

**Supplement: Sleep and day-to-day PTSD symptom variability: an ecological
momentary assessment and actigraphy monitored study in trauma-exposed young
adults**

EMA variables

Plots

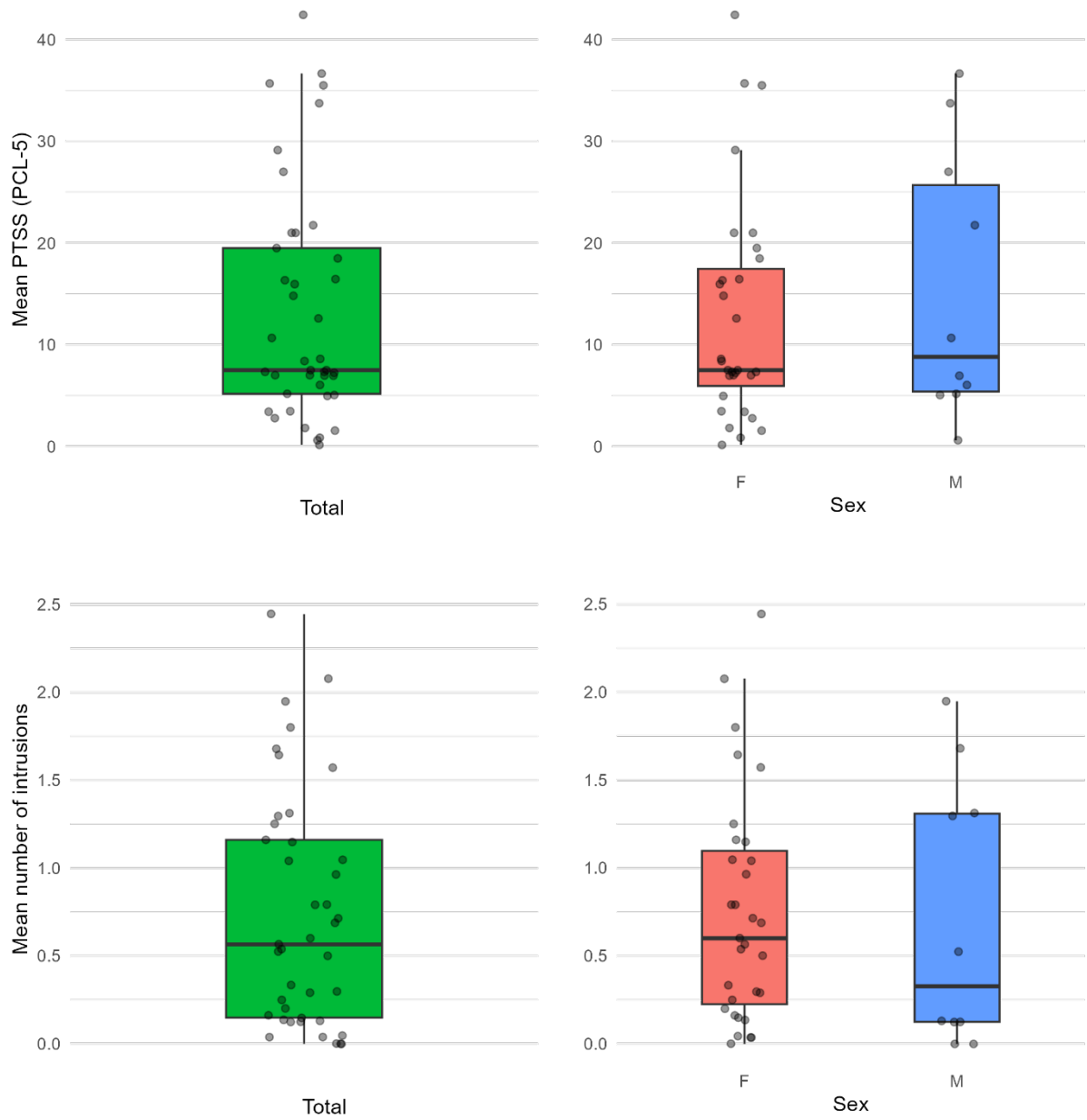
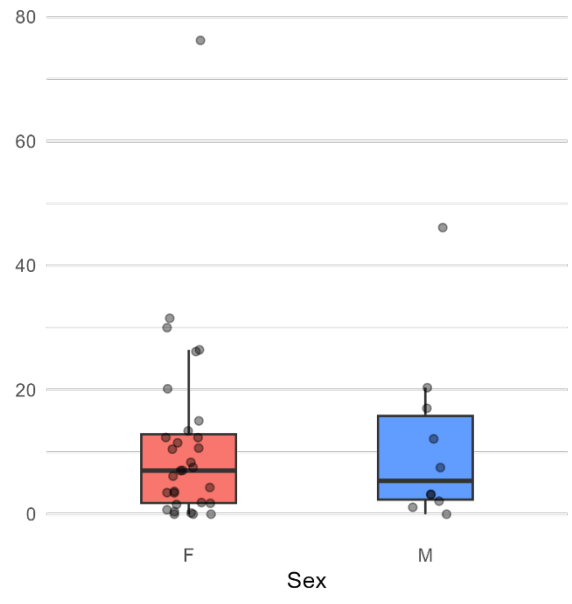
