed by preceding each of the items with the following prompt: “How often does [item 2: feeling depressed] interfere with your performance during training?” or “How often does [item 7: difficulty sleeping] interfere with your performance during competition?”

The frequency of symptoms may be a reliable indicator of symptom severity and the impairment in functioning, making a frequency scale appropriate for this type of data. Weng (2004) conducted a study examining coefficient alpha and test-retest reliability based on the number of items in a response scale. The results indicated that if participants possess cognitive ability similar to college students, they are likely to provide consistent and reliable responses using a 7-point scale. This measure utilized a 7-point frequency scale ranging from 1 (never) to 7 (always) in responding to the SIC-SSSMH-T and SIC-SSSMH-C items. For each item, the participant is asked to respond three times. The first response assesses how often the item

interferes with their training and the second response assesses how the item interferes with their competition. The third response (SIC-SSSMH-DSP) is a dichotomous (i.e., 1 = no, 2 = yes) response assessing whether the participant would “go to a sport psychologist” for each item “if possible.” A copy of the inventories is included in the Appendix.

The extant literature related to the need for mental health services within the athletic population and the current practices in mental health screening for student-athletes was also reviewed.

CHAPTER 2: LITERATURE REVIEW

Mental Health of Student-Athletes

Although an estimated 20% of adults experience some form of mental illness each year, college-aged adults display the highest rates of mental illness within this group (United States Department of Health and Human Services [USDHHS], 2013). College athletes and their non-athlete peers have similar rates of mental health disorders, with approximately 17% of males and 21% of females currently meeting criteria for depression (Weigand, Cohen, & Merenstein, 2013; Yang et al., 2007). Furthermore, 25% of college-aged females meet criteria for subclinical eating disorders (Greenleaf, Petrie, Carter, & Reel, 2009). A major concern for all college students is the high prevalence of comorbid mental health issues. For instance, students who engage in disordered eating are also likely to display high levels of anxiety (Vardar, Vardar, & Kurt, 2007). Additionally, athletes who experience depressive symptoms tend to have elevated risk for alcohol abuse (Miller, Miller, Verhegge, Linville, & Pumariega, 2002).

College athletes are a unique subset of young adults. Unlike many of their peers who do not participate in athletics, these individuals endure a number of unique challenges, such as maintaining peak physical fitness, adhering to the time demands of their particular sport, and demonstrating acceptable academic performance in order to remain eligible for athletic participation (Broughton & Neyer, 2001). These athletes must also navigate sport-associated stressors such as social isolation, physical and mental fatigue, restricted financial opportunities, and the increased likelihood of injury (Parham, 1993). In addition, college athletes report difficulties in their personal relationships, lack of energy, lack of motivation, and stress related to public criticism (Parham, 1993). These stressors place collegiate student-athletes at a particularly elevated risk for a variety of mental health issues (Sudano, Collins, & Miles, 2017). Among the

National Collegiate Athletic Association (NCAA) athletes who participated between 2008 to 2012, more than 30% of males and nearly 50% of females reported anxiety-related or depressive symptoms (Brown, Hainline, Kroshus, & Wilfert, 2014). Student-athletes also display elevated risk for substance use problems (Donohue et al., 2018; Barry, Howell, Riplinger, & Piazza-Gardner, 2015), eating disorders (Bratland-Sanda & Sundgot-Borgen, 2013; Mclester, Hardin, & Hoppe, 2014), sleep problems, mood disorders, and suicide (Brown et al., 2014).

Identification of Mental Health Problems in Student-Athletes

The early identification of mental health disorders is crucial in reducing the duration and severity of mental health symptoms. However, many of the health care professionals (athletic trainers, team physicians, etc.) who have regular or semi-regular interactions with collegiate athletes may not be qualified to diagnose or, in some cases, even recognize or mental health disorders (Esfandiari, Broshek, & Freeman, 2011; Etzel, 2006; Neal et al., 2013). Detecting mental health disorders through mere observation, especially for subclinical presentations, can present a significant challenge for untrained individuals. Although some recommendations have been made to train athletes' health care professionals to recognize mental health disorders, this may not be the most efficient way to address this problem due to the tremendous financial and temporal costs of training a large number of individuals. An additional problem with identification by an outside observer is many typical athlete behaviors are difficult to distinguish from symptoms associated with mental health disorders (Sundgot-Borgen & Torstveit, 2010). For example, behaviors such as excessive exercise and rigid eating, which are often associated with eating disorders, may be normative for many athletes (Thompson & Sherman, 1999). Likewise, symptoms of depression and fatigue may simply be the result of extensive and demanding sport training (Esfandiari et al., 2011). In many cases, it seems early identification of

(and intervention for) mental health issues may depend upon the self-report and help-seeking behavior of the symptomatic individual.

In addition to the aforementioned risks, many college students, including college athletes, are either unaware of or reluctant to disclose personal mental health symptoms (Eisenberg, Golberstein, & Gollust, 2007). Interestingly, college athletes reported a higher willingness to seek assistance for possible mental health concerns than their non-athlete peers; yet, they were less likely to participate in mental health-related treatment (Brown et al., 2014). This provides support for the theory that athlete underrepresentation in mental health services may be related to screening and referral practices. It is also possible the cultural or social environment around athletic teams influence how athletes appraise mental health services or individuals who pursue mental health treatment. Potentially compounding the problem, many universities lack mental health resources tailored specifically to student-athletes (Neighbors et al., 2007; Stokols, Allen, & Bellingham, 1996). Those institutions that do provide student-athlete focused treatment options are often staffed with underqualified treatment providers (Watson, 2003).

Current Practices in Athlete Mental Health Screening

Across universities throughout the U.S., there is significant variability in the resources allocated to student-athlete mental health care (Gallagher, 2012). At many universities, the athletic department is responsible for providing resources to address athlete mental health. As a result, the variability in the size and budget of athletic departments has led to substantial discrepancies in funding for mental health programs (Matheson, O'connor, & Herberger, 2012). Many institutions may forgo mental health screening altogether, likely due to a lack of efficient screening measures or a shortage of qualified mental health providers (Matheson et al., 2012). Identifying possible mental health disorders early in their development may be an effective

approach to combat the growing financial burden on universities and athletic departments across the U.S.

There is growing interest among universities, athletic programs, and policymakers to provide collegiate athletes with additional funding and resources for mental health care (Galli, Petrie, Greenleaf, Reel, & Carter, 2014; Neal et al., 2013; Rao, Asif, Drezner, Toresdahl, & Harmon, 2015; Wolanin, Gross, & Hong, 2015). For example, in order to address the rising mental health concerns of student athletes, the NCAA has developed a series of best practices related to mental health (NCAA Sport Science Institute [NCAA], 2016b). In addition to their recommendations for licensed practitioners to provide mental health care and a call for the development of procedures for identification and referrals, the NCAA recommends all athletes engage in pre-participation mental health screening. The NCAA (2016b) offers some recommendations for measures to assess individual mental health concerns (e.g. depression, anxiety); however, they do not have any recommendations for measures that offer a global assessment of symptoms.

One of the measures commonly used to evaluate global mental health symptomatology is the Symptom Checklist 90-Revised (SCL-90-R; Derogatis, 1994). This measure is used in a variety of inpatient and outpatient settings. The SCL-90-R was developed to evaluate nine separate dimensions of psychological functioning (Derogatis & Cleary, 1977a, 1977b). It has also been used for screening in an outpatient setting (Holi, Marttunen, & Aalberg, 2003), to differentiate between anxiety and depression (Tomassini et al., 2009), and to examine the relationship between depression and physical activity (Ryan, 2008). The reliability and validity of this measure have also been assessed in multicultural contexts (Martinez, Stillerman, & Waldo, 2005; Sereda & Dembitskyi, 2016). Furthermore, the SCL-90-R has been used to

evaluate the validity of other instruments (Øiesvold, Bakkejord, & Sexton, 2011; Recklitis, Licht, Ford, Oeffinger, & Diller, 2007). Despite its' demonstrated clinical utility, the SCL-90-R has never been validated within athlete populations specifically. Moreover, a 90-item questionnaire can often be inefficient to administer.

