

Supplementary Table 1. Operational definition of symptoms in adolescence.

| Symptom | Young-HUNT3 questions | Operationalization | Questions derived from |
|--|--|--|--|
| Posttraumatic stress symptoms | I have upsetting thoughts, pictures or sounds of what happened come into my mind when I do not want them to When something reminds me of what happened I get very afraid, upset or sad I try not to talk about, think about or have feelings about what happened | Questions were answered with yes/no and scored yes=1 and no=0, resulting in a sum score ranging 0-3 | UCLA PTSD Reaction Index for DSM IV, part III (1) The items included in the Young-HUNT3 study were carefully selected in collaboration with authors of the original instrument. |
| Psychological distress, SCL-5 | <i>Experienced for the past 14 days:</i> i) feeling fearful ii) nervousness or shakiness inside iii) feeling hopeless about the future iv) feeling blue v) worrying about things too much | Participants rated to which extent they were bothered by each item, ranging from 1 – “not bothered” to 4 “very bothered”, resulting in a mean score ranging 1-4 | Hopkins Symptoms Checklist (SCL-5) (2) |
| Headache, weekly | <i>Reoccurring headaches past 12 months:</i> Migraine Tension type headache Other headache | Headache frequency was assessed for each type, and any headache weekly or more frequently was scored 1, less frequent headaches were scored 0, resulting in a measure for weekly headache yes/no, scored 1/0 | Validated headache interview (3) |
| Musculoskeletal pain, number of sites | <i>Pain for the past 3 months in:</i> Neck or shoulders Chest Upper back Lower back Left arm Right arm Left leg Right leg | Weekly or more frequent pain was scored 1, less frequent pain was scored 0, resulting in a sum score for number of pain sites ranging 0-≥3. | Assessment instrument by Mikkelsen et al. (4) |

1. Steinberg AM, Brymer MJ, Decker KB, Pynoos RS. The University of California at Los Angeles Post-traumatic Stress Disorder Reaction Index. *Curr Psychiatry Rep.* 2004;6(2):96-100.
2. Strand BH, Dalgard OS, Tambs K, Rognerud M. Measuring the mental health status of the Norwegian population: a comparison of the instruments SCL-25, SCL-10, SCL-5 and MHI-5 (SF-36). *Nord J Psychiatry.* 2003;57(2):113-8.
3. Zwart JA, Dyb G, Stovner LJ, Sand T, Holmen TL. The validity of 'recognition-based' headache diagnoses in adolescents. Data from the Nord-Trøndelag Health Study 1995-97, Head-HUNT-Youth. *Cephalalgia.* 2003;23(3):223-9.
4. Mikkelsen M, Salminen JJ, Kautiainen H. Non-specific musculoskeletal pain in preadolescents. Prevalence and 1-year persistence. *Pain.* 1997;73(1):29-35.

Supplementary Table 2. Sample descriptives and trauma exposures as reported in Young-HUNT3 (2006-2008) and the number receiving prescription opioid and nonopioid analgesics (NorPD, 2004-2021) in adolescence and young adulthood.

