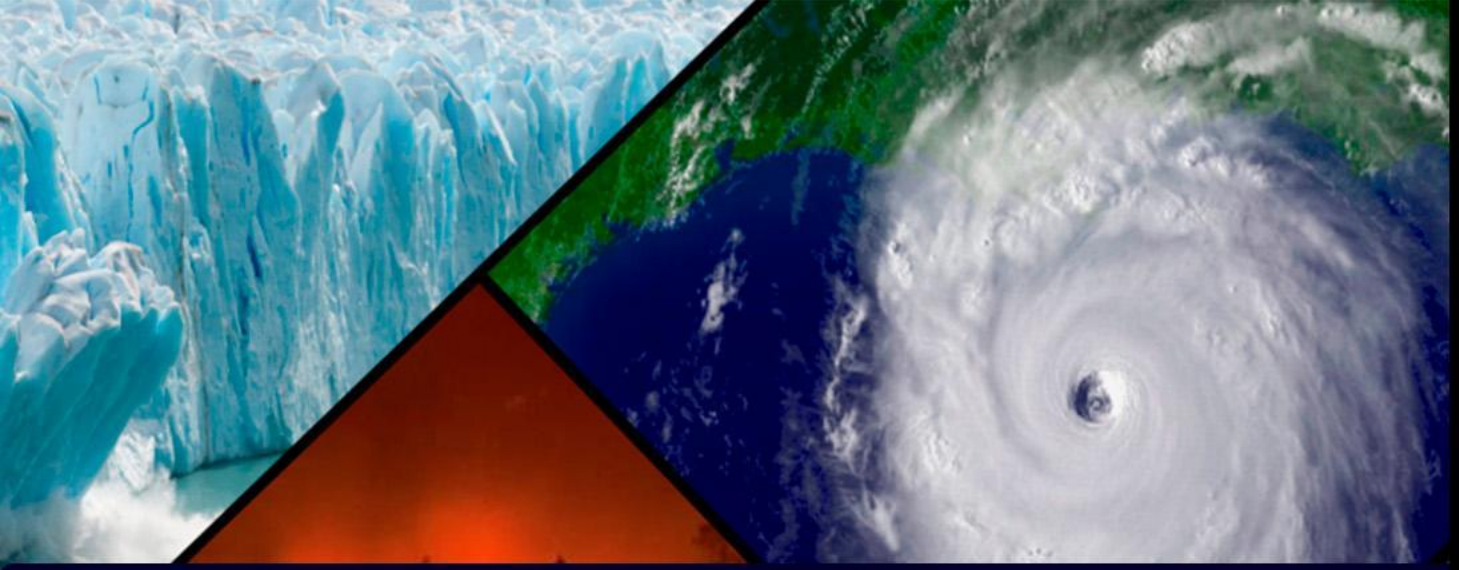
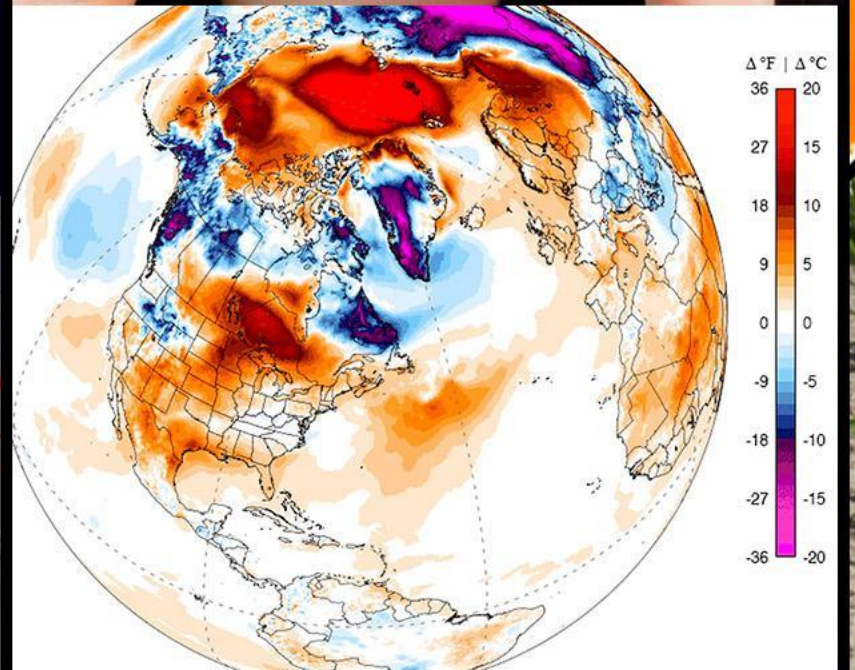
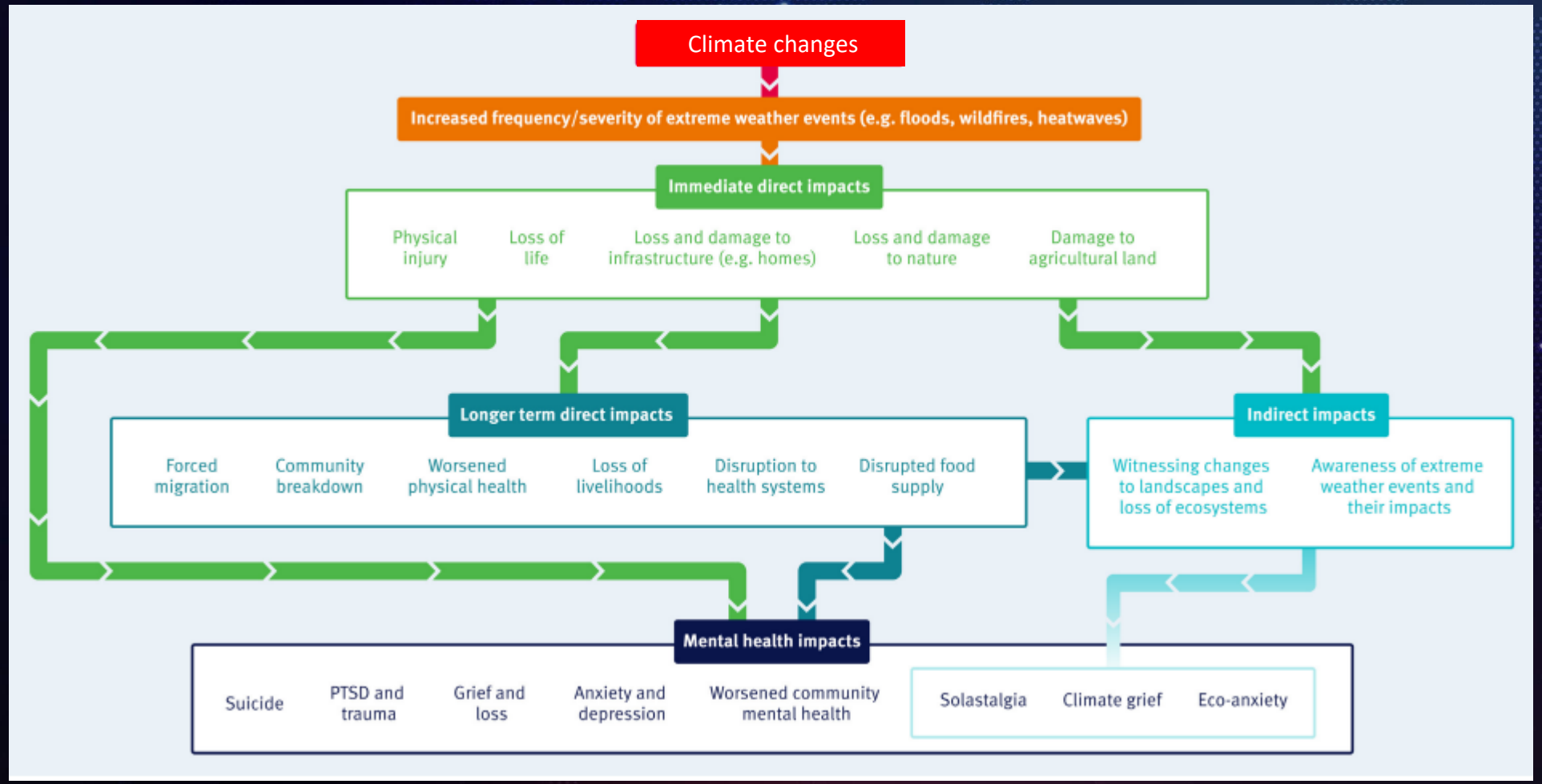


# IMPACT OF CLIMATE CHANGE ON MENTAL HEALTH, BEHAVIOR, AND HUMAN BRAIN




# Illustrative pathways by which extreme weather events impact mental health, with arrows indicating direction from cause to effect.

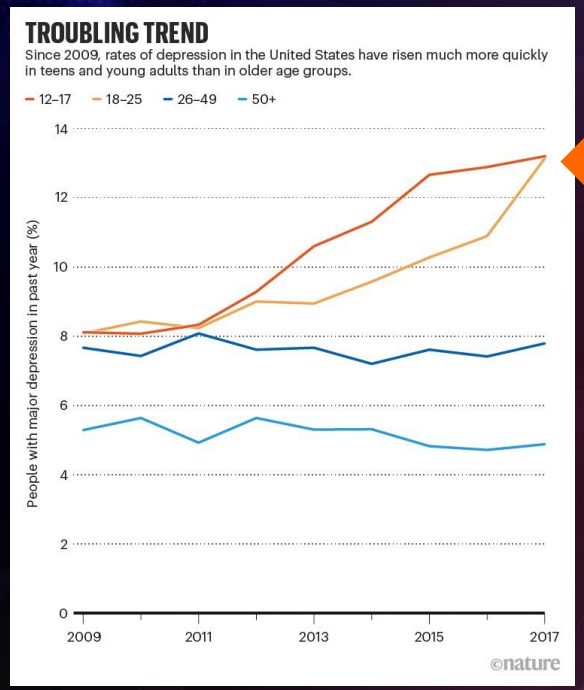



Climate change ultimately impacts a range of mental health outcomes via many different pathways, and so the mental health impacts of climate change must ultimately be assessed by thinking about entire systems. Example pathways shown here arise from an extreme weather event (e.g. a flood or wildfire), which has immediate direct impacts (e.g. physical injury and loss and damage to homes), longer term direct impacts (e.g. forced migration and disrupted food supply) and indirect impacts (e.g. witnessing changes to landscapes and ecosystems). Each of these impacts or consequences flowing from the climate change-related extreme weather event can impact mental health outcomes.

