



MSc in Clinical Psychology

The Relationship Between Anxiety and Depression Symptoms, and Help-Seeking Intentions in Individual Sport Athletes and University Students in Iceland: The Moderating Role of Gender and Participant Status

June 2017

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Foreword and Acknowledgements

This MSc thesis was conducted in partial fulfillment of the requirements for the degree of Master of Science in Clinical Psychology at Reykjavik University, and will be submitted for publication in The Journal of Clinical Sport Psychology. The co-author for the submission will be the main supervisor of this thesis, Dr. Hafrún Kristjánsdóttir.

This thesis paper is the result of a research project that was initiated in the beginning of the spring semester of 2016, and was conducted across three consecutive semesters as part of a MSc thesis course. The main coordinator of the MSc thesis course was Professor Jón Friðrik Sigurðsson. Within this course, specific assignments were due by the end of each semester including; a research plan, a literature review, an application (and approval of the application) to the Icelandic bioethics committee, a draft of the thesis methods and results, and the final submission of the MSc thesis.

Throughout this project, it became increasingly apparent to me that mental health issues among Icelandic athletes and university students warrant more attention. My sincere hope is that this thesis can motivate relevant stakeholders to take mark of this need. The National Olympic and Sports Association of Iceland and the Universities, and the athletes and the university students that participated in this study deserve a special thank you. I want to thank my supervisor, Dr. Hafrún Kristjánsdóttir for her support and assistance throughout this project. I also want to express my gratitude to the faculty members at the Psychology department at Reykjavik University for their help and support during the past five years of my studies. And to Rósa, you have been the backbone in everything, thank you!

Abstract

This study explored the relationship between anxiety and depression symptoms, and intentions to seek professional help from psychologist, and the moderating role of gender and participant status in this relationship. A total of 375 University students and 187 individual sport athletes, 18 years and older were included in the study.

A significant main effect of symptoms on help-seeking intentions was observed among females and this was moderated by participant status; female athletes with depression symptoms reported lower intentions than female students with depression symptoms. There was no main effect of symptoms among athletes, but a significant cross-over interaction effect of symptoms and gender on intentions was observed; non-symptomatic female athletes reported higher intentions than male athletes without symptoms, and female athletes with depression symptoms reported lower intentions than male athletes with depression symptoms.

Results suggested that experiencing depression symptoms may decrease female athletes' intentions to seek help from psychologist.

Keywords; anxiety, depression, help-seeking intentions, athletes, university students

Organized youth sports are thought to prepare individuals for life through positive physical and psychosocial development (Eime, Young, Harvey, Charity, & Payne, 2013). However, despite of the potential benefits acquired through youth sports, as athletes transition into senior sports, health related risk factors may become more prominent (Rice, Purcell, De Silva, et al., 2016). It is not until recently however that the prevalence of common mental disorders (CMD), such as anxiety and depression, has been systematically explored among the athlete populations. The current literature indicates that prevalence of CMDs among athletes may vary depending on sport-specific factors and that some athlete groups may be more vulnerable to mental health problems than others (Gulliver, Griffiths, Mackinnon, Batterham, & Stanimirovic, 2015; Rice, Purcell, Silva, et al., 2016; Roberts, Faull, & Tod, 2016; Weigand, Cohen, & Merenstein, 2013). For example, one consistent finding has been that individual sport athletes may be at a higher risk for CMDs than team sport athletes (Nixdorf, Frank, & Beckmann, 2016; Nixdorf, Frank, Hautzinger, & Beckmann, 2013; Schaal et al., 2011; Wolanin, Hong, Marks, Panchoo, & Gross, 2016). However, there is a need to explore this athlete population in more detail as most studies to-date have assessed CMDs in relatively small samples and/or within a limited range of different individual sports. For example, a study by Hammond, Gialloreto, Kubas, and Davis IV (2013) assessed depression symptoms in athletes from only one sport (swimming). Gulliver et al. (2015) assessed multiple mental disorders and only 15 individual sport athletes were included, representing only two different sports (rowing and sailing). One study assessed depression symptoms in individual sport athletes from 10 different individual sports, however, the sample size was relatively small ($n = 59$) (Nixdorf et al., 2013). Furthermore, Wolanin et al. (2016) assessed depressive symptoms including individual sport

athletes from five different individual sports and the sample size was larger than observed in other studies to-date (n = 127).

Previous studies have reported highly variable prevalence rates in athletes' current anxiety and/or depression symptoms, ranging from 6 % (Schaal et al., 2011) to 45% (Gouttebarga, Backx, Aoki, & Kerkhoffs, 2015). These inconsistencies may be due to differences in measurement and assessment methods, as well as due to differences in study populations. For example, while some studies have assessed prevalence of CMDs among European elite athletes through in-person interviews (Schaal et al., 2011), others have more commonly utilized self-report measures (e.g. Nixdorf et al., 2013). Furthermore, while some European and Australian studies have often compared elite or professional athletes' to the general population, showing similar prevalence rates between these groups (Gouttebarga, Backx, Aoki, & Kerkhoffs, 2015; Nixdorf, Frank, Hautzinger, & Beckmann, 2013; Wolanin, Hong, Marks, Panchoo, & Gross, 2016), other studies have assessed prevalence rates among North American collegiate athletes and non-athletes, and reported lower prevalence rates in athletes than non-athletes (Armstrong, Burcin, Bjerke, & Early, 2015; Armstrong & Oomen-Early, 2009). Despite of these methodological differences, the results from previous studies underline the fact that athletes *do* experience mental health problems and that further studies among the athlete population are warranted.

Although the question about athletes' risk for CMDs compared to other population groups is still a under debate, one question that is especially important from a treatment perspective concerns athletes' tendency to seek help when they experience mental health symptoms. Hence, although it is important to acquire more knowledge about the prevalence of

CMDs within the athlete population, it is also important to understand which athletes may be in an increased risk for not seeking help when symptoms emerge.

Help-seeking can be defined as a behavior where an individual expresses a need for help by approaching informal (e.g. friends and family) or formal (e.g. psychologist) sources for help (Rickwood, Deane, Wilson, & Ciarrochi, 2005). The help-seeking process involves the identification of a need for help, a deliberate decision process to seek help (intention), and the actual behavior of seeking help (Rickwood et al., 2005). Previous help-seeking experiences, especially positive ones, may significantly increase individuals' intentions to seek help in the future (Martin, 2005). However, for the majority of people, help-seeking from psychologists may not represent a habitual behavior, and hence intentions may be an important marker for future help-seeking behaviors (Ouellette & Wood, 1998).