| | | All | Females | Males |
|---|------|-------------------|-------------------|-------------------|
| | n | n (%) / mean (SD) | n (%) / mean (SD) | n (%) / mean (SD) |
| All participants | 8199 | 8199 | 4128 (50.3) | 4071 (49.7) |
| Age at Young-HUNT3, mean (min 12.7, max 20.9) | 8199 | 15.9 (1.7) | 15.9 (1.8) | 15.9 (1.7) |
| Pubertal development score, mean (range 1-4) | 7511 | 3.1 (0.7) | 3.3 (0.6) | 2.9 (0.7) |
| Socioeconomic factors | | | | |
| Family economy below average | 7636 | 708 (9.3) | 399 (10.2) | 309 (8.3) |
| Household, not living with both parents | 8104 | 3776 (46.6) | 1900 (46.5) | 1876 (46.7) |
| Direct interpersonal trauma | | | | |
| By type | | | | |
| Bullying | 7803 | 628 (8.1) | 296 (7.5) | 332 (8.7) |
| Physical violence | 7809 | 789 (10.1) | 304 (7.6) | 485 (12.7) |
| Sexual abuse | 7829 | 430 (5.5) | 324 (8.1) | 106 (2.8) |
| By number of types | | | | |
| No events | | 6464 (82.5) | 3321 (83.2) | 3143 (81.8) |
| 1 type | | 987 (12.6) | 475 (11.9) | 512 (13.3) |
| ≥ 2 types | | 382 (4.9) | 196 (4.9) | 186 (4.8) |
| Other trauma | | | | |
| By type | | | | |
| Witness to violence | 7812 | 1810 (23.2) | 722 (18.1) | 1088 (28.4) |
| Disease or death of someone close | 7848 | 5757 (73.4) | 3064 (76.6) | 2693 (70.0) |
| Severe accident, disaster or other traumatic event | 7848 | 2481 (31.6) | 1304 (32.6) | 1177 (30.6) |
| By number of types | | | | |
| No events | | 1657 (21.1) | 746 (18.6) | 911 (23.6) |
| 1 type | | 3307 (42.1) | 1821 (45.5) | 1486 (38.5) |
| 2 types | | 1956 (24.9) | 1048 (26.2) | 908 (23.5) |
| 3 types | | 943 (12.0) | 391 (9.8) | 552 (14.3) |
| ≥ 1 analgesic prescriptions in adolescence | | | | |
| Opioid analgesics | 8199 | 938 (11.4) | 565 (13.7) | 373 (9.2) |
| Nonopioid analgesics | | | | |
| Paracetamol | | 646 (7.9) | 378 (9.2) | 268 (6.6) |
| NSAIDs | | 3196 (39.0) | 1829 (44.3) | 1367 (33.6) |
| Gabapentinoids | | 21 (0.3) | 18 (0.4) | < 5 |
| ≥ 1 analgesic prescriptions in young adulthood | | | | |
| Opioid analgesics | 8199 | 3507 (42.8) | 1958 (47.4) | 1549 (38.1) |
| Nonopioid analgesics | | | | |
| Paracetamol | | 2439 (29.8) | 1414 (34.3) | 1025 (25.2) |
| NSAIDs | | 5472 (66.7) | 2935 (71.1) | 2537 (62.3) |
| Gabapentinoids | | 178 (2.2) | 114 (2.8) | 64 (1.6) |
| Symptoms reported in adolescence | | | | |
| Psychological distress (SCL-5, 1-4) | 7961 | 1.50 (0.55) | 1.65 (0.60) | 1.35 (0.45) |
| Posttraumatic stress (0-3) | 5016 | 0.82 (0.99) | 1.04 (1.07) | 0.56 (0.84) |
| Musculoskeletal pain, weekly | 8035 | 2748 (34.2) | 1671 (41.0) | 1077 (27.2) |
| Headaches, weekly | 7619 | 617 (8.10) | 456 (11.9) | 161 (4.25) |

Supplementary Table 3. Overlap of exposure to direct interpersonal trauma and other trauma types.

| Other trauma, number of types | Interpersonal trauma, number of types | | | |
|-------------------------------|---------------------------------------|-------------|-------------|--------------|
| | 0 n/% | 1 n/% | ≥2 n/% | Total n/% |
| 0 | 1572 (24.3) | 66 (6.7) | 8 (2.1) | 1646 (21.0) |
| 1 | 2998 (46.4) | 248 (25.1) | 48(12.6) | 3294 (42.1) |
| 2 | 1461 (22.6) | 367 (37.2) | 123 (32.2) | 1951 (24.9) |
| 3 | 433 (6.7) | 306 (31.0) | 203 (53.1) | 942 (12.0) |
| Total | 6464 (100.0) | 987 (100.0) | 382 (100.0) | 7833 (100.0) |

Supplementary Table 4. Zero-inflated negative binomial regression analyses for number of prescriptions of gabapentinoids in adolescence and young adulthood by type of traumatic events, number of types of direct interpersonal trauma and other trauma types, background factors and adolescent symptoms.