Lawrance, E.,Thompson, R., Fontana, G., & Jennings, N. (2021). The impact of climate change on mental health and emotional wellbeing: current evidence and implications for policy and practice. London : Grantham Institute, 36 pp. DOI:10.25561/88568. Available from https://www.imperial.ac.uk/grantham/publications/all-publications/the-impact-of-climate-change-on-mental-health-and-emotional-wellbeing-current-evidence-and-implications-for-policy-and-practice.php

# INCIDENCE OF MAJOR DEPRESSIVE EPISODE (MDE) IN LAST 12 MONTHS: PERCENT OF ADOLESCENTS AND ADULTS BY AGE CATEGORY, 2005–2017

| Age (years) | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | PD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12–13 | 5.59 | 5.27 | 4.29 | 5.18 | 4.57 | 4.20 | 4.16 | 5.58 | 5.90 | 7.17 | 8.20 | 7.22 | 6.73 | +47% (+20%) |
| 14–15 | 9.19 | 7.82 | 8.60 | 8.62 | 8.72 | 9.11 | 8.71 | 10.05 | 12.14 | 11.76 | 13.77 | 13.32 | 14.28 | +64% (+55%) |
| 16–17 | 11.18 | 10.59 | 11.55 | 11.14 | 10.55 | 10.68 | 11.69 | 11.93 | 13.38 | 14.68 | 15.52 | 17.60 | 17.81 | +69% (+59%) |
| 18–19 | — | — | — | — | 8.50 | 8.74 | 8.68 | 9.64 | 9.17 | 10.62 | 11.34 | 11.23 | 12.42 | +46% |
| 20–21 | — | — | — | — | 6.80 | 8.47 | 8.36 | 9.19 | 9.06 | 8.94 | 11.68 | 12.48 | 15.12 | +122% |
| 22–23 | — | — | — | — | 8.01 | 8.86 | 7.32 | 8.93 | 8.53 | 9.5 | 9.41 | 9.97 | 12.77 | +59% |
| 24–25 | — | — | — | — | 8.90 | 7.59 | 8.56 | 8.18 | 8.98 | 9.19 | 8.8 | 9.98 | 12.37 | +39% |
| 26–29 | — | — | — | — | 7.53 | 6.76 | 8.34 | 7.88 | 8.34 | 7.56 | 8.16 | 7.98 | 9.55 | +27% |
| 30–34 | — | — | — | — | 8.29 | 7.41 | 7.43 | 7.49 | 8.02 | 6.76 | 6.96 | 7.94 | 7.98 | —4% |
| 35–49 | — | — | — | — | 7.47 | 7.59 | 8.19 | 7.56 | 7.35 | 7.25 | 7.67 | 7.05 | 7.21 | —3% |
| 50–64 | — | — | — | — | 7.22 | 7.94 | 6.98 | 7.16 | 7.16 | 6.96 | 6.04 | 6.29 | 6.23 | —14% |
| 65+ | — | — | — | — | 2.44 | 2.27 | 1.78 | 3.37 | 2.68 | 3.00 | 3.19 | 2.64 | 3.17 | +30% |




PERCENT WITH MAJOR DEPRESSIVE EPISODE
IN THE PAST 12 MONTHS, BY AGE GROUP, 2009 –2017

Source: Jean M. Twenge, A. Bell Cooper, Thomas E. Joiner, Mary E. Duffy, Sarah G. Binau. Age, period, and cohort trends in mood disorder indicators and suicide-related outcomes in a nationally representative dataset, 2005–2017.. Journal of Abnormal Psychology, 2019; DOI: 10.1037/abn0000410

# INCIDENCE OF SUICIDAL THOUGHTS, PLANS, AND ATTEMPTS IN LAST 12 MONTHS: PERCENTAGE OF ADULTS BY AGE CATEGORY

Table 5

*Incidence of Suicidal Thoughts, Plans, and Attempts in Last 12 Months: Percentage of Adults by Age Category*

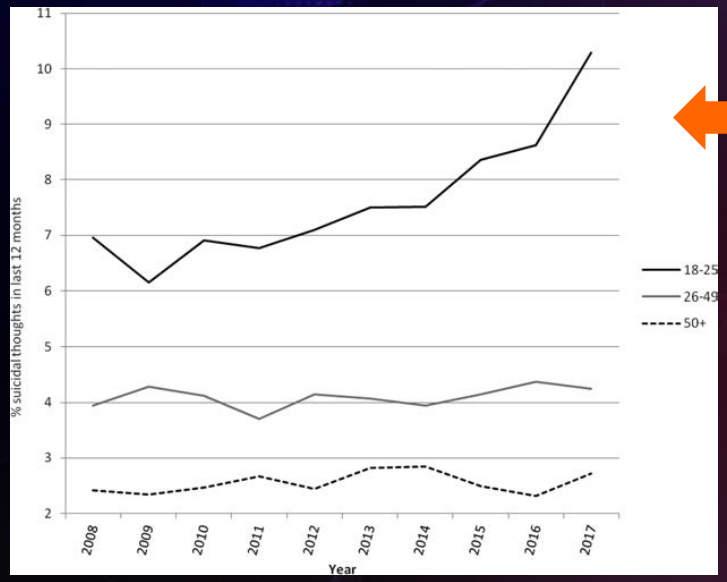
| Age (years) | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | PD |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Thoughts | | | | | | | | | | | |
| 18–19 | 8.51 | 7.44 | 8.59 | 8.86 | 9.43 | 9.63 | 9.82 | 11.16 | 10.35 | 12.40 | +46% |
| 20–21 | 7.17 | 6.52 | 7.32 | 6.89 | 7.58 | 8.46 | 7.91 | 8.60 | 10.10 | 12.03 | +68% |
| 22–23 | 5.72 | 5.33 | 6.13 | 5.94 | 6.15 | 6.67 | 6.46 | 7.88 | 7.66 | 8.86 | +55% |
| 24–25 | 6.20 | 5.07 | 5.41 | 5.27 | 5.45 | 5.25 | 5.87 | 5.93 | 6.60 | 7.98 | +29% |
| 26–29 | 4.35 | 4.15 | 4.43 | 4.42 | 4.20 | 4.41 | 4.37 | 6.07 | 5.70 | 6.30 | +45% |
| 30–34 | 3.71 | 4.38 | 4.00 | 2.59 | 4.19 | 4.44 | 4.17 | 4.36 | 5.11 | 4.46 | +20% |
| 35–49 | 3.90 | 4.30 | 4.09 | 3.89 | 4.13 | 3.86 | 3.75 | 3.54 | 3.74 | 3.58 | −8% |
| 50–64 | 2.95 | 3.04 | 3.06 | 3.35 | 2.84 | 3.73 | 3.75 | 3.01 | 2.89 | 3.07 | +4% |
| 65+ | 1.62 | 1.30 | 1.61 | 1.67 | 2.07 | 1.54 | 1.58 | 1.78 | 1.63 | 2.28 | +41% |
| Plans | | | | | | | | | | | |
| 18–19 | 2.94 | 2.61 | 2.67 | 2.56 | 3.58 | 3.31 | 3.09 | 4.15 | 3.52 | 5.17 | +76% |
| 20–21 | 2.16 | 1.89 | 2.11 | 1.68 | 2.39 | 3.02 | 2.57 | 2.76 | 3.46 | 4.59 | +113% |
| 22–23 | 1.21 | 1.23 | 1.90 | 1.43 | 1.62 | 2.20 | 1.69 | 2.59 | 2.41 | 2.63 | +117% |
| 24–25 | 1.67 | 1.62 | 1.56 | 1.79 | 1.62 | 1.21 | 1.68 | 1.24 | 2.02 | 2.24 | +34% |
| 26–29 | 1.14 | .78 | 1.00 | 1.70 | 1.11 | 1.54 | 1.27 | 1.17 | 1.55 | 1.58 | +39% |
| 30–34 | 1.13 | .89 | 1.19 | .52 | .93 | 1.42 | .96 | 1.15 | 1.40 | 1.10 | −3% |
| 35–49 | 1.03 | 1.15 | 1.09 | 1.17 | 1.49 | 1.25 | 1.12 | .92 | 1.12 | 1.07 | +4% |
| 50–64 | 1.02 | .91 | 1.04 | .95 | .66 | .70 | .93 | .86 | .63 | .83 | −19% |
| 65+ | .26 | .20 | .61 | .33 | .51 | .21 | .52 | .41 | .22 | .49 | +88% |
| Attempts | | | | | | | | | | | |
| 18–19 | 2.46 | 1.46 | 1.68 | 1.87 | 2.07 | 1.77 | 1.66 | 2.42 | 2.36 | 2.99 | +22% |
| 20–21 | 1.07 | .90 | 1.10 | 1.26 | 1.60 | 1.40 | 1.38 | 1.63 | 2.31 | 2.00 | +87% |
| 22–23 | .65 | .73 | 1.13 | .74 | 1.08 | .91 | .96 | 1.48 | 1.17 | 1.35 | +108% |
| 24–25 | .89 | 1.11 | .78 | .88 | .87 | .54 | .89 | 1.04 | .97 | 1.10 | +24% |
| 26–29 | .66 | .34 | .23 | .73 | .49 | .62 | .53 | .65 | .79 | .96 | +45% |
| 30–34 | .66 | .43 | .54 | .40 | .43 | .76 | .38 | .63 | .41 | .37 | −44% |
| 35–49 | .36 | .43 | .43 | .41 | .48 | .59 | .57 | .39 | .47 | .40 | +11% |
| 50–64 | .51 | .27 | .30 | .50 | .26 | .32 | .26 | .42 | .23 | .33 | −35% |
| 65+ | .07 | .13 | .23 | .07 | .32 | .14 | .16 | .18 | .15 | .22 | +214% |
| Thoughts but no attempt | | | | | | | | | | | |
| 18–19 | 6.04 | 5.96 | 6.91 | 6.98 | 7.36 | 7.86 | 8.16 | 8.74 | 7.93 | 9.38 | +55% |
| 20–21 | 6.08 | 5.62 | 6.21 | 5.63 | 5.81 | 7.01 | 6.52 | 6.97 | 7.78 | 10.04 | +65% |
| 22–23 | 5.07 | 4.60 | 5.00 | 5.20 | 5.07 | 5.73 | 5.50 | 6.39 | 6.49 | 7.51 | +48% |
| 24–25 | 5.31 | 3.96 | 4.63 | 4.39 | 4.58 | 4.70 | 4.98 | 4.88 | 5.64 | 6.89 | +30% |
| 26–29 | 3.67 | 3.81 | 4.21 | 3.69 | 3.71 | 3.79 | 3.81 | 5.42 | 4.91 | 5.60 | +53% |
| 30–34 | 3.06 | 3.95 | 3.46 | 2.19 | 3.75 | 3.67 | 3.79 | 3.73 | 4.70 | 4.08 | +33% |
| 35–49 | 3.54 | 3.87 | 3.64 | 3.47 | 3.65 | 3.27 | 3.17 | 3.14 | 3.27 | 3.18 | −10% |
| 50–64 | 2.44 | 2.77 | 2.76 | 2.85 | 2.47 | 3.42 | 3.49 | 2.59 | 2.65 | 2.74 | +12% |
| 65+ | 1.55 | 1.17 | 1.38 | 1.60 | 1.71 | 1.39 | 1.42 | 1.61 | 1.48 | 2.06 | +33% |