There is increasing support for the idea that mental health-focused assessments and interventions specifically designed for the athletic population may offer some benefit for the student-athletes (Donohue et al., 2016). Evidence suggests athletes experiencing depression, eating disorders, or alcohol abuse display a greater risk for injury and often experience a decline in their athletic performance (Wiese-Bjornstal, 2010; Yang et al., 2014; Mountjoy et al., 2014; Seto, 2011). Athletic performance may also be an indicator of the severity of mental health symptoms, as optimal athletic performance can be negatively influenced by a variety of mental health complaints (Donohue et al., 2018). The impact of many of these issues can be seen in both training and competitive situations. The aforementioned findings suggest a sport performance-related mental health screening tool may provide important insight into athlete mental health issues. As a result of the unique stressors related to athletic participation (Gulliver, Griffiths, & Christensen, 2012; Schwenk, 2000) and the apparent underutilization of mental health services by collegiate athletes as compared to their non-athlete peers (Gallagher, 2012), athlete-specific screening could be the first step in connecting athletes who have mental health concerns with available providers.

CHAPTER 3: THE PRESENT STUDY

The purpose of this study was to develop and psychometrically examine the utility of the Sport Interference Checklist – Sport Specific Screen for Mental Health (SIC-SSSMH). Two of the measure's scales are aimed at determining how mental health factors influence athletes' performance in training (SIC-SSSMH-T) and competition (SIC-SSSMH-C). A third scale is designed to examine athletes' motivation to seek out sport psychology for these factors (SIC-SSSMH-DSP). For each of the aforementioned three scales, a factor analysis was performed, internal consistency was calculated, and convergent validity was established using a widely used mental health screening tool, the Symptom Checklist – 90- Revised (SCL-90-R; Derogatis, 1994).

Methods

Participants. Participants were 259 undergraduate collegiate student-athletes in a southwestern U.S. university. Collegiate student-athletes were predominately Intramural (n = 118, 45.6%) and NCAA (n = 102, 39.8%) athletes, and participants' ages ranged from 18 to 33 years, most were males (n = 144, 55.6%), and most were freshman, n = 105, 40.5%), although all levels of academic year were represented. The sample was ethnically diverse, and predominately Caucasian (n = 102, 39.4%). Demographic information is summarized in table 1.

Measures

Demographics Form. A demographics form was used to obtain demographic information, including gender, age, and sport level (NCAA, club, or intramural).

Sport Interference Checklist's Sport Specific Screen for Mental Health (SIC-SSSMH). The SIC-SSSMH is an measure designed to assess the severity of mental health interference in athletes' performance during training and competition, and the extent to which psychological

services are desired. This instrument consists of 42 items (three 14-item scales). The Training scale (SIC-SSSMH-T) assesses the degree to which specific mental health issues interfere with performance during training (e.g., How often does “feeling depressed” interfere with your performance during training?). The Competition scale (SIC-SSSMH-C) assesses the same mental health interference during competition (e.g., How often does “difficulty sleeping” interfere with your performance during competition?). The Training and Competition scales use a 7-point frequency response format (1 = never, 7 = always), with higher scores indicating greater performance interference. The Desire for Sport Psychology scale (SIC-SSSMH-DSP) assesses whether athletes would consult a sport psychologist to address these issues if one were available (e.g., Would you go to a sport psychologist for “alcohol use,” if possible?). The DSP scale uses a dichotomous (yes/no) response format with higher total scores indicating higher willingness to seek mental health services.

Symptom Checklist 90–Revised (SCL-90-R). The SCL-90-R (Derogatis, 1994) is a 90-item self-report measure, which assesses nine distinct dimensions of psychological functioning. One of these dimensions is the Global Severity Index (GSI), which is the SCL-90-R’s assessment of general psychiatric impairment. The GSI has the greatest psychometric support of all SCL-90-R scales (Derogatis, 1997). In the present study, the GSI was used to evaluate whether general psychiatric impairment is associated with self-reported mental health interference with sport performance, as determined by the participants’ responses on the SIC-SSSMH. The SCL-90-R requires participants to rate the severity of their experiences with each symptom over the past week. This measure uses a 5-point scale from 0 to 4, on which a 0 indicates the participant has not experienced the symptom in the past week and a 4 indicates the participant has been extremely distressed by the symptom over the past week. NCAA and recreational athletes have

displayed significantly lower GSI scores when compared to undergraduate non-athlete control groups (Donohue, Covassin, et al., 2004).

Procedure

Participants were recruited for the study in several ways. First, the study was posted on the psychology department's catalog of active studies that psychology students had the option of participating in to receive course credit with few restrictions on study participation other than being 18 years-old and an athlete at the university (i.e., intramural athletics, club sport, NCAA Division I). Referrals also entered the study after testing positive for illicit drugs in random tests conducted by the Athletics Department, responding to brochures about the study that were distributed in high traffic locations throughout the campus, and presentations about the study during sport performance workshops at athletic team meetings. After study consent, participants who met inclusionary criteria completed a demographic questionnaire and were subsequently randomly assigned to one of two interview conditions (i.e., Recruitment Engagement, RE; Standard Recruitment, SR) that were aimed at increasing understanding and interest in goal-oriented intervention specific to sport and life performance. After randomization, a trained doctoral student was instructed to implement the semi-structured interview designed to determine if the participants in this recruitment evaluation study were willing and qualified to participate in a randomized treatment outcome study (Donohue et al., 2018).

Immediately after the respective RE or SR interview was implemented, all participants were administered the Symptom Checklist – 90 Revised (SCL-90R; Derogatis, 1994) and the Sport Interference Checklist – Sport Specific Screen for Mental Health (SIC-SSSMH) to assess their self-reports of mental health symptoms and factors indicated to interfere with sport

performance during training and competition, respectively. The assessment lasted approximately 1.5 hours.

The dataset used for this study was de-identified after the data collection was complete and used for secondary analysis. This procedure is consistent with the American Psychological Association's ethical guidelines and was approved by the University of Nevada, Las Vegas' Institutional Review Board as exempt research. While taking part in the study, the participants were under the protection of a National Institutes of Health federal certificate of confidentiality.

Study Hypotheses and Statistical Plan

H_{1a}: All items from the SIC-SSSMH-T scale will load onto a single factor.

H_{1b}: All items from the SIC-SSSMH-C scale will load onto a single factor.

H_{1c}: All items from the SIC-SSSMH-DSP scale will load onto a single factor.

H₂: The items within each factor will evidence high internal consistency.

H₃: The hypothesized factor scores will evidence a positive correlation with the SCL-90-R Global Severity Index (GSI).

Principal components analyses were performed on each of the SIC-SSSMH scales (i.e., SIC-SSSMH-T, SIC-SSSMH-C, SIC-SSSMH-DSP). The number of factors was determined according to the results of parallel analysis (Horn, 1965) and Minimum Average Partial (MAP, Velicer, 1976) tests. Although a sample size of 300 or more would have been ideal (Tabachnick & Fidell, 2007), the current sample size of 259 exceeds the 100 to 200 participant sample required for a reasonably stable factor structure (Guadagnoli & Velicer, 1988). For each of the three scales, both the parallel analysis and MAP tests indicated a one factor solution.