Epidemiological studies have consistently reported that females are more likely than males to experience mood and anxiety disorders (Nolen-Hoeksema & Girgus, 1994; Steel et al., 2014). In contrast, studies suggest that males, of different ages, ethnicities, and social backgrounds, are as less likely than females to seek help for mental health problems (Addis & Mahalik, 2003). Similar gender differences have also been observed within the athlete population in prevalence (Rice, Purcell, Silva, et al., 2016) and in help-seeking patterns (Martin et al., 2001; Martin, Lavallee, Kellmann, & Page, 2004). Males' overall lower tendency to seek help has often been understood in terms of males' socialization into masculine roles, and that these roles are discrepant with the act of seeking help from others (Addis & Mahalik, 2003; Judd, Komiti, & Jackson, 2008). This socialization process may be especially prevalent within the sport culture where masking weakness (Gulliver, Griffiths, & Christensen, 2012) and exhibiting toughness, and ignoring or downplaying injury may be highly valued (Martin, 2005; Steinfeldt, Steinfeldt,

England, & Speight, 2009). Subsequently, some previous studies have shown that athletes may have less positive attitudes towards help-seeking than non-athletes (Watson, 2005).

Although these studies have expanded our understanding about how socialization through and in sports may give rise to attitudes and beliefs that may hinder help-seeking, intentions to seek help do not exist in a vacuum. That is, individuals' intention to seek help may depend on the type and severity of symptoms experienced, and it may be that those with the highest expected need may report the lowest intention to seek help (Deane, Wilson, & Ciarrochi, 2001; Rickwood et al., 2005; Wilson & Deane, 2010). For example, while increasing levels of depression symptoms may relate to decreased help-seeking intentions, increasing levels of anxiety symptoms may relate to increased intentions (Wilson & Deane, 2010). Furthermore, while individuals with minimal symptoms may initially report intentions to seek help in the future, as mental health symptoms emerge, intentions to seek help may decrease (Deane et al., 2001). Hence, although studies have reported that athletes may report less positive attitudes towards help-seeking than non-athletes (Watson, 2005), to the author's knowledge no studies have explored differences in athletes' and non-athletes' help-seeking intentions in conjunction to current psychological symptoms.

In sum, only a few studies have assessed CMDs within an individual sport athlete sample consisting of athletes from a range of different individual sports (for an overview see; Rice, Purcell, Silva, et al., 2016), and these studies have not assessed how symptoms may influence help-seeking intentions. In addition, much of the extant literature reporting prevalence rates of CMDs and help-seeking patterns among athletes have been conducted in larger sporting nations, where the contextual factors may have different implications for the athlete than in smaller sporting nations such as in Iceland (Swann, Moran, & Piggott, 2015). Furthermore, as indicated

in a study by Martin, Lavalley, Kellmann, and Page (2004) attitudes towards sport psychology consulting may vary not only as a function of type of sport and gender, but also as a function of nationality. Hence, an increased understanding of the country-specific patterns of symptom prevalence and how these symptoms relate to help-seeking intentions among Icelandic athletes is important in order for local and national sport organizations, and other stakeholders, to develop appropriate support and prevention strategies for in-risk athletes.

The first aim of the current study was to assess anxiety and depression symptoms, and help-seeking intentions in Icelandic individual sport athletes and university students, and to test if symptoms and help-seeking intentions differed depending on gender and participant status. Based on the reviewed studies it was anticipated that males would report significantly lower levels of anxiety and depression symptoms, and help-seeking intentions than females. It was also expected that athletes would have lower help-seeking intentions than students. No, other hypotheses were set forth due to inconsistencies in the current literature.

The second aim of this study was explorative in nature and aimed to extend current knowledge by exploring the relationship between type of symptoms (i.e. no symptoms, anxiety only, depression only, and comorbid anxiety and depression) and help-seeking intentions, and if this relationship would be moderated by gender and/or participant status.

Methods

Participants

The athlete sample consisted of male ($n = 85$) and female ($n = 97$) athletes, competing at the national and/or international level in any of the individual sports that are members of the National Olympic and Sports Association of Iceland (Íþróttta og Ólympíusamband Íslands, ISI). Inclusion criteria for athletes was; being 18 years or older, fluency in the Icelandic language, and

competing nationally or internationally in any of the individual sports that are members of the National Olympic and Sports Association of Iceland. The comparison group consisted of male ($n = 101$) and female ($n = 270$) university students currently enrolled in one of the seven Icelandic Universities. Inclusion criteria for the comparison sample was being 18 years or older, being fluent in the Icelandic language, and not currently competing in any sport.

Measures

Background variables. The online survey assessed demographic variables such as age, gender, and previous help-seeking experiences. Age was assessed in categories (three age groups per category e.g. 18-20) and previous help seeking was assessed with a multi-response scale where respondents were asked if they had ever sought help from a psychologist. Response categories were “yes, within the past 30 days”, “yes, within the past 12 months”, “yes, more than 12 months ago”, or “no”. Previous help seeking was then coded into a dichotomized variable “yes” or “no”. Individual sport athletes also answered whether they were currently in the national team or an elite training group.

General Anxiety Disorder 7 (GAD-7). Is a brief, 7-item self-report measure for assessing generalized anxiety disorder but is also suitable for assessing symptoms of anxiety in more general (Spitzer, Kroenke, Williams, & Löwe, 2006). The GAD-7 assesses symptom frequency and the severity of those symptoms during the past two-weeks. Each item on the scale is scored from 0 to 3, thus total score ranges from 0-21, with higher scores representing more severe symptoms of anxiety and scores 10 or above are considered as clinically relevant. The psychometric properties of GAD have shown to be good among the clinical (Spitzer et al., 2006) and the general population abroad (Löwe et al., 2008) and in Iceland (Ingólfssdóttir, 2014). In the

current sample, reliability was shown to be very good ($\alpha = .90$). Responses with more than 10 % of missing values on the scale were not included.