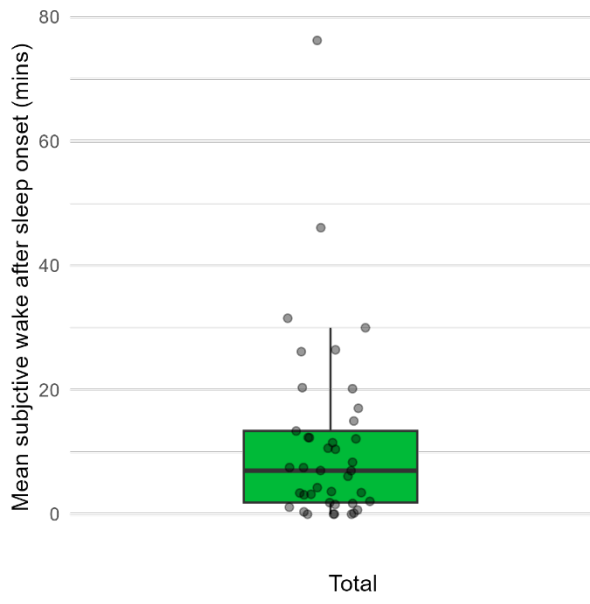
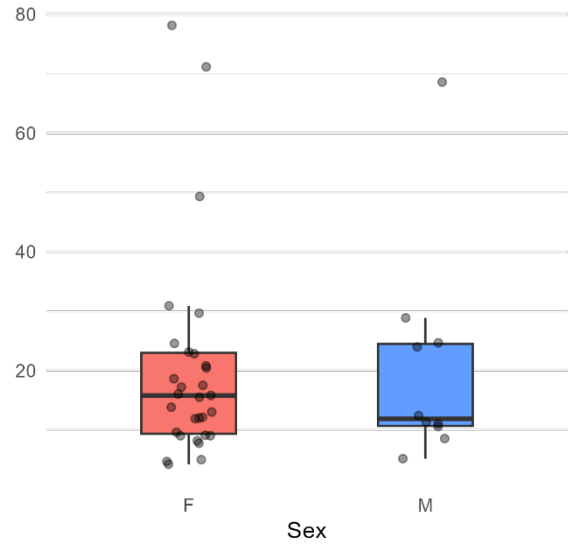
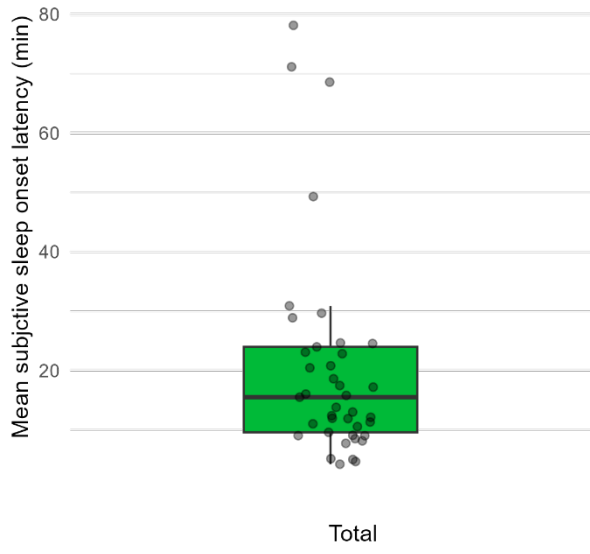
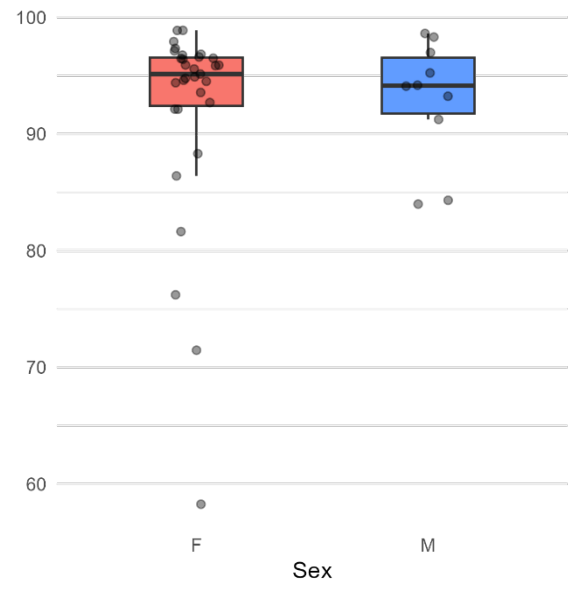
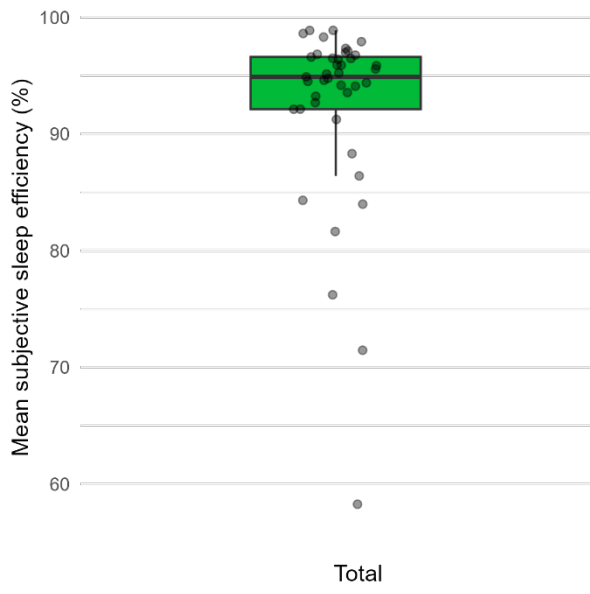
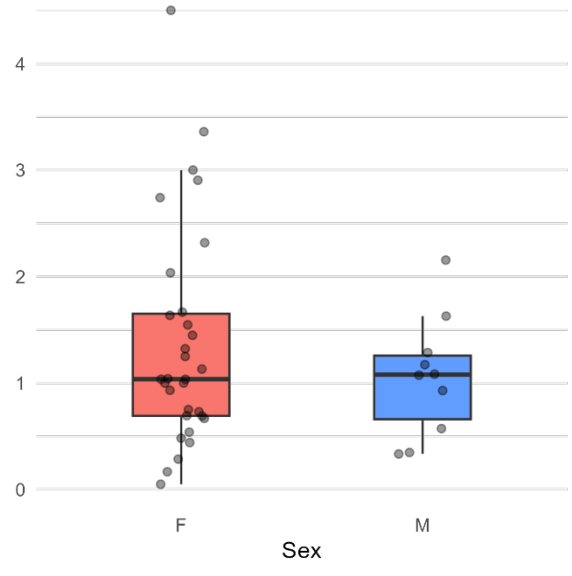
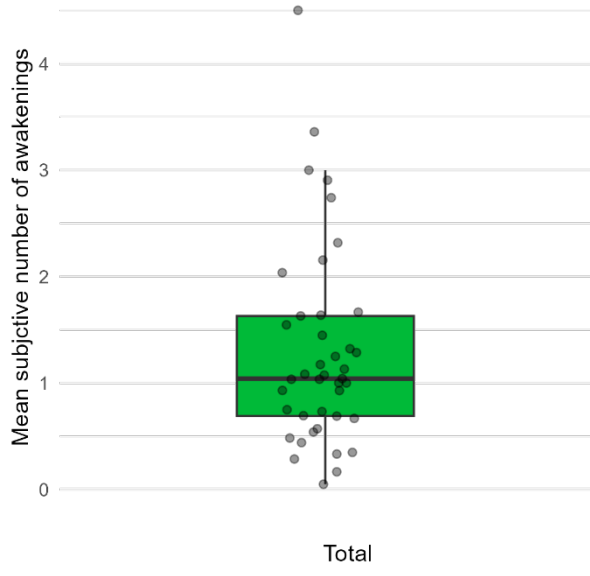


