Supplementary Table 1

Outcome events by mode of data collection

|  |  |  |  |
| --- | --- | --- | --- |
| Outcome | Total sample (N=7677) | Among soldiers who completed T2 and/or T3 (n=7165) | Among soldiers with any prospective attempt (n=103) |
| Administrative attempt | Administrative attempt | Administrative attempt |
| Y | N | Y | N | Y | N |
| Survey attempt | Y | % | 0.27 | 0.63 | 0.28 | 0.63 | 20.29 | 47.96 |
| (n) | (22) | (48) | (22) | (45) | (22) | (48) |
| N | % | 0.42 | 98.69 | 0.39 | 98.70 | 31.76 | 0 |
| (n) | (33) | (7574) | (30) | (7068) | (33) | (0) |

**Note.** Percentages are weighted and n’s are unweighted. “Survey attempt” refers to suicide attempts that were reported as having occurred “during or since your recent deployment” in surveys administered approximately 3 months (T2) and 9 months (T3) after the participating Brigade Combat Teams returned from deployment. “Administrative attempt” refers to suicide attempts that were recorded in Army/Department of Defense databases during the follow-up period (median number of months of available records for a given soldier = 30 months). Agreement of administrative and survey data was similar in the total sample [κ=.33 (.22-.44)] and among those with T2 and/or T3 survey data [κ=.31 (.18-.44)].

Supplementary Table 2

Distribution and association of very mild traumatic brain injury (TBI) characteristics with prospective suicide attempt

|  |  |  |
| --- | --- | --- |
|  | Prevalence | Association with suicide attempt (N=7677) |
|  | Full sample(N=7677) | Among those with Any Very Mild TBI(n=3724) | Adjusting for other risk factors1 | Adjusting for other risk factors and Any Very Mild TBI |
|  | % | SE | % | SE | AOR | 95% CI | AOR | 95% CI |
|  Age of onset (median, IQR) |  |  | 13.8 | (6.8) |  |  | 1.02  | (0.96, 1.10) |
|  Years since onset (median, IQR) |  |  | 9.3 | (8.5) |  |  | 0.94  | (0.87, 1.01) |
|  Most recent Very Mild TBI  |   |   |  |  |   |    |   |   |
|  Past 12 months | 13.4 | (0.5) | 26.6 | (0.8) | 0.61 | (0.34, 1.09) | 0.81  | (0.29, 2.24) |
|  1-2 years ago | 10.7 | (0.4) | 21.2 | (0.7) | 0.90  | (0.43, 1.88) | 1.18  | (0.40, 3.46) |
|  3-5 years ago | 11.6 | (0.4) | 23.0 | (0.8) | 0.69 | (0.33, 1.43) | 0.91  | (0.31, 2.66) |
|  6+ years ago | 14.7 | (0.5) | 29.1 | (1.0) | 0.75 | (0.30, 1.88) | 1.00  | Ref |
|  Never sustained Very Mild TBI | 49.5 | (0.7) |  |  | 1.00 | Ref |  |  |
|  χ24/3 |  |  |  |  | 3.69 | *p*=.45 | 1.32  | *p*=.72 |
|  Number of Very Mild TBIs (median, IQR) | 0.03 | (1.9) | 1.9 | (2.9) |  |  |  |  |
|  0 | 49.5 | (0.7) |  |  | 1.00  | Ref  |   |   |
|  1 | 14.9 | (0.4) | 29.4 | (0.9) | 0.76  | (0.39, 1.49) | 1.00  | Ref |
|  2 | 11.7 | (0.3) | 23.1 | (0.6) | 0.52  | (0.22, 1.25) | 0.68  | (0.28, 1.65) |
|  3-4 | 12.0 | (0.4) | 23.8 | (0.8) | 1.05  | (0.53, 2.09) | 1.36  | (0.67, 2.74) |
|  5+ | 12.0 | (0.5) | 23.7 | (0.8) | 0.59  | (0.35, 1.02) | 0.76  | (0.48, 1.22) |
|  χ24/3 |  |  |  |  | 5.91  | *p*=.21 | 3.50 | *p*=.32 |

*Note*. The sample was comprised of Pre/Post Deployment Study (PPDS) respondents who completed the pre-deployment (T0) survey and deployed to Afghanistan. The outcome includes any suicide attempt documented in Army/DoD administrative records or reported in the PPDS T2 or T3 surveys. All models control for months in administrative data and T2/T3 survey completion, socio-demographic and Army career correlates of suicide attempt (age, sex, high school or less education, marital/relationship status of “previously married, not currently engaged/in a serious relationship”, having deployed within first year of Army service, and perceived unit cohesion at T0), and lifetime mental disorder at T0.

1Models also adjust for having had TBI of Mild or Moderate-to-Severe severity; thus, adjusted odds are relative to “No Lifetime TBI”.