Patient Health Questionnaire 9 (PHQ – 9). Is a nine-item self-report scale, that assesses depressive symptoms during the past two-weeks. Each item is scored from 0 to three ranging from “not at all” to “nearly every day”, thus total scores range from 0 to 27, with higher scores representing more severe symptoms. Identical to the GAD-7, scores 10 or above are considered as clinically relevant. The psychometric properties of PHQ-9 have shown to be good among the clinical (Kroenke & Spitzer, 2002) and the general population (Martin, Rief, Klaiberg, & Braehler, 2006) abroad, and in Iceland (Palsdottir, 2007). In the current sample, reliability was shown to be very good ($\alpha = .87$). Responses with more than 10 % of missing values on the scale were not included.

Icelandic version of the Beliefs About Psychological Services (I-BAPS). Is an Icelandic (cross-culturally validated) version of the 18-item self-report measure; Beliefs About Psychological Services (BAPS, Aegisdottir & Gerstein, 2009). The I-BAPS is a 22-item questionnaire containing three subscales; Intent, Stigma Tolerance, and Expertness with each sub-scale score intended to be reported separately. The intent sub-scale was utilized in the current study. The intent scale includes six positively worded statements such as “At some future time, I might want to see a psychologist” or “I would see a psychologist if I were worried or upset for a long period of time”. Each item range from one (*strongly disagree*) to six (*strongly agree*) and the total scale score is calculated as the sum of each item response divided by the number of items, with higher scores representing greater intentions or willingness to seek help from a psychologist in the future. The I-BAPS was chosen for the current study as it is currently the only measure of help-seeking intention that has been adapted in Iceland, and has shown good

psychometric properties among the Icelandic general population (Ægisdóttir & Einarsdóttir, 2012). Permission to utilize the scale was granted by the developers of the I-BAPS. In the current study sample, reliability was shown to be very good ($\alpha = .87$). Responses with more than 10 % of missing values on the scale were not included.

Procedures

A non-probability (convenience) sampling method was utilized to recruit participants competing in individual sports. Firstly, the author advertised the study on Facebook with a short description of the study purpose, inclusion criteria, and providing a direct link to the online questionnaire. Individual athletes currently in elite or national team programs, were directly contacted through Facebook or indirectly through their coaches and requested to answer the online questionnaire. Furthermore, with help from The National Olympic and Sports Association, all individual Sport Federations were contacted and requested to forward a link to the online questionnaire to relevant athletes (i.e. 18 years and older, fluent in Icelandic, and actively competing in an individual sport at national or international level).

A non-probability (convenience) sampling method was also utilized to recruit the university sample. Firstly, the authors advertised the study on Facebook with a short description of the study purpose, inclusion criteria, and providing a direct link to the online questionnaire. Furthermore, all Icelandic Universities were contacted and requested to cooperate. Universities that agreed to cooperate (six out of seven), advertised the study on their respective internal webs and/or sent out emails to all students with a short description of the study purpose and a link to the survey.

Statistical Analyses

For anxiety and depression symptoms, participants were dichotomized into clinically relevant or no clinically relevant symptom-groups. Clinical relevance was defined as scores 10 or above for both depression (Kroenke & Spitzer, 2002) and anxiety symptoms (Spitzer, Kroenke, Williams, & Löwe, 2006). Column proportions were then compared between athletes and students utilizing Pearson's chi square to test for significant differences in prevalence between groups.

To test how participant status (athlete vs. student) and gender was related to the dependent variables anxiety and depression symptoms, and help-seeking intentions, separate 2 (participant status) x 2 (gender) Factorial ANOVAs were conducted for each dependent variable. When testing help-seeking intentions, age and previous help-seeking from psychologist were included as covariates. When testing for anxiety and depression symptoms, only age was included as a covariate. Since the homogeneity of variance assumption was violated for anxiety and depression symptoms, a square root transformation was executed for these dependent variables. However, analyses with transformed data did not influence the results, and hence the original analyzes are reported.

To explore the moderation effect of gender and participant status on the relationship between symptoms and help-seeking intentions, participants were categorized based on their clinically relevant symptoms; no symptoms, anxiety only, depression only, and comorbid depression and anxiety. A 2 (participant status) x 4 (symptom type) model was conducted separately for females and males to test the moderating effect of participant status on the relationship between symptoms and help-seeking intentions.

A 2 (gender) x 4 (symptom type) model was conducted separately for students and athletes to test the moderating effect of gender on the relationship between symptoms and help-seeking intentions. In all moderation models, help-seeking intention scale score was the dependent variable, and age and previous help-seeking from psychologist were included as covariates. The assumption of homogeneity of variance was not violated. All analyses were conducted with IBM statistics SPSS software version 24.

Ethical Considerations

Participants received information about the study purpose and its anonymity on the introduction page of the online questionnaire. Participants were informed that participation was voluntary and that participation could be withdrawn at any point during the study. Data was merely accessible to the primary investigator and the supervisor of the study, and was stored on a private password-protected folder. Considering the small population in Iceland, the athlete questionnaire was designed in such a way that identification of individual athletes was not possible. This study was approved by the Icelandic Bioethics Committee (application number 16-148).

Results

Descriptive Analyses

As shown in table 1, the athlete sample had a higher proportion of participants in the age ranges 18-20 years of age (30.8 %) than the student sample (8.2 %). Students also reported more experience of seeking help from a psychologist at some point in their lives (55.0 %) than athletes (39.3 %). Among athletes, 75.0 % were currently in the national team or in an elite training group. Athletes competed in a range of different sports including racquet sports (tennis, badminton, and table tennis), precision sports (golf, bowling, and shooting sports), aesthetic

sports (gymnastics, figure skating, and dance), speed and conditioning sports (track and field and swimming), combat sports (Judo, karate, boxing, Taekwondo, and wrestling) and power sports (powerlifting and Olympic weightlifting). A total of 35 athletes did not specify their sport or their sport did not fall specifically under any of the categories (e.g. Horse riding).