*Note.* Positive percent differences (PDs) indicate an increase in prevalence, and negative PDs indicate a decrease in prevalence.

Source: Jean M. Twenge, A. Bell Cooper, Thomas E. Joiner, Mary E. Duffy, Sarah G. Binau. Age, period, and cohort trends in mood disorder indicators and suicide-related outcomes in a nationally representative dataset, 2005–2017.. Journal of Abnormal Psychology, 2019; DOI: 10.1037/abn0000410

COMPLETED SUICIDES, RATE OUT OF 100,000, BY AGE GROUP

| Age (years) | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | PD |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 18–19 | 9.33 | 9.58 | 10.17 | 10.76 | 10.50 | 10.30 | 10.78 | 12.70 | 12.11 | 14.53 | 56% |
| 20–21 | 12.15 | 11.94 | 12.26 | 12.76 | 12.99 | 12.81 | 13.20 | 14.79 | 15.75 | 16.45 | 35% |
| 22–23 | 13.13 | 13.18 | 14.65 | 14.55 | 14.16 | 14.46 | 14.84 | 15.28 | 16.58 | 17.38 | 32% |
| 24–25 | 13.35 | 12.94 | 14.19 | 14.01 | 14.44 | 13.97 | 14.54 | 15.63 | 16.14 | 17.70 | 33% |
| 26–29 | 12.82 | 12.78 | 14.28 | 14.54 | 14.91 | 15.43 | 15.16 | 15.20 | 16.60 | 17.24 | 34% |
| 30–34 | 13.39 | 13.34 | 13.70 | 14.66 | 14.50 | 14.49 | 15.30 | 16.24 | 16.41 | 17.65 | 32% |
| 35–49 | 16.87 | 16.92 | 17.16 | 17.32 | 17.57 | 17.11 | 17.67 | 17.87 | 17.74 | 18.70 | 11% |
| 50–64 | 17.00 | 17.76 | 18.39 | 18.30 | 18.98 | 18.98 | 19.49 | 19.78 | 19.47 | 19.42 | 14% |
| 65+ | 14.84 | 14.78 | 14.89 | 15.28 | 15.40 | 16.15 | 16.67 | 16.58 | 16.66 | 16.85 | 14% |

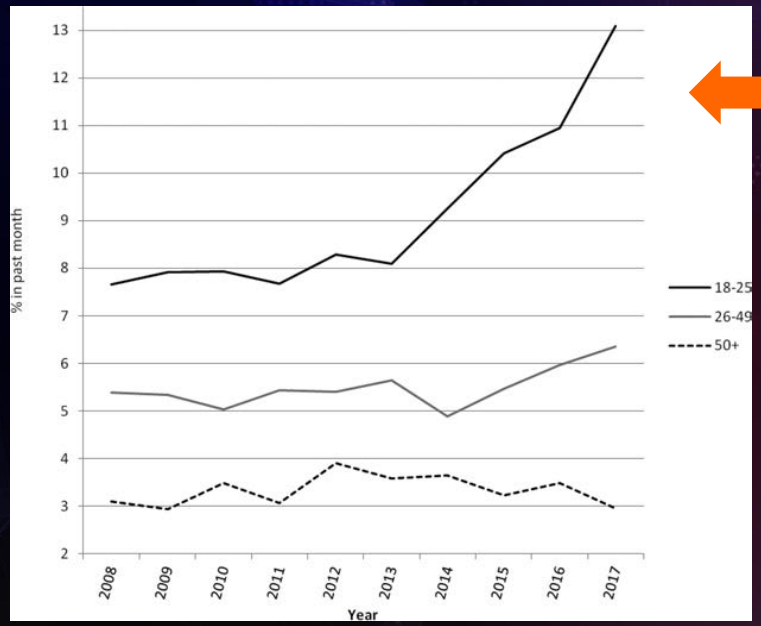



PERCENT OF ADULTS WITH AT LEAST ONE SUICIDE-RELATED OUTCOME (THOUGHTS, PLANS, OR ATTEMPTS) IN THE LAST YEAR, BY AGE GROUP, 2008 –2017.

Source: Jean M. Twenge, A. Bell Cooper, Thomas E. Joiner, Mary E. Duffy, Sarah G. Binau. Age, period, and cohort trends in mood disorder indicators and suicide-related outcomes in a nationally representative dataset, 2005–2017.. Journal of Abnormal Psychology, 2019; DOI: 10.1037/abn0000410

INCIDENCE OF SERIOUS PSYCHOLOGICAL DISTRESS IN LAST MONTH, PERCENT OF ADULTS BY AGE CATEGORY

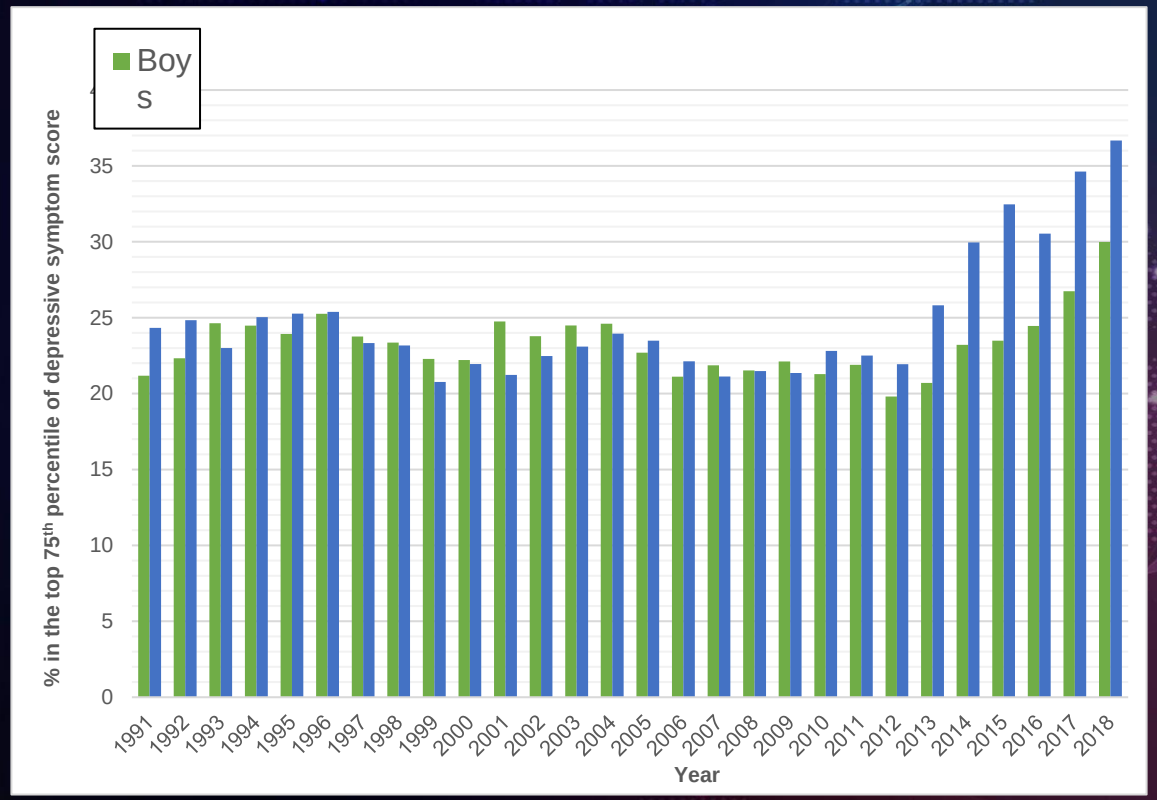
| Age (years) | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | PD |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 18–19 | 8.97 | 8.47 | 8.92 | 9.23 | 9.4 | 9.55 | 10.99 | 12.33 | 13.05 | 14.97 | +67% |
| 20–21 | 8.09 | 8.45 | 9.04 | 7.07 | 8.57 | 8.68 | 9.77 | 10.68 | 12.62 | 14.37 | +78% |
| 22–23 | 6.96 | 7.56 | 7.20 | 7.07 | 7.48 | 7.94 | 8.27 | 9.09 | 9.77 | 11.99 | +72% |
| 24–25 | 6.38 | 7.08 | 6.36 | 7.24 | 7.58 | 6.19 | 8.05 | 9.53 | 8.48 | 11.08 | +74% |
| 26–29 | 6.17 | 5.31 | 5.67 | 7.01 | 6.07 | 7.33 | 5.12 | 7.24 | 7.16 | 9.19 | +49% |
| 30–34 | 4.96 | 6.06 | 5.37 | 4.87 | 6.04 | 5.96 | 5.36 | 5.38 | 6.17 | 6.58 | +33% |
| 35–49 | 5.31 | 5.11 | 4.75 | 5.16 | 5.01 | 5.06 | 4.66 | 5.00 | 5.56 | 5.44 | +2% |
| 50–64 | 3.21 | 3.63 | 4.41 | 4.10 | 4.37 | 4.14 | 4.41 | 4.15 | 4.62 | 3.83 | +19% |
| 65+ | 2.91 | 1.90 | 2.15 | 1.52 | 3.24 | 2.81 | 2.6 | 1.97 | 2.00 | 1.87 | —36% |