Cronbach's alpha was utilized to calculate the internal consistencies for each resulting factor. Methods used to calculate confidence intervals for Cronbach's alpha and ICC (A,k) were

obtained from Feldt (1965) and Fleiss and ShROUT (1978), respectively. Total scores were also calculated for each resulting factor to gather an adequate picture of each participant's total pattern of symptomology. Total scale scores were calculated by summing the participants' responses to items on each of the three individual measures. To determine the convergent validity of each scale, correlations were computed between the total scores for each SIC-SSSMH scale and the SCL-90-R Global Severity Index (GSI) scores. A positive correlation between the SIC-SSSMH-T and SIC-SSSMH-C scores and the SCL-90-R GSI was expected (i.e., as the severity of psychological symptoms increases, so should the interference of mental health problems during sport performance during training and/or competition). The correlation coefficient was also calculated between the SCL-90-R GSI and DSP total score. Although the GSI and DSP were designed to assess theoretically different constructs (general psychological functioning and attitudes toward pursuing mental health services, respectively) it was hypothesized these scales would demonstrate a positive relationship because increased mental health symptomatology would presumably be associated with favorable attitudes toward the utilization of mental health services.

To determine if participants of different genders, and/or sport status (recreational vs. NCAA athletes) gave similar answers on the SICSSSMH scales and the SCL-90-R, a multivariate analyses of variance (MANOVA) test was performed. ANVOAs were performed to examine any significant findings from the MANOVA. Each of the SIC scales factor scores (i.e., SIC-SSSMH-DSP, SIC-SSSMH-C, SIC-SSSMH-T) and the SCL-90-R GSI were used as dependent variables in these multi-variate tests. Gender (male, female) and athlete type (NCAA, club, recreational) were the independent variables.

CHAPTER 4: ANALYSIS

Results

Descriptive Results.

Table 1 displays the participants' demographic information and Table 2 displays the means and standard deviations of the primary study variables.

Outliers

The data was inspected for multivariate outliers. A Mahalanobas distance analysis indicated, the associated for p-value for 254 of the sets was greater than 0.05 and, therefore, these sets are not considered outliers against the criterion of $\alpha = 0.001$ (Tabachnick & Fidell, 2007). Five sets of scores did meet the 0.001 alpha outlier criterion; however, after examination of the scores it was determined these extreme scores were not present due to error and they were distributed evenly across key demographic variables (e.g. gender, sport type); therefore, no cases were selected for removal.

The standard error of measurement (SEM) was calculated based on coefficient alpha for the SIC-SSSMH-T (SEM = 3.88), SIC-SSSMH-C (SEM = 3.78), and SIC-SSSMH-DSP (SEM = 1.03). The determinant of the variance-covariance matrix was close to 0 for all three versions of the measure, so the chi-square test for parallelism could not be calculated. Therefore, the Training, Competition, and Desire for Sport Psychology items may not be parallel and the SEMs may underestimate how far the observed scores are from the true scores.

SIC-SSSMH-T (Training)

A principal components analysis revealed a one-factor solution for the SIC-SSSMH-T, comprising 38.1% of the total variance. As displayed in Table 3, items all loaded onto one factor related to general mental health symptoms.

As indicated in Table 4, all but one item of the SIC-SSSMH-T (seeing, hearing, or smelling things that others don't) displayed a significant positive correlation with the SCL-90-R GSI (range of coefficients = .13 to .49). This suggests that, during training, as athletes experience mental health interference with their sport performance in each of these specific areas, the severity of their general psychiatric symptoms increases. However, as might be expected, the one item that did not correlate with the GSI demonstrated a significant relationship with the Psychosis subscale of the SCL-90-R ($r = .19, p < .006$).

The Training scale items demonstrated high internal consistency (Cronbach's $\alpha = .86$, 95% CI [.83, .88]) and standardized alpha (.87). The intraclass correlation for absolute agreement [ICC (A,k)] was also strong (.83, 95% CI [.79, .86]).

Convergent validity for the SIC-SSSMH-T was assessed by correlating the total factor score with the SCL-90-R Global severity index (GSI). The correlation between the Training scale and the GSI was moderate ($r(259) = .53, p < .008$, 95% CI [.43, .61]). This demonstrates a reasonable positive association between the two measures, indicating that as athletes experience an increase in mental health related interference with their sport training, the severity of psychiatric symptoms increases.

Corrected item-total correlations and alphas-if-item-deleted were performed on the SIC-SSSMH-T. Results are summarized in Table 5. As no corrected item-total correlations were below .3, the deletion of any items would not improve internal consistency. All alpha-if-item-deleted values fell between .82 and .85. With a coefficient alpha of .86, based on the alpha-if-item-deleted analysis, the removal of any items would not improve internal consistency of this measure.

SIC-SSSMH-C (Competition)

A principal components analysis revealed a one-factor solution for the SIC-SSSMH-C, comprising 36.1% of the total variance. As displayed in Table 6, items all loaded onto one factor related to general mental health symptoms.

As indicated in Table 7, all but one item of the SIC-SSSMH-C (seeing, hearing, smelling things that others don't) displayed a significant positive correlation with the GSI (range of coefficients = .13 to .42). This suggests that, during competition, as athletes experience mental health interference with their sport performance in each of these specific areas, the severity of their general psychiatric symptoms increases. Again, the one item that did not correlate with the GSI demonstrated a significant relationship with the Psychosis subscale of the SCL-90-R ($r = .17, p < .008$).

The Competition scale items demonstrated high internal consistency (Cronbach's $\alpha = .84$, 95% CI [.81, .87]) and standardized alpha (.86). The intraclass correlation for absolute agreement [ICC(A,k)] was also strong (.81, 95% CI [.77, .85]).

Convergent validity was assessed by correlating SIC-SSSMH-C total score with the SCL-90-R GSI. The correlation between the Competition scale and the GSI was moderate ($r(259) = .48, p < .011$, 95% CI [.38, .57]). This demonstrates a reasonable positive association between the two measures, indicating that as athletes experience an increase in mental health related interference with their sport competition, the severity of their psychiatric symptoms increases.

Corrected item-total correlations and alphas-if-item-deleted were performed on the SIC-SSSMH-C. Results are summarized in Table 8. As no corrected item-total correlations were below .3, the deletion of any items would not improve internal consistency. All alpha-if-item-deleted values fell between .82 and .85. With an overall Cronbach's alpha of .84, based on the

alpha-if-item-deleted analysis, the removal of only one item (difficulty maintaining weight at an acceptable level to me or to others) would improve the internal consistency of this measure.

SIC-SSSMH-DSP (Desire for Sport Psychology)

A principal components analysis revealed a one-factor solution for the SIC-SSSMH-DSP, comprising 53.9% of the total variance. As displayed in Table 9, items all loaded onto one factor related to general mental health symptoms.

The items on the Desire for Sport Psychology scale also demonstrated high internal consistency (Cronbach's $\alpha = .93$, 95% CI [.91, .94]) and standardized alpha (.93). The intraclass correlation for absolute agreement [ICC(A,k)] was also strong (.93, 95% CI [.91, .94]).

As indicated in Table 10, half of the fourteen items of the SIC-SSSMH-DSP displayed a significant positive correlation with the GSI (range of coefficients = .02 to .27). Convergent validity was assessed by correlating Desire for Sport Psychology scale total score with the SCL-90-R GSI. The correlation between this scale and the GSI was weak but significant ($r(259) = .24, p < .010$, 95% CI [.12, .35]). This demonstrates a weak association between the two measures, indicating there was some increase in desire to pursue sport psychology for mental health issues as general psychiatric functioning worsens.