Table 1
Descriptive Statistics for Athletes and Students

| Factor | Athletes | | Students | |
|--|----------|------|----------|------|
| | n | % | n | % |
| Age | | | | |
| 18-20 | 56 | 30.8 | 30 | 8.2 |
| 21-23 | 45 | 24.7 | 93 | 25.3 |
| 24-26 | 31 | 17.0 | 72 | 19.6 |
| 27-29 | 15 | 8.2 | 45 | 12.3 |
| 30-32 | 13 | 7.1 | 30 | 8.2 |
| 33-35 | 8 | 4.4 | 36 | 9.8 |
| 36 + | 14 | 7.7 | 61 | 16.6 |
| Previous experience with psychologist | | | | |
| No | 111 | 60.7 | 165 | 45.0 |
| Yes | 72 | 39.3 | 202 | 55.0 |
| National or elite group | | | | |
| Yes | 138 | 75.0 | - | - |
| No | 46 | 25.0 | - | - |
| Type of sport | | | | |
| Racquet | 24 | 12.8 | - | - |
| Precision | 32 | 17.1 | - | - |
| Aesthetic | 13 | 7.0 | - | - |
| Speed and conditioning | 36 | 19.3 | - | - |
| Combat | 25 | 13.4 | - | - |
| Power | 22 | 11.8 | - | - |
| Other | 35 | 18.7 | - | - |

Note. University students were not assessed on sport specific factors, hence the dashed cells.

Prevalence

There was a significant difference in prevalence of clinically relevant anxiety symptoms between athletes and university students [$\chi^2 (1) = 6.82, p = .009$], with athletes reporting significantly lower prevalence (20.2 %) than university students (30.7 %). Athletes reported also significantly lower prevalence of depression symptoms (20.9 %) than students (34.1%) [$\chi^2 (1) = 10.26, p = .009$].

The Effect of Participant Status and Gender on Anxiety and Depression symptoms, and Help-Seeking Intentions.

Means scores for anxiety and depression symptoms, and help-seeking intentions by gender and participant status are displayed in table 2.

Anxiety symptoms. There was a significant main effect of participant status [$F (1, 538) = 14.20, p < .001, \text{partial } \eta^2 = .03$] and gender [$F (1, 538) = 13.48, p < .001, \text{partial } \eta^2 = .02$], but no significant interaction effect on symptoms of anxiety. Hence independent of participant status, males had on average lower levels of depression symptoms than females, and independent from gender, athletes had on average lower levels of depression symptoms than students. The total model explained 6.3 % of the variance in anxiety symptoms with age significantly contributing to the overall model [$F (1, 538) = 8.91, p = .003, \text{partial } \eta^2 = .02$].

Depression symptoms. There was a significant main effect of participant status [$F (1, 535) = 9.92, p = .002, \text{partial } \eta^2 = .02$] and gender [$F (1, 538) = 9.12, p = .003, \text{partial } \eta^2 = .02$], but no significant interaction effect on symptoms of depression. Hence independent of participant status, males had on average lower levels of depression symptoms than females, and athletes had on average lower levels of depression symptoms than students, independent from

gender. The total model explained 4.0 % of the variance and the age covariate did not significantly contribute to the overall model.

Help-seeking intentions. There was a significant main effect gender [$F(1, 532) = 9.02, p = .003, \text{partial } \eta^2 = .02$], but no significant main effect of participant status or interaction effect on help-seeking intentions. Hence independent of participant status, males had on average lower help-seeking intentions than females. The overall model explained 12.0 % of the variance in help-seeking and was significantly influenced by previous help seeking [$F(1, 532) = 37.58, p < .001, \text{partial } \eta^2 = .07$] and age [$F(1, 532) = 12.89, p < .001, \text{partial } \eta^2 = .02$].

Table 2**Means and Standard Deviations and Sample sizes in Anxiety, Depression, and Help-Seeking Intentions by Gender and Participant Status**

| Measure | Gender | Participant status | N | M | SD |
|--------------------------------|---------------|---------------------------|----------|----------|-----------|
| Anxiety symptoms | Male | University students | 98 | 6.46 | 4.94 |
| | | Individual sport athletes | 85 | 4.94 | 3.93 |
| | | Total | 183 | 5.75 | 4.55 |
| | Female | University students | 266 | 8.13 | 5.22 |
| | | Individual sport athletes | 94 | 6.79 | 4.43 |
| | | Total | 360 | 7.78 | 5.05 |
| | Total | University students | 364 | 7.68 | 5.19 |
| | | Individual sport athletes | 179 | 5.91 | 4.29 |
| | | Total | 543 | 7.10 | 4.98 |
| Depression | Male | University students | 97 | 6.89 | 5.59 |
| | | Individual sport athletes | 85 | 5.48 | 4.22 |
| | | Total | 182 | 6.23 | 5.03 |
| | Female | University students | 265 | 8.44 | 5.42 |
| | | Individual sport athletes | 93 | 7.05 | 5.13 |
| | | Total | 358 | 8.08 | 5.37 |
| | Total | University students | 362 | 8.02 | 5.50 |
| | | Individual sport athletes | 178 | 6.30 | 4.77 |
| | | Total | 540 | 7.46 | 5.33 |
| Help-seeking intentions | Male | University students | 97 | 4.37 | 1.13 |
| | | Individual sport athletes | 85 | 4.21 | 0.97 |
| | | Total | 182 | 4.30 | 1.06 |
| | Female | University students | 262 | 4.77 | 1.09 |
| | | Individual sport athletes | 94 | 4.49 | 0.98 |
| | | Total | 356 | 4.69 | 1.07 |
| | Total | University students | 359 | 4.66 | 1.11 |
| | | Individual sport athletes | 179 | 4.36 | 0.98 |
| | | Total | 538 | 4.56 | 1.08 |

Moderating Effect of Participant Status on The Relationship Between Type of Symptom(s) and Help-Seeking Intentions

Comparing female students and female athletes, there was a significant main effect of symptom type on help-seeking intentions, [$F(3, 342) = 2.98, p = .032, \text{partial } \eta^2 = .03$], but no significant main effect of participant status. There was also a significant interaction effect between type of symptoms and participant status on help-seeking intentions [$F(3, 342) = 2.91, p = .035, \text{partial } \eta^2 = .03$] (figure 1). This suggested that the relationship between symptom type and help-seeking intentions was moderated by participant status among females. Simple effects analyses showed that female athletes with only depression symptoms had significantly lower help-seeking intentions ($M = 3.60, SE = .32$) than female students reporting only depression symptoms ($M = 4.77, SE = .19$), [$F(1, 342) = 9.69, p = .002$]. The total model explained 9.1 % of the variance in females' help-seeking intentions with previous help-seeking [$F(1, 342) = 16.73, p < .001, \text{partial } \eta^2 = .05$] and age [$F(1, 342) = 8.82, p = .003, \text{partial } \eta^2 = .03$] significantly contributing to the model.

