Scandinavian Journal of Public Health

# Prevalence of parental mental health conditions among children aged 0-16 years in Denmark: a nationwide register-based cross-sectional study

* Supplementary tables

Amanda MS Christesen1

Camilla K Knudsen\*1

Kirsten Fonager1,2

Martin N Johansen3

Signe Heuckendorff1,4

## **Affiliations**

1. Department of Social Medicine, Aalborg University Hospital, Aalborg, Denmark
2. Department of Clinical Medicine, Aalborg University, Aalborg, Denmark
3. Unit of Clinical Biostatistics, Aalborg University Hospital, Aalborg, Denmark
4. Danish Center for Clinical Health Services Research (DACS), Department of Clinical Medicine, Aalborg University, Aalborg, Denmark

# Supplementary table 1:

**Prevalence of children with parental mental health conditions in the 98 municipalities. Within each region, municipalities are ranked according to increasing prevalence of any parental mental health conditions.**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | **Any** | | **Minor** | **Moderate** | **Severe** |
| **Region** | **Municipality** | **N** | **n** | **% (95% CI)** | **% (95% CI)** | **% (95% CI)** | **% (95% CI)** |
| **Region North** | **Jammerbugt** | 7,486 | 2,742 | 36.6 (35.5-37.7) | 23.6 (22.7-24.6) | 11.2 (10.6-12.0) | 1.8 (1.5-2.1) |
| **Aalborg** | 36,710 | 13,560 | 36.9 (36.4-37.4) | 24.0 (23.6-24.4) | 11.3 (11.0-11.6) | 1.7 (1.5-1.8) |
|  | **Rebild** | 6,614 | 2,464 | 37.3 (36.1-38.4) | 25.8 (24.8-26.9) | 9.8 (9.1-10.5) | 1.7 (1.4-2.0) |
|  | **Thisted** | 8,250 | 3,132 | 38.0 (36.9-39.0) | 25.0 (24.0-25.9) | 10.0 (9.4-10.7) | 3.0 (2.6-3.4) |
|  | **Brønderslev** | 7,440 | 2,885 | 38.8 (37.7-39.9) | 24.4 (23.5-25.4) | 12.4 (11.6-13.1) | 2.0 (1.7-2.3) |
|  | **Frederikshavn** | 10,089 | 3,942 | 39.1 (38.1-40.0) | 23.8 (22.9-24.6) | 13.5 (12.9-14.2) | 1.8 (1.5-2.1) |
|  | **Vesthimmerlands** | 7,194 | 2,811 | 39.1 (38.0-40.2) | 25.7 (24.7-26.7) | 11.1 (10.4-11.9) | 2.2 (1.9-2.6) |
|  | **Mariagerfjord** | 7,952 | 3,116 | 39.2 (38.1-40.3) | 24.8 (23.9-25.8) | 12.6 (11.9-13.4) | 1.8 (1.5-2.1) |
|  | **Hjørring** | 12,164 | 4,845 | 39.8 (39.0-40.7) | 24.1 (23.4-24.9) | 13.8 (13.2-14.4) | 1.9 (1.7-2.2) |
|  | **Morsø** | 3,700 | 1,571 | 42.5 (40.9-44.1) | 27.8 (26.3-29.2) | 11.4 (10.4-12.5) | 3.3 (2.7-3.9) |
|  | **Læsø** | 220 | 94 | 42.7 (36.3-49.4) | 29.5 (23.9-35.9) | 10.0 (6.7-14.8) | 3.2 (1.5-6.5) |