Corrected item-total correlations and alphas-if-item-deleted were performed on the SIC-SSSMH-DSP. Results are summarized in Table 11. As no corrected item-total correlations were below .3, the deletion of any items would not improve internal consistency. All alpha-if-item-deleted values fell between .92 and .93. With an overall Cronbach's alpha of .93, based on the alpha-if-item-deleted analysis, the removal of any items would not improve internal consistency of this measure.

Analysis of Potential Effects Due to Gender and Athlete Type

Gender. It was predicted that males and females would exhibit similar response patterns on both measures. To examine this hypothesis, a MANOVA was implemented utilizing the SIC-SSSMH scales (Training, Competition, DSP) and the SCL-90-R as dependent variables and gender (male, female) as the independent variable. No significant differences were demonstrated $F(4, 216) = 1.67, p > .050$, Wilk's $\Lambda = .970$, suggesting that males and females responded similarly on the SIC scales and the SCL-90-R.

Athlete Type. It was also expected that different types of athletes (intramural, club, NCAA) would exhibit similar response patterns on both measures. To test this hypothesis, a MANOVA was performed utilizing the SIC-SSSMH scales (Training, Competition, DSP) and the SCL-90-R as dependent variables and sport type as the independent variable. There was a statistically significant difference in responses based on whether the participant was an NCAA, club, or intramural athlete $F(8, 432) = 3.50, p > .010$, Wilk's $\Lambda = .88$.

To determine the source of these differences, four one-way ANOVAs were performed using each of the SIC scales and the SCL-90-R as dependent variables and sport type as the independent variable for all four analyses. There was a statistically significant difference between groups on the Training scale ($F(2,255) = 3.49, p = .032$). A Tukey post hoc test revealed that club athletes (28.16 ± 11.17) responded significantly higher than NCAA athletes (23.56 ± 9.09) on this scale ($p = .047$).

There was also a statistically significant difference between groups on the Competition scale ($F(2,255) = 5.756, p = .004$). A Tukey post hoc test revealed that NCAA athletes (21.54 ± 7.48) responded significantly lower than intramural athletes (25.52 ± 10.51) on this scale ($p = .005$).

There was also a statistically significant difference between groups on the SCL-90-R ($F(2,255) = 4.613, p = .011$). A Tukey post hoc test revealed that NCAA athletes (48.54 ± 39.11) responded significantly lower than club athletes (70.50 ± 48.24) on this scale ($p = .008$).

There was no statistically significant difference between athlete types on the Desire for Sport Psychology scale ($p = .989$).

CHAPTER 5: DISCUSSION

These findings offer support for the SIC-SSSMH's psychometric properties. The SIC-SSSMH not only provides a measure of the extent to which mental health problems are interfering with athletes' sport performance in both training (SIC-SSSMH-T) and competition (SIC-SSSMH-C), it may also increase understanding about how athletes' mental health relates to their desire to seek out treatment providers for sport-specific problems (SIC-SSSMH-DSP). The results of this study suggest that items generated by the focus group during the development of the measure are applicable to athletes. In addition, all items in the Training scale had a salient loading on a single factor (general mental health symptoms), as did the items on the Competition and Desire for Sport Psychology scales. Furthermore, all but one item on both the SIC-SSSMH-T and the SIC-SSSMH-C were correlated with the SCL-90-R GSI. For both scales, the non-correlated item (hearing, smelling, or seeing things that others don't) was endorsed infrequently. However, in both cases this item demonstrated a significant relationship with the Psychosis scale of the SCL-90-R, suggesting this item may assist clinical screening for psychosis. These findings also support the notion that athletes may experience mental health-related problems in either training and/or competition. The factor structure was sound for each of the three SIC-SSSMH scales and the internal consistencies were very high, all three scales demonstrating high reliability.

Additionally, the relationship between the SIC-SSSMH-T and SIC-SSSMH-C factor scores and the SCL-90-R GSI was positive and significant, supporting the convergent validity of these scales. It stands to reason that as general psychological difficulties increase, mental health related sport-interference is also likely to rise. Undeniably, many items included in the SIC-SSSMH-T and SIC-SSSMH-C scales overlap with items from the SCL-90-R (e.g., sport

activities and anxiety disorders may both lead to difficulty breathing, heart racing, and/or severe anxiety). The SIC-SSSMH-T and SIC-SSSMH-C subscales were developed to measure to what degree athletes are affected by sport-specific mental health symptoms. A weak linear relationship was found between the SIC-SSSMH-DSP and the SCL-90-R GSI, despite these instruments theoretically measuring two different, yet possibly related constructs. This is likely to have occurred because as mental health symptom severity increases, athletes may experience additional distress and, potentially, may display increased willingness to pursue mental health services.

Limitations and Future Directions

The present study has some limitations. The current sample size is adequate but the study may have yielded a more stable factor structure with additional participants. Tabachnick and Fidell (2007) recommend a sample size of 300 when analyzing this type of data, as having a small sample often leads to unstable or uninterpretable factor matrices. Therefore, additional factors may have been found in a larger sample size.

Additionally, although the standard errors of measurement were 3.88, 3.78, and 1.03 on the SIC-SSSMH-T, SIC-SSSMH-C, and SIC-SSSMH-DSP respectively, they may underestimate how far the observed scores are from the true scores because the items may not be parallel.

In regards to internal consistency, it is possible participants would respond more similarly to other participants of the same gender than those of the opposite gender. Because females tend to endorse higher levels of mental health symptomatology (Grant, Hasin, Stinson, & Dawson, 2005) and males tend to exhibit higher resistance to psychological treatment than females (Rochlen, Whilde, & Hoyer, 2005), internal consistency may have been higher if these groups were examined separately. Thus, overall internal consistency may have been lower in the overall

sample as compared to each group. However, the MANOVA results indicate that there were no significant differences between males and females on how they responded to any of the measures used in the study. Therefore, it is unlikely that validity would have been improved if these groups were examined separately. With regards to the factor analysis, the correlations within factors may be higher than they would have been if the groups had been analyzed separately. Had these groups been analyzed separately, it is possible there would be fewer salient loadings on the 1st principal component and additional factors may have been identified. Unfortunately, the groups of the present study were too small to complete these analyses separately. Future research may focus on conducting these analyses in separate groups.

Another set of homogenous subgroups in our sample were athletes participating at different levels of competition (e.g., NCAA, Club, and Intramural athletes). With regards to athlete groups, previous findings indicate different levels of athletes tend to evidence similar mental health difficulties (Donohue et al., 2004) and although the results of the MANOVA indicate there were significant differences between these groups, it is not expected that this subgroup affected our results with regards to validity, internal consistency, or factor analysis because some variability is to be expected between NCAA athletes and those who compete in sports for recreation purposes. Future research may focus on examining these groups separately.

The clinical utility of the SIC-SSSMH appears to be very high. Administration of all three scales can be completed in under 10 minutes, items demonstrate good face validity, and they allow for comparison between interference occurring in training and/or competition. The SIC-SSSMH-DSP scale also quickly assesses the athlete's attitude toward pursuing psychological treatment for each mental health symptom. Future studies should focus on the

development of cutoff scores that can enhance the clinical utility of the measure by clarifying scores that warrant mental health referral.

Although the original Sport Interference Checklist (SIC) demonstrated good clinical utility and face validity (Donohue et al., 2007), the SIC-SSSMH has an advantage over the original SIC in that SIC-SSSMH Training and Competition items load onto their own factors. In addition, each factor has a stronger positive relationship with the SCL-90-R GSI than did any of the original SIC's four factors. The original SIC-Desire for Sport Psychology Scale and the SIC-SSSMH-Desire for Sport Psychology Scale have a similar relationship with the GSI. This measure, used independently or alongside the original SIC measure, may offer important insights into athlete mental health.