No significant main or interaction effects were observed for differences between male athletes and male students. However, previous help-seeking was a significant predictor of male participants help-seeking intentions [$F(1, 171) = 21.58, p < .001, \text{partial } \eta^2 = .11$].

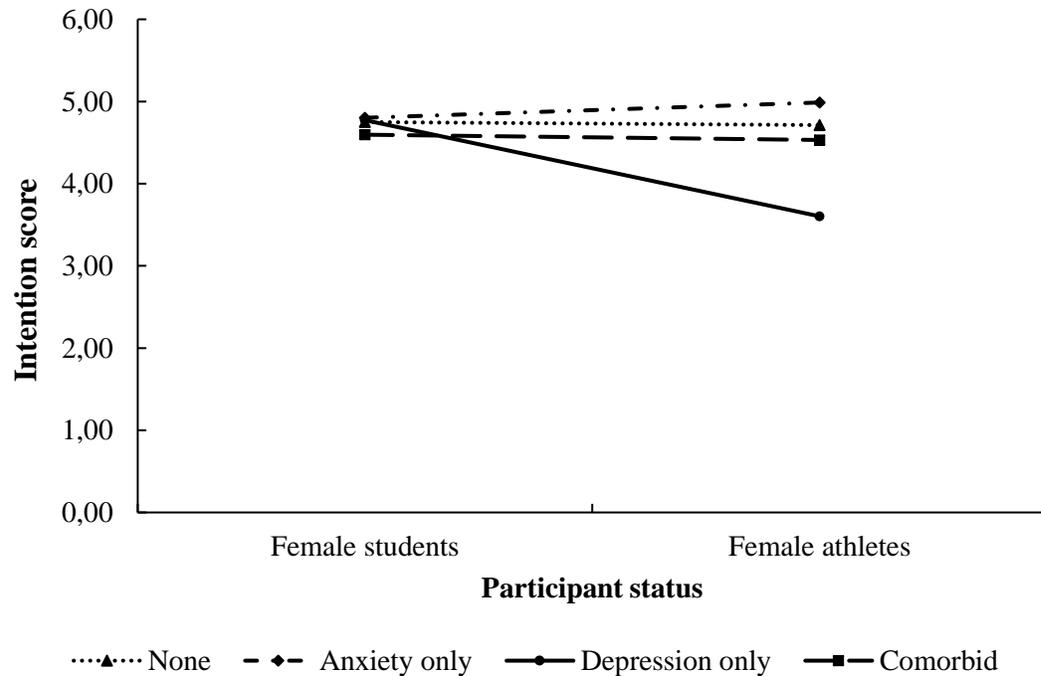


Figure 1 Help-Seeking Intentions for Female Participants by Participant Status and Type of Symptoms

Moderating Effect of Gender on the Relationship Between Type of Symptom(s) and Help-Seeking Intentions

Comparing male and female students, there was a significant main effect of gender [$F(1, 347) = 4.47, p = .035, \text{partial } \eta^2 = .01$] but no main effect of symptom type or interaction effect between gender and type of symptoms, suggesting that help-seeking intentions were lower among male than female students independent from symptom type. The total model explained 8.9 % of the variance in students' help-seeking intentions with previous help-seeking [$F(1, 347) = 18.47, p < .001, \text{partial } \eta^2 = .05$] and age [$F(1, 347) = 9.37, p = .002, \text{partial } \eta^2 = .03$] significantly contributing to the model.

Comparing male and female athletes, no significant main effect of symptom type or gender was observed. However, there was a significant cross-over interaction effect between

type of symptoms and gender on help-seeking intentions [$F(3, 166) = 2.84, p = .040, \text{partial } \eta^2 = .05$] (figure 2). Simple effects analyses showed that female athletes with no clinically relevant symptoms had higher intention scores ($M = 4.585, SE = .120$) than male athletes with no symptoms ($M = 4.205, SE = .114$), [$F(1, 166) = 5.29, p = .023$]. A reverse effect was shown for athletes reporting only depression symptoms, where male athletes had significantly higher intention scores ($M = 4.41, SE = .32$) than female athletes ($M = 3.47, SE = .29$), [$F(1, 166) = 4.76, p = .030$]. The total model explained 15,1% of athletes' help-seeking intentions, with previous help-seeking from a psychologist significantly contributing to the model [$F(1, 166) = 19.34, p < .001, \text{partial } \eta^2 = .10$]. The influence of age on help-seeking intentions did not reach statistical significance.

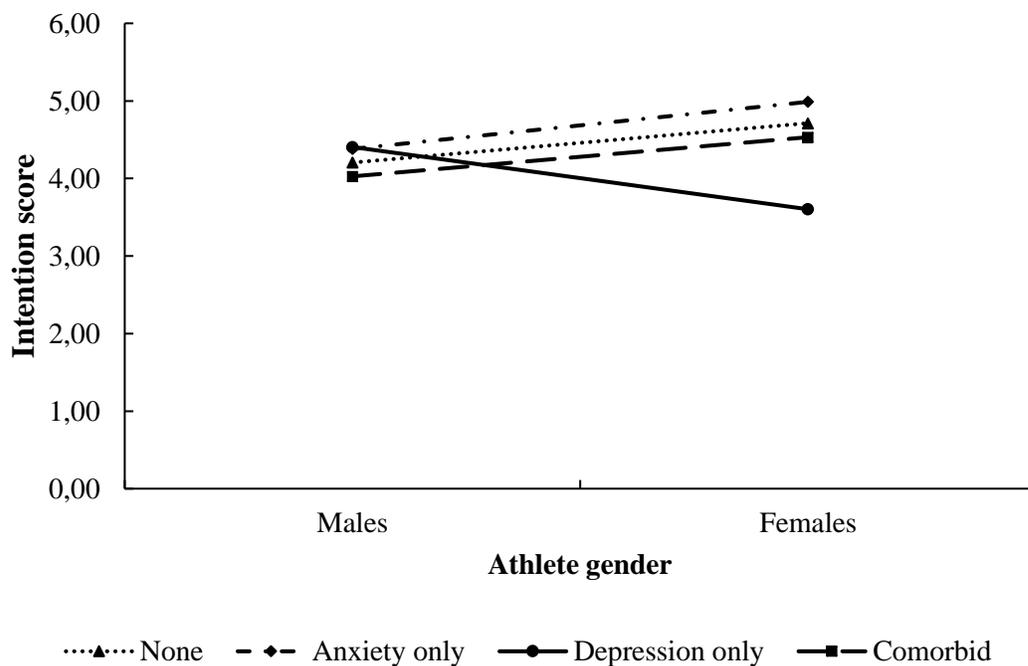


Figure 2 Help-seeking intentions for athletes by gender and type of symptoms

Discussion

This study aimed to assess differences in anxiety and depression symptoms, and help-seeking intentions between individual sport athletes and university students in Iceland. Furthermore, the aim was to extend the current athlete help-seeking literature by exploring the relationship between symptoms and help-seeking intentions, and if gender or participant status moderated this relationship.