Figure S.1. Boxplots of EMA variables (PTSD symptom severity and number of intrusions)





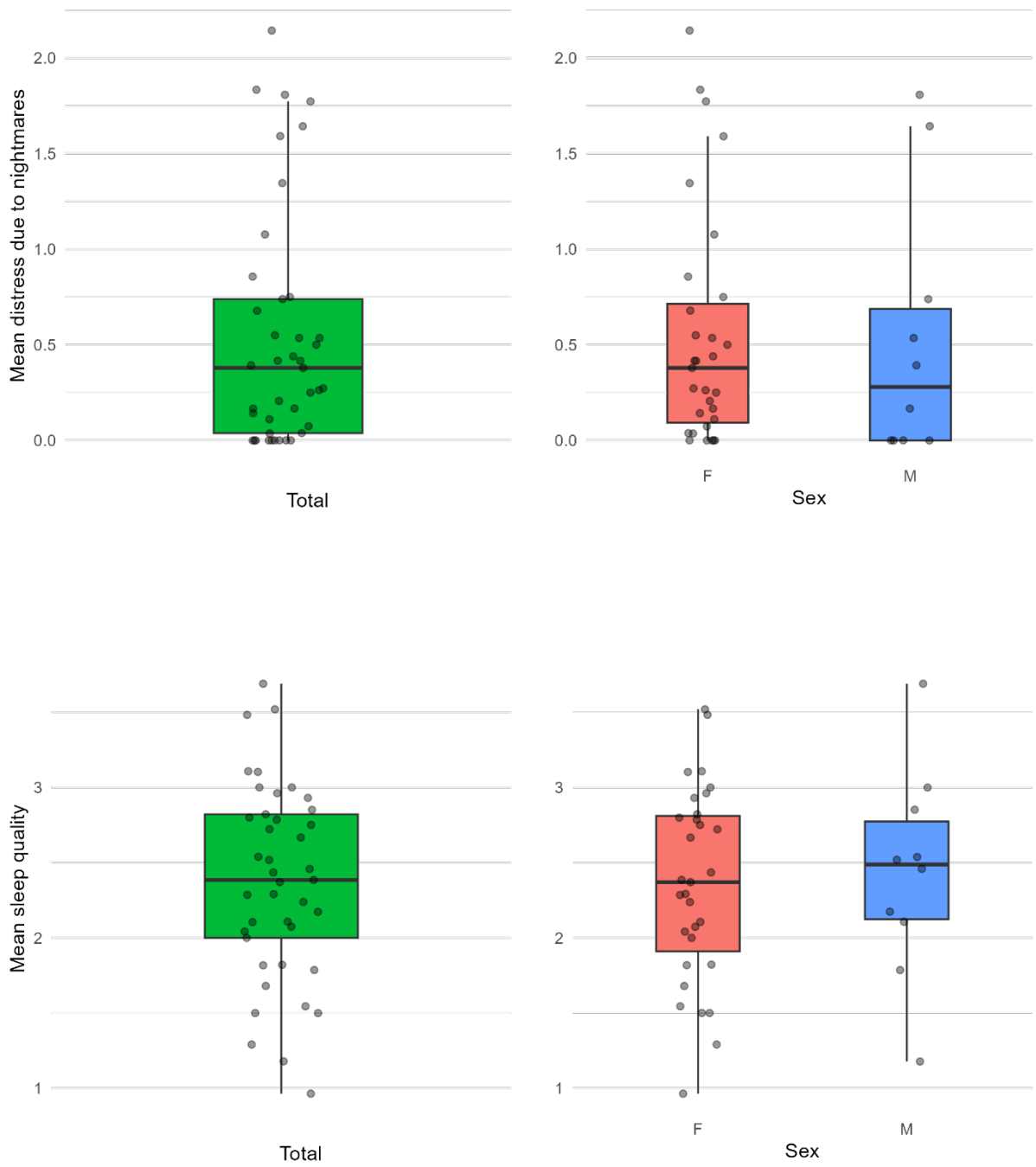
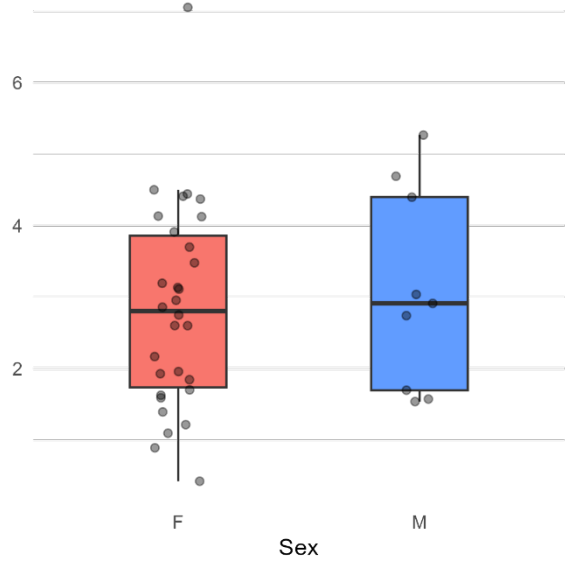
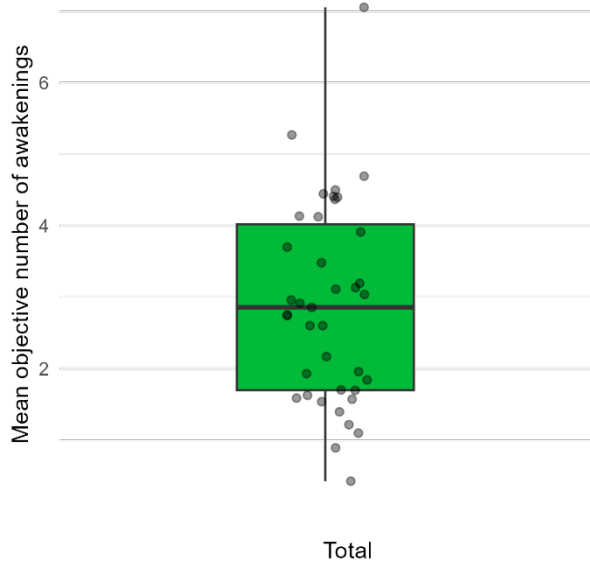
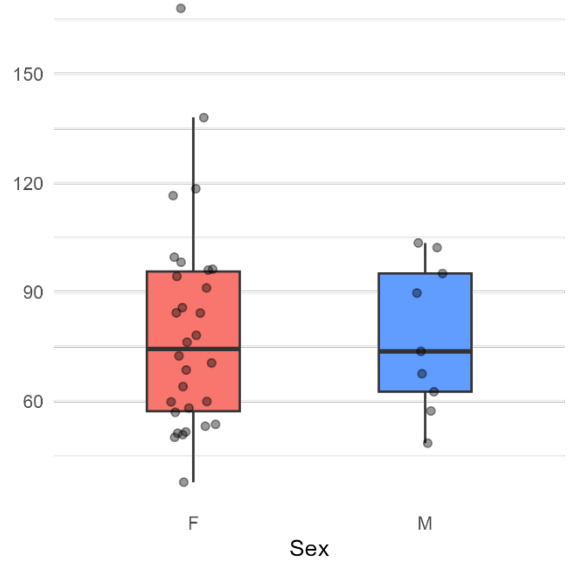
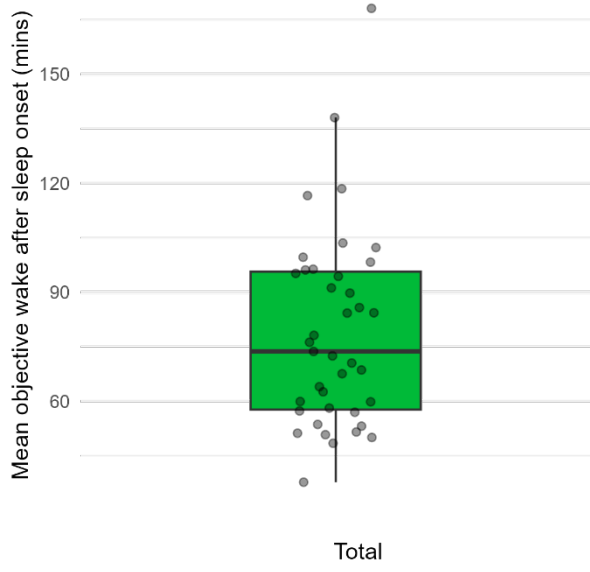


Figure S.2. Boxplots of EMA variables (subjective sleep)



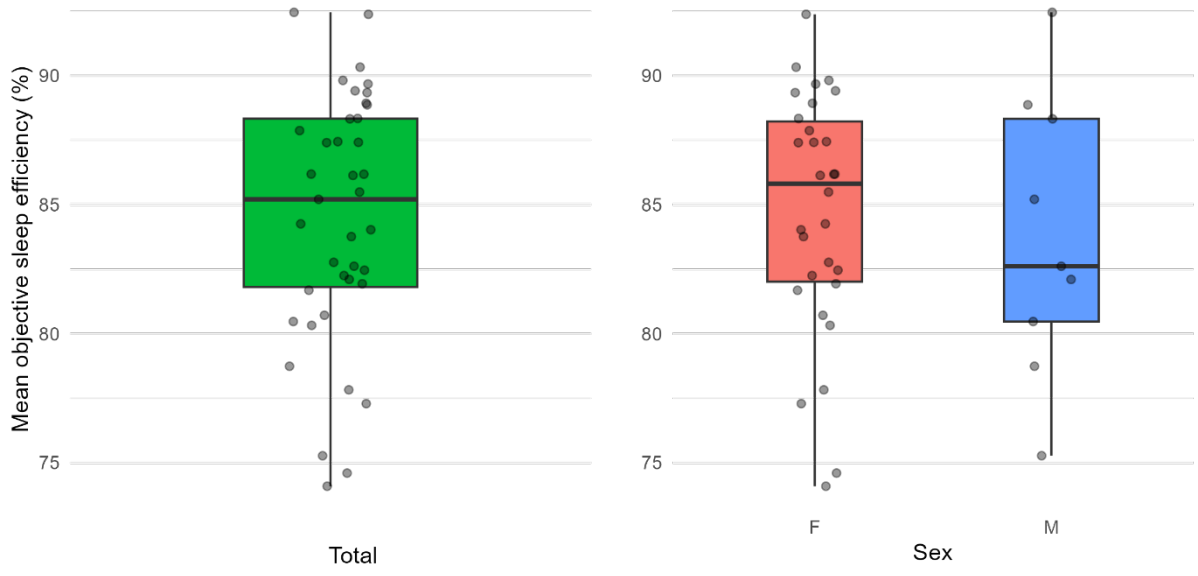


Figure S.3. Boxplots of EMA variables (objective sleep)

