**Supplementary Table 3.** Summary of findings

| Study | Anxiety profile; *n* (%) reporting anxiety. Mean anxiety level | Anxiety measurement tool\* | Timing of anxiety assessment | Main anxiety findings |
| --- | --- | --- | --- | --- |
| Bartholomew | *n* = NR. Means; Low-performance range 15.78-10.11, high performance range 15.0 – 9.11, accurate feedback range 12.0 – 9.22, control 11.89 – 10.67 | Shortened State Anxiety Inventory (SAI). 8 items, 0-4 response scale | Before exercise and 10, 25, and 40 minutes after exercise in 4 conditions - exercise, accurate feedback; exercise, low performance feedback; exercise high performance feedback; no exercise, control | The low performance feedback group had higher state anxiety than the high performance feedback group 10 minutes post- exercise (*ES =* 1.38). Both groups reported lower anxiety than controls at 40 minutes post exercise (*ES =* 1.17, *ES =* 0.83 respectively), but did not differ. The accurate feedback group had lower anxiety than controls 10 minutes post-exercise (*ES* = 1.10). |
| Brand et al. | Females; Elite *n* = NR (14.4%), deselected (33.3%), non-athletes (13.3%) Males; Elite (9%), deselected (4.7%), non-athletes (8%). Means NR | Composite International Diagnostic-Screener (CID-S), 4 anxiety-related symptoms | Self-reported during career | Women reported higher anxiety symptoms than men (> 10.12. *p* <.01). Deselected female athletes had higher overall anxiety compared to elite athletes (OR *=* 2.3) and non-athletes (OR *=* 2.5). |
| Brown et al. | *n* = 243 (28.8%). Forced retirement 26.1%, voluntary retirement 32.7%. Means NR | General Health Questionnaire (GHQ-12), 12 item, 4-point scale | Self-reported post career | Anxiety/depression was not significantly different between voluntary and forced retired rugby players. Co-morbidity of two or more CMD symptoms was significantly higher in forced retired players (37%) compared to voluntary retired players (23.9%), *p* = .02. Forced retired players were 1.9 times more likely to experience co-morbidity compared to voluntary retired players (95% CI 1.11 - 3.15). |
| Byrd et al. | *n* = 11 (37%). Mean = 7.4 (5.6) | Generalized Anxiety disorder (GAD-7) scale. 7 questions, 0-3 response scale | Self-reported within 10 days of concussion | Increased concussion symptoms significantly predicted higher anxiety scores (adjusted *R*2 = 0.398). |
| Çelebi et al. | *n* = NR. Means; Time of admission 6.21, 6-weeks post 5.33 | Hospital Anxiety and Depression Scale (HADS) | Time of admission into rehabilitation program (1-week post operation) and 6-weeks post operation | Anxiety was significantly higher 1 week post-operation compared to 6 weeks post-operation (*t* = -8.21, *p* < .001). Knee function was negatively correlated with anxiety (*r* = -0.49, *p* < .01). |
| Cromer et al. | OCD from PDSQ; Year 1, *n* = 269 (20.1%), Year 2, *n* = 45 (16.7%). Means NR | Psychiatric Diagnostic Screening Questionnaire (PDSQ), Florida Obsessive-compulsive Inventory (FOCI) | Self-reported at 2 time points, 1 year apart. | All-conference collegiate athletes had less symptoms (*t* = 2.36, *p* = .02) and fewer positive screenings for OCD (= 5.68, *p* = .02) than non-all-conference athletes. FOCI scores suggest that collegiate athletes had higher prevalence of OCD (5.2%) than the general population (2.3%). |
| Drew et al. | *n* = 24 (19%). Means NR | Depression, Anxiety and Stress scale (DASS-21) | Self-reported ~ 3 months before 2016 Summer Olympics | Factor analyses showed anxiety was a factor in athlete health status, 0.72, and recent sports incapacity illness, 0.74. Anxiety was not associated with any individual illnesses. |