The prevalence of clinically relevant symptoms of current anxiety was 20.2 % among individual sport athletes, which was significantly lower than the 30.7 % prevalence observed among university students. Athletes reported also significantly lower prevalence of depression symptoms (20.9 %) than students (34.1%). Although athletes in this study had higher prevalence rates than what has been reported in some previous studies among team sport athletes (Junge & Feddermann-Demont, 2016), it is difficult compare these studies as different measures were utilized to assess prevalence. Nevertheless, it is possible that the higher prevalence rate in the current study compared to previous studies among team sport athletes reflect the notion that individual sport athletes are more prone to CMDs than team sport athletes. For example, while Junge and Feddermann-Demont (2016) reported lower rates of depression and anxiety symptoms among soccer players, Hammond et al. (2013) showed similar rates of depression symptoms among swimmers as the current study.

It was found that independent of participant status (i.e. student or athlete), male participants reported on average lower anxiety and depression symptoms than females. Furthermore, both male and female athletes reported lower prevalence than their student counterparts. These results are in line with some previous studies suggesting males have on average lower symptoms of anxiety and depression than females (e.g. Steel et al., 2014), and that

athletes may have lower prevalence of some CMDs than university students (Armstrong & Oomen-Early, 2009) or other non-athlete populations (Armstrong et al., 2015). Although not specifically addressed in this study, according to some studies, the observed differences in prevalence of anxiety and depression symptoms could potentially reflect athletes' higher internal (e.g. self-esteem) and external (e.g. social support) protective resources gained through the socialization in and through sports (Armstrong, Burcin, Bjerke, & Early, 2015).

As expected, male participants in this study had lower intentions to seek help from psychologist than females, and is in-line with findings from previous studies (Addis & Mahalik, 2003). Based on the notion that socialization through sports could promote identification with norms that may hinder athletes inclination to seek help for mental health problems (Gulliver et al., 2012; Steinfeldt et al., 2009; Watson, 2005), it was expected that athletes would have lower help-seeking intentions than university students. However, although athletes had on average lower help-seeking intentions than students, this difference was not statistically significant.

An important aspect of the current study was however the idea, that help-seeking intentions do not present themselves in a vacuum. Instead, help-seeking intentions may depend on the type or severity of symptoms experienced by individuals (Rickwood et al., 2005). The second aim of the study explored this argument and it was found that symptom type was significantly related to help-seeking intentions among females, but not males. For females, the relationship between symptoms and help-seeking intentions varied as a function of participant status; female athletes who experienced clinically relevant symptoms of depression expressed significantly lower intentions to seek help than female students with these symptoms. Considering that conformity to traditional masculine gender norms may be more prevalent among female athletes than female non-athletes (Lantz & Schroeder, 1999; Steinfeldt, Zakrajsek,

Carter, & Steinfeldt, 2011), it is possible that that the lower intentions to seek help among female athletes than female students with depressive symptoms reflected this difference. For example, female military veterans showed no differences from men in relation to attitudes towards seeking psychological help in college after service (DiRamio, Jarvis, Iverson, Seher, & Anderson, 2015). Hence, it is possible that due to their socialization through and in sports, female athletes in this study identified more with norms discrepant with the act of seeking help than female students.

There was no significant main effect of symptom type on help-seeking when tested within the student and athlete samples separately. However, there was a significant cross-over interaction effect of gender and symptom type on help-seeking intentions among the athlete sample. This suggested that the relationship between symptoms and help-seeking intentions were different depending on athletes' gender. More specifically, female athletes with no clinically significant symptoms reported higher intentions to seek help than their male counterparts. Furthermore, in athletes reporting clinically relevant depression symptoms, help-seeking intentions were significantly lower for female than male athletes. Although no specific hypotheses were set forth, this latter finding was especially surprising considering that males, of different ages, ethnicities, and social backgrounds, have shown to be less likely than females to seek help for different mental and physical issues (Addis & Mahalik, 2003), and that this gendered help-seeking pattern has also been consistently reported within the athlete population (Martin et al., 2001, 2004).

However, as discussed by Deane and colleagues (2010) while individuals with minimal symptoms may initially report intentions to seek help in the future, as mental health symptoms emerge, intentions to seek help may decrease (Deane et al., 2001). While female athletes without clinically relevant symptoms reported higher willingness to seek help than male athletes, this

pattern in help-seeking intentions was reversed when depression symptoms were clinically relevant. Hence, for female athletes, the deliberate decision process to seek help (intention) (Rickwood et al., 2005) may have been disrupted due to the type of symptoms they experienced. Although the behavioral characteristics related to depression, such as decreased levels of interest and energy, and increased hopelessness, may explain the negative correlation between depression and help-seeking (Nam et al., 2013), it does not explain why depression symptoms influenced female athletes intentions significantly more than those of males'. One previous study among female university students has however found similar findings. Chang (2013) studied help-seeking intentions for depressive symptoms among Chinese University students and found that help-seeking intentions decreased as symptom severity increased. Interestingly, Chang also found that gender moderated the effects of symptom severity on help-seeking, where females with increasing levels of depression were less likely than male students to seek professional help. These findings are intriguing and underline the importance of assessing individuals' symptom type and severity when exploring patterns of help seeking. Furthermore, although several studies have supported the notion that males have lower help-seeking intentions than females, this relationship may not be as straightforward as previously indicated. Hence, within some population sub-groups such as athletes, females may be in an elevated risk for not seeking help when levels of depressive symptoms reach clinical relevance.