| **Central Region** | **Samsø** | 520 | 171 | 32.9 (29.0-37.1) | 20.6 (17.3-24.3) | 9.2 (7.0-12.0) | 3.1 (1.9-5.0) |
| **Lemvig** | 3,580 | 1,246 | 34.8 (33.3-36.4) | 24.8 (23.4-26.3) | 8.5 (7.7-9.5) | 1.4 (1.1-1.9) |
|  | **Skanderborg** | 14,317 | 5,172 | 36.1 (35.3-36.9) | 25.2 (24.5-25.9) | 9.2 (8.8-9.7) | 1.7 (1.5-1.9) |
|  | **Ringkøbing-Skjern** | 11,642 | 4,280 | 36.8 (35.9-37.6) | 22.8 (22.0-23.5) | 11.9 (11.4-12.6) | 2.1 (1.8-2.3) |
|  | **Hedensted** | 9,951 | 3,727 | 37.5 (36.5-38.4) | 25.9 (25.0-26.7) | 9.5 (8.9-10.0) | 2.1 (1.9-2.4) |
|  | **Holstebro** | 11,909 | 4,607 | 38.7 (37.8-39.6) | 24.5 (23.7-25.3) | 12.6 (12.1-13.2) | 1.5 (1.3-1.8) |
|  | **Ikast-Brande** | 8,649 | 3,350 | 38.7 (37.7-39.8) | 24.5 (23.6-25.4) | 12.0 (11.4-12.7) | 2.2 (1.9-2.5) |
|  | **Silkeborg** | 19,357 | 7,509 | 38.8 (38.1-39.5) | 26.2 (25.5-26.8) | 10.7 (10.3-11.1) | 1.9 (1.7-2.1) |
|  | **Odder** | 4,529 | 1,770 | 39.1 (37.7-40.5) | 26.3 (25.1-27.6) | 10.7 (9.8-11.6) | 2.1 (1.7-2.5) |
|  | **Favrskov** | 11,125 | 4,385 | 39.4 (38.5-40.3) | 28.8 (28.0-29.7) | 8.6 (8.1-9.2) | 2.0 (1.7-2.2) |
|  | **Herning** | 18,032 | 7,127 | 39.5 (38.8-40.2) | 24.6 (24.0-25.2) | 13.3 (12.8-13.8) | 1.6 (1.5-1.8) |
|  | **Skive** | 8,689 | 3,479 | 40.0 (39.0-41.1) | 25.0 (24.1-25.9) | 12.8 (12.1-13.5) | 2.3 (2.0-2.6) |
|  | **Aarhus** | 59,450 | 23,854 | 40.1 (39.7-40.5) | 26.1 (25.8-26.5) | 11.6 (11.3-11.8) | 2.4 (2.3-2.5) |
|  | **Horsens** | 18,126 | 7,285 | 40.2 (39.5-40.9) | 26.5 (25.9-27.2) | 11.5 (11.0-11.9) | 2.2 (2.0-2.4) |
|  | **Struer** | 4,014 | 1,623 | 40.4 (38.9-42.0) | 24.2 (22.9-25.6) | 14.6 (13.6-15.8) | 1.6 (1.2-2.0) |
|  | **Viborg** | 20,074 | 8,124 | 40.5 (39.8-41.2) | 26.0 (25.4-26.7) | 11.8 (11.4-12.3) | 2.6 (2.4-2.8) |
|  | **Randers** | 18,755 | 7,774 | 41.5 (40.7-42.2) | 26.4 (25.7-27.0) | 13.0 (12.5-13.5) | 2.1 (1.9-2.3) |
|  | **Syddjurs** | 7,932 | 3,407 | 43.0 (41.9-44.0) | 27.9 (26.9-28.9) | 12.7 (12.0-13.4) | 2.4 (2.1-2.7) |
|  | **Norddjurs** | 6,457 | 2,915 | 45.1 (43.9-46.4) | 28.8 (27.7-29.9) | 14.3 (13.5-15.2) | 2.0 (1.7-2.4) |
| **Region**  **South** | **Fanø** | 571 | 189 | 33.1 (29.4-37.1) | 23.1 (19.8-26.8) | 8.4 (6.4-11.0) | 1.6 (0.8-3.0) |
| **Vejle** | 23,501 | 9,144 | 38.9 (38.3-39.5) | 25.1 (24.6-25.7) | 11.6 (11.2-12.0) | 2.1 (2.0-2.3) |
|  | **Varde** | 9,978 | 3,930 | 39.4 (38.4-40.3) | 23.1 (22.3-23.9) | 13.4 (12.7-14.0) | 2.6 (2.3-3.0) |