Correlation matrices

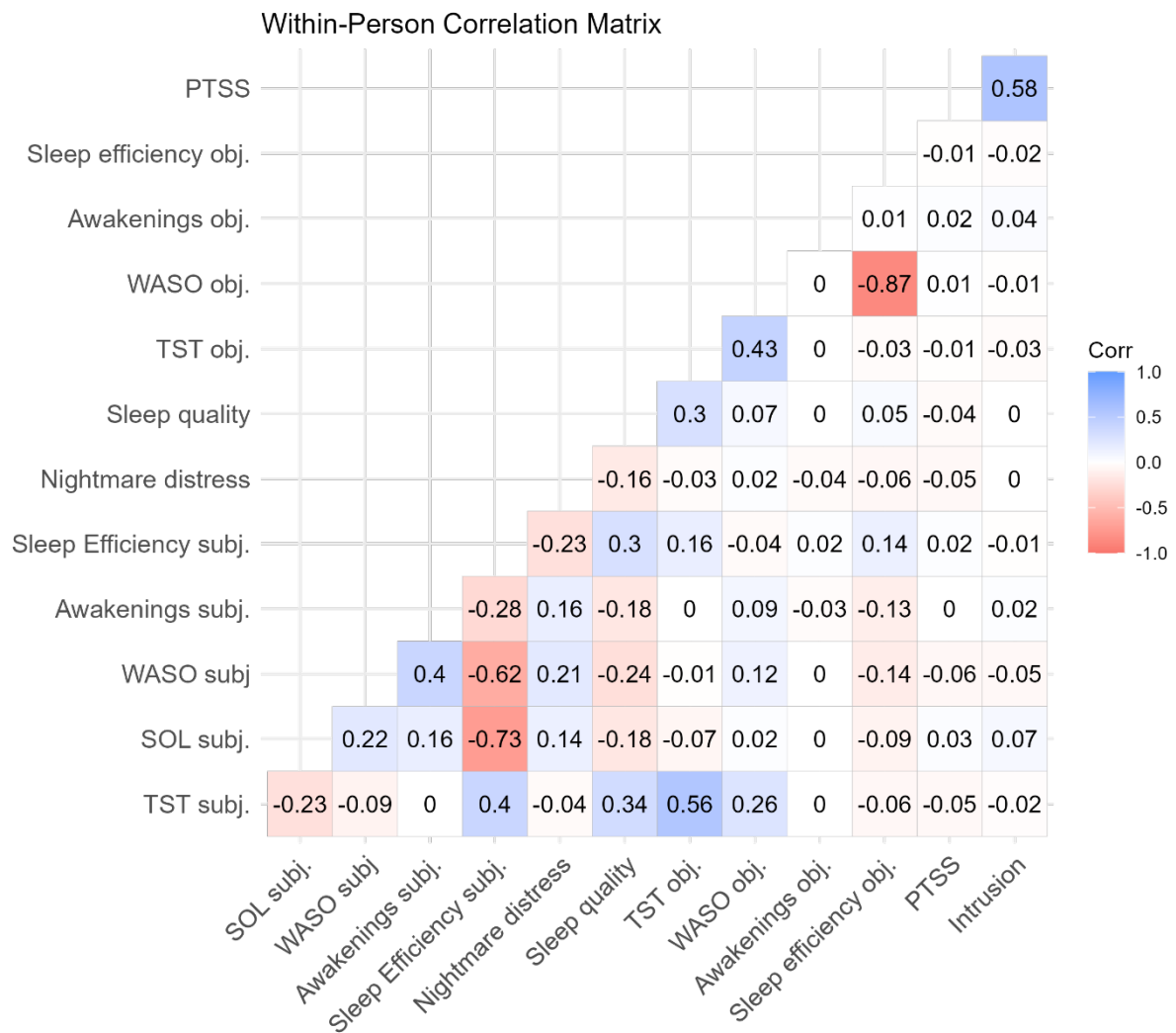


Figure S.4. Correlation matrix of the within-person objective and subjective sleep variables and PTSD symptoms (Spearman rank correlation coefficients).

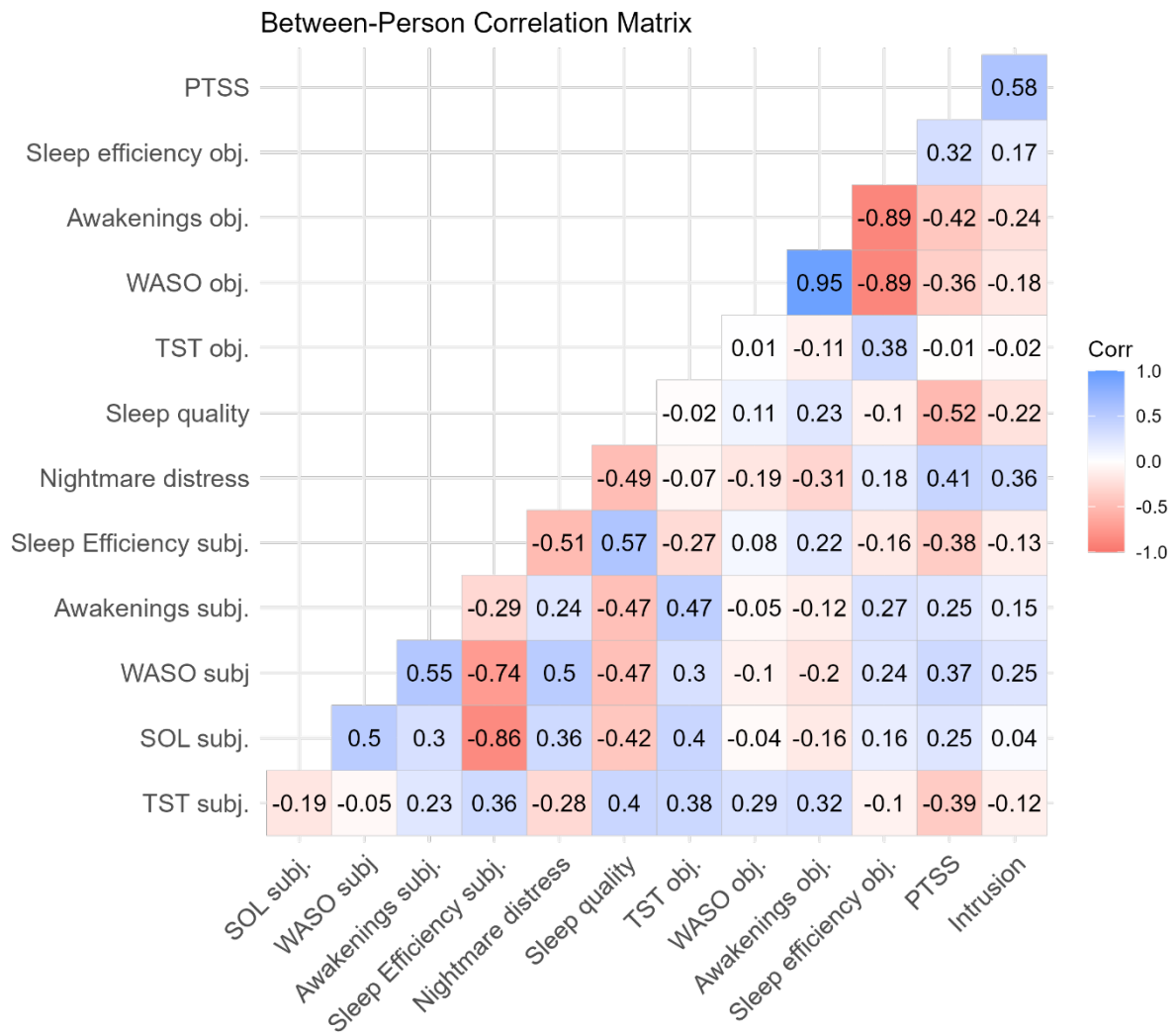


Figure S.5. Correlation matrix of the between-person objective and subjective sleep variables and PTSD symptoms (Spearman rank correlation coefficients).