| Du Preez et al. | Preseason *n* = 59 (14.6%), in-season *n* = 28 (10.1%). Means; preseason 4.51, in-season 4.14 | GAD-7 | Self-reported during pre-season and in-season | Anxiety scores were not different in the two periods (*p* = .10). History of mental illness associated with anxiety at preseason (OR = 3.81, 95% CI 1.85 – 7.82) and in-season (OR = 13.28, 95% CI 4.89 – 36.05). |
| Eissa et al. | GAD *n* = 2 (2%), OCD *n* = 11 (11%), panic disorder *n* = 2 (2%), social phobia *n* = 14 (14%), agoraphobia *n* = 1 (1%), specific phobia *n* = 35 (35%), PTSD *n* = 5 (5%); Means NR | Structured clinical interview (SCID-CV) | Interviewed during career | Athletes with GAD and panic disorder used significantly less social support coping and information seeking than athletes without that diagnosis (M = 36.5, 51.86 for both disorders). Athletes with social phobia were less likely to use positive reinterpretation than athletes without social phobia (M = 47.36, 54.72). Athletes with specific phobia showed more helplessness and self-blame (M = 54.20, 50.59) and greater use of behavioral emotion-focussed coping (M = 111.66, 104.48) than those without specific phobia. |
| Filaire et al. | *n* = NR. Means; Handball before competition 49.5, after competition 44.7. Volleyball before competition 42.1, after competition 34.3 | State Trait Anxiety Inventory (STAI) | Self-reported before and after competition | Handball players had significantly higher state and trait anxiety than volleyball players, *p* < .01. State anxiety significantly correlated with cortisol levels before competition (*r* = .81, *p* < .01), DHEA (*r* = .61, *p* < .05) and androstenedione (*r* = .53, *p* < .05). |
| Fiorilli et al. | *n* = NR. Means; Basketball 0.30, non-basketball 0.41 | Symptom Checklist 90 (SCL-90-R), 90 items, 5-point scale | Self-reported during career | Basketball and non-basketball wheelchair participants did not differ on scores of general anxiety (*p* = .34). Mean scores of phobic anxiety were lower in basketball (.17) compared to non-basketball (0.70) players (*p* < .01). |
| Foskett & Longstaff | *n* = 66 (47.8%); means NR | GHQ-12 | Self-reported during career | Anxiety/depression showed a significant negative correlation with career satisfaction (*r* = -0.3, *p* < .001). Anxiety/depression was not associated with age, sport type, injuries, or competitive level. |
| Gerber et al. | Trait anxiety means; athletes 2.17, controls 2.23 | German STAI. 20-item, 4-point response scale | Self-reported before training session over 7-day log entry | Athletes reported lower trait-anxiety than controls (*F* = 9.46, *p* <.01). Higher stress levels were associated with higher trait anxiety (*F* = 16.67, *p* < .001). Women reported higher trait anxiety scores than men (*F* = 15.58, *p* <.01). |
| Gleeson et al. | Median scores; male swimmers 35.0, male controls 31.5. Female swimmers 36.0, female controls 36.0 | STAI | Studied and self-reported before and during training sessions at monthly intervals | Anxiety scores did not differ between male and female swimmers (*p* = .53) or male and female controls (*p* = .19). |
| Gomez-Piqueras et al. | *n* = NR; Means, no re-injury 9.91, re-injury 17.08 | STAI | Self-reported at predicted end of injury recovery | Re-injured players presented higher levels of anxiety compared to players that did not suffer re-injury (*d* = 1.1, *p* < .01). Players with an anxiety score of >17 were significantly more likely to re-injure themselves (RR = 8.63, 95% CI = 2.0 – 36.2). |
| Gouttebarge et al. 2016a | *n =* 66 (35%). Mean NR | GHQ-12 | Self-reported post-career | Anxiety/depression was the second most prevalent symptom of CMDs behind adverse nutrition behavior (65%). Anxiety/ depression was associated with life events in past 6 months (OR = 1.6, 95% CI 1.2 – 2.1), but not career dissatisfaction, surgeries, severe injuries, or life events > 6 months ago. |