|  | **Esbjerg** | 21,910 | 8,916 | 40.7 (40.0-41.3) | 22.9 (22.3-23.5) | 14.7 (14.2-15.2) | 3.1 (2.9-3.4) |
|  | **Billund** | 5,367 | 2,205 | 41.1 (39.8-42.4) | 23.8 (22.7-24.9) | 14.4 (13.5-15.4) | 2.9 (2.5-3.4) |
|  | **Middelfart** | 7,486 | 3,087 | 41.2 (40.1-42.4) | 24.7 (23.7-25.7) | 14.5 (13.7-15.3) | 2.0 (1.7-2.4) |
|  | **Kolding** | 18,778 | 7,852 | 41.8 (41.1-42.5) | 27.3 (26.7-28.0) | 12.8 (12.3-13.3) | 1.7 (1.5-1.9) |
| **Region**  **South (cont.)** | **Vejen** | 8,860 | 3,736 | 42.2 (41.1-43.2) | 24.9 (24.0-25.8) | 14.7 (14.0-15.4) | 2.6 (2.3-3.0) |
| **Aabenraa** | 11,248 | 4,757 | 42.3 (41.4-43.2) | 25.4 (24.6-26.2) | 14.1 (13.5-14.8) | 2.8 (2.5-3.1) |
| **Nyborg** | 6,033 | 2,577 | 42.7 (41.5-44.0) | 20.0 (19.0-21.0) | 20.4 (19.4-21.5) | 2.3 (2.0-2.7) |
|  | **Sønderborg** | 13,872 | 5,988 | 43.2 (42.3-44.0) | 25.3 (24.6-26.0) | 14.5 (13.9-15.0) | 3.4 (3.1-3.7) |
|  | **Faaborg-Midtfyn** | 9,833 | 4,276 | 43.5 (42.5-44.5) | 22.4 (21.6-23.2) | 19.0 (18.3-19.8) | 2.0 (1.8-2.3) |
|  | **Tønder** | 6,943 | 3,022 | 43.5 (42.4-44.7) | 25.4 (24.4-26.5) | 15.0 (14.2-15.9) | 3.1 (2.7-3.5) |
|  | **Haderslev** | 10,611 | 4,640 | 43.7 (42.8-44.7) | 26.8 (26.0-27.6) | 13.9 (13.3-14.6) | 3.0 (2.7-3.4) |
|  | **Odense** | 35,988 | 15,808 | 43.9 (43.4-44.4) | 22.8 (22.4-23.3) | 19.3 (18.9-19.7) | 1.8 (1.7-1.9) |
|  | **Nordfyns** | 5,705 | 2,506 | 43.9 (42.6-45.2) | 23.8 (22.7-24.9) | 18.3 (17.4-19.4) | 1.8 (1.5-2.2) |
|  | **Kerteminde** | 4,421 | 1,943 | 43.9 (42.5-45.4) | 23.7 (22.5-25.0) | 18.4 (17.3-19.6) | 1.8 (1.5-2.3) |
|  | **Assens** | 8,088 | 3,574 | 44.2 (43.1-45.3) | 22.5 (21.6-23.4) | 19.1 (18.3-20.0) | 2.6 (2.3-3.0) |
|  | **Fredericia** | 9,944 | 4,532 | 45.6 (44.6-46.6) | 24.4 (23.6-25.3) | 18.6 (17.8-19.4) | 2.5 (2.3-2.9) |
|  | **Svendborg** | 10,688 | 4,952 | 46.3 (45.4-47.3) | 25.0 (24.1-25.8) | 19.1 (18.4-19.9) | 2.3 (2.0-2.6) |
|  | **Ærø** | 789 | 377 | 47.8 (44.3-51.3) | 28.8 (25.7-32.0) | 18.1 (15.6-21.0) | 0.9 (0.4-1.9) |
|  | **Langeland** | 1,723 | 832 | 48.3 (45.9-50.7) | 25.4 (23.4-27.5) | 21.0 (19.1-23.0) | 1.9 (1.4-2.7) |
| **Capital** | **Allerød** | 5,683 | 1,649 | 29.0 (27.9-30.2) | 19.6 (18.6-20.7) | 7.9 (7.3-8.7) | 1.5 (1.2-1.8) |
| **Region** | **Gentofte** | 16,038 | 4,884 | 30.5 (29.7-31.2) | 21.7 (21.1-22.4) | 7.7 (7.3-8.1) | 1.0 (0.9-1.2) |
|  | **Rudersdal** | 12,071 | 3,876 | 32.1 (31.3-32.9) | 21.2 (20.5-22.0) | 9.6 (9.0-10.1) | 1.3 (1.1-1.6) |