EMA sleep diary

Table S.1

Sleep diary

| | <i>Question</i> | <i>Answer option</i> | <i>Comment</i> |
|----|---|--|---|
| 1 | What time did you go to bed | <input type="checkbox"/> 18:00 <input type="checkbox"/> 18:05 <input type="checkbox"/> 18:10 [...] | Multiple choice providing answering options in five-minute increments for the full 24h. |
| 2 | What time did you go to sleep | <input type="checkbox"/> 18:00 <input type="checkbox"/> 18:05 <input type="checkbox"/> 18:10 [...] | Multiple choice providing answering options in five-minute increments for the full 24h. |
| 3 | How long did it take you to fall asleep | <input type="checkbox"/> less than 5 minutes <input type="checkbox"/> 5 minutes <input type="checkbox"/> 10 minutes [...] | Multiple choice options providing 5 minute-increments up to 1h, followed by 15 minute increments up to <i>more than 10h</i> . |
| 3a | Please enter how long it took you to fall asleep? (e.g. 10:50) <i>Note:</i> use the following format hh:mm | [text field] | Branch when response in 3 included <i>More than 10h</i> |
| 4 | How many times did you wake up, not counting your final awakening? | None 10+ _____ | 12-point Likert scale (0= <i>None</i> , 11 = <i>More than 10 times</i>) |

| | <i>Question</i> | <i>Answer option</i> | <i>Comment</i> |
|----|---|---|--|
| 4a | In total, how long did these awakenings last? | <input type="checkbox"/> less than 5 minutes <input type="checkbox"/> 5 minutes <input type="checkbox"/> 10 minutes [...] | Branch when response in 4 was >0. Multiple choice options providing 5 minute-increments up to 1h, followed by 15 minute increments up to <i>more than 10h.</i> |
| 4b | Please enter, how long did these awakenings last in total? (e.g., 11:15) <i>Note:</i> use the following format hh:mm | [text field] | Branch when response in 4a included <i>more than 10h..</i> |
| 5 | What time was your final awakening? | <input type="checkbox"/> 05:00 <input type="checkbox"/> 05:05 <input type="checkbox"/> 05:10 [...] | Multiple choice providing answering options in five-minute increments for the full 24h. |
| 6 | What time did you get out of bed for the day? | <input type="checkbox"/> 05:00 <input type="checkbox"/> 05:05 <input type="checkbox"/> 05:10 [...] | Multiple choice providing answering options in five-minute increments for the full 24h. |
| 7 | How would you rate the quality of your sleep? | <input type="checkbox"/> Very good <input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor <input type="checkbox"/> Very poor | Multiple choice |

| <i>Question</i> | <i>Answer option</i> | <i>Comment</i> |
|--|---|-----------------|
| 8 Last night, how much were you bothered by repeated, disturbing dreams of the stressful experience? | <input type="checkbox"/> Not at all <input type="checkbox"/> A little bit <input type="checkbox"/> Moderately <input type="checkbox"/> Quite a bit <input type="checkbox"/> Extremely | Multiple choice |

EMA daytime diary

Table S.2

Sleep diary

| | <i>Question</i> | <i>Answer option</i> | <i>Comment</i> |
|---|--|---|---|
| 1 | How many intrusive memories of previous traumatic experiences did you have today? <i>(Intrusions are sudden, unwanted memories or flashbacks)</i> | None _____ | 10+ 12-point Likert scale (0=None, 11 = More than 10 times) |
| 2 | Following is a list of problems that people sometimes have in response to a very stressful experience. Keeping your worst event in mind, please read each problem carefully and then select how much you have been bothered by that problem today . | | Intro |
| 3 | Today, how much were you bothered by repeated, disturbing, and unwanted memories of the stressful experience? | <input type="checkbox"/> Not at all <input type="checkbox"/> A little bit <input type="checkbox"/> Moderately <input type="checkbox"/> Quite a bit <input type="checkbox"/> Extremely | Multiple choice |
| 4 | Today, how much were you bothered by suddenly feeling or acting as if the stressful experience were actually happening again (as if you were actually back there reliving it)? | <input type="checkbox"/> Not at all <input type="checkbox"/> A little bit <input type="checkbox"/> Moderately <input type="checkbox"/> Quite a bit <input type="checkbox"/> Extremely | Multiple choice |

| | <i>Question</i> | <i>Answer option</i> | <i>Comment</i> |
|---|---|---|-----------------|
| 5 | Today, how much were you bothered by feeling very upset when something reminded you of the stressful experience? | <input type="checkbox"/> Not at all <input type="checkbox"/> A little bit <input type="checkbox"/> Moderately <input type="checkbox"/> Quite a bit <input type="checkbox"/> Extremely | Multiple choice |
| 6 | Today, how much were you bothered by having strong physical reactions when something reminded you of the stressful experience? <i>(for example, heart pounding, trouble breathing, sweating)</i> | <input type="checkbox"/> Not at all <input type="checkbox"/> A little bit <input type="checkbox"/> Moderately <input type="checkbox"/> Quite a bit <input type="checkbox"/> Extremely | Multiple choice |
| 7 | Today, how much were you bothered by avoiding memories, thoughts, or feelings related to the stressful experience? | <input type="checkbox"/> Not at all <input type="checkbox"/> A little bit <input type="checkbox"/> Moderately <input type="checkbox"/> Quite a bit <input type="checkbox"/> Extremely | Multiple choice |
| 8 | Today, how much were you bothered by avoiding external reminders of the stressful experience? <i>(for example, people, places, conversations, activities, objects, or situations)</i> | <input type="checkbox"/> Not at all <input type="checkbox"/> A little bit <input type="checkbox"/> Moderately <input type="checkbox"/> Quite a bit <input type="checkbox"/> Extremely | Multiple choice |
| 9 | Today, how much were you bothered by trouble remembering important parts of the stressful experience? | <input type="checkbox"/> Not at all <input type="checkbox"/> A little bit <input type="checkbox"/> Moderately | Multiple choice |

| <i>Question</i> | <i>Answer option</i> | <i>Comment</i> |
|---|---|-----------------|
| | <input type="checkbox"/> Quite a bit | |
| | <input type="checkbox"/> Extremely | |
| 10 Today, how much were you bothered by having strong negative beliefs about yourself, other people, or the world? <i>(for example, having thoughts such as: I am bad, there is something seriously wrong with me, no one can be trusted, the world is completely dangerous)</i> | <input type="checkbox"/> Not at all <input type="checkbox"/> A little bit <input type="checkbox"/> Moderately <input type="checkbox"/> Quite a bit <input type="checkbox"/> Extremely | Multiple choice |
| 11 Today, how much were you bothered by blaming yourself or someone else for the stressful experience or what happened after it? | <input type="checkbox"/> Not at all <input type="checkbox"/> A little bit <input type="checkbox"/> Moderately <input type="checkbox"/> Quite a bit <input type="checkbox"/> Extremely | Multiple choice |
| 12 Today, how much were you bothered by having strong negative feelings such as fear, horror, anger, guilt, or shame? | <input type="checkbox"/> Not at all <input type="checkbox"/> A little bit <input type="checkbox"/> Moderately <input type="checkbox"/> Quite a bit <input type="checkbox"/> Extremely | Multiple choice |
| 13 Today, how much were you bothered by loss of interest in activities that you used to enjoy? | <input type="checkbox"/> Not at all <input type="checkbox"/> A little bit <input type="checkbox"/> Moderately <input type="checkbox"/> Quite a bit | Multiple choice |

| <i>Question</i> | <i>Answer option</i> | <i>Comment</i> |
|---|---|-----------------|
| | <input type="checkbox"/> Extremely | |
| 14 Today, how much were you bothered by feeling distant or cut off from other people? | <input type="checkbox"/> Not at all <input type="checkbox"/> A little bit <input type="checkbox"/> Moderately <input type="checkbox"/> Quite a bit <input type="checkbox"/> Extremely | Multiple choice |
| 15 Today, how much were you bothered by trouble experiencing positive feelings? <i>(for example, being unable to feel happiness or have loving feelings for people close to you)</i> | <input type="checkbox"/> Not at all <input type="checkbox"/> A little bit <input type="checkbox"/> Moderately <input type="checkbox"/> Quite a bit <input type="checkbox"/> Extremely | Multiple choice |
| 16 Today, how much were you bothered by irritable behavior, angry outbursts, or acting aggressively? | <input type="checkbox"/> Not at all <input type="checkbox"/> A little bit <input type="checkbox"/> Moderately <input type="checkbox"/> Quite a bit <input type="checkbox"/> Extremely | Multiple choice |
| 17 Today, how much were you bothered by taking too many risks or doing things that could cause you harm? | <input type="checkbox"/> Not at all <input type="checkbox"/> A little bit <input type="checkbox"/> Moderately <input type="checkbox"/> Quite a bit <input type="checkbox"/> Extremely | Multiple choice |
| 18 Today, how much were you bothered by being “superalert” or watchful or on guard? | <input type="checkbox"/> Not at all <input type="checkbox"/> A little bit <input type="checkbox"/> Moderately | Multiple choice |