PERCENT WITH SERIOUS PSYCHOLOGICAL DISTRESS IN THE LAST MONTH BY AGE GROUP, 2008 –2017.

Source: Jean M. Twenge, A. Bell Cooper, Thomas E. Joiner, Mary E. Duffy, Sarah G. Binau. Age, period, and cohort trends in mood disorder indicators and suicide-related outcomes in a nationally representative dataset, 2005–2017.. Journal of Abnormal Psychology, 2019; DOI: 10.1037/abn0000410

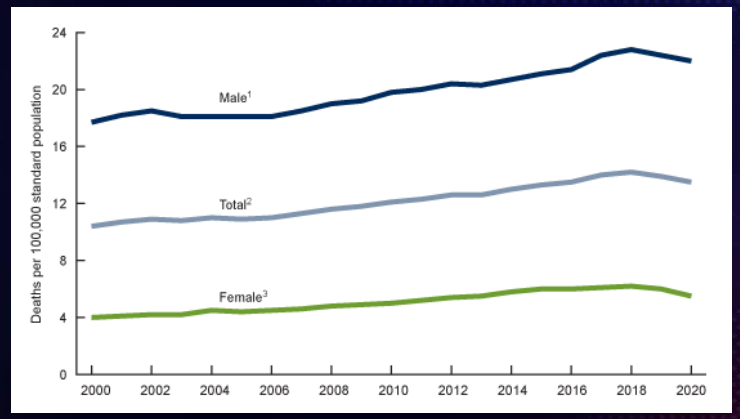
PROPORTION OF MALE AND FEMALE ADOLESCENTS
WHO SCORED 75% ON THE DEPRESSIVE SYMPTOMS SCALE, BY YEAR



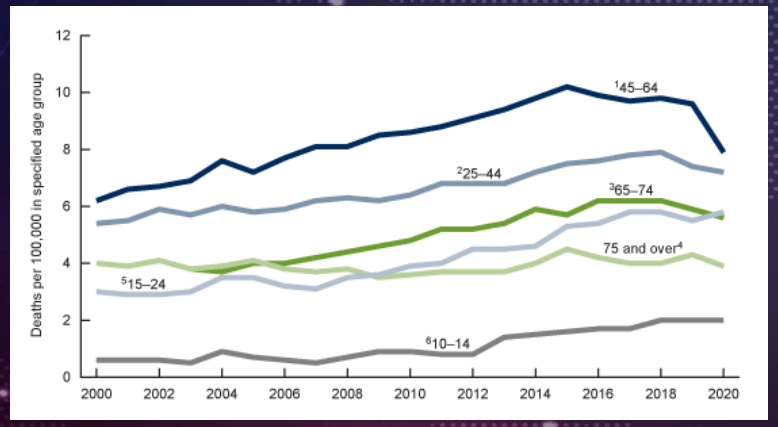

PROPORTION OF MALE AND FEMALE ADOLESCENTS
WHO SCORED 90% ON THE DEPRESSIVE SYMPTOMS SCALE, BY YEAR


Source: Keyes, K. M., Gary, D., O'Malley, P. M., Hamilton, A., & Schulenberg, J. (2019). Recent increases in depressive symptoms among US adolescents: trends from 1991 to 2018. Social psychiatry and psychiatric epidemiology, 54(8), 987–996. https://doi.org/10.1007/s00127-019-01697-8
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7015269/

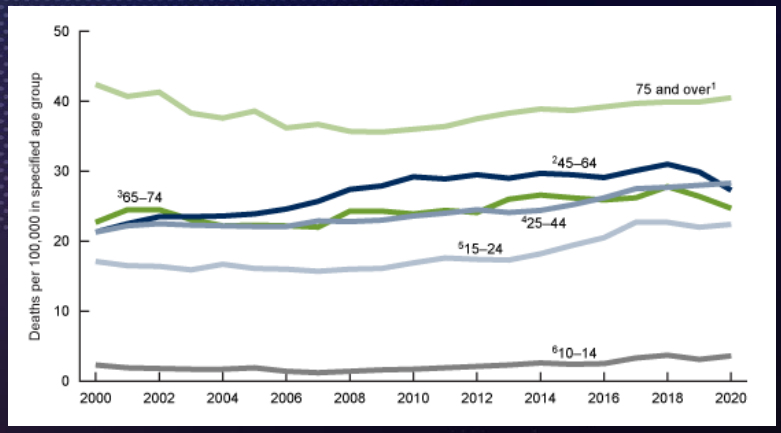
AGE-ADJUSTED SUICIDE RATES BY SEX: USA, 2000-2020




FEMALE SUICIDE RATES BY AGE GROUP: USA, 2000-2020




MALE SUICIDE RATES BY AGE GROUP: USA, 2000-2020




Source: Garnett MF, Curtin SC, Stone DM. Suicide mortality in the United States, 2000–2020. NCHS Data Brief, no 433. Hyattsville, MD: National Center for Health Statistics. 2022. DOI: https://dx.doi.org/10.15620/cdc:114217
https://www.cdc.gov/nchs/products/databriefs/db433.htm

# CENTERS FOR DISEASE CONTROL AND PREVENTION (CDC) WISQARS LEADING CAUSES OF DEATH REPORTS, IN 2020:

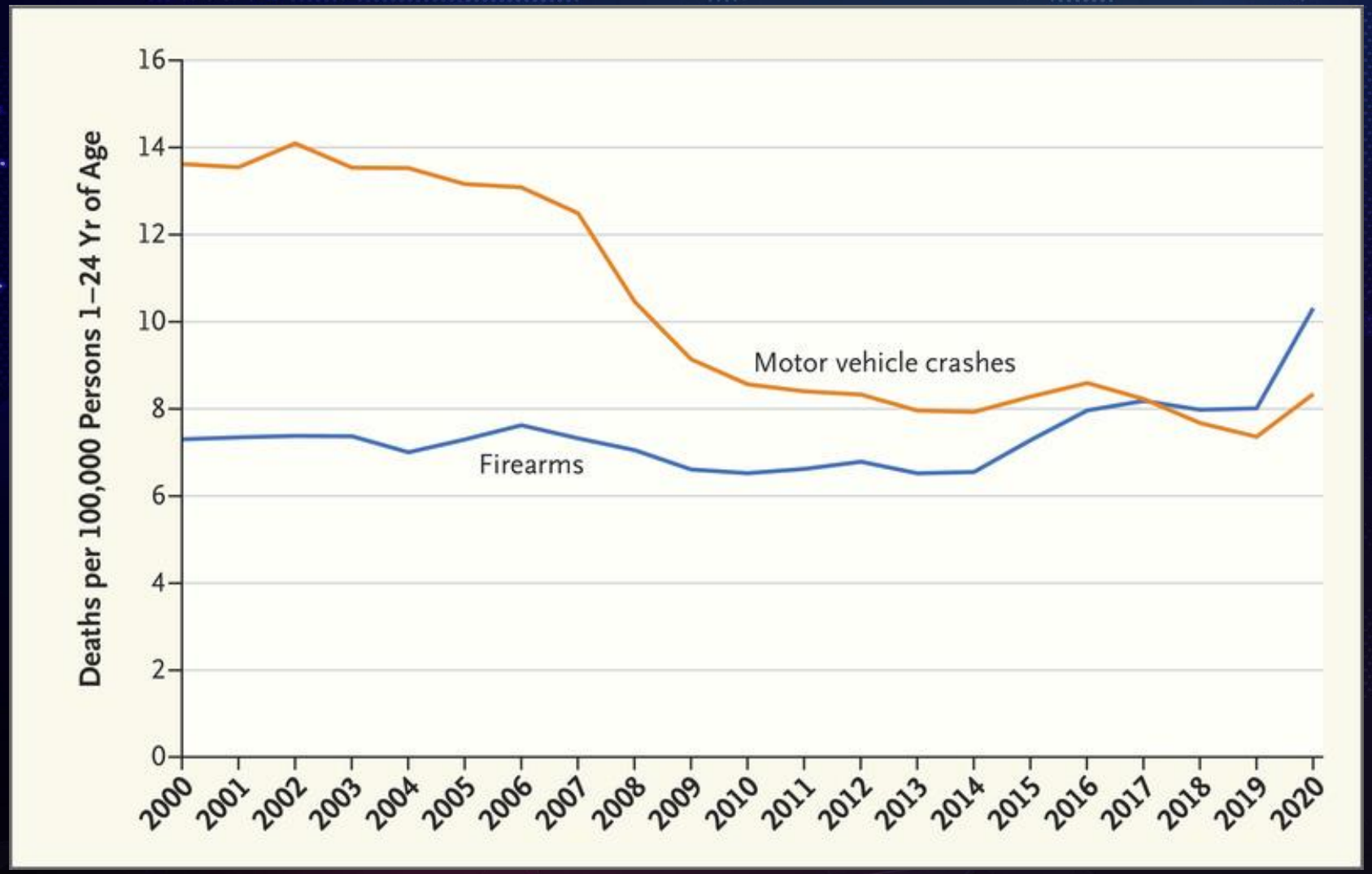
**10 Leading Causes of Death, United States**