Supplementary Table 3

Distribution and association of mild traumatic brain injury (TBI) characteristics with prospective suicide attempt

|  |  |  |
| --- | --- | --- |
|  | Prevalence | Association with suicide attempt (N=7677) |
|  | Full sample(N=7677) | Among those with Any Mild TBI (n=2796) | Adjusting for other risk factors1 | Adjusting for other risk factors and Any Mild TBI |
|  | % | SE | % | SE | AOR | 95% CI | AOR | 95% CI |
|  Age of onset (median, IQR)2 |  |  | 13.9 | (7.5) |  |  | 1.04  | (0.97, 1.12) |
|  Years since onset (median, IQR)2 |  |  | 9.0 | (8.4) |   |    | 0.94  | (0.88, 1.02) |
|  Most recent Mild TBI2 |  |  |   |   |   |    |   |   |
|  Within the past year | 6.8 | (0.3) | 18.1 | (0.9) | 1.94 | (0.92, 4.10) | **3.41**  | (1.24, 9.35) |
|  1-5 years ago | 17.7 | (0.6) | 46.8 | (1.1) | 1.14 | (0.63, 2.04) | 1.99 | (0.87, 4.57) |
|  More than 5 years ago | 13.3 | (0.5) | 35.1 | (1.1) | 0.57 | (0.26, 1.24) | 1.00  | Ref |
|  Never sustained Mild TBI | 62.2 | (0.7) |  |  | 1.00 | Ref |  |  |
|  χ23/2 |  |  |  |  | 6.25 | *p­*=.10 | 6.26 | *p*=.044 |
|  Number of Mild TBIs (median, IQR) | 0.0 | (0.8) | 1.2 | (1.2) |  |  |  |  |
|  0 | 62.2 | (0.7) |  |  | 1.00  | Ref  |  |   |
|  1 | 17.0 | (0.5) | 45.0 | (1.2) | 0.97  | (0.53, 1.77) | 1.00  | Ref |
|  2 | 10.4 | (0.4) | 27.5 | (0.8) | 0.82 | (0.36, 1.90) | 0.85  | (0.36, 2.02) |
|  3+ | 10.4 | (0.4) | 27.5 | (0.9) | 1.71  | (0.87, 3.34) | 1.77  | (0.95, 3.32) |
|  χ23/2 |  |  |   |   | 5.40 | *p*=.14 | 5.45 | *p*=.070 |

*Note*. The sample was comprised of Pre/Post Deployment Study (PPDS) respondents who completed the pre-deployment (T0) survey and deployed to Afghanistan. The outcome includes any suicide attempt documented in Army/DoD administrative records or reported in the PPDS T2 or T3 surveys. All models control for months in administrative data and T2/T3 survey completion, socio-demographic and Army career correlates of suicide attempt (age, sex, high school or less education, marital/relationship status of “previously married, not currently engaged/in a serious relationship”, having deployed within first year of Army service, and perceived unit cohesion at T0), and lifetime mental disorder at T0. Odds ratios that appear in bold are statistically significant (*p*<.05); exact *p* values are provided for χ2 tests.

1Models also adjust for having had TBI of Very Mild or Moderate-to-Severe severity; thus, adjusted odds are relative to “No Lifetime TBI”.

2Due to limitations of the survey assessment of age-of-onset and recency of TBI, the estimates of age-of-onset of Mild TBI and recency of Mild TBI may include some injuries that were Moderate-to-Severe. This would occur if soldiers reported 1 or more injuries with loss of consciousness <30 minutes and 1 or more injuries with loss of consciousness >30 minutes; *or* if they reported 1 or more injuries with memory lapse <30 minutes and 1 or more injuries with memory lapse >30 minutes. For those soldiers (n=435), we were unable to determine whether the reference injury was Mild or Moderate-to-Severe for items assessing age-of-onset and recency. For the purpose of these Mild TBI models, those injuries were assumed to have been Mild in severity.

Supplementary Table 4

Distribution and association of Moderate-to-Severe traumatic brain injury (TBI) characteristics with prospective suicide attempt

|  |  |  |
| --- | --- | --- |
|  | Prevalence | Association with suicide attempt (N=7677) |
|  | Full sample(N=7677) | Among those with Any Moderate-to-Severe TBI (n=746) | Adjusting for other risk factors1 | Adjusting for other risk factors and Any Moderate-to-Severe TBI |
|  | % | SE | % | SE | AOR | 95% CI | AOR | 95% CI |
|  Age of onset (median, IQR)2 |  |  | 15.4 | (9.0) |  |  | 1.01  | (0.90, 1.14) |
|  Years since onset (median, IQR)2 |  |  | 8.0 | (8.6) |   |    | 0.98  | (0.89, 1.09) |
|  Most recent Moderate-to-Severe TBI2 |  |  |   |   |   |    |   |  |
|  Within the past 5 years | 7.1 | (0.3) | 70.3 | (1.5) | 2.01 | (0.99, 4.10) | 3.10  | (0.63, 15.15) |
|  More than 5 years ago | 3.0 | (0.2) | 29.7 | (1.5) | 0.65 | (0.13, 3.22) | 1.00  | Ref |
|  Never sustained Moderate-to-Severe TBI | 89.9 | (0.4) |  |  | 1.00 | Ref |  |  |
|  χ22/1 |  |  |  |  | 4.97 | *p*=.080 | 2.07 | *p*=.150 |
|  Number of Moderate-to-Severe TBIs | 0.0 | (0.0) | 1.0 | (0.5) |  |  |  |  |
|  0 | 89.9 | (0.4) |  |  | 1.00  | Ref  |   |   |
|  1 | 6.6 | (0.3) | 65.1 | (1.7) | 1.24  | (0.49, 3.18) | 1.00  | Ref |
|  2+ | 3.5 | (0.3) | 34.9 | (1.7) | **2.44**  | (1.04, 5.69) | 1.97  | (0.63, 6.13) |
|  χ22 |  |  |  |  | 4.53  | *p*=.10 | 1.46 | *p*=.227 |