| <i>Question</i> | <i>Answer option</i> | <i>Comment</i> |
|---|---|--|
| | <input type="checkbox"/> Quite a bit | |
| | <input type="checkbox"/> Extremely | |
| 19 Today, how much were you bothered by feeling jumpy or easily startled? | <input type="checkbox"/> Not at all | Multiple choice |
| | <input type="checkbox"/> A little bit | |
| | <input type="checkbox"/> Moderately | |
| | <input type="checkbox"/> Quite a bit | |
| | <input type="checkbox"/> Extremely | |
| 20 Today, how much were you bothered by having difficulty concentrating? | <input type="checkbox"/> Not at all | Multiple choice |
| | <input type="checkbox"/> A little bit | |
| | <input type="checkbox"/> Moderately | |
| | <input type="checkbox"/> Quite a bit | |
| | <input type="checkbox"/> Extremely | |
| 21 How many standard drinks containing alcohol did you have today? | None | 10+ |
| | _____ | |
| | | 12-point Likert scale (0=None, 11 = More than 10 times) |
| | | <i>(standard drink: e.g. bottle, can or large glass of mid-strength beer, standard serve of wine, 30ml of spirits)</i> |
| 22 Please select the appropriate statement below about your hormonal cycle today | <input type="checkbox"/> I'm on my period | Multiple choice |
| | <input type="checkbox"/> I'm not on my period | |
| | <input type="checkbox"/> I'm using the pill | |
| | <input type="checkbox"/> I'm using a hormonal birth control other than the pill (e.g., hormonal IUD, implant) | |
| | | <i>Note: If you do not have periods, please select "I'm not on my period"</i> |

Subjective sleep

Sleep predicting PTSD symptoms

Table S.3

Additional subjective sleep variables predicting PTSD symptoms

| | | WASO (mins) | NMd |
|------------------------|---------|------------------------------|---------------------------------|
| PTSS | within | 0.004 [-0.012, 0.019] | -0.038 [-0.773, 0.697] |
| | between | 0.193 [-0.021, 0.407] | 11.842** [7.742, 15.941] |
| Intrusion [†] | within | 0.000 [0.000, 0.003] | 0.115* [0.007, 0.223] |
| | between | 0.025* [0.000, 0.051] | 1.228** [0.721, 1.736] |

Notes: Results are unstandardised regression coefficients [95% confidence interval]. PTSS: PTSD symptom severity (PCL-5), WASO: wake after sleep onset (mins), NMd: distress from nightmares (PCL item #2).

[†] Poisson or negative binomial distribution

* $p < .05$, ** $p < .001$.

PTSD symptoms predicting sleep

Table S.4

PTSD symptoms predicting additional subjective sleep variables

| | | PTSS | Intrusions |
|--------------------------|---------|--|---------------------------------|
| SOL (mins) | within | 0.009* [0.0000, 0.019] [#] | 0.206 [-0.014, 0.208] |
| | between | 0.039** [0.022, 0.056] [#] | 4.352 [-1.081, 0.043] |
| WASO (mins) [#] | within | -0.003 [-0.015, 0.009] | 0.094 [-0.017, 0.204] |
| | between | 0.050** [-0.015, 0.014] | 0.641* [0.147, 1.135] |
| NAwk [†] | within | -0.001 [-0.010, 0.008] | 0.053 [-0.013, 0.119] |
| | between | 0.021* [0.004, 0.039] | 0.345* [0.029, 0.661] |
| SE (%) | within | -0.051 [-0.141, 0.039] | -0.056 [-0.745, 0.634] |
| | between | -0.426** [-0.590, -0.263] | -3.642* [-7.060, -0.223] |

Notes: Results are unstandardised regression coefficients [95% confidence interval]. PTSS: PTSD symptom severity (PCL-5), SOL: sleep onset latency (mins), WASO: wake after sleep onset (mins), NAwk: number of awakenings, SE: sleep efficiency (%).

[#] log-transformed, [†] Poisson or negative binomial distribution

* $p < .05$, ** $p < .001$.

Objective sleep

Sleep predicting PTSD symptoms

Table S.5

Additional objective sleep variables predicting PTSD symptoms

| | | WASO (mins) |
|------------------------|---------|----------------------------------|
| PTSS | within | 0.003 [-0.011, 0.016] |
| | between | -0.194** [-0.308, -0.080] |
| Intrusion [†] | within | 0.001 [-0.004, 0.002] |
| | between | -0.019* [-0.036, -0.002] |

Notes: Results are unstandardised regression coefficients [95% confidence interval]. PTSS: PTSD symptom severity (PCL-5), WASO: wake after sleep onset (mins).

[†] Poisson or negative binomial distribution

* $p < .05$, ** $p < .001$

PTSD symptoms predicting sleep

Table S.6

PTSD symptoms predicting additional objective sleep variables

| | | PTSS | Intrusions |
|-------------------|---------|----------------------------------|----------------------------------|
| WASO (mins) | within | 0.002 [-0.004, 0.009] | 0.071* [0.016, 0.125] |
| | between | -0.014** [-0.023, -0.004] | -0.179* [-0.358, -0.0001] |
| NAwk [†] | within | -0.002 [-0.007, 0.010] | 0.042 [-0.029, 0.114] |
| | between | -0.022** [-0.035, -0.009] | -0.281 [-0.533, 0.028] |

Notes: Results are unstandardised regression coefficients [95% confidence interval]. PTSS: PTSD symptom severity (PCL-5), WASO: wake after sleep onset (mins), NAwk: number of awakenings.

[†] Poisson or negative binomial distribution

* $p < .05$, ** $p < .001$

Exploratory moderation analyses

Sex

Table S.7a

Interaction between subjective sleep variables and sex predicting PTSD symptoms

| | TST*sex | SOL*sex | NAwk*sex | SE*sex | SQ*sex |
|------------------------------|---------------------------------|---------------------------------|----------------------------|------------------------------------|------------------------------------|
| PTSS | | | | | |
| within | -0.410 [-1.331, 0.511] | 0.099* [0.015, 0.183] | -0.616 [-1.788, 0.557] | -0.195* [-0.347, -0.043] | -1.529* [-3.046, -0.013] |
| between | 0.811 [-3.673, 5.296] | 0.016 [-0.349, 0.381] | -2.717 [-13.826, 8.391] | 0.608 [-0.483, 1.700] | 0.489 [-7.757, 8.736] |
| sex | 1.309 [-4.542, 7.160] | -2.535 [-0.995, 3.925] | -4.585 [-11.631, 2.461] | -3.497 [-9.382, 2.389] | -3.226 [-8.615, 2.162] |
| Intrusion[†] | | | | | |
| within | 0.000 [-0.163, 0.163] | 0.006 [-0.001, 0.013] | -0.049 [-0.246, 0.148] | -0.020 [-0.049, 0.008] | -0.120 [-0.413, 0.173] |
| between | 0.562 [-0.038, 1.162] | -0.028 [-0.077, 0.022] | -0.132 [-1.567, 1.303] | 0.167* [0.014, 0.320] | 1.462* [0.128, 2.797] |
| sex | 1.002* [0.145, 1.859] | 0.424 [-0.466, 1.315] | 0.292 [-0.645, 1.230] | 0.386 [-0.485, 1.211] | 0.527 [-0.285, 1.340] |

Notes: Results are unstandardised regression coefficients [95% confidence interval]. PTSS: PTSD symptom severity (PCL-5), TST: total sleep time (hours), SOL: sleep onset latency (mins), NAwk: number of awakenings, SE: sleep efficiency (%), SQ: sleep quality, sex: main effect for women vs. men.