|  | **Furesø** | 9,050 | 2,952 | 32.6 (31.7-33.6) | 21.4 (20.5-22.2) | 9.6 (9.0-10.2) | 1.7 (1.4-2.0) |
|  | **Vallensbæk** | 3,564 | 1,163 | 32.6 (31.1-34.2) | 19.8 (18.5-21.1) | 11.5 (10.5-12.6) | 1.3 (1.0-1.8) |
|  | **Hørsholm** | 4,894 | 1,598 | 32.7 (31.4-34.0) | 23.1 (21.9-24.3) | 8.4 (7.6-9.2) | 1.2 (1.0-1.6) |
|  | **Lyngby-Taarbæk** | 11,220 | 3,815 | 34.0 (33.1-34.9) | 22.8 (22.0-23.5) | 9.8 (9.2-10.3) | 1.5 (1.3-1.7) |
|  | **Frederiksberg** | 17,653 | 6,011 | 34.1 (33.4-34.8) | 20.9 (20.3-21.5) | 11.4 (10.9-11.8) | 1.8 (1.6-2.0) |
|  | **Egedal** | 9,788 | 3,397 | 34.7 (33.8-35.7) | 21.5 (20.7-22.3) | 11.3 (10.7-12.0) | 1.9 (1.6-2.2) |
|  | **Dragør** | 3,072 | 1,086 | 35.4 (33.7-37.1) | 24.8 (23.3-26.3) | 9.2 (8.2-10.3) | 1.4 (1.0-1.9) |
|  | **Hillerød** | 10,636 | 3,798 | 35.7 (34.8-36.6) | 22.3 (21.5-23.1) | 11.6 (11.0-12.2) | 1.8 (1.6-2.1) |
|  | **Tårnby** | 8,916 | 3,186 | 35.7 (34.7-36.7) | 22.0 (21.1-22.9) | 12.0 (11.4-12.7) | 1.7 (1.5-2.0) |
|  | **Gladsaxe** | 14,385 | 5,177 | 36.0 (35.2-36.8) | 20.6 (20.0-21.3) | 13.3 (12.8-13.9) | 2.0 (1.8-2.3) |
|  | **Glostrup** | 4,298 | 1,565 | 36.4 (35.0-37.9) | 19.9 (18.8-21.2) | 14.2 (13.2-15.3) | 2.2 (1.8-2.7) |
|  | **København** | 101,133 | 36,907 | 36.5 (36.2-36.8) | 20.5 (20.3-20.8) | 13.7 (13.5-13.9) | 2.3 (2.2-2.4) |
|  | **Hvidovre** | 10,885 | 4,065 | 37.3 (36.4-38.3) | 21.3 (20.6-22.1) | 13.5 (12.9-14.2) | 2.5 (2.2-2.8) |
|  | **Ishøj** | 4,867 | 1,822 | 37.4 (36.1-38.8) | 19.1 (18.0-20.2) | 16.0 (15.0-17.1) | 2.3 (2.0-2.8) |
|  | **Høje-Taastrup** | 10,530 | 4,022 | 38.2 (37.3-39.1) | 19.9 (19.2-20.7) | 15.6 (15.0-16.3) | 2.6 (2.4-3.0) |
|  | **Fredensborg** | 8,326 | 3,184 | 38.2 (37.2-39.3) | 23.6 (22.7-24.5) | 12.6 (11.9-13.3) | 2.1 (1.8-2.4) |
|  | **Rødovre** | 7,690 | 2,997 | 39.0 (37.9-40.1) | 21.2 (20.3-22.1) | 15.9 (15.1-16.7) | 1.9 (1.6-2.2) |
|  | **Ballerup** | 9,741 | 3,828 | 39.3 (38.3-40.3) | 20.6 (19.8-21.4) | 16.0 (15.3-16.7) | 2.7 (2.4-3.1) |
|  | **Brøndby** | 6,999 | 2,776 | 39.7 (38.5-40.8) | 22.1 (21.1-23.1) | 15.8 (15.0-16.7) | 1.8 (1.5-2.1) |
|  | **Gribskov** | 7,473 | 2,969 | 39.7 (38.6-40.8) | 23.2 (22.3-24.2) | 13.8 (13.0-14.6) | 2.7 (2.3-3.1) |
|  | **Frederikssund** | 8,766 | 3,497 | 39.9 (38.9-40.9) | 23.2 (22.3-24.1) | 14.2 (13.5-14.9) | 2.5 (2.2-2.8) |