| | Gabapentinoid prescriptions | | | | | |
|--|-----------------------------|--------------------|---------|--------------------------|--------------------|---------|
| | Adolescence n=21 | | | Young adulthood n=178 | | |
| | n | IRR (95%CI) | p-value | n | IRR (95%CI) | p-value |
| Direct interpersonal trauma | | | | | | |
| Bullying | 7244 | 0.92 (0.04, 21.24) | 0.957 | 7455 | 5.66 (2.08, 15.39) | 0.001 |
| Sexual abuse | 7266 | 2.00 (0.16, 25.76) | 0.595 | 7480 | 2.00 (0.55, 7.29) | 0.292 |
| Physical violence | 7244 | 0.61 (0.03, 12.03) | 0.747 | 7460 | 2.06 (0.81, 5.29) | 0.131 |
| Other trauma types | | | | | | |
| Witness to violence | 7245 | 0.12 (0.02, 0.91) | 0.040 | 7461 | 1.25 (0.63, 2.51) | 0.523 |
| Severe illness or death of someone close | 7269 | 2.18 (0.45, 10.61) | 0.334 | 7485 | 1.10 (0.56, 2.15) | 0.774 |
| Severe accident, disaster or other traumatic event | 7274 | 0.51 (0.11, 2.37) | 0.391 | 7490 | 1.59 (0.84, 3.04) | 0.157 |
| Direct interpersonal trauma, number of types | | | | | | |
| 1 type | 7270 | 3.79 (0.36, 40.3) | 0.270 | 7484 | 2.02 (0.86, 4.76) | 0.108 |
| ≥2 types | 7270 | 1.87 (0.04, 91.01) | 0.753 | 7484 | 6.04 (1.43, 25.48) | 0.014 |
| Other trauma, number of types | | | | | | |
| 1 type | 7270 | 1.17 (0.12, 11.42) | 0.894 | 7484 | 2.12 (0.96, 4.68) | 0.063 |
| 2 types | 7270 | 0.32 (0.03, 3.47) | 0.345 | 7484 | 1.38 (0.57, 3.30) | 0.474 |
| 3 types | 7270 | 0.11 (0.01, 1.52) | 0.099 | 7484 | 0.93 (0.30, 2.90) | 0.899 |
| Background factors | | | | | | |
| Age | 8199 | 0.85 (0.56, 1.57) | 0.844 | 8199 | 1.31 (1.14, 1.51) | <0.001 |
| Sex, female | 8199 | 5.8 (1.65, 20.38) | 0.006 | 8199 | 2.20 (1.27, 3.83) | 0.005 |
| Pubertal development score | 7511 | 0.58 (0.19, 1.76) | 0.334 | - | - | - |
| Family economy below average | 7636 | 0.58 (0.10, 3.20) | 0.529 | 7636 | 1.08 (0.40, 2.94) | 0.875 |
| Household, not living with both parents | 8104 | 1.97 (0.49, 7.94) | 0.343 | 8104 | 1.72 (0.98, 3.04) | 0.060 |
| Subsample analyses for participants exposed to childhood trauma | | | | | | |
| Symptoms in adolescence | | | | | | |
| Psychological distress | 5807 | 0.65 (0.14, 3.07) | 0.585 | 5954 | 1.49 (0.93, 2.36) | 0.101 |
| Posttraumatic stress symptoms | 4753 | 3.27 (1.45, 7.36) | 0.004 | 4858 | 1.26 (0.89, 1.80) | 0.196 |
| Musculoskeletal pain | 5790 | 1.59 (0.75, 3.36) | 0.223 | 5939 | 1.90 (1.32, 2.73) | 0.001 |
| Headaches | 5447 | 4.25 (0.53, 33.96) | 0.172 | 5586 | 1.52 (0.48, 4.84) | 0.481 |

Trauma types and symptoms were assessed in separate analyses, while number of types were assessed in one analysis including interpersonal trauma and other trauma types. n is the same for all analgesics, as data on filled prescriptions are available for all participants. Analyses were run as complete case analyses adjusted for age, sex, household structure, and family economy. Analyses for prescriptions in adolescence were adjusted for pubertal development. Background factors were assessed in unadjusted, separate complete case analyses. Symptoms were analyzed only for the subsample reporting trauma exposure.