| Gouttebarge et al. 2017a | Total *n* = NR (26%). Mean NR | GHQ-12 | Self-reported post career | Former male athletes with 6 or more concussions in their careers were 2.4 times more likely to experience symptoms of anxiety/depression (95% CI 1.2 – 4.9). |
| Gouttebarge et al. 2016b | Current soccer players *n* = NR (38%), retired soccer players (35%). Mean NR | GHQ-12 | One group self-reported during career, one group post-career | Anxiety/depression was the second most prevalent symptom of CMDs (38%, 35%) in current and retired professional players, respectively. Employment status (-0.17, *p* < .05) and working hours (-0.19, *p* < .05) showed weak negative correlations with anxiety. |
| Gouttebarge et al. 2017b | Baseline *n* = NR (32%), follow-up incidence *n* = 50 (37%). Means NR | GHQ-12 | Self-reported during career, baseline related to symptoms experienced in previous 4 weeks, first and second follow-up related to previous 6 months | Anxiety/depression was the most prevalent symptom of CMDs (32%, 37%) at baseline and follow-up (incidence) respectively, compared to distress (16%, 12%), sleep disturbance (25%, 19%), and adverse alcohol use (9%, 14%). No associations between anxiety/depression and adverse life events, conflict with trainer/coach, or career dissatisfaction were found. |
| Gouttebarge et al. 2015a | Spain *n* = NR (25%), France (38%), Sweden (38%), Finland (40%), Norway (43%) | GHQ-12 | Self-reported during career | Anxiety/depression was more prevalent than distress, adverse alcohol behavior, and sleeping disturbance in all countries except Spain. Anxiety/depression and life events within 6 months showed small positive correlations in Finland (*r* = .25, *p* < .05) and Sweden (*r* = .18, *p* < .05). Weak to moderate negative correlations between anxiety/ depression and career dissatisfaction were found in Finland (*r* = -.35, *p* < .01) and Sweden (*r* = -.19, *p* < .05). |
| Gouttebarge et al. 2015b | Current soccer players *n* = 38 (26%), former soccer players *n* = 41 (39%). Means NR | GHQ-6, 6 items, 4-point scale | Self-reported during and after career, relating to symptoms experienced in previous 4 weeks | Anxiety/depression was more prevalent than distress (10%, 18%), burnout (5%, 16%), and low self-esteem (3%, 5%) among current and retired players, respectively. Anxiety/ depression was associated with life events within 12 months in current (OR = 1.4, 95% CI 1.2 – 1.8) and former players (OR = 1.4, 95% CI 1.0 – 1.9). Anxiety/depression was also weakly associated with low social support from teammates in current players (OR = 1.1, 95% CI 1.0 – 1.1). |
| Gouttebarge et al. 2017c | *n* = NR (30%). Means NR | GHQ-12 | Self-reported during career, relating to symptoms experienced in previous 4 weeks | Anxiety/depression was the most prevalent symptom of CMDs compared to distress (17%), sleep disturbance (13%), eating disorders (23%), and adverse alcohol use (15%). |
| Gouttebarge et al. 2017d | *n* = 84 (45%) | GHQ-12 | Self-reported, relating to symptoms experienced in previous 4 weeks | Anxiety/depression was the most common CMD symptom in athletes. Multivariate analysis showed that current athletes with symptoms of anxiety/depression were 3.8 times more likely to have career dissatisfaction (95% CI 1.8 – 7.9), compared to those without symptoms. |
