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| **Table 3. Concussion symptom knowledge descriptive statistics for collegiate student-athletes** |
| **Symptoms** | **n (%) answering correctly** |
| **All sports** |  | **Football only** |
| **All SA (n=768)** | **White SA (n=634)** | **Black SA (n=134)** | **p-valuea** |  | **All football SA (n=196)** | **White football SA (n=115)** | **Black football SA (n=81)** | **p-valuea** |
| Somatic symptoms |   |   |   |   |   |   |   |   |   |
|  Sensitivity to light | 744 (96.9) | 612 (96.5) | 132 (98.5) | 0.41 |   | 191 (97.5) | 111 (96.5) | 80 (98.8) | 0.65 |
|  Blurred vision | 675 (87.9) | 560 (88.3) | 115 (85.8) | 0.47 |   | 168 (85.7) | 100 (87.0) | 68 (84.0) | 0.68 |
|  Ringing in the ears | 576 (75.0) | 483 (76.2) | 93 (69.4) | 0.10 |   | 146 (74.5) | 90 (78.3) | 56 (69.1) | 0.18 |
|  Sensitivity to sound | 638 (83.1) | 538 (84.9) | 100 (74.6) | 0.007 |   | 148 (75.5) | 93 (80.9) | 55 (67.9) | 0.04 |
|  Feeling off balance | 646 (84.1) | 546 (86.1) | 100 (74.6) | 0.002 |   | 145 (74.0) | 92 (80.0) | 53 (65.4) | 0.03 |
|  Sharp, burning pain in the neck | 262 (34.1) | 233 (36.8) | 29 (21.6) | <0.001 |   | 52 (26.5) | 75 (187.5) | 69 (575) | 0.002 |
|  Nausea or vomiting | 604 (78.7) | 523 (82.5) | 81 (60.4) | <0.001 |   | 132 (67.4) | 88 (76.5) | 44 (54.3) | 0.002 |
|  Dizziness | 694 (90.4) | 581 (91.6) | 113 (84.3) | 0.01 |   | 165 (84.2) | 98 (85.2) | 67 (82.7) | 0.69 |
|  |  |  |  |  |  |  |  |  |  |
| Sleep symptoms |   |   |   |   |   |   |   |   |   |
|  Sleep problems | 625 (81.4) | 527 (83.1) | 98 (73.1) | 0.01 |   | 148 (75.5) | 91 (79.1) | 57 (70.4) | 0.18 |
|  Drowsiness | 557 (72.5) | 473 (74.6) | 84 (62.7) | 0.008 |   | 130 (66.3) | 86 (74.8) | 44 (54.3) | 0.004 |
|  Fatigue or low energy | 576 (75.0) | 495 (78.1) | 81 (60.4) | <0.001 |   | 123 (62.8) | 79 (68.7) | 44 (54.3) | 0.051 |
|  |  |  |  |  |  |  |  |  |  |
| Cognitive symptoms |   |   |   |   |   |   |   |   |   |
|  Feeling like “in a fog” | 600 (78.1) | 527 (83.1) | 73 (54.5) | <0.001 |   | 121 (61.7) | 84 (73.0) | 37 (45.7) | <0.001 |
|  Headache | 734 (95.6) | 610 (96.2) | 124 (92.5) | 0.07 |   | 183 (93.4) | 110 (95.7) | 73 (90.1) | 0.15 |
|  Difficulty concentrating  | 688 (89.6) | 581 (91.6) | 107 (79.9) | <0.001 |   | 159 (81.1) | 99 (86.1) | 60 (74.1) | 0.04 |
|  Confusion | 684 (89.1) | 574 (90.5) | 110 (82.1) | 0.009 |   | 161 (82.1) | 97 (84.3) | 64 (79.0) | 0.35 |
|  Feeling slowed down | 558 (72.7) | 479 (75.6) | 79 (59.0) | <0.001 |   | 119 (60.7) | 78 (67.8) | 41 (50.6) | 0.02 |