*Note*. The sample was comprised of Pre/Post Deployment Study (PPDS) respondents who completed the pre-deployment (T0) survey and deployed to Afghanistan. The outcome includes any suicide attempt documented in Army/DoD administrative records or reported in the PPDS T2 or T3 surveys. All models control for months in administrative data and T2/T3 survey completion, socio-demographic and Army career correlates of suicide attempt (age, sex, high school or less education, marital/relationship status of “previously married, not currently engaged/in a serious relationship”, having deployed within first year of Army service, and perceived unit cohesion at T0), and lifetime mental disorder at T0. Odds ratios that appear in bold are statistically significant (*p*<.05); exact *p* values are provided for χ2 tests.

1Models also adjust for having had TBI of Very Mild or Mild severity; thus, adjusted odds are relative to “No Lifetime TBI”.

2Due to limitations of the survey assessment of age-of-onset and recency of TBI, the estimates of age-of-onset of Moderate-to-Severe TBI and recency of Moderate-to-Severe TBI may include some injuries that were Mild. This would occur if soldiers reported 1 or more injuries with loss of consciousness <30 minutes and 1 or more injuries with loss of consciousness >30 minutes; *or* if they reported 1 or more injuries with memory lapse <30 minutes and 1 or more injuries with memory lapse >30 minutes. For those soldiers (n=435), we were unable to determine whether the reference injury was Mild or Moderate-to-Severe for items assessing age-of-onset and recency. For the purpose of these Moderate-to-Severe TBI models, those injuries were assumed to have been Moderate-to-Severe in severity.

Supplementary Table 5

Associations of TBI history and other (non-PCS) somatic symptoms with any prospective suicide attempt (N=7677)

|  |  |
| --- | --- |
|  | Association with any prospective suicide attempt |
|  | Base multivariable model1 | Multivariable model including the Other Somatic Symptoms score |
|  | AOR | 95% CI | AOR | 95% CI |
| TBI History (by worst severity, then recency) |  |  |  |  |
|  Moderate-to-Severe TBI |  |  |  |  |
|  Most recent within past 5 years2 | **2.08**  | (1.02, 4.24) | **2.07**  | (1.01, 4.25) |
|  Most recent 5+ years ago | 0.66  | (0.14, 3.26) | 0.67  | (0.14, 3.24) |
|  χ22  | 5.33  | *p*=.07 | 5.30  | *p*=.07 |
|  Mild TBI |  |  |  |  |
|  Most recent within past year | 1.80  | (0.74, 4.35) | 1.79  | (0.74, 4.32) |
|  Most recent 1-5 years ago | 0.99  | (0.47, 1.82) | 0.92  | (0.47, 1.82) |
|  Most recent 5+ years ago | 0.58  | (0.25, 1.31) | 0.57  | (0.25, 1.31) |
|  χ23 | 4.88  | *p*=.18 | 4.86  | *p*=.18 |
|  Very Mild TBI only | **0.48**  | (0.26, 0.90) | **0.48**  | (0.26, 0.89) |
|  No Lifetime TBI | 1.00 | Ref | 1.00  | Ref |
| Symptom severity at T0  |  |  |  |  |
|  Other somatic symptoms (mean, SD) |  |  | 1.16  | (0.70, 1.92) |

*Note.* TBI=traumatic brain injury. PCS=post-concussive/post-TBI symptoms. The sample was comprised of Pre/Post Deployment Study respondents who completed the pre-deployment (T0) survey and deployed to Afghanistan. The outcome includes any suicide attempt documented in Army administrative data or reported in the PPDS T2 or T3 surveys. All models control for months in administrative data, T2/T3 survey completion, socio-demographic and Army career correlates of suicide attempt (age, sex, high school or less education, marital/relationship status of “previously married, not currently engaged/in a serious relationship”, having deployed within first year of Army service, and perceived unit cohesion at T0), and lifetime mental disorder at T0. Odds ratios that appear in bold are statistically significant (*p*<.05); exact *p* values are provided for χ2 tests.

1This model is labeled “Multivariable Model 1” in Table 4, and is shown again here to facilitate comparison with the model that includes the Other Somatic Symptoms score.

2For a subset (*n*=435) of respondents with Worst TBI severity of “Moderate-to-Severe” and Any Lifetime Mild TBI, the survey items did not permit us to distinguish whether the most recent TBI with loss of consciousness and/or memory lapse was Mild or Moderate-to-Severe. Thus, some respondents included in this category may have had Mild TBI(s) in the past 5 years, and Moderate-to-Severe TBI(s) earlier than that.