| Gouttebarge et al. 2016c | *n* = 79 (28%). Means NR | GHQ-12 | Self-reported after career, relating to symptoms experienced in previous 4 weeks | Anxiety/depression had higher prevalence than distress (25%) and adverse alcohol (24%) and adverse smoking behaviors (15%), but not sleep disturbance (29%) or adverse nutrition behavior (62%). More life events in the past 6 months was associated with anxiety/depression symptoms (OR = 1.6, 95% CI 1.2 – 21). Anxiety/depression and career dissatisfaction had a weak negative correlation (*r* = -.13, *p* <.05). |
| Gouttebarge et al. 2017e | Current ice hockey players *n* = NR (24%), former players (19%). Means NR | GHQ-12 | Self-reported during and after career at baseline (relating to past 4 weeks) and 6 months later | Anxiety/depression was the most prevalent CMD symptom in current players, but the third most prevalent in former players after adverse alcohol use (29%) and eating disorders (24%). There were no significant associations between anxiety/depression and severe injury, surgery, recent life events, or career dissatisfaction. |
| Gouttebarge et al. 2016d | Baseline *n* = 87 (48%), follow-up incidence *n* = 12 (21%). Means NR | GHQ-12 | Self-reported during career at baseline (relating to past 4 weeks) and 6 months later | Anxiety/depression was the most prevalent CMD symptom at baseline and follow up (incidence). There was an association between severe injury and anxiety/depression (OR = 3.1, 95% CI 1.2 – 8.2). |
| Gouttebarge et al.2018 | *n* = NR (28%). Means NR | GHQ-12 | Self-reported at two time points, baseline (symptoms within previous month) and 12-month follow-up (symptoms within past 6 months). | Baseline prevalence of anxiety/depression was 32%. Incidence of anxiety/depression was the highest CMD at 28%. Anxiety/ depression symptoms were positively associated with 1-2 negative life events within 6 months (RR = 2.1, 95% CI = 0.6 – 7.0). |
| Gross et al. | *n* = NR; Means, general anxiety = Mindfulness-Acceptance-Commitment (MAC) pre 0.84, post 1.1 follow-up 0.57; Psychological Skills Training (PST) pre 0.9, post 0.9, follow-up 0.72 | Counselling Centre Assessment of Psychological Symptoms-62 (CCAPS-62) | Preseason, self-reported at baseline, post-program (week 7), and one-month follow-up | A significant within-group effect was found for generalized anxiety (*F*(2, 32) = 5.24, *p* = .01, *η2p* = 0.25); MAC group participants showed decreased anxiety from post-intervention to follow-up. No effects were found for social anxiety. |
| Guillén and Sánchez | *n* = NR. Mean state anxiety; national team 15.07, first division 0.07. Mean trait anxiety; national team 23.3, first division 24.99 | STAI | Self-reported 24-48 hours prior to a game | Main effect found for playing time on state (*F* = 6.2, *p* = .003) and trait anxiety (*F* = 11.11, *p* = .001). Players averaging ≥ 30 min of game time had significantly lower state and trait anxiety scores than players averaging 11-29 minutes and ≤ 10 minutes of game time. Years of experience had a main effect on trait anxiety (*F* = 3.14, *p* = .048). Players with ≥ 7 years' experience had significantly lower trait anxiety than players with 1-2 or 3-6 years' experience. Game time was a significant predictor of state (*β=* -.33, *p* < .01) and trait (*β =* -.46, *p* < .01) anxiety; years of experience (*β =* -.41, *p* < .03) and age (*β =* .48, *p* < .01) were significant predictors of trait anxiety. |
| Gulliver et al. | General anxiety *n* = 16 (7%), social anxiety *n* = 33 (15%). Mean generalized anxiety 4.09, social anxiety 9.72 | GAD-7 and Social Phobia Inventory (SPIN) | Self-reported during career | Injured athletes showed more symptoms of generalized anxiety disorder (*t* = 2.26, *p* = .025) than non-injured athletes. Prevalence of general and social anxiety symptoms in athletes were comparable to the general population. |