The patterns of responding to SIC-SSSMH items do not appear to be influenced by gender; thus, interpretations of the SIC-SSSMH scale scores are appropriate for mental health providers, regardless of the participant's gender. Alternatively, responses did vary to some degree between different athlete types, but it is unlikely these differences are large enough to affect the interpretation of results. Further research to determine the nature of these differences between athletes of varying sport level is warranted. Lastly, the SIC-SSSMH may be a useful tool within a therapeutic setting because its format allows the clinician to assess which mental health difficulties are interfering most frequently with their performance. Therefore, mental health problem areas that are causing the most frequent interference can be prioritized and lack of motivation or ambivalence toward seeking psychological services can be addressed. The SIC-SSSMH is displayed in the Appendix and researchers are encouraged to use this measure in future studies.

TABLES

Table 1

Demographic Information (N=259)

| Item | Total | % |
|--------------------------------|-------|------|
| Gender | | |
| Male | 144 | 55.6 |
| Female | 115 | 44.4 |
| Ethnicity | | |
| White/Caucasian | 102 | 39.4 |
| Black/African-American | 39 | 15.1 |
| Asian/Asian American | 23 | 8.9 |
| Hispanic/Latino | 32 | 12.4 |
| Pacific Islander | 11 | 4.2 |
| Other (multiple or not listed) | 52 | 20.1 |
| Type of Athlete | | |
| NCAA | 102 | 39.8 |
| Club | 38 | 14.7 |
| Intramural | 119 | 46.0 |
| Class Status | | |
| Freshman | 105 | 40.5 |
| Sophomore | 75 | 29.0 |
| Junior | 53 | 20.5 |
| Senior | 26 | 10.0 |

Note. Average age 19.83 (SD=2.06)

Table 2

Means and Standard Deviations of Study Variables (n = 259)

| Measures | M | SD | Min | Max |
|---------------|-------|-------|-------|-------|
| SIC-SSSMH-T | 25.45 | 10.24 | 14.00 | 89.00 |
| SIC-SSSMH-C | 23.94 | 9.41 | 14.00 | 89.00 |
| SIC-SSSMH-DSP | 16.40 | 3.95 | 6.00 | 28.00 |
| SCL-90-R GSI | 0.62 | 0.43 | 0.00 | 2.22 |

Table 3

First Principal Component (SIC-SSSMH-Training)

| Item | Pattern Matrix Coefficient |
|--|----------------------------|
| 1. Too impulsive | .54 |
| 2. Feeling depressed | .71 |
| 3. Severe anxiety, panic attacks, obsessive thoughts, doing senseless behavior repeatedly | .68 |
| 4. Alcohol use | .63 |
| 5. Drug use, or use of prescribed drugs more than medical doctor's recommendation | .65 |
| 6. Difficulty maintaining weight at an acceptable level to me or to others | .38 |
| 7. Difficulty sleeping | .56 |
| 8. Doing things that get me in trouble with others | .72 |
| 9. Poor relationships with others | .68 |
| 10. Tics or sudden and uncontrollable jerks of body parts | .54 |
| 11. Hearing, smelling, or seeing things that others don't | .50 |
| 12. Difficulties remembering things | .61 |
| 13. Sudden mood swings | .71 |
| 14. Sexual disorders (pain during sex, premature ejaculation, problems with arousal, sexual promiscuity, unsafe sex) | .62 |

Note. Coefficient alpha for the first principal component is .88.

Table 4

Item Correlations with SCL-90-R (SIC-SSSMH-Training)

| Item | Correlation with SCL-90-R |
|--|---------------------------|
| 1. Too impulsive | .30** |
| 2. Feeling depressed | .47** |
| 3. Severe anxiety, panic attacks, obsessive thoughts, doing senseless behavior repeatedly | .35** |
| 4. Alcohol use | .17** |
| 5. Drug use, or use of prescribed drugs more than medical doctor's recommendation | .16* |
| 6. Difficulty maintaining weight at an acceptable level to me or to others | .35** |
| 7. Difficulty sleeping | .35** |
| 8. Doing things that get me in trouble with others | .29** |
| 9. Poor relationships with others | .37** |
| 10. Tics or sudden and uncontrollable jerks of body parts | .21** |
| 11. Hearing, smelling, or seeing things that others don't | .11 |
| 12. Difficulties remembering things | .45** |
| 13. Sudden mood swings | .49** |
| 14. Sexual disorders (pain during sex, premature ejaculation, problems with arousal, sexual promiscuity, unsafe sex) | .13* |

Note. Training scale total score correlation with SCL-90-R GSI is $r(259) = .53$ $p < .008$

* $p < .05$. ** $p < .01$.

¹ Item demonstrated a significant relationship ($r = .19$ $p < .006$) with the Psychosis scale of the SCL-90-R

Table 5

Item-Total Statistics (SIC-SSSMH-Training)

| Item | Corrected Item-Total Correlation | Coefficient Alpha if Item Deleted |
|---|-------------------------------------|--------------------------------------|
| 1. Too impulsive | .40 | .84 |
| 2. Feeling Depressed | .59 | .82 |
| 3. Severe anxiety, panic attacks, obsessive thoughts, doing senseless behavior repeatedly | .57 | .82 |
| 4. Alcohol use | .53 | .83 |
| 5. Drug use, or use of prescribed drugs more than medical doctor's recommendation | .56 | .83 |
| 6. Difficulty maintaining weight at an acceptable level to me or to others | .30 | .85 |
| 7. Difficulty sleeping | .52 | .83 |
| 8. Doing things that get me in trouble with others | .57 | .83 |
| 9. Poor relationships with others | .56 | .82 |
| 10. Tics or sudden and uncontrollable jerks of body parts | .48 | .83 |
| 11. Hearing, smelling, or seeing things that others don't | .41 | .83 |
| 12. Difficulties remembering things | .50 | .83 |
| 13. Sudden mood swings | .61 | .82 |
| 14. Sexual disorders (pain during sex, premature ejaculation, problems with arousal, sexual promiscuity, unsafe sex) | .48 | .84 |

Note. Coefficient alpha for the 14-item test is .86.

Table 6

First Principal Component (SIC-SSSMH-Competition)

| Item | Pattern Matrix Coefficient |
|--|----------------------------|
| 1. Too impulsive | .47 |
| 2. Feeling depressed | .65 |
| 3. Severe anxiety, panic attacks, obsessive thoughts, doing senseless behavior repeatedly | .65 |
| 4. Alcohol use | .65 |
| 5. Drug use, or use of prescribed drugs more than medical doctor's recommendation | .67 |
| 6. Difficulty maintaining weight at an acceptable level to me or to others | .36 |
| 7. Difficulty sleeping | .59 |
| 8. Doing things that get me in trouble with others | .67 |
| 9. Poor relationships with others | .64 |
| 10. Tics or sudden and uncontrollable jerks of body parts | .59 |
| 11. Hearing, smelling, or seeing things that others don't | .52 |
| 12. Difficulties remembering things | .58 |
| 13. Sudden mood swings | .69 |
| 14. Sexual disorders (pain during sex, premature ejaculation, problems with arousal, sexual promiscuity, unsafe sex) | .57 |

Note. Coefficient alpha for the first principal component is .86.