2020, Both Sexes, All Ages, All Races

| | <1 | 1-4 | 5-9 | 10-14 | 15-24 | 25-34 | 35-44 | 45-54 | 55-64 | 65+ | All Ages |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Congenital Anomalies 4 043 | Unintentional Injury 1 153 | Unintentional Injury 685 | Unintentional Injury 881 | Unintentional Injury 15 117 | Unintentional Injury 31 315 | Unintentional Injury 31 057 | Malignant Neoplasms 34 589 | Malignant Neoplasms 110 243 | Heart Disease 556 665 | Heart Disease 696 962 |
| 2 | Short Gestation 3 141 | Congenital Anomalies 382 | Malignant Neoplasms 382 | Suicide 581 | Homicide 6 466 | Suicide 8 454 | Heart Disease 12 177 | Heart Disease 34 169 | Heart Disease 88 551 | Malignant Neoplasms 440 753 | Malignant Neoplasms 602 350 |
| 3 | Sids 1 389 | Homicide 311 | Congenital Anomalies 171 | Malignant Neoplasms 410 | Suicide 6 062 | Homicide 7 125 | Malignant Neoplasms 10 730 | Unintentional Injury 27 819 | Covid-19 42 090 | Covid-19 282 836 | Covid-19 350 831 |
| 4 | Unintentional Injury 1 194 | Malignant Neoplasms 307 | Homicide 169 | Homicide 285 | Malignant Neoplasms 1 306 | Heart Disease 3 984 | Suicide 7 314 | Covid-19 16 964 | Unintentional Injury 28 915 | Cerebrovascular 137 392 | Unintentional Injury 200 955 |
| 5 | Maternal Pregnancy Comp. 1 116 | Heart Disease 112 | Heart Disease 56 | Congenital Anomalies 150 | Heart Disease 870 | Malignant Neoplasms 3 573 | Covid-19 6 079 | Liver Disease 9 503 | Chronic Low. Respiratory Disease 18 816 | Alzheimer's Disease 132 741 | Cerebrovascular 160 264 |
| 6 | Placenta Cord Membranes 700 | Influenza & Pneumonia 84 | Influenza & Pneumonia 55 | Heart Disease 111 | Covid-19 501 | Covid-19 2 254 | Liver Disease 4 938 | Diabetes Mellitus 7 546 | Diabetes Mellitus 18 002 | Chronic Low. Respiratory Disease 128 712 | Chronic Low. Respiratory Disease 152 657 |
| 7 | Bacterial Sepsis 542 | Cerebrovascular 55 | Chronic Low. Respiratory Disease 54 | Chronic Low. Respiratory Disease 93 | Congenital Anomalies 384 | Liver Disease 1 631 | Homicide 4 482 | Suicide 7 249 | Liver Disease 16 151 | Diabetes Mellitus 72 194 | Alzheimer's Disease 134 242 |
| 8 | Respiratory Distress 388 | Perinatal Period 54 | Cerebrovascular 32 | Diabetes Mellitus | Diabetes Mellitus 312 | Diabetes Mellitus 1 168 | Diabetes Mellitus 2 904 | Cerebrovascular 5 686 | Cerebrovascular 14 153 | Unintentional Injury 62 796 | Diabetes Mellitus 102 188 |
| 9 | Circulatory System Disease 386 | Septicemia 43 | Benign Neoplasms 28 | Influenza & Pneumonia 50 | Chronic Low. Respiratory Disease 220 | Cerebrovascular 600 | Cerebrovascular 2 008 | Chronic Low. Respiratory Disease 3 538 | Suicide 7 160 | Nephritis 42 675 | Influenza & Pneumonia 53 544 |
| 10 | Neonatal Hemorrhage 317 | Benign Neoplasms 35 | Suicide 20** | Cerebrovascular 44 | Complicated Pregnancy 191 | Complicated Pregnancy 594 | Influenza & Pneumonia 1 148 | Homicide 2 542 | Influenza & Pneumonia 6 295 | Influenza & Pneumonia 42 511 | Nephritis 52 547 |

Source: The National Institute of Mental Health (NIMH) Извлечено из: NIMH » Самоубийство (nih.gov) https://www.nimh.nih.gov/health/statistics/suicide

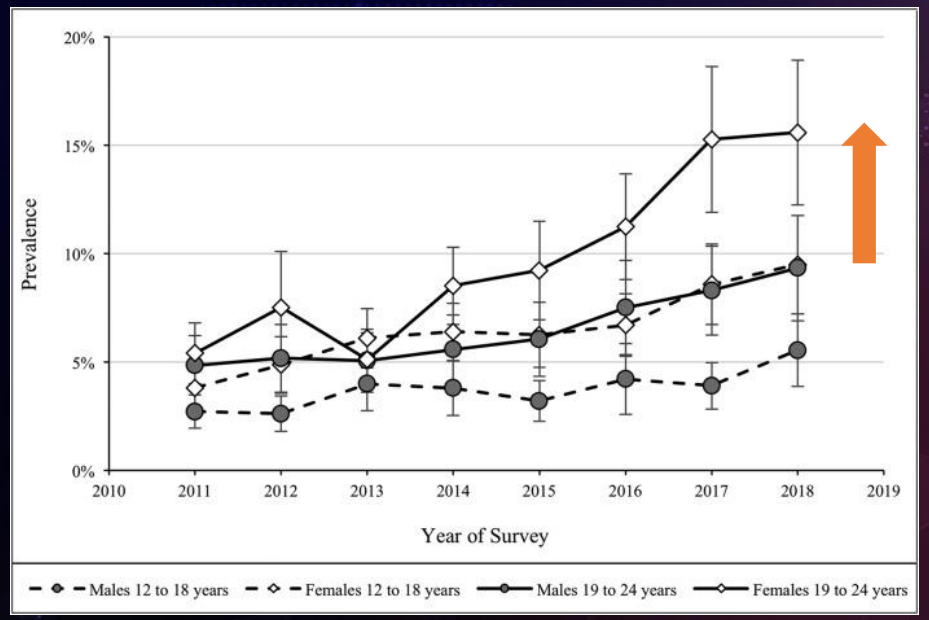
# MORTALITY FROM MOTOR VEHICLE CRASHES AND FIREARMS AMONG CHILDREN, ADOLESCENTS, AND YOUNG ADULTS, UNITED STATES, 2000–2020




Source: Centers for Disease Control and Prevention. WISQARS injury data (https://www.cdc.gov/injury/wisqars/index.html. opens in new tab).
Lee, L. K., Douglas, K., & Hemenway, D. (2022). Crossing lines—a change in the leading cause of death among US children. New England Journal of Medicine, 386(16), 1485-1487.
https://www.nejm.org/doi/full/10.1056/NEJMp2200169#article_citing_articles
Goldstick, J. E., Cunningham, R. M., & Carter, P. M. (2022). Current causes of death in children and adolescents in the United States. New England journal of medicine, 386(20), 1955-1956.

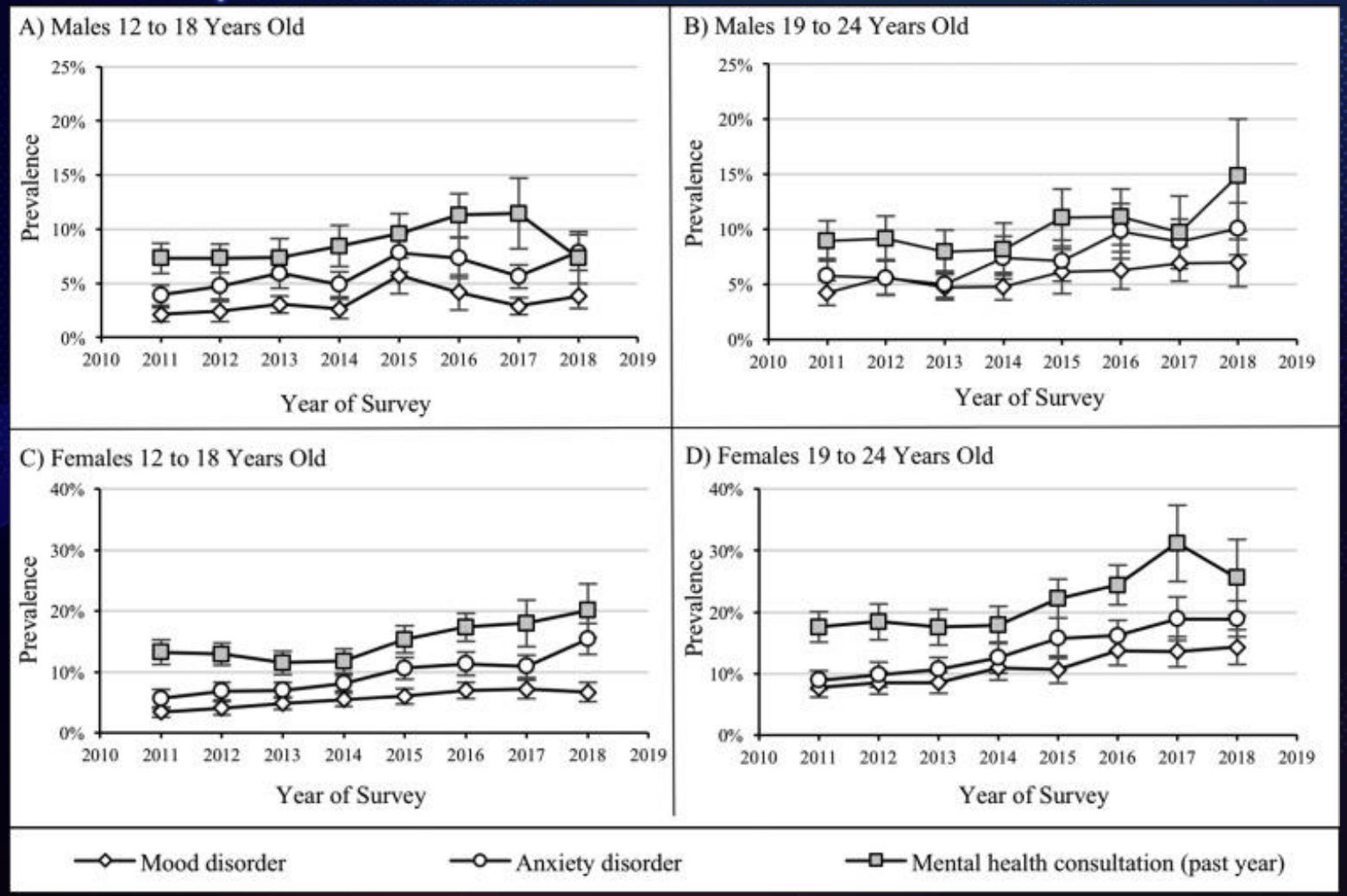
ACCORDING TO MENTAL HEALTH ASSESSMENTS OF YOUNG PEOPLE FROM 12 TO 24 YEARS OF AGE, THERE HAS BEEN AN APPROXIMATELY TWO-FOLD INCREASE IN THE FOLLOWING PREVALENCE RATES OVER AN EIGHT-YEAR PERIOD (2011-2018):