[†] Poisson or negative binomial distribution

* $p < .05$

Table S.7b*Interaction between additional subjective sleep variables and sex predicting PTSD symptoms*

| | | WASO*sex | NMd*sex |
|------------------------|---------|------------------------|------------------------|
| PTSS | within | 0.030 [-0.001, 0.062] | 1.038 [-0.649, 2.725] |
| | between | 0.215 [-0.305, 0.734] | 1.451 [-7.529, 10.432] |
| | sex | -2.287 [-9.397, 4.823] | -2.443 [-8.043, 3.157] |
| Intrusion [†] | within | 0.012 [-0.004, 0.028] | 0.062 [-0.181, 0.306] |
| | between | -0.000 [-0.066, 0.065] | -0.565 [-1.678, 0.548] |
| | sex | 0.495 [-0.404, 1.394] | 0.455 [-0.270, 1.181] |

Notes: Results are unstandardised regression coefficients [95% confidence interval]. PTSS: PTSD symptom severity (PCL-5), WASO: wake after sleep onset (mins), NMd: distress from nightmares (PCL item #2), sex: main effect for women vs. men.

[†] Poisson or negative binomial distribution

Table S.8a*Interaction between PTSD symptoms and sex predicting subjective sleep variables*

| | | PTSS*sex | Intrusions*sex |
|---------|---------|------------------------|------------------------------|
| TST (h) | within | -0.005 [-0.040, 0.030] | -0.015 [-0.261, 0.232] |
| | between | 0.012 [-0.042, 0.066] | 1.257* [0.130, 2.384] |
| | sex | 0.464 [-0.202, 1.130] | 0.686 [-0.105, 1.478] |
| NMd | within | -0.004 [-0.021, 0.013] | 0.012 [-0.103, 0.128] |
| | between | 0.007 [-0.020, 0.034] | -0.066 [-0.532, 0.401] |
| | sex | 0.101 [-0.231, 0.434] | -0.004 [-0.331, 0.323] |
| SQ | within | -0.003 [-0.022, 0.017] | 0.071 [-0.066, 0.208] |
| | between | -0.005 [-0.032, 0.023] | 0.380 [-0.230, 0.989] |
| | sex | -0.114 [-0.455, 0.227] | -0.007 [-0.435, 0.422] |

Notes: Results are unstandardised regression coefficients [95% confidence interval]. PTSS: PTSD symptom severity (PCL-5), TST: total sleep time (hours), NMd: distress from nightmares (PCL item #2), SQ: sleep quality, sex: main effect for women vs. men.

* $p < .05$

Table S.8b*Interaction between PTSD symptoms and sex predicting additional subjective sleep variables*

| | | PTSS*sex | Intrusions*sex |
|--------------------------|---------|-------------------------------------|---------------------------------|
| SOL (mins) | within | 0.004 [-0.019, 0.028] [#] | -0.444 [-4.139, 3.251] |
| | between | 0.006 [-0.030, 0.042] [#] | -10.586 [-27.098, 5.927] |
| | sex | -0.097 [-0.546, 0.351] [#] | -1.093 [-12.703, 10.517] |
| WASO (mins) [#] | within | 0.002 [-0.034, 0.039] | -0.066 [-0.313, 0.182] |
| | between | 0.006 [-0.051, 0.062] | -0.253 [-1.321, 0.814] |
| | sex | 0.397 [-0.300, 1.095] | 0.258 [-0.494, 1.011] |
| NAwk [†] | within | -0.011 [-0.035, 0.013] | -0.164* [-0.302, -0.025] |
| | between | 0.014 [-0.023, 0.052] | 0.239 [-0.441, 0.918] |
| | sex | 0.185 [-0.287, 0.657] | 0.160 [-0.325, 0.646] |
| SE (%) | within | -0.014 [-0.229, 0.201] | -0.535 [-2.055, 0.985] |
| | between | -0.266 [-0.608, 0.075] | 2.180 [-5.255, 9.615] |
| | sex | -1.419 [-5.610, 2.772] | -0.282 [-5.502, 4.937] |

Notes: Results are unstandardised regression coefficients [95% confidence interval]. PTSS: PTSD symptom severity (PCL-5), SOL: sleep onset latency (mins), WASO: wake after sleep onset (mins), NAwk: number of awakenings, SE: sleep efficiency (%), sex: main effect for women vs. men.

[#] log-transformed, [†] Poisson or negative binomial distribution

* $p < .05$

Table S.9*Interaction between objective sleep variables and sex predicting PTSD symptoms*

| | | TST*sex | WASO*sex | NAwk*sex | SE*sex |
|------------------------|---------|-----------------|-----------------|------------------|-----------------|
| PTSS | within | -0.104 | -0.010 | -0.084 | 0.036 |
| | | [-0.841, 0.633] | [-0.043, 0.023] | [-0.470, 0.6.39] | [-0.172, 0.244] |
| | between | -2.099 | 0.084 | 1.456 | 0.112 |
| | | [-8.200, 4.003] | [-0.248, 0.417] | [-3.454, 6. 367] | [-1.323, 1.547] |
| | sex | -0.303 | -0.049 | -1.742 | -1.239 |
| | | [-8.097, 7.490] | [-6.931, 6.832] | [-8.410, 4.926] | [-8.392, 5.913] |
| Intrusion [†] | within | 0.000 | 0.000 | -0.060 | 0.001 |
| | | [-0.163, 0.163] | [-0.007, 0.007] | [-0.061, 0.180] | [-0.043, 0.044] |
| | between | 0.562 | 0.005 | 0.124 | 0.038 |
| | | [-0.038, 1.162] | [-0.039, 0.050] | [-0.535, 0.783] | [-0.146, 0.222] |
| | sex | 1.002 | 0.697 | 0.630 | 0.632 |
| | | [0.145, 1.859] | [-0.219, 1.614] | [-0.259, 1.520] | [-0.311, 1.575] |

Notes: Results are unstandardised regression coefficients [95% confidence interval]. Only TST, NAwk and SE formed parts of the hypotheses. PTSS: PTSD symptom severity (PCL-5), TST: total sleep time (hours), WASO: wake after sleep onset (mins) NAwk: number of awakenings, SE: sleep efficiency, sex: main effect for women vs. men.

[†] Poisson or negative binomial distribution

Table S.10*Interaction between PTSD symptoms and sex predicting objective sleep variables*

| | | PTSS*sex | Intrusions*sex |
|--------------------------|---------|------------------------|-------------------------|
| TST (h) | within | 0.009 [-0.030, 0.047] | 0.057 [-0.245, 0.359] |
| | between | 0.003 [-0.060, 0.066] | -0.197 [-1.337, 0.943] |
| | sex | 4.311 [-2.867, 11.488] | 0.042 [-0.032, 0.115] |
| WASO (mins) [#] | within | -0.002 [-0.019, 0.016] | 0.032 [-0.098, 0.162] |
| | between | 0.001 [-0.020, 0.023] | 0.068 [-0.352, 0.489] |
| | sex | -0.081 [-0.330, 0.168] | -0.039 [-0.312, 0.234] |
| NAwk [†] | within | -0.012 [-0.034, 0.009] | -0.046 [-0.214, 0.122] |
| | between | -0.006 [-0.024, 0.035] | 0.201[-0.401, 0.804] |
| | sex | -0.101 [-0.439, 0.237] | -0.022 [-0.411, 0.368] |
| SE (%) | within | 0.032 [-0.116, 0.181] | 0.174 [-0.971, 1.318] |
| | between | 0.019 [-0.258, 0.297] | -0.367 [-5.727, 4.994] |
| | sex | 1.337 [-1.844, 4.519] | 9.910 [-24.785, 44.604] |

Notes: Results are unstandardised regression coefficients [95% confidence interval]. Only TST, and SE formed parts of the hypotheses. PTSS: PTSD symptom severity (PCL-5), TST: total sleep time, SE: sleep efficiency (%), sex: main effect for women vs. men.