| Guo et al. | *n* = NR; Mean baseline ~41, 12-month follow-up ~28 | STAI | Baseline, follow-up intervals until injured athlete returned to play. | Anxiety scores did not differ between athletes with concussion versus orthopedic injuries. For both injury types, anxiety scores decreased over time (*B* = -1.14, *p* < .001). |
| Halvari and Gjesme | Pre-test trait anxiety; low, *n* = 13, moderate, *n* = 11, high, *n* = 9. Pre-test state anxiety; low *n* = 11, moderate, *n* = 11, high, *n* = 11. Post-test state anxiety; low *n* = 11, moderate, *n* = 11, high, *n* = 11. Means NR | STAI | Before and after a short competitive motor-task (Kasten-Bumerang Test) | Trait anxiety was associated with performance error (*β* = .32, *p* < .05). Pre-state anxiety showed a U-shaped relationship with performance error *(β* = .52, *p* < .001)*,* indicating that high and low pre-state anxiety levels were associated with more errors than moderate anxiety (= 9.9, *p* < .001). Post-state anxiety was also related to number of performance errors ( =10.2 *p* < .001); high performance errors increased post-state anxiety (*β* = .48, *p* < .01). |
| Han et al. | *n* = NR; Means, higher rank = 38.8 (8.2), lower rank = 41.3 (8.4) | STAI form-Y, Korean version | Self-reported during career | Higher- and lower-ranked baseball players did not differ in trait anxiety. |
| Houltberg et al. | NR | DASS-21 | Self-reported during career | Athletes with a performance-based identity had the highest anxiety scores, followed by athletes with mixed-profile identity and purpose-based identity ((2) = 25.34, *p* < .001). |
| Ivarsson et al. | *n* = NR. Mean; men 3.6, women 4.2 | Swedish Universities Scales of Personalities (anxiety subscale). 7 items, 4-point scale | Self-reported during competitive season. Followed up over 13-weeks | Path analysis showed trait anxiety indirectly affected injury occurrence through negative life event stress and daily hassle, but did not directly affect injury occurrence. Trait anxiety had a direct positive relationship on negative life-event stress (*β* = .45, *p* < .01). |
| Johnson and Ivarsson | *n* = NR. Mean somatic trait anxiety 1.79 | STAI | Self-reported during season | Injured soccer players had higher levels of somatic trait anxiety than non-injured players (*F(*1, 99) = 4.79, *p* = .03). Somatic trait anxiety significant predicted injury (*β* = 0.32, *p* < .01). |
| Junge and Feddermann-Demont | Moderate anxiety disorder *n* = 6 (1.4%). Mean 2.14 | GAD-7 | Self-reported during career | Anxiety prevalence was significantly lower in professional soccer players than the general population (= 16.7 *p* < .001). Anxiety showed small significant negative correlations with age (*r* = -.12, *p* < .05) and number of games played (*r* = -.20, *p* < .001), and was positively correlated with depression scores (*r* = .58, *p* < .001). |
| Junge & Prinz | Moderate disorder *n* = 20 (6.9%), severe disorder *n* = 4 (1.4%); Mean 4.65 (3.29) | GAD-7 | Self-reported during season | Three of four athletes with a severe general anxiety score also had severe symptoms of depression. Prevalence of anxiety did not differ between athletes and the general population. Anxiety scores were higher in players who were in the second league, older, less experienced, and had a history of psychotherapeutic support and poorer general health. Less match experience and younger age were significant predictors of generalized anxiety symptoms. |