- DIAGNOSED MOOD DISORDERS INCREASED FROM 4.3 TO 7.8%,
- DIAGNOSED ANXIETY DISORDER INCREASED FROM 6.0 TO 12.9%,
- PAST-YEAR SUICIDALITY INCREASED FROM 3.0% IN 2011 TO 5.8% IN 2016,
- THE PREVALENCE OF POOR/FAIR PERCEIVED MENTAL HEALTH INCREASED FROM 4.2% IN 2011 TO 9.9% IN 2018




PREVALENCE OF PERCEIVED POOR/FAIR MENTAL HEALTH AMONG YOUTH 12–24 YEARS OLD, STRATIFIED BY AGE AND SEX GROUPS.

# PREVALENCE OF PROFESSIONALLY DIAGNOSED MOOD AND ANXIETY DISORDERS AND PAST YEAR PREVALENCE OF MENTAL HEALTH CONSULTATIONS AMONG YOUTH 12–24 YEARS OLD, STRATIFIED BY AGE AND SEX GROUPS




Source: Wiens, K., Bhattarai, A., Pedram, P., Dores, A., Williams, J., Bulloch, A., & Patten, S. (2020). A growing need for youth mental ealth services in Canada: examining trends in youth mental health from 2011 to 2018. Epidemiology and psychiatric sciences, 29, e115. https://doi.org/10.1017/S2045796020000281 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7214527/

## THE NUMBER OF PEOPLE VISITING MENTAL HEALTH SERVICES HAS ALSO INCREASED

- THE PREVALENCE OF MENTAL HEALTH COUNSELLING VISITS (OVER THE PAST 12 MONTHS) INCREASED FROM 11.7% IN 2011 TO 17.0% IN 2018.
- MOREOVER, IN ONTARIO, THE NUMBER OF VISITS TO A MENTAL HEALTH EMERGENCY DEPARTMENT AMONG YOUTH INCREASED FROM 11.7 PER 1000 IN 2003 TO 24.1 PER 1000 IN 2017

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" IN ONTARIO, CANADA, RATES OF MENTAL HEALTH OR ADDICTION-RELATED EMERGENCY DEPARTMENT (ED) VISITS CONTINUE TO RISE IN CHILDREN AND YOUTH; HOWEVER, IT IS UNCLEAR WHAT IS DRIVING THIS CHANGE. WE DECONSTRUCTED THIS TREND BY SOCIODEMOGRAPHIC AND CLINICAL CHARACTERISTICS, USING LINKED HEALTH ADMINISTRATIVE DATA SETS. MENTAL HEALTH OR ADDICTION-RELATED ED VISIT RATES INCREASED BY 89.1 PERCENT BETWEEN 2006 AND 2017, WITH THE GREATEST RISE OBSERVED FOR THOSE AGES 14-21, HIGH-ACUITY CASES, AND ANXIETY AND MOOD DISORDERS. WE OBSERVED A SIGNIFICANTLY SHARP INCREASE AFTER 2009…"

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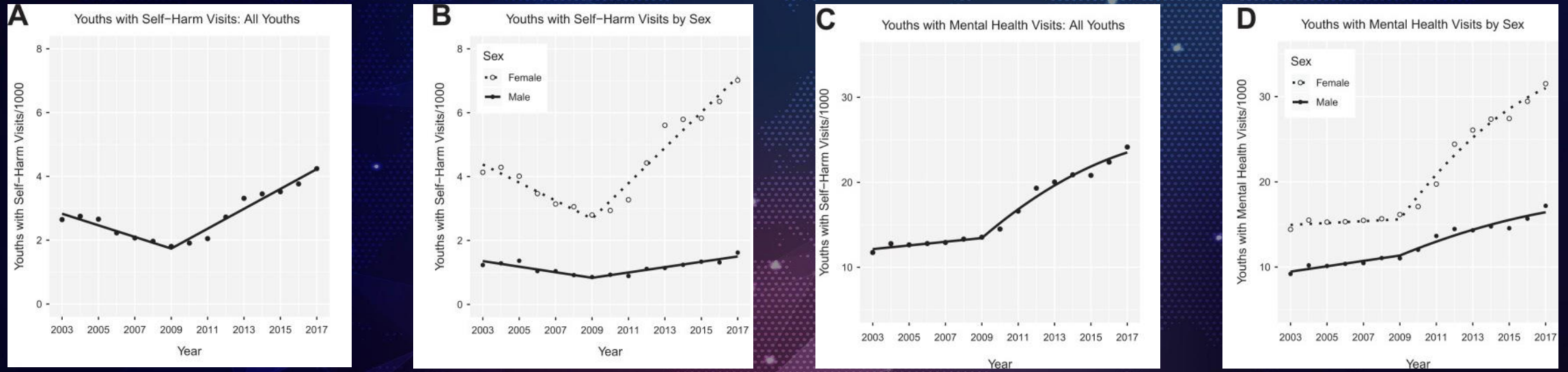
Source: Chiu, M., Gatov, E., Fung, K., Kurdyak, P., & Guttmann, A. (2020). Deconstructing The Rise In Mental Health-Related ED Visits Among Children And Youth In Ontario, Canada. Health affairs (Project Hope), 39(10), 1728–1736. https://doi.org/10.1377/hlthaff.2020.00232 https://pubmed.ncbi.nlm.nih.gov/33017254/

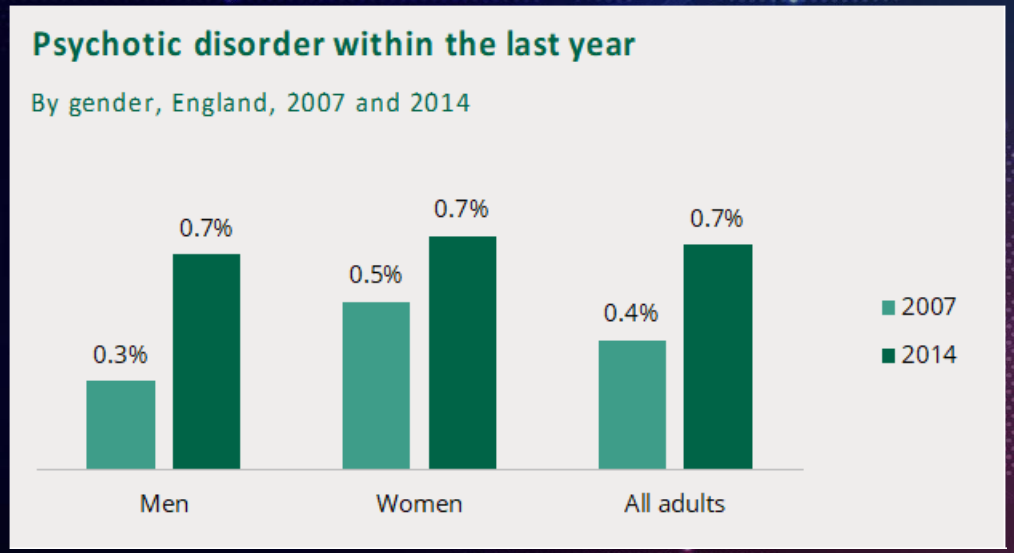
# RATES OF ADOLESCENTS WITH SELF-HARM EMERGENCY DEPARTMENT (ED) VISITS: 2003 TO 2017




(A) Rates of adolescents having a self-harm ED visit, per thousand adolescents in the population, as a function of time.
(B) Rates of adolescents having a self-harm ED visit by sex.
(C) Rates of adolescents having a mental health ED visit.
(D) Rates of adolescents having a self-harm ED visit by sex.