[#] log-transformed, [†] Poisson or negative binomial distribution

Post hoc exploratory analyses

Diagnosis

Table S.11

Interaction between objective sleep variables and probable PTSD diagnosis predicting PTSD symptoms

| | | TST*PTSD | WASO*PTSD | NAwk*PTSD | SE*PTSD |
|------------------------|-----------------|-----------------|------------------|-----------------|-----------------|
| PTSS | within | 0.248 | 0.017 | 0.069 | -0.097 |
| | | [-0.389, 0.885] | [-0.010, 0.044] | [-0.557, 0.419] | [-0.274, 0.080] |
| | between | -0.762 | -0.231* | -3275 | 0.621 |
| | | [-5.886, 4.363] | [-0.406, -0.055] | [-6.606, 0.057] | [-0.483, 1.724] |
| diagnosis | 12.997** | 11.552** | 11.816** | 12.214** | |
| | | [7.689, 18.305] | [7.080, 16.024] | [7.462, 16.170] | [7.443, 16.986] |
| Intrusion [†] | within | 0.082 | 0.003 | -0.087 | 0.015 |
| | | [-0.077, 0.240] | [-0.009, 0.004] | [-0.203, 0.030] | [-0.025, 0.055] |
| | between | 0.118 | -0.015 | -0.140 | 0.041 |
| | | [-0.470, 0.706] | [-0.040, 0.010] | [-0.596, 0.317] | [-0.105, 0.188] |
| diagnosis | 1.599** | 1.464** | 1.445** | 1.528** | |
| | | [1.004, 2.194] | [0.888, 2.040] | [0.881, 2.008] | [0.948, 2.108] |

Notes: Results are unstandardised regression coefficients [95% confidence interval]. Only TST, NAwk and SE

formed parts of the hypotheses. PTSS: PTSD symptom severity (PCL-5), TST: total sleep time (hours),

WASO: wake after sleep onset (mins) NAwk: number of awakenings, SE: sleep efficiency (%), diagnosis:

main effect for probable PTSD vs no PTSD at baseline,

[†] Poisson or negative binomial distribution, * $p < .05$, ** $p < .001$

Table S.12*Interaction between PTSD symptoms and probable PTSD diagnosis predicting objective sleep variables*

| | | PTSS*PTSD | Intrusions*PTSD |
|--------------------------|-----------|------------------------|-------------------------|
| TST (h) | within | 0.024 [-0.013, 0.062] | -0.054 [-0.413, 0.305] |
| | between | -0.059 [-0.181, 0.064] | 0.397 [-1.317, 2.110] |
| | diagnosis | -0.630 [-1.739, 0.479] | 0.105 [-10.027, 10.236] |
| WASO (mins) [#] | within | 0.008 [-0.008, 0.024] | 0.027 [-0.121, 0.175] |
| | between | 0.004 [-0.038, 0.047] | 0.037 [-0.599, 0.673] |
| | diagnosis | 0.102 [-0.287, 0.490] | 0.029 [-0.347, 0.405] |
| NAwk [†] | within | 0.009 [-0.012, 0.030] | 0.041 [-0.141, 0.224] |
| | between | 0.007 [-0.054, 0.069] | -0.142 [-1.024, 0.739] |
| | diagnosis | 0.231 [-0.313, 0.776] | -0.050 [-0.469, 0.569] |
| SE (%) | within | -0.055 [-0.195, 0.086] | -0.347 [-1.677, 0.982] |
| | between | -0.072 [-0.606, 0.462] | 0.802 [-6.991, 8.594] |
| | diagnosis | -2.689 [-7.494, 2.115] | -0.699 [-5.309, 3.911] |

Notes: Results are unstandardised regression coefficients [95% confidence interval]. Only TST, and SE formed parts of the hypotheses. PTSS: PTSD symptom severity (PCL-5), TST: total sleep time, SE: sleep efficiency (%), diagnosis: main effect for probable PTSD vs no PTSD at baseline,

[#] log-transformed, [†] Poisson or negative binomial distribution

Alcohol

Table S.13

Interaction between objective sleep variables and number of alcoholic drinks predicting PTSD symptoms

| | | TST*alcohol | WASO*alcohol | NAwk*alcohol | SE*alcohol |
|------------------------|---------|------------------|-----------------|-----------------|------------------|
| PTSS | within | -0.553** | -0.003 | -0.439 | -0.110* |
| | | [-0.876, -0.229] | [-0.027, 0.021] | [-0.896, 0.018] | [-0.215, -0.006] |
| | between | 0.029 | 0.025 | 0.183 | -0.087 |
| | | [-1.387, 1.444] | [-0.004, 0.054] | [-0.301, 0.667] | [-0.242, 0.067] |
| | alcohol | -0.536 | -0.077 | -0.513 | -0.156 |
| | | [-1.141, 0.068] | [-0.926, 0.773] | [-1.301, 0.275] | [-0.960, 0.648] |
| Intrusion [†] | within | -0.007 | 0.001 | -0.064 | -0.020* |
| | | [-0.060, 0.045] | [-0.003, 0.005] | [-0.164, 0.035] | [-0.039, -0.002] |
| | between | 0.268 | 0.000 | -0.037 | 0.016 |
| | | [-0.014, 0.550] | [-0.006, 0.006] | [-0.145, 0.072] | [-0.017, 0.048] |
| | alcohol | -0.104 | -0.101 | -0.170 | -0.178 |
| | | [-0.222, 0.013] | [-0.311, 0.109] | [-0.390, 0.050] | [-0.395, 0.039] |

Notes: Results are unstandardised regression coefficients [95% confidence interval]. Only TST, NAwk and SE formed parts of the hypotheses. PTSS: PTSD symptom severity (PCL-5), TST: total sleep time (hours), WASO: wake after sleep onset (mins) NAwk: number of awakenings, SE: sleep efficiency, alcohol.: main effect of number of alcoholic drinks.

[†] Poisson or negative binomial distribution

* $p < .05$, ** $p < .001$

Table S.14*Interaction between PTSD symptoms and number of alcoholic drinks predicting objective sleep variables*

| | | PTSS*alcohol | Intrusions*alcohol |
|--------------------------|---------|----------------------------------|--------------------------------|
| TST (h) | within | 0.024 * [0.003, 0.045] | 0.097 [-0.032, 0.226] |
| | between | 0.013 [-0.005, 0.031] | 0.075 [-0.152, 0.302] |
| | alcohol | 0.049 [-0.101, 0.199] | -0.016 [-0.184, 0.152] |
| WASO (mins) [#] | within | 0.024 ** [0.016, 0.033] | 0.035 [-0.016, 0.085] |
| | between | -0.009 * [-0.016, -0.001] | -0.066 [-0.155, 0.024] |
| | alcohol | -0.021 [-0.080, 0.038] | -0.014 [-0.080, 0.052] |
| NAwk [†] | within | 0.009 [-0.006, -0.024] | -0.042 [-0.138, 0.053] |
| | between | -0.005 [-0.017, 0.007] | -0.047 [-0.215, 0.120] |
| | alcohol | -0.036 [-0.129, 0.058] | -0.010 [-0.106, 0.086] |
| SE (%) | within | -0.076 [-0.154, 0.003] | -0.013 [-0.567, 0.540] |
| | between | 0.031 [-0.038, 0.100] | 1.343 ** [0.458, 2.228] |
| | alcohol | 0.372 [-0.197, 0.940] | -0.482 [-1.157, 0.192] |

Notes: Results are unstandardised regression coefficients [95% confidence interval]. Only TST, and SE formed parts of the hypotheses. PTSS: PTSD symptom severity (PCL-5), TST: total sleep time, WASO: wake after sleep onset (mins), NAwk: number of awakenings, SE: sleep efficiency (%), alcohol: main effect of number of alcoholic drinks.

[#] log-transformed, [†] Poisson or negative binomial distribution

* $p < .05$, ** $p < .001$