|  | **Herlev** | 5,970 | 2,417 | 40.5 (39.2-41.7) | 21.8 (20.8-22.9) | 16.1 (15.2-17.1) | 2.5 (2.2-3.0) |
|  | **Albertslund** | 5,819 | 2,372 | 40.8 (39.5-42.0) | 21.1 (20.0-22.1) | 17.4 (16.5-18.4) | 2.3 (1.9-2.7) |
|  | **Helsingør** | 11,738 | 4,795 | 40.9 (40.0-41.7) | 24.8 (24.0-25.6) | 14.1 (13.5-14.7) | 1.9 (1.7-2.2) |
|  | **Halsnæs** | 5,480 | 2,261 | 41.3 (40.0-42.6) | 21.7 (20.7-22.8) | 16.9 (16.0-18.0) | 2.6 (2.2-3.0) |
|  | **Bornholm (and Christiansø)** | 6,238 | 2,593 | 41.6 (40.3-42.8) | 25.3 (24.3-26.4) | 13.5 (12.7-14.4) | 2.7 (2.3-3.1) |
| **Region** | **Solrød** | 4,860 | 1,703 | 35.0 (33.7-36.4) | 22.4 (21.3-23.6) | 11.0 (10.2-11.9) | 1.6 (1.3-2.0) |
| **Zealand** | **Roskilde** | 17,256 | 6,256 | 36.3 (35.5-37.0) | 21.6 (21.0-22.2) | 12.6 (12.1-13.1) | 2.1 (1.9-2.3) |
|  | **Greve** | 10,375 | 3,799 | 36.6 (35.7-37.5) | 21.3 (20.5-22.1) | 13.5 (12.9-14.2) | 1.8 (1.6-2.1) |
|  | **Lejre** | 5,742 | 2,227 | 38.8 (37.5-40.1) | 23.8 (22.7-24.9) | 13.3 (12.5-14.2) | 1.6 (1.3-2.0) |
|  | **Stevns** | 4,050 | 1,581 | 39.0 (37.5-40.5) | 22.9 (21.6-24.2) | 13.7 (12.7-14.8) | 2.5 (2.0-3.0) |
|  | **Sorø** | 5,855 | 2,379 | 40.6 (39.4-41.9) | 21.3 (20.3-22.3) | 16.9 (16.0-17.9) | 2.4 (2.1-2.9) |
|  | **Køge** | 12,263 | 5,004 | 40.8 (39.9-41.7) | 22.6 (21.8-23.3) | 16.1 (15.4-16.7) | 2.2 (1.9-2.5) |
|  | **Holbæk** | 14,171 | 5,964 | 42.1 (41.3-42.9) | 24.4 (23.7-25.1) | 15.1 (14.5-15.7) | 2.6 (2.3-2.9) |
|  | **Ringsted** | 6,862 | 2,928 | 42.7 (41.5-43.8) | 22.4 (21.4-23.4) | 18.1 (17.2-19.0) | 2.2 (1.9-2.6) |
|  | **Guldborgsund** | 10,061 | 4,389 | 43.6 (42.7-44.6) | 21.4 (20.6-22.2) | 19.5 (18.7-20.3) | 2.7 (2.4-3.0) |
|  | **Odsherred** | 5,166 | 2,262 | 43.8 (42.4-45.1) | 24.3 (23.1-25.4) | 16.7 (15.7-17.7) | 2.8 (2.4-3.3) |
|  | **Kalundborg** | 8,997 | 3,951 | 43.9 (42.9-44.9) | 24.3 (23.4-25.2) | 17.3 (16.5-18.0) | 2.4 (2.1-2.7) |
|  | **Slagelse** | 14,354 | 6,305 | 43.9 (43.1-44.7) | 22.2 (21.6-22.9) | 18.8 (18.1-19.4) | 2.9 (2.6-3.2) |
|  | **Næstved** | 15,629 | 6,910 | 44.2 (43.4-45.0) | 25.3 (24.6-25.9) | 16.4 (15.8-17.0) | 2.5 (2.3-2.8) |
|  | **Faxe** | 6,728 | 3,042 | 45.2 (44.0-46.4) | 25.3 (24.2-26.3) | 16.9 (16.0-17.8) | 3.0 (2.6-3.5) |
|  | **Vordingborg** | 7,889 | 3,707 | 47.0 (45.9-48.1) | 26.5 (25.5-27.4) | 17.5 (16.7-18.3) | 3.1 (2.7-3.5) |
|  | **Lolland** | 6,508 | 3,069 | 47.2 (45.9-48.4) | 24.3 (23.2-25.3) | 19.8 (18.9-20.8) | 3.1 (2.7-3.5) |