| Kang et al. | *n* = NR. Mean state anxiety; KLPGA 43.9, non-KLPGA 50.7. Mean trait anxiety; KLPGA 44.9, non-KLPGA 51.0 | Korean STAI | Self-reported during career and before a 3-day golf tournament | Anxiety scores were significantly lower in non-professional golfers than professional golfers for state (*t* = 7.9, *p* <.01) and trait anxiety (*t* = 6.6, *p* <.01)*.* Anxiety scores in the top 10% of professional golfers (*M* = 37.3, 41.7) were significantly lower in the bottom 10% (*M* = 41.1, 43.1) for state and trait anxiety, respectively (*p* <0.01)*.* State anxiety showed a moderate positive correlation with tournament scores over the first 9 holes (*r* = .50, *p* < .01). |
| Kilic et al. 2017 | Football; current *n* = NR (18%), former (19%). Handball; current (26%), former (16%) | GHQ-12 | Self-reported during and post career, relating to symptoms experienced in previous 4 weeks | Anxiety/depression was the most prevalent CMD symptom in current and former handball and football players. Anxiety/depression was associated with life events within 12 months across all current and former handball and footballers (OR*s* 1.1 – 1.4, 95% CIs 1.0 – 1.8). Anxiety/depression was associated with severe injuries (OR = 1.2, 95% CI 1.1 – 1.3) and surgeries (OR = 1.2, 95% CI 1.0 - 1.3) in retired football players. |
| Kilic et al. 2018 | Incidence *n* = NR (37%) | GHQ-12 | Baseline (previous 4 weeks), follow-up (previous 6 months) | Baseline anxiety/depression was not related to increased risk of musculoskeletal injury, but baseline injury was related to future anxiety/depression (RR = 2.91, 95% CI = 2.27 – 3.74). |
| Lancaster et al. | *n* = NR. Means, High school; male 1.4, female 2.2. College; male 1.1, female 1.6 | BSI-18 | One-on-one health interview during career | Young men in high school had higher anxiety scores than those in college (*r* = .08)*.* Young women in high school had higher anxiety scores than those in college (*r* = .16) and both male groups (college *r* = .23, high school *r* = .19). College women had higher anxiety scores than college men (*r* = .09)*.* |
| Levit et al. | *n* = NR. Means, professional 64.06, amateur 71.41, group 63.72, individual 71.43 | STAI | Self-reported during career | Anxiety did not differ between professional and amateur athletes, or between group and individual sport athletes. |
| Liu et al. | *n* = NR. Means, baseline 3.58 (3.29), follow-up 2.83 (3.33) | GAD-7 | Baseline, follow-up (week 4) | Anxiety scores did not differ between baseline and follow-up. |
| Millet et al. | Reported graphically over 40 weeks | Modified STAI A-State scale, 8-items | Self-reported twice/week for 40 weeks prior to a training session | Training load and anxiety showed a moderate positive correlation (*r* = .32, *p* <.001). Training load was associated with short-term anxiety decrease (decay time constant of 23 days) followed by longer-term anxiety increase (decay time constant of 59 days). Time needed for anxiety levels to return to pre-training levels was 28 days. Anxiety levels increased when participants were ill (week 7-9), following an altitude training camp (week 23), and preceding competition in the world championship (week 34). |
| Moore et al. | NR | Profile of Mood States (POMS) | Structured interview, self-report and electroencephalogram during career | Anxiety and frontal alpha-asymmetry were significantly negatively correlated in collegiate athletes with a history of concussions (*r* = -.35, *p* = .02). |
| Morgan et al. | *n* = NR. Means; state 36.6, trait 38.0 | STAI | Self-reported on the first day of a training camp | Trait anxiety was negatively correlated with performance (*r* = -.57, *p* = .02). Multiple regression analysis showed that trait anxiety and global mood accounted for 45% of total variance in performance, where trait anxiety alone accounted for 9%. |