The Icelandic version of the Beliefs About Psychological Services (I-BAPS), that was utilized in the current study to measure help-seeking intentions is currently the only measure about help-seeking intentions that has been adapted to the Icelandic context. In a study by Ægisdóttir & Einarsdóttir (2012) the psychometric properties of the IBAPS was tested among 336 randomly selected, 17 to 70 year old Icelandic participants. When comparing the mean

scores from that study with the means in the current study, athletes and university students scored similarly or slightly higher than the Icelandic general population. However, when considering current symptomology, female athletes with depression symptoms had considerably lower intention scores than the Icelandic female population. Therefore, it is important for the local and national sport organizations, and other stakeholders developing support and prevention strategies for in-risk athletes to be aware of the possibility; that although male athletes have been previously identified as a risk group for not seeking help for mental health problems, female individual sport athletes with depression symptoms may be an important risk group.

It is also worth noting that previous help-seeking experiences explained a significant proportion of the total variance in all models, suggesting that previous experiences with a psychologist may be a robust predictor of help seeking intentions among Icelandic athletes and university students. This is in line with previous studies (Aegisdottir & Gerstein, 2009; Rickwood et al., 2005) and underlines the fact that preventive efforts among athletes should focus on introducing positive psychological experiences to athletes early in their careers in order to lower potential barriers to help-seeking. Based on the current results, it seems that Icelandic individual sport athletes have less experience with psychologist than university students. Future studies should assess whether this pattern is the rule, rather than the exception within the athlete population, and hence develop future youth and junior development programs accordingly.

There are some limitations to this study that should be mentioned. Firstly, the study was cross-sectional in nature and hence causal attributions cannot be made. Furthermore, self-selection bias due to the convenience sampling methodology could have influenced the results and hence these results should be replicated in future studies with a more representative sample. Furthermore, help-seeking from other sources, such as family and friends was not analyzed, thus

it is possible that female athletes with depression symptoms in this study were more likely to seek help from these sources rather than from psychologists. Finally, although 75% of the athletes reported being currently in an elite group or national team, and that top athletes in Iceland were directly contacted through Facebook or through their coaches, it is difficult to evaluate athletes' competitive level in this sample. As discussed by Swann et al. (2015) the competitive level may vary largely depending on type of sport and depending on its size and popularity within the country.

Nevertheless, to the author's knowledge, the current study is the first study to assess the effect of anxiety and depression symptoms on help-seeking intentions among a sample of athletes competing in a range of different individual sports. Furthermore, it utilized standardized measures that have been adapted to the Icelandic context and hence provides a good basis for future studies among the Icelandic athlete population. The comparison group consisted of university students from all the seven Universities in Iceland. Considering that University students have been shown to be an important population risk group, both in terms of prevalence of CMDs (Stallman, 2010) and help-seeking intentions (Hunt & Eisenberg, 2010), this study may provide useful information concerning the risk-status of Icelandic individual sport athletes.

Conclusions and future directions

This study provides preliminary findings among individual sport athletes in Iceland and suggests that although athletes may have in general lower levels of anxiety and depression symptoms than Icelandic university students; female athletes that do experience depression symptoms may be in an increased risk for not seeking help from psychologist. Considering that previous help-seeking was the strongest predictor of willingness to seek help from a psychologist, it is important that local and national sport organizations, and other stakeholders

promote early contact with the psychology professionals. By introducing the different aspects of psychological services and concepts as a normal part of the athletic culture, it is perhaps possible to further promote help-seeking intentions and behaviors in the future. Future studies should conduct longitudinal studies to describe the developmental features of CMDs and help-seeking among athletes to identify relevant sport and non-sport specific determinants. Furthermore, more studies are warranted to replicate the findings concerning the potential negative impact of depression symptoms on female athletes help-seeking intentions.

References

- Addis, M. E., & Mahalik, J. R. (2003). Men, masculinity, and the contexts of help seeking. *American Psychologist, 58*(1), 5.
- Ægisdóttir, S., & Einarisdóttir, S. (2012). Cross-cultural adaptation of the Icelandic Beliefs about Psychological Services Scale (I-BAPS). *International Perspectives in Psychology: Research, Practice, Consultation, 1*(4), 236.
- Aegisdottir, S., & Gerstein, L. H. (2009). Beliefs about psychological services (BAPS): Development and psychometric properties. *Counselling Psychology Quarterly, 22*(2), 197–219.
- Armstrong, S. N., Burcin, M. M., Bjerke, W., & Early, J. (2015). Depression in Student Athletes: A Particularly At-Risk Group? A Systematic Review of the Literature.
- Armstrong, S., & Oomen-Early, J. (2009). Social connectedness, self-esteem, and depression symptomatology among collegiate athletes versus nonathletes. *Journal of American College Health, 57*(5), 521–526.
- Deane, F. P., Wilson, C. J., & Ciarrochi, J. (2001). Suicidal ideation and help-negation: Not just hopelessness or prior help. *Journal of Clinical Psychology, 57*(7), 901–914.
- DiRamio, D., Jarvis, K., Iverson, S., Seher, C., & Anderson, R. (2015). Out from the shadows: female student veterans and help-seeking. *College Student Journal, 49*(1), 49–68.
- Eime, R. M., Young, J. A., Harvey, J. T., Charity, M. J., & Payne, W. R. (2013). A systematic review of the psychological and social benefits of participation in sport for children and adolescents: informing development of a conceptual model of health through sport. *International Journal of Behavioral Nutrition and Physical Activity, 10*(1), 98.

- Gouttebauge, V., Backx, F. J., Aoki, H., & Kerkhoffs, G. M. (2015). Symptoms of Common Mental Disorders in Professional Football (Soccer) Across Five European Countries. *Journal of Sports Science & Medicine, 14*(4), 811–818.
- Gulliver, A., Griffiths, K. M., & Christensen, H. (2012). Barriers and facilitators to mental health help-seeking for young elite athletes: a qualitative study. *BMC Psychiatry, 12*(1), 157.
- Gulliver, A., Griffiths, K. M., Mackinnon, A., Batterham, P. J., & Stanimirovic, R. (2015). The mental health of Australian elite athletes. *Journal of Science and Medicine in Sport, 18*(3), 255–261.
- Hammond, T., Gialloredo, C., Kubas, H., & Davis IV, H. H. (2013). The prevalence of failure-based depression among elite athletes. *Clinical Journal of Sport Medicine, 23*(4), 273–277.
- Hunt, J., & Eisenberg, D. (2010). Mental health problems and help-seeking behavior among college students. *Journal of Adolescent Health, 46*(1), 3–10.
- Ingólfssdóttir, R. (2014). Psychometric Properties of the Icelandic Version of the Generalized Anxiety Disorder-7. Retrieved from <http://skemman.is/item/view/1946/19443>
- Judd, F., Komiti, A., & Jackson, H. (2008). How does being female assist help-seeking for mental health problems? *Australian and New Zealand Journal of Psychiatry, 42*(1), 24–29.
- Junge, A., & Feddermann-Demont, N. (2016a). Prevalence of depression and anxiety in top-level male and female football players. *BMJ Open Sport & Exercise Medicine, 2*(1), e000087.
- Kroenke, K., & Spitzer, R. L. (2002). The PHQ-9: a new depression diagnostic and severity measure. *Psychiatric Annals, 32*(9), 509–515.