Table 7

Item Correlations with SCL-90R (SIC-SSSMH-Competition)

| Item | Correlation with SCL-90-R |
|--|---------------------------|
| 1. Too impulsive | .27** |
| 2. Feeling depressed | .38** |
| 3. Severe anxiety, panic attacks, obsessive thoughts, doing senseless behavior repeatedly | .31** |
| 4. Alcohol use | .14* |
| 5. Drug use, or use of prescribed drugs more than medical doctor's recommendation | .14* |
| 6. Difficulty maintaining weight at an acceptable level to me or to others | .30** |
| 7. Difficulty sleeping | .31** |
| 8. Doing things that get me in trouble with others | .24** |
| 9. Poor relationships with others | .35** |
| 10. Tics or sudden and uncontrollable jerks of body parts | .20** |
| 11. Hearing, smelling, or seeing things that others don't | .09 |
| 12. Difficulties remembering things | .42** |
| 13. Sudden mood swings | .42** |
| 14. Sexual disorders (pain during sex, premature ejaculation, problems with arousal, sexual promiscuity, unsafe sex) | .13* |

Note. Competition scale total score correlation with SCL-90-R GSI is $r(259) = .48$ $p < .011$

* $p < .05$. ** $p < .01$.

¹ Item demonstrated a significant relationship ($r = .17$ $p < .008$) with the Psychosis scale of the SCL-90-R

Table 8

Item-Total Statistics (SIC-SSSMH-Competition)

| Item | Corrected Item-Total Correlation | Coefficient Alpha if Item Deleted |
|---|-------------------------------------|--------------------------------------|
| 1. Too impulsive | .40 | .84 |
| 2. Feeling Depressed | .59 | .82 |
| 3. Severe anxiety, panic attacks, obsessive thoughts, doing senseless behavior repeatedly | .57 | .82 |
| 4. Alcohol use | .53 | .83 |
| 5. Drug use, or use of prescribed drugs more than medical doctor's recommendation | .56 | .83 |
| 6. Difficulty maintaining weight at an acceptable level to me or to others | .30 | .85 |
| 7. Difficulty sleeping | .52 | .83 |
| 8. Doing things that get me in trouble with others | .57 | .83 |
| 9. Poor relationships with others | .56 | .82 |
| 10. Tics or sudden and uncontrollable jerks of body parts | .48 | .83 |
| 11. Hearing, smelling, or seeing things that others don't | .41 | .83 |
| 12. Difficulties remembering things | .50 | .83 |
| 13. Sudden mood swings | .61 | .82 |
| 14. Sexual disorders (pain during sex, premature ejaculation, problems with arousal, sexual promiscuity, unsafe sex) | .48 | .84 |

Note. Coefficient alpha for the 14-item test is .84.

Table 9

First Principal Component (SIC-SSSMH-Desire for Sport Psychology Scale)

| Item | Pattern Matrix Coefficient |
|--|----------------------------|
| 1. Too impulsive | .64 |
| 2. Feeling depressed | .66 |
| 3. Severe anxiety, panic attacks, obsessive thoughts, doing senseless behavior repeatedly | .73 |
| 4. Alcohol use | .82 |
| 5. Drug use, or use of prescribed drugs more than medical doctor's recommendation | .82 |
| 6. Difficulty maintaining weight at an acceptable level to me or to others | .56 |
| 7. Difficulty sleeping | .66 |
| 8. Doing things that get me in trouble with others | .79 |
| 9. Poor relationships with others | .70 |
| 10. Tics or sudden and uncontrollable jerks of body parts | .77 |
| 11. Hearing, smelling, or seeing things that others don't | .81 |
| 12. Difficulties remembering things | .67 |
| 13. Sudden mood swings | .77 |
| 14. Sexual disorders (pain during sex, premature ejaculation, problems with arousal, sexual promiscuity, unsafe sex) | .82 |

Note. Coefficient alpha for the first principal component is .93.

Table 10

Item Correlations with SCL-90R (SIC-SSSMH-Desire for Sport Psychology Scale)

| Item | Correlation with SCL-90-R |
|--|---------------------------|
| 1. Too impulsive | .10 |
| 2. Feeling depressed | .23** |
| 3. Severe anxiety, panic attacks, obsessive thoughts, doing senseless behavior repeatedly | .25** |
| 4. Alcohol use | .12 |
| 5. Drug use, or use of prescribed drugs more than medical doctor's recommendation | .10 |
| 6. Difficulty maintaining weight at an acceptable level to me or to others | .27** |
| 7. Difficulty sleeping | .17** |
| 8. Doing things that get me in trouble with others | .08 |
| 9. Poor relationships with others | .27** |
| 10. Tics or sudden and uncontrollable jerks of body parts | .07 |
| 11. Hearing, smelling, or seeing things that others don't | .02 |
| 12. Difficulties remembering things | .24** |
| 13. Sudden mood swings | .18** |
| 14. Sexual disorders (pain during sex, premature ejaculation, problems with arousal, sexual promiscuity, unsafe sex) | .15 |

Note. DSP scale total score correlation with SCL-90-R GSI is $r(259) = .24$ $p < .010$

* $p < .05$. ** $p < .01$.

Table 11

Item-Total Statistics (SIC-SSSMH-Desire for Sport Psychology Scale)

| Item | Corrected Item- Total Correlation | Coefficient Alpha if Item Deleted |
|---|--------------------------------------|--------------------------------------|
| 1. Too impulsive | .58 | .92 |
| 2. Feeling Depressed | .63 | .92 |
| 3. Severe anxiety, panic attacks, obsessive thoughts, doing senseless behavior repeatedly | .70 | .92 |
| 4. Alcohol use | .75 | .92 |
| 5. Drug use, or use of prescribed drugs more than medical doctor's recommendation | .75 | .92 |
| 6. Difficulty maintaining weight at an acceptable level to me or to others | .51 | .93 |
| 7. Difficulty sleeping | .62 | .92 |
| 8. Doing things that get me in trouble with others | .73 | .92 |
| 9. Poor relationships with others | .66 | .92 |
| 10. Tics or sudden and uncontrollable jerks of body parts | .70 | .92 |
| 11. Hearing, smelling, or seeing things that others don't | .74 | .92 |
| 12. Difficulties remembering things | .62 | .92 |
| 13. Sudden mood swings | .71 | .92 |
| 14. Sexual disorders (pain during sex, premature ejaculation, problems with arousal, sexual promiscuity, unsafe sex) | .71 | .92 |

Note. Coefficient alpha for the fourteen-item test is .93.

APPENDIX

Sport Interference Checklist-Sport Specific Scale for Mental Health (SIC-SSSMH)

Below is a list of things that sometimes occur with athletes during their training or during their competition. Please circle the number that represents how often each of these things interfere with your performance during training and, separately, your performance during competition.

Then circle either “yes” or “no” to indicate if you would see a sport psychologist if this happened to you and if a good sport psychologist were available to you.