| Petito et al. | *n* = NR. 5-HTTLPR genotype group tension anxiety means; l/l 5.0, l/s 7.4, s/s 9.6, l/s + s/s 7.8 | POMS and clinical diagnosis (DSM-IV) | Structured interview, during career | A main effect of genotype on tension anxiety ((3) = 9.03, p = .02) and cognitive anxiety symptoms was found ((3) = 10.81 p = .01). Those with s/s alleles had significantly higher anxiety than those with l/l alleles (*p* < .05). The 5-HTT genotype significantly predicted cognitive anxiety (*β* = 0.33, *p* <.01), and tension anxiety (*β* **=** 0.33, *p* <.05) in multiple regression analyses. |
| Schaal et al. | Current; men *n* = NR (7%), women (11%). Lifetime; men (10%), women (16%). Means NR | DSM-IV or ICD-10 diagnostic criteria | Retrospective interviews, during career | GAD was the most prevalent condition in men and women. Women were 1.56 times more likely to have had an anxiety disorder. Men with GAD showed low comorbidity (18%), whereas women with GAD had higher rates of multiple diagnoses (44%). Aesthetic sports (e.g., gymnastics, figure skating) had the highest rates of GAD for women (39%) and men (17%), while high-risk sports (e.g., motor sports) had the lowest rates for women (4%) and men (3%). |
| Schuring et al. | *n* = NR (27.1%). Means NR | GHQ-12 | Self-reported post-career | No association was found between anxiety/depression and osteoarthritis. Anxiety was the most prevalent CMD symptom reported by those without osteoarthritis (25%). |
| Selmi et al. | *n* = NR; Means, pre-training ~6, post-training ~8 | POMS | Self-reported during in-season, before and after high-intensity interval training (HIIT) sessions | Tension anxiety significantly increased after HIIT sessions (*ES* = 0.41, *p* <.05), but did not significantly correlate with ratings of perceived exertion. |
| Sheehan et al. 2018a | *n* = NR (13%); mean 39.31 (8.62) | STAI-Y2 (Trait) | Self-reported during career | Anxiety was positively associated with two sports motivation subscales, non-regulation (*β* = 0.34) and introjected regulation (*β* = 0.16). Anxiety was negatively associated with integrated regulation (*β* = -0.20). |
| Sheehan et al. 2018b | Week 1 *n* = 3 (7.9%), week 13 *n* = 4 (10.5%); mean week 1 = 36.34 (6.94), week 13 = 34.37 | STAI-Y2 | Self-reported before and after a competitive season | No significant gender or time effects were found. In week one, anxiety scores were significantly related to relatedness (*r* = -0.47), task climate (*r* = -0.48), and ego climate (*r* = 0.45). For scores in week 13, additional significant correlations were observed between anxiety and intrinsic motivation (*r* = -0.48), extrinsic motivation (*r* = -0.46), competence (*r* = -0.67), and autonomy *r* = -0.6). |
| Turner and Raglin | Anxiety within zone of optimal functioning (ZOF) *n* = 76 (51.4%), above ZOF *n* = 33 (22.2%), below ZOF *n* = 39 (26.4%). Overall mean pre-competition anxiety 42.6 | STAI-Y1 (State) | State anxiety measured 1 hour before 4 competitions. Reflective self-report of anxiety before best performance | Athletes with actual pre-competition anxiety values within their ZOF performed better than athletes above their ZOF (*F*(2,152) = 5.3, *p* <.01). Athletes within their ZOF performed significantly better than those 1-9 anxiety units above and below their ZOF (*F*(4,143) = 4.68, *p* <.05). Athletes 10-18 anxiety units above or below their ZOF had lower mean performance than those within their ZOF, but the difference was not significant. |
| van Ramele et al. | *n* = NR (29%). Means NR | GHQ-12 | Self-reported post-career, at baseline and 12-month follow-up | Anxiety/depression had the highest 12-month incidence of CMD symptoms in former soccer players. At 12 months, no associations were seen between anxiety/depression and number of recent adverse life events during that time. |