- Lantz, C. D., & Schroeder, P. J. (1999). Endorsement of masculine and feminine gender roles: Differences between participation in and identification with the athletic role. *Journal of Sport Behavior*, 22(4), 545.
- Martin, A., Rief, W., Klaiberg, A., & Braehler, E. (2006). Validity of the brief patient health questionnaire mood scale (PHQ-9) in the general population. *General Hospital Psychiatry*, 28(1), 71–77.
- Martin, S. B. (2005). High school and college athletes' attitudes toward sport psychology consulting. *Journal of Applied Sport Psychology*, 17(2), 127–139.
- Martin, S. B., Akers, A., Jackson, A. W., Wrisberg, C. A., Nelson, L., Leslie, P. J., & Leidig, L. (2001). Male and female athletes' and nonathletes' expectations about sport psychology consulting. *Journal of Applied Sport Psychology*, 13(1), 18–39.
- Martin, S. B., Lavalley, D., Kellmann, M., & Page, S. J. (2004). Attitudes toward sport psychology consulting of adult athletes from the United States, United Kingdom, and Germany. *International Journal of Sport and Exercise Psychology*, 2(2), 146–160.
- Nam, S. K., Choi, S. I., Lee, J. H., Lee, M. K., Kim, A. R., & Lee, S. M. (2013). Psychological factors in college students' attitudes toward seeking professional psychological help: A meta-analysis. *American Psychological Association*. Retrieved from <http://psycnet.apa.org/journals/pro/44/1/37/>
- Nixdorf, I., Frank, R., & Beckmann, J. (2016). Comparison of athletes' proneness to depressive symptoms in individual and team sports: Research on psychological mediators in junior elite athletes. *Frontiers in Psychology*, 7, 893.

- Nixdorf, I., Frank, R., Hautzinger, M., & Beckmann, J. (2013). Prevalence of depressive symptoms and correlating variables among German elite athletes. *Journal of Clinical Sport Psychology, 7*(4), 313–326.
- Nolen-Hoeksema, S., & Girgus, J. S. (1994). The emergence of gender differences in depression during adolescence. *Psychological Bulletin, 115*(3), 424.
- Ouellette, J. A., & Wood, W. (1998). Habit and intention in everyday life: The multiple processes by which past behavior predicts future behavior. *Psychological Bulletin, 124*(1), 54.
- Pálsdóttir, V.E. (2007). Réttmæti sjálfsmatskvarðans Patient Health Questionnaire (PHQ) gagnvart geðgreiningarviðtalinu Mini International Neuropsychiatric Interview (MINI) við að greina geðraskanir hjá heilsugæslusjúklingum. An unpublished Cand.Psych dissertation. University of Iceland.
- Rice, S. M., Purcell, R., De Silva, S., Mawren, D., McGorry, P. D., & Parker, A. G. (2016). The Mental Health of Elite Athletes: A Narrative Systematic Review. *Sports Medicine, 1–21*.
- Rickwood, D., Deane, F. P., Wilson, C. J., & Ciarrochi, J. (2005). Young people's help-seeking for mental health problems. *Australian E-Journal for the Advancement of Mental Health, 4*(3), 218–251.
- Roberts, C.-M., Faull, A. L., & Tod, D. (2016). Blurred lines: performance enhancement, common mental disorders and referral in the UK Athletic Population. *Frontiers in Psychology, 7*.
- Schaal, K., Tafflet, M., Nassif, H., Thibault, V., Pichard, C., Alcotte, M., ... others. (2011). Psychological balance in high level athletes: gender-based differences and sport-specific patterns. Retrieved from <http://dx.plos.org/10.1371/journal.pone.0019007>

- Spitzer, R. L., Kroenke, K., Williams, J. B., & Löwe, B. (2006). A brief measure for assessing generalized anxiety disorder: the GAD-7. *Archives of Internal Medicine*, *166*(10), 1092–1097.
- Stallman, H. M. (2010). Psychological distress in university students: A comparison with general population data. *Australian Psychologist*, *45*(4), 249–257.
- Steel, Z., Marnane, C., Iranpour, C., Chey, T., Jackson, J. W., Patel, V., & Silove, D. (2014). The global prevalence of common mental disorders: a systematic review and meta-analysis 1980–2013. *International Journal of Epidemiology*, dyu038.
- Steinfeldt, J. A., Steinfeldt, M. C., England, B., & Speight, Q. L. (2009). Gender role conflict and stigma toward help-seeking among college football players. *Psychology of Men & Masculinity*, *10*(4), 261.
- Steinfeldt, J. A., Zakrajsek, R., Carter, H., & Steinfeldt, M. C. (2011). Conformity to gender norms among female student-athletes: Implications for body image. *Psychology of Men & Masculinity*, *12*(4), 401.
- Swann, C., Moran, A., & Piggott, D. (2015). Defining elite athletes: Issues in the study of expert performance in sport psychology. *Psychology of Sport and Exercise*, *16*, 3–14.
- Watson, J. C. (2005). College student-athletes' attitudes toward help-seeking behavior and expectations of counseling services. *Journal of College Student Development*, *46*(4), 442–449.
- Weigand, S., Cohen, J., & Merenstein, D. (2013). Susceptibility for depression in current and retired student athletes. *Sports Health*, *5*(3), 263–266.
- Wilson, C. J., & Deane, F. P. (2010). Help-negation and suicidal ideation: the role of depression, anxiety and hopelessness. *Journal of Youth and Adolescence*, *39*(3), 291–305.

Wolanin, A., Hong, E., Marks, D., Panchoo, K., & Gross, M. (2016). Prevalence of clinically elevated depressive symptoms in college athletes and differences by gender and sport.

British Journal of Sports Medicine, 50(3), 167–171.