Please use the following scale for items 1 through 14:

1 = *Never*, 2 = *Very Seldom*, 3 = *Seldom*, 4 = *Sometimes*, 5 = *Often*, 6 = *Very Often*, 7 = *Always*

| | How often does this interfere with your performance during training? | How often does this interfere with your performance during competition? | Would you go to a sport psychologist for this , if possible? |
|--|---|--|--|
| 1. Too impulsive | 1 2 3 4 5 6 7 | 1 2 3 4 5 6 7 | Yes / No |
| 2. Feeling Depressed | 1 2 3 4 5 6 7 | 1 2 3 4 5 6 7 | Yes / No |
| 3. Severe Anxiety, panic attacks, doing senseless behavior repeatedly | 1 2 3 4 5 6 7 | 1 2 3 4 5 6 7 | Yes / No |
| 4. Alcohol Use | 1 2 3 4 5 6 7 | 1 2 3 4 5 6 7 | Yes / No |
| 5. Drug use, or use of prescribed drugs more than a medical doctor’s recommendation | 1 2 3 4 5 6 7 | 1 2 3 4 5 6 7 | Yes / No |
| 6. Difficulty maintaining weight at an acceptable level to me or others | 1 2 3 4 5 6 7 | 1 2 3 4 5 6 7 | Yes / No |
| 7. Difficulty sleeping | 1 2 3 4 5 6 7 | 1 2 3 4 5 6 7 | Yes / No |
| 8. Doing things that get me into trouble with others | 1 2 3 4 5 6 7 | 1 2 3 4 5 6 7 | Yes / No |
| 9. Poor relationships with others | 1 2 3 4 5 6 7 | 1 2 3 4 5 6 7 | Yes / No |
| 10. Tics or sudden and uncontrollable jerks of body parts | 1 2 3 4 5 6 7 | 1 2 3 4 5 6 7 | Yes / No |
| 11. Hearing, smelling, or seeing things that others don’t | 1 2 3 4 5 6 7 | 1 2 3 4 5 6 7 | Yes / No |
| 12. Difficulties remembering things | 1 2 3 4 5 6 7 | 1 2 3 4 5 6 7 | Yes / No |
| 13. Sudden mood swings | 1 2 3 4 5 6 7 | 1 2 3 4 5 6 7 | Yes / No |
| 14. Sexual disorders (pain during sex, premature ejaculation, problems with arousal) | 1 2 3 4 5 6 7 | 1 2 3 4 5 6 7 | Yes / No |

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CURRICULUM VITAE

JESSE SCOTT

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EDUCATION

- Ph.D., Clinical Psychology**, University of Nevada, Las Vegas (APA-Accredited) Expected 2020
Dissertation: *TBD (Fall 2018)*
Chair: Brad Donohue, Ph.D.
- M.A., Clinical Psychology**, University of Nevada, Las Vegas (APA-Accredited) Expected 2018
Thesis: *Examination of a Screening Tool for Athletes' Mental Health and its Direct Implications to Sport Training and Competition*
Chair: Brad Donohue, Ph.D.
- B.A., Psychology (Magna Cum Laude)**, University of Alaska Anchorage June 2012

CLINICAL PRACTICA

- Psychology Trainee, VA Southern Nevada Healthcare System** July 2017 - Present
Behavioral Health Interdisciplinary Program Supervisor: Jason Mouritsen, Psy.D.
Las Vegas, NV 12 to 16 hours per week
- Provided individual and group psychotherapy to Veterans with various psychological concerns (e.g. Mood Disorders, Personality Disorders, Adjustment Disorders, Anxiety Disorders, and Post-traumatic Stress Disorder)
 - Provided *Psychological First Aid* to Veterans affected by the mass shooting
 - Provided diagnostic assessments for Veterans
 - Facilitated a weekly Whole Health class for Veterans, which covered topics including sleep hygiene, anger management, mindfulness/relaxation techniques, and principles of cognitive behavioral therapy
 - Co-facilitated CBT for Depression, ACT for Depression, and ACT for Chronic Pain groups for Veterans
 - Implemented screening and treatment monitoring assessments (e.g., PHQ-9, GAD-7, PCL-5)
 - Utilized the integrated Computerized Patient Record System (CPRS) for diagnostic interviews, treatment planning, and session notes
 - Received weekly individual supervision, including in-vivo observations
 - Attended monthly Diversity Seminars
- Psychology Trainee, Department Community Mental Health Clinic** Aug. 2016 - Aug. 2017
University of Nevada, Las Vegas Supervisors: Stephen Benning, Ph.D. & Michelle Paul, Ph.D.
Las Vegas, NV 12 to 16 hours per week
- Provided individual psychotherapy with a caseload of approximately 5-8 clients per week in an outpatient psychology department-sponsored mental health training clinic
 - Diagnoses included affective disorders, anxiety disorders, obsessive-compulsive disorders, trauma-related disorders, ADHD, intermittent explosive disorders, neurocognitive disorders, and adjustment disorders. Primary theoretical approaches utilized included CBT and FBT
 - Received weekly individual and group supervision with digital video review
 - Attended weekly practicum seminars, which included didactic training, group supervision, and case conference components
- Psychology Trainee, Department Psychological Assessment & Testing Clinic** Aug. 2016 - Aug. 2017
University of Nevada, Las Vegas Supervisors: Stephen Benning, Ph.D. & Michelle Paul, Ph.D.

Las Vegas, NV

12-16 hours per week

- Conducted psychodiagnostic and neuropsychological assessments in an outpatient department-sponsored mental health training clinic using a flexible battery of psychometrically validated tests and measures with adults and children referred from the Las Vegas community with a range of referral questions
- Further responsibilities included interviewing, scoring, interpretation of assessment results, integrated report writing, differential diagnosis, and provision of feedback to clients
- Supervision consisted of weekly individual and group meetings with digital video review, reviewing cases, training in case conceptualization, joint determination of evidence-based assessment battery and interpretation of results, integrated report revisions, and discussion of feedback

SUPPLEMENTAL CLINICAL PRACTICA

Psychology Trainee, The Optimum Performance Program in Sports

July 2015 – Apr. 2017

University of Nevada, Las Vegas

Supervisor: Brad Donohue, Ph.D.

Las Vegas, NV

Up to 20 hours per week

- Conducted manualized 12-session evidence-based treatment (FBT) in the context of a clinical trial with Division I athletes and their supportive others, including family members, teammates, coaches, and peers, to decrease substance use & risk of HIV/STIs, and optimize mental health, relationships, and sport performance
- Provided team workshops for UNLV student-athletes on various topics, including motivation, thought management, goal-setting, focus, communication, and team cohesion
- Received weekly individual and group supervision with in-vivo observations and audiotape review

OTHER CLINICAL EXPERIENCE

Serenity House Treatment Center

Aug. 2013 – June 2015

Kenai, AK

Supervisor: Kristie Sellers, Ph.D.

- Facilitated group therapy sessions and classes on various topics, including neuropsychological effects of drugs and addiction, triggers for substance use, seeking employment, etc.
- Participated in monthly consultations with supervisor and direct intervention team focused on clients' goal acquisition, generalization, and treatment planning
- Involved in grant writing, administrative tasks, and research activities
- Exposed to numerous therapeutic modalities, including Motivational Interviewing, CBT, DBT, and ACT

CLINICAL SUPERVISION TRAINING AND EXPERIENCE

Peer-Supervisor

July 2015 - June 2017

Family Research & Services, UNLV

Supervisor: Brad Donohue, Ph.D.

Las Vegas, NV

- Supervised junior graduate student-clinicians implementing FBT with collegiate athletes in a NIDA-funded clinical trial (1R01DA031828)
- Reviewed session audio recordings to provide feedback and measure protocol adherence

RESEARCH EXPERIENCE

Family Research and Services

July 2015 - Aug. 2017

University of Nevada, Las Vegas

Advisor: Brad Donohue, Ph.D.

Las Vegas, NV

Study (Thesis): Examination of a Screening Tool for Athletes' Mental Health with Direct Implications to Sport Training and Competition

- Designed and implemented a project examining the psychometric properties of a brief screening tool for athletes that assesses for potential mental health concerns

Study: Evaluation of Family Behavior Therapy in collegiate athletes (NIDA grant, 1R01DA031828).