| Weber et al. 2018a | Subclinical scores *n* = 22 (6.7%), clinical scores *n* = 11 (3.4%). Mean overall 4.3 | HADS | Self-reported during high-school career | Anxiety scores did not differ by gender or age. |
| Weber et al. 2018b | Baseline *n* =10 (5.5%), 24-48 hr *n* = 6 (4.6%), asymptomatic *n* =2 (1.5%), return to play *n* =6 (3.8%), 6-month *n* =1 (1.1%); Means baseline 4.27, 24-48 hr 3.9, asymptomatic 2.26, return to play 1.75, 6-month 2.34 | HADS | Self-reported at baseline, 24-48 hrs, asymptomatic, return-to-play, and 6 months post-injury | No interaction or group (concussion history) effects were found for anxiety scores. A significant time effect (*F*(4,497) = 54.77, *p* <.001) indicated that anxiety scores were significantly higher at baseline compared to all other time points except at 24-48 hrs. |
| Weber et al.2018c | Anxiety *n* = 59 (<1%), anxiety with depression *n* = 68 (<1%); Mean BSI score, no anxiety history group 0.8 (1.8), anxiety history 3.7 (4.7) | BSI-18, self-disclosed anxiety history | Self-reported during career | Athletes with history of anxiety reported higher concussive symptom severity (*d* = 0.58, *p* <.001) and total number of symptoms (*d* = 0.53, *p* <.001) than those without anxiety. Higher state anxiety (BSI subscale) was positively correlated with concussive symptom severity (*r* = 0.43, *p* <.001) and total number of symptoms (*r* = 0.43, *p* <.001). Athletes with 4+ concussions showed higher mean state anxiety scores than those with 3 or less (2.3, *p* < .02). |
| Wilson and Madrigal | NR | BAI | Self-reported during off-season collegiate career | BAI scores negatively correlated with HS-omega-3 index blood levels (*rho* = -.32, *p* = .02), eicosapentaenoic acid blood levels (*rho* = -.40, *p* = .003), and docosapentaenoic acid blood levels (*rho* = -.33, *p* = .02). |
| Yang et al. 2015 | Concussed athletes experiencing anxiety, *n* = 24 (34%). Mean NR | STAI | Trait anxiety self-reported at baseline and state anxiety 1 week and 1, 3, 6, and 12 months post-concussive injury | Athletes with high baseline trait anxiety were not at increased risk for post-concussion state anxiety. However, athletes with high baseline depression symptoms were 3.4 times more likely to experience post-concussion state anxiety (95% CI = 1.11 – 10.49). |
| Yang et al. 2007 | State anxiety mean 35.1, trait anxiety mean 35.6 | STAI | Self-reported during collegiate career | No differences in anxiety scores were found across gender, race, injuries, or collegiate class level. Anxiety scores had strong positive correlations with depression scores for state (*rho* = .69, *p* <.001) and trait anxiety (*rho* = .65, *p* < .001). |

\*Beck Anxiety Inventory (BAI), Brief Symptom Inventory (BSI), Composite International Diagnostic-Screener (CID-S), Confidence interval (CI), Counselling Centre Assessment of Psychological Symptoms (CCAPS), Dehydroepiandrosterone (DHEA), Depression, Anxiety and Stress Scale (DASS), Diagnostic and Statistical Manual of Mental Disorders 4th Revision (DSM-IV), Effect Size (ES), EuroQoL 5 dimension health scale (EQ-5D), Florida Obsessive-Compulsive Inventory (FOCI), General Health Questionnaire (GHQ), Generalized Anxiety Disorder 7 Scale (GAD-7), Hospital Anxiety and Depression Scale (HADS), International Classification of Diseases 10th Revision (ICD-10), Life events (LE), Mindfulness-Acceptance-Commitment (MAC), Not Reported (NR), Odds Ratio (OR), Personality Assessment Inventory (PAI), Profile of Mood States (POMS), Psychiatric Diagnostic Screening Questionnaire (PDSQ), Risk Ratio (RR), Social Phobia Inventory (SPIN), State Anxiety Inventory (SAI), State Trait Anxiety Inventory (STAI), Structured Clinical Interview for DSM (SCID), Symptom Checklist 90 (SCL-90-R), Zone of optimal functioning (ZOF).