# Supplementary table 2

**Post-hoc analyses of what constituted the severity group of minor parental mental health conditions. Percentages are based on the total number of children with minor parental mental health conditions (N=259,508)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Psychologista** | **General practitionerb** | **Medicationc** | **A combination of psychologist, general practitioner and medication** | **Total** |
|  | **% (95% CI)** | **% (95% CI)** | **% (95% CI)** | **% (95% CI)** | **% (95% CI)** |
| **Psychologista** | 21.9 (21.7-22.1) | 4.2 (4.1-4.3) | 11.7 (11.6-11.9) | 5.5 (5.5-5.6) | 43.4 (43.2-43.6) |
| **General practitionerb** | 4.2 (4.1-4.3) | 11.1 (11.0-11.2) | 8.5 (8.3-8.6) | 5.5 (5.5-5.6) | 29.3 (29.1-29.5) |
| **Medicationc** | 11.7 (11.6-11.9) | 8.5 (8.3-8.6) | 37.1 (36.9-37.2) | 5.5 (5.5-5.6) | 62.8 (62.6-63.0) |
| *a At least one reimbursed contact with a private psychologist*  *b At least two psychometric tests or two sessions of talk therapy with a general practitioner. Only 1.4 % (95% CI: 1.3-1.4) of the children had a parent who only had two psychometric tests*  *c At least two redeemed prescriptions of anxiolytic or antidepressant medication* | | | | | |