|  Memory loss  | 664 (86.5) | 562 (88.6) | 102 (76.1) | <0.001 |   | 155 (79.1) | 96 (83.5) | 59 (72.8) | 0.08 |
|  |  |  |  |  |  |  |  |  |  |
| Affective symptoms |   |   |   |   |   |   |   |   |   |
|  Feeling more irritable/angry | 409 (53.3) | 360 (56.8) | 49 (36.6) | <0.001 |   | 91 (46.4) | 68 (59.1) | 23 (28.4) | <0.001 |
|  Feeling more emotional | 407 (53.0) | 351 (55.4) | 56 (41.8) | 0.006 |   | 90 (45.9) | 55 (47.8) | 35 (43.2) | 0.56 |
|  |  |  |  |  |  |  |  |  |  |
| Loss of consciousness | 608 (79.2) | 513 (80.9) | 95 (70.9) | 0.01 |   | 138 (70.4) | 87 (75.7) | 51 (63.0) | 0.06 |
|  |  |  |  |  |  |  |  |  |  |
| False distractorsb |   |   |   |   |   |   |   |   |   |
|  Abnormal sense of taste | 644 (83.9) | 528 (83.3) | 116 (86.6) | 0.44 |   | 164 (83.7) | 93 (80.9) | 71 (87.7) | 0.24 |
|  Difficulty breathing | 671 (87.4) | 555 (87.5) | 116 (86.6) | 0.77 |   | 171 (87.2) | 101 (87.8) | 70 (86.4) | 0.83 |
|  Joint stiffness | 698 (90.9) | 575 (90.7) | 123 (91.8) | 0.87 |   | 176 (89.8) | 104 (90.4) | 72 (88.9) | 0.81 |
|  Numbness or tingling in arms | 523 (68.1) | 425 (67.0) | 98 (73.1) | 0.19 |   | 132 (67.4) | 72 (62.6) | 60 (74.1) | 0.12 |
|  Bleeding from mouth | 718 (93.5) | 594 (93.7) | 124 (92.5) | 0.57 |   | 178 (90.8) | 103 (89.6) | 75 (92.6) | 0.62 |
|  Skin rash | 753 (98.1) | 621 (97.9) | 132 (98.5) | >0.99 |   | 189 (96.4) | 110 (95.7) | 79 (97.5) | 0.70 |
|  Bleeding from the nose | 665 (86.6) | 547 (86.3) | 118 (88.1) | 0.68 |   | 164 (83.7) | 96 (83.5) | 68 (84.0) | >0.99 |
|  Abnormal sense of smell | 674 (87.8) | 553 (87.2) | 121 (90.3) | 0.39 |   | 176 (89.8) | 100 (87) | 76 (93.8) | 0.15 |
|  Bleeding from the ear(s) | 654 (85.2) | 539 (85.0) | 115 (85.8) | 0.89 |   | 164 (83.7) | 93 (80.9) | 71 (87.7) | 0.24 |
|  Weakness in neck movements | 384 (50.0) | 294 (46.4) | 90 (67.2) | <0.001 |   | 129 (65.8) | 66 (57.4) | 63 (77.8) | 0.004 |
|  Chest pain | 724 (94.3) | 597 (94.2) | 127 (94.8) | >0.99 |   | 184 (93.9) | 107 (93.0) | 77 (95.1) | 0.76 |
|  Black eye | 670 (87.2) | 545 (86.0) | 125 (93.3) | 0.02 |   | 178 (90.8) | 103 (89.6) | 75 (92.6) | 0.62 |
|  Stiff back | 641 (83.5) | 520 (82.0) | 121 (90.3) | 0.02 |   | 177 (90.3) | 100 (87.0) | 77 (95.1) | 0.08 |
|  Fever | 671 (87.4) | 550 (86.8) | 121 (90.3) | 0.32 |   | 175 (89.3) | 101 (87.8) | 74 (91.4) | 0.49 |
| a Fisher's exact test compares proportions of White versus Black student-athletes that correctly identified symptoms/non-symptoms |
| b Fake symptoms were marked as correct if identified as not concussion symptoms |