- As *Data Management Coordinator*, responsible for the day-to-day oversight of data management for a clinical RCT focused on the development and controlled evaluation of Family Behavior Therapy (FBT) for substance abuse adapted for collegiate athletes
- As *Recruitment Coordinator*, responsible for the recruitment of participants for the clinical RCT
- Supervised data management and recruitment teams
- Monitored assessment procedures, treatment adherence, IRB, participant incentives, and quality assurance
- Co-facilitated research and staff meetings
- Ensured peer adherence to standardized administrative protocols
- Developed and implemented recruitment strategies (i.e. class presentations, tabling events, campus outreach events, etc.) to increase student participation in the RCT
- Assisted with the preparation of a treatment manual for use with athletes, presented findings at professional conferences, and wrote manuscripts for publications in peer reviewed journals
- Supervised and mentored a team of graduate students and undergraduate research assistants

GRANT INVOLVEMENT

Family Behavior Therapy for Collegiate Athletes (1R01DA031828) \$1,998,000
Data Management/Recruitment Coordinator and Clinician
Funding Agency: NIDA. PI: Brad Donohue, Ph.D.

PEER-REVIEWED PUBLICATIONS

Peer-Reviewed Journal Publications

- 1) Donohue, B., Gavrilova, Y., Galante, M., Loughran, T., Plant, C., **Scott, J.**, ... Allen, D. (2018). Controlled evaluation of an optimization approach to mental health and sport performance. *Journal of Clinical Sport Psychology*
- 2) Donohue, B., Plant, C. P., **Scott, J.**, & Galante, M. (2018). Influence of child neglect type and court disposition status on assessment of child abuse potential in mothers referred to Child Protective Services. *Child Welfare*.

PRESENTATIONS

Conference Presentations

- 1) **Scott, J.**, Perkins, M., Danlag, A., Strong, M., Kalita, J., (May 2018). *Examination of a Screening Tool for Athletes' Mental Health with Direct Implications to Sport Training and Competition*. Poster presented at the Nevada Psychological Association Annual Convention, Las Vegas, NV.
- 2) Galante, M., Gavrilova, Y., Phillips, C., Corral, A., Corey, A., **Scott, J.** & Donohue, B. (September, 2016). TOPP performance: Anxiety and problem-solving skills in circus artists. Poster presented at the Association of Applied Sport Psychology National Conference, Phoenix, AZ.

- 3) Plant, C. P., **Scott, J.**, & Galante, M. E. (April, 2016). Examination of the effects of child neglect type and case status on self-reporting of child maltreatment potential in substance abusing mothers referred by Child Protective Services. Western Psychological Association Annual Convention, Long Beach, CA.
- 4) **Scott, J.**, Parshall, M., (April, 2014). *Relationship between locus of control and college outcomes*. Poster presented at the Behavioral Sciences Conference of the North, Anchorage, AK.

TEACHING & TRAINING EXPERIENCE

Instructor

University of Nevada, Las Vegas
Las Vegas, NV

Aug. 2017 - Present
Supervisor: Wayne Weiten, Ph.D.

- Taught 2 sections of live-classroom Psychology 101 courses each semester, concurrently enrolled in Teaching of Psychology with a supervisory component for the initial semester of teaching
- Developed syllabi, planned courses, prepared and presented lectures, facilitated class discussions, developed online content pages, utilized MindTap learning platform, and developed/graded exams

Substitute Instructor

Kenai Peninsula Borough School District
Kenai/Soldotna, AK

2013 - 2015
Supervisor: Steve Atwater, Ph.D.

- Taught multiple sections of live-classroom courses each semester
- Classes taught include Algebra, Calculus, History, English, Psychology, Health, etc.
- Prepared and presented lectures, facilitated class discussions

RELEVANT TRAINING RECEIVED

Prolonged Exposure (PE) Therapy

Robert Mirabella, Ph.D. & Nicole Anders, Psy.D.,
VA Southern Nevada Healthcare System, Las Vegas, NV

Dec. 2017, 16 hours

- Two-day comprehensive training focused on PE, structured cognitive-behavioral therapy to treat PTSD symptoms
- PE is a short-term treatment that may work in as few as eight 90-minute treatment sessions that focus on gradually approaching trauma-related memories, feelings, and situations patients have been avoiding since the trauma

Cognitive Processing Therapy (CPT)

Robert Mirabella, Ph.D. & Diane Sakal-Gutierrez, LCSW,
VA Southern Nevada Healthcare System, Las Vegas, NV

July 2017, 16 hours

- Two-day comprehensive training focused on CPT, a structured cognitive-behavioral treatment to address the unique needs of patients suffering from PTSD symptoms
- CPT is a short-term treatment that may work in as few as 12 treatment sessions, which focuses on the connections between thoughts, feelings, behaviors, and bodily sensations

Interprofessional Education Day

University of Nevada, Las Vegas
Las Vegas, NV

Mar. 2017 & Mar. 2018, 16 hours
Supervisor: Michelle Paul, Ph.D.

- Two 8-hour events aimed at increasing awareness of interprofessional education, practice concepts, roles, responsibilities, and myths for the participating professions, as well as initiating an understanding of how interprofessional teams should function to offer the best possible patient care

Integrated Behavioral Health in Primary Care Course

University of Nevada, Las Vegas
Las Vegas, NV

Fall 2017
Supervisor: Michelle Paul, Ph.D.

- 16-week course developed based on recommendations from Interprofessional Education Collaborative for clinical professions who plan on delivering integrated behavioral health services and who serve populations with complex needs in physical health, mental health, and substance use
- Areas of training included assessment, intervention, and consultation skills and working together within interdisciplinary teams in developing treatment plans and establishing appropriate referrals

Responsible Conduct of Research (RCR)

University of Nevada, Las Vegas - Office of Research and Integrity
Las Vegas, NV

Oct. 2016, 8 hours

- Live training on professional development and various ethical issues in conducting research in accordance with federal requirements

Family Behavior Therapy (FBT) for Adults

Bradley Donohue, Ph.D., Las Vegas, NV

Aug. 2015, 30 hours

- Comprehensive training focused on FBT for Adults, evidence-supported behavioral treatment for substance use and mental health disorders, developed with support of NIDA and NIMH
- FBT involves engagement of significant others as change agents in bringing about a substance-free lifestyle; core intervention components include Behavioral Goals & Rewards, Environmental-Control, Self-Control, Job-Getting Skills Training, Consequence Review, and Communication Skills Training

OTHER WORK EXPERIENCE

Treasurer – Board of Directors

2013-2015

Lee Shore Center (residential facility for victims of domestic violence)
Kenai, AK

Supervisor: Jennifer Joanis, J.D.

- Analyzed and monitored monthly financial data and reports
- Educated other board members about various granting organizations
- Organized and implemented fundraising efforts

AWARDS AND SCHOLARSHIPS

- Patricia Sastaunik Scholarship, UNLV (2017-2018) \$2,500
- UAA Talent Grant, UAA (2013) \$2,000
- Full Tuition Award, UAA (2012-2013) \$2,300

OUTSTANDING HONORS AND ACCOMPLISHMENTS

Undergraduate Chancellor’s List, UAA

2012-2015

LEADERSHIP, MENTORSHIP, AND SERVICE

Student Mentor

Kenai Alternative High School
Kenai, AK

2014 - 2015
Supervisor: Paul Landen, Ph.D.

- Met weekly with high school students to increase their knowledge and skills related to college preparation and professional development

PROFESSIONAL AFFILIATIONS

- Nevada Psychological Association (NPA), student member 2015-Present
- American Psychological Association (APA)
 - Division 47 (Sport & Performance Psychology), list serve member 2016-Present
- Western Psychological Association (WPA), student member 2016-Present
- Association for Applied Sport Psychology (AASP), student member 2016-2018

REFERENCES

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