Source: Gardner, W., Pajer, K., Cloutier, P., Zemek, R., Currie, L., Hatcher, S., Colman, I., Bell, D., Gray, C., Cappelli, M., Duque, D. R., & Lima, I. (2019). Changing Rates of Self-Harm and Mental Disorders by Sex in Youths Presenting to Ontario Emergency Departments: Repeated Cross-Sectional Study. Canadian journal of psychiatry. Revue canadienne de psychiatrie, 64(11), 789–797. https://doi.org/10.1177/0706743719854070 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6882075/

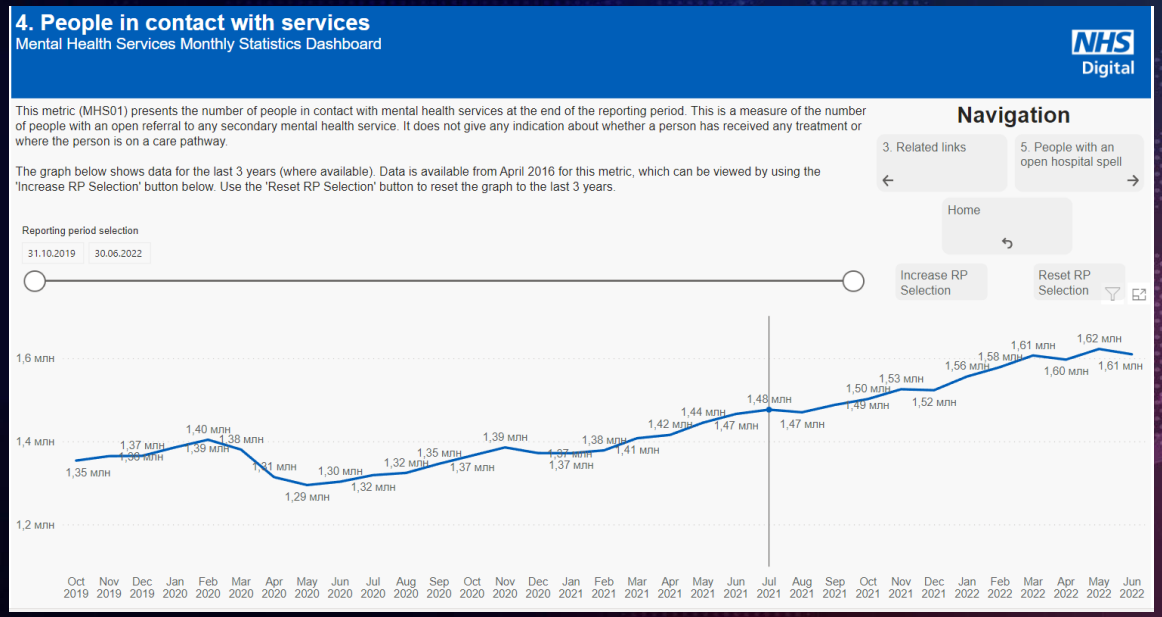
INCREASE IN THE PREVALENCE OF PSYCHOTIC DISORDERS FROM 2007 TO 2014

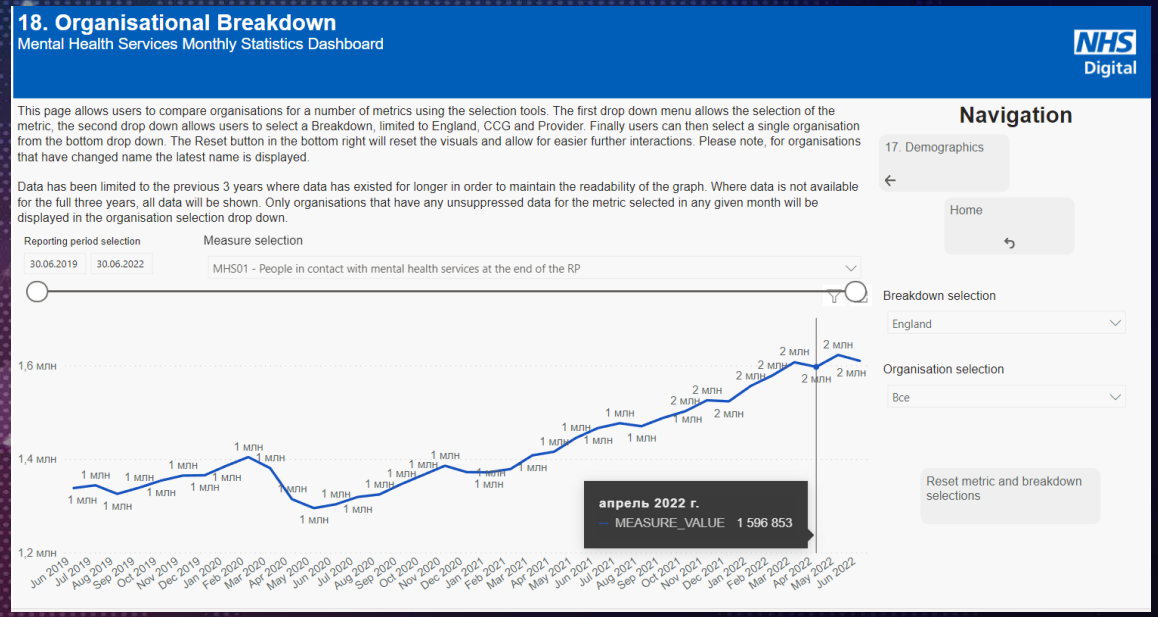



INCREASING PREVALENCE OF SUICIDAL BEHAVIOUR AND SELF-HARM FROM 2007 TO 2014


Source: Mental health statistics: prevalence, services and funding in England. Research Briefing. Published Monday, 13 December, 2021 https://commonslibrary.parliament.uk/research-briefings/sn06988/

# INCREASING THE NUMBER OF PEOPLE IN CONTACT WITH MENTAL HEALTH SERVICES IN THE UK FROM OCTOBER 2019 TO JUNE 2022



# INCREASE IN CASES OF CHILDREN AND YOUNG PEOPLE ACCESSING MENTAL HEALTH SERVICES 2021 - 2022

## 8. Children and young people accessing mental health services

Mental Health Services Monthly Statistics Dashboard

NHS Digital

This measure presents the number of children and young people accessing mental health services in the last 12 months (MHS95). The data points below represent a 12 month rolling period, so people reported in December 2021 would have accessed services within 2021 (between January 2021 and December 2021).
A person is defined as accessing services if they have had at least one direct contact (i.e. where the patient was involved) or at least one instance of indirect activity (activity which relates to the patients care where the patient wasn't present) in the previous 12 months.

The graph below shows data for the last 3 years (where available). Data is available from March 2021 for this metric, which can be viewed by using the 'Increase RP Selection' button below. Use the 'Reset RP Selection' button to reset the graph to the last 3 years.

**Navigation**

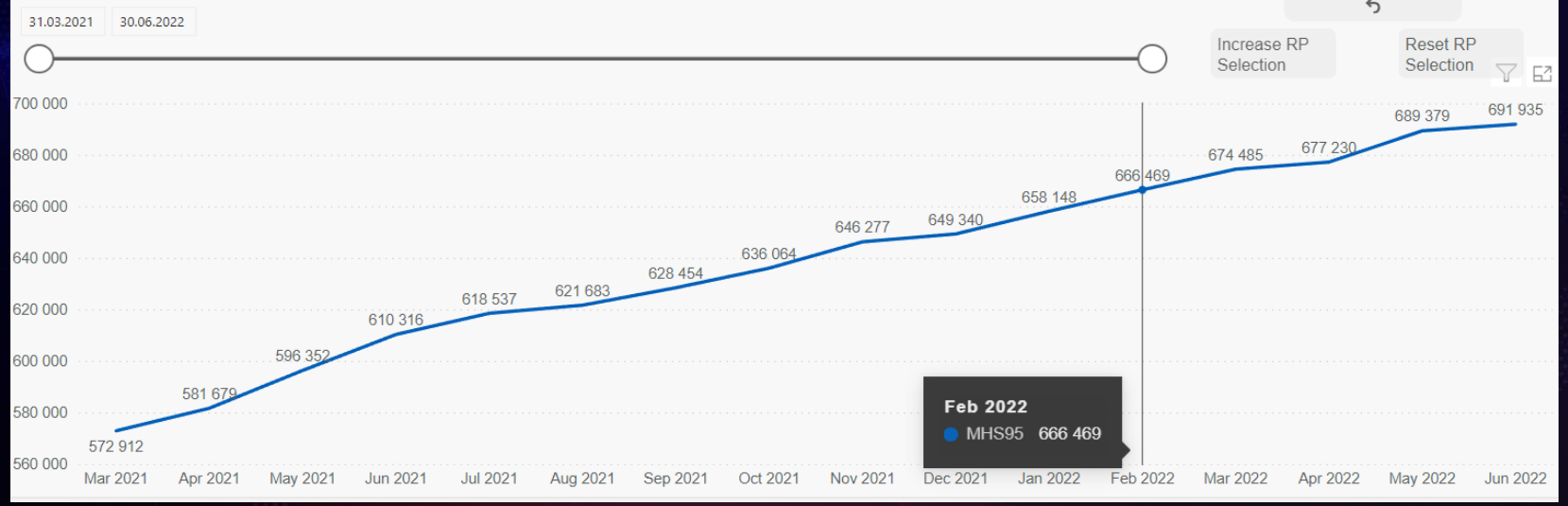
7. New referrals

9. Adults

Home

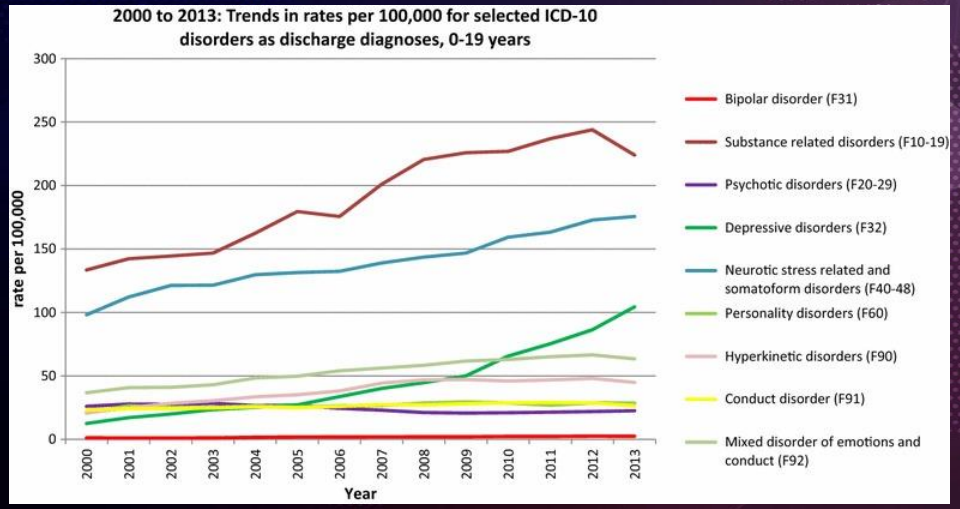
Increase RP Selection

Reset RP Selection



THERE WAS AN INCREASE IN HOSPITALISATION FOR ALL CATEGORIES OF MENTAL DISORDERS, WITH THE EXCEPTION OF PSYCHOTIC DISORDERS, PER 100,000, IN THE PERIOD BETWEEN 2000 AND 2013 IN THE 0–19 AGE GROUP. IN DESCENDING ORDER OF PERCENTAGE INCREASE, THESE WERE:

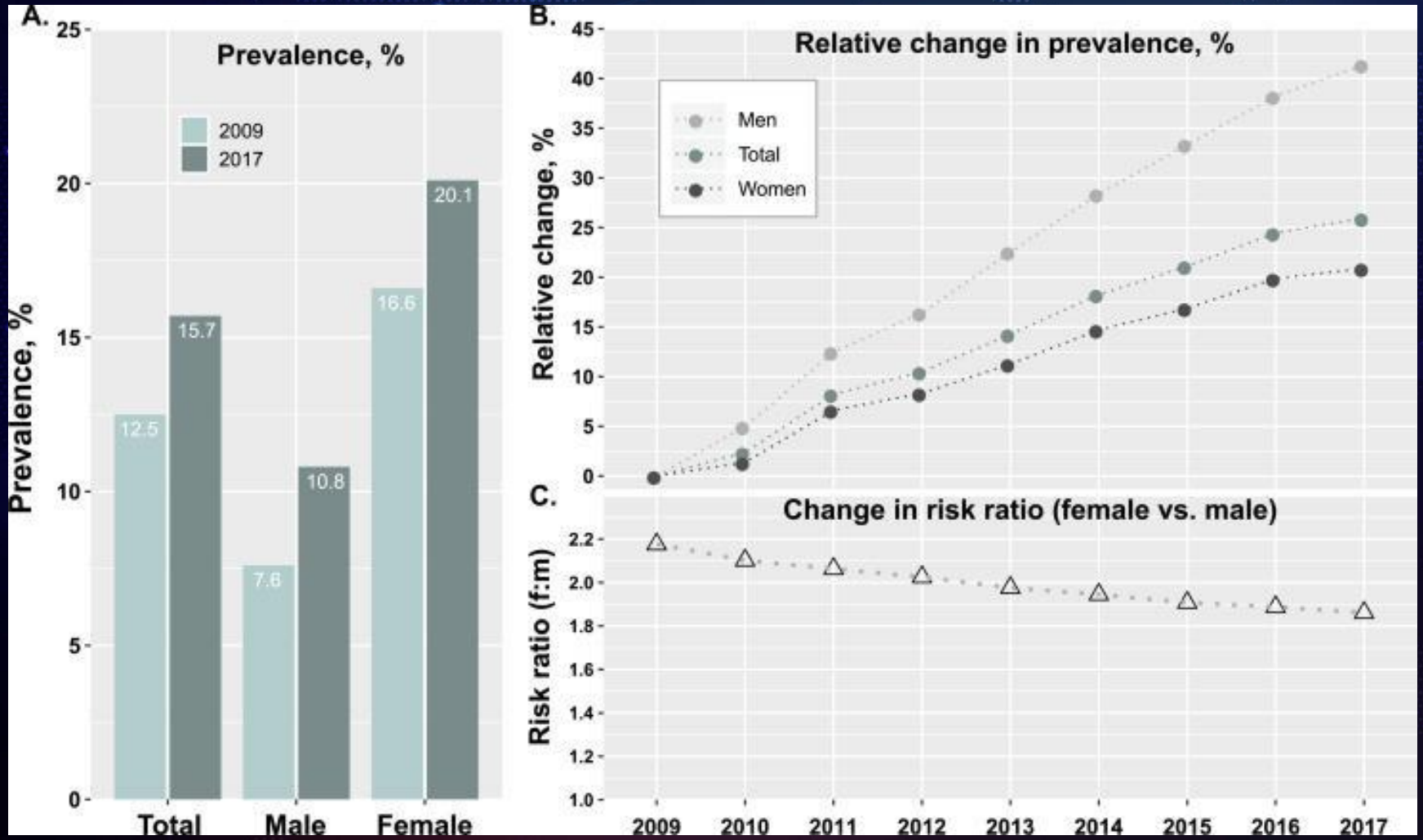
- DEPRESSIVE DISORDERS (832%),
- HYPERKINETIC DISORDERS (214%),
- NEUROTIC, STRESS-RELATED AND SOMATOFORM DISORDERS (179%),
- MIXED DISORDERS OF CONDUCT AND EMOTIONS (173%),
- SUBSTANCE-RELATED DISORDERS (168%),
- PERSONALITY DISORDERS (137%) AND
- CONDUCT DISORDERS (114%).




TRENDS IN THE FREQUENCY (PER 100,000) OF INDIVIDUAL DISEASES ACCORDING TO ICD-10 AS DIAGNOSES AT DISCHARGE IN MINORS AGED 0-19 YEARS FROM 2000 TO 2013

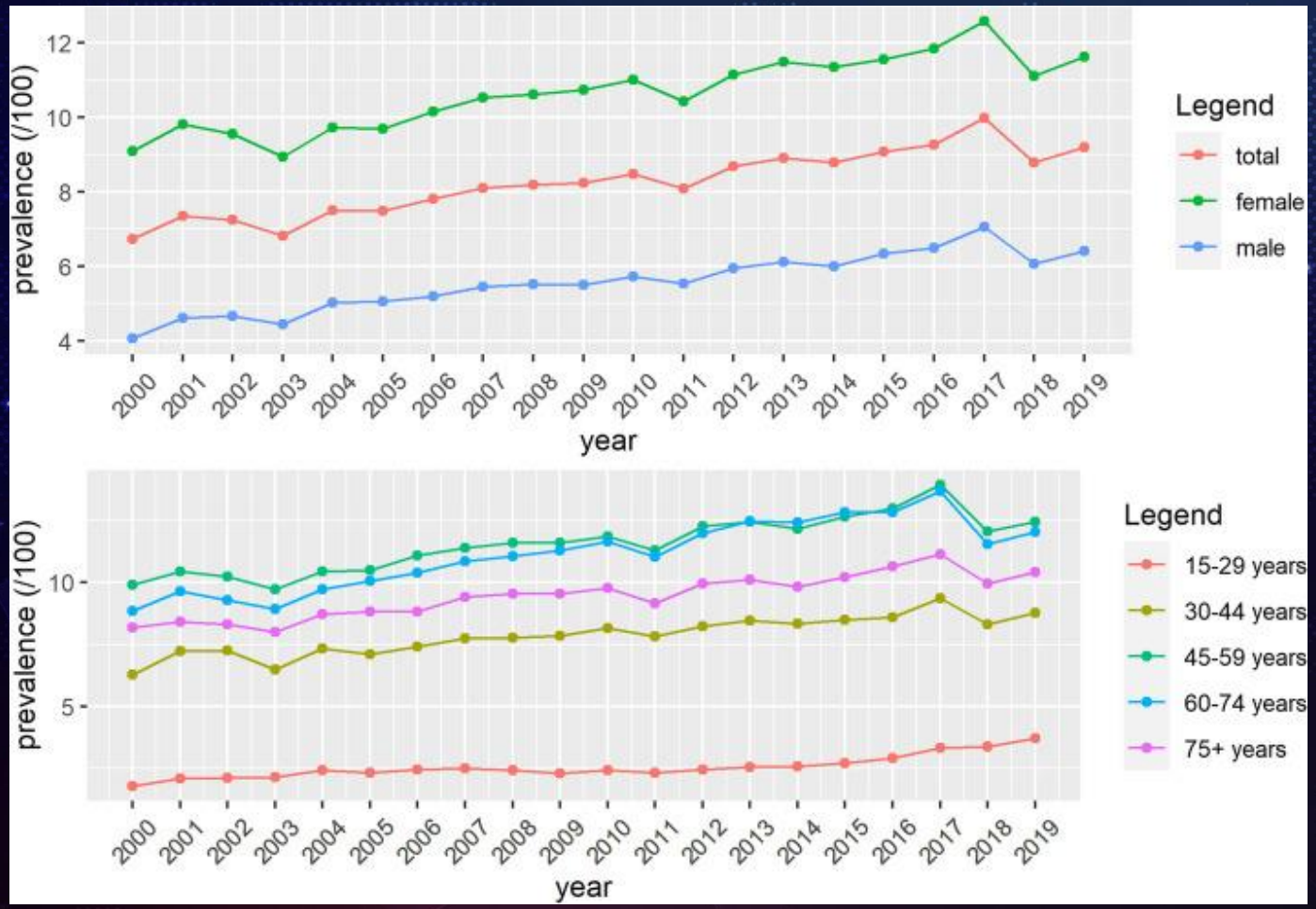
source: Rao, P., Moore, J. K., Stewart, R., Runions, K., Bear, N., Wong, J. W., Holtmann, M., & Zepf, F. D. (2016). Bipolar disorder in children and adolescents: diagnostic inpatient rates from 2000 to 2013 in Germany. International journal of bipolar disorders, 4(1), 23. https://doi.org/10.1186/s40345-016-0064-2
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5106426/

# INCREASE IN THE PREVALENCE OF DEPRESSION IN GERMANY FROM 2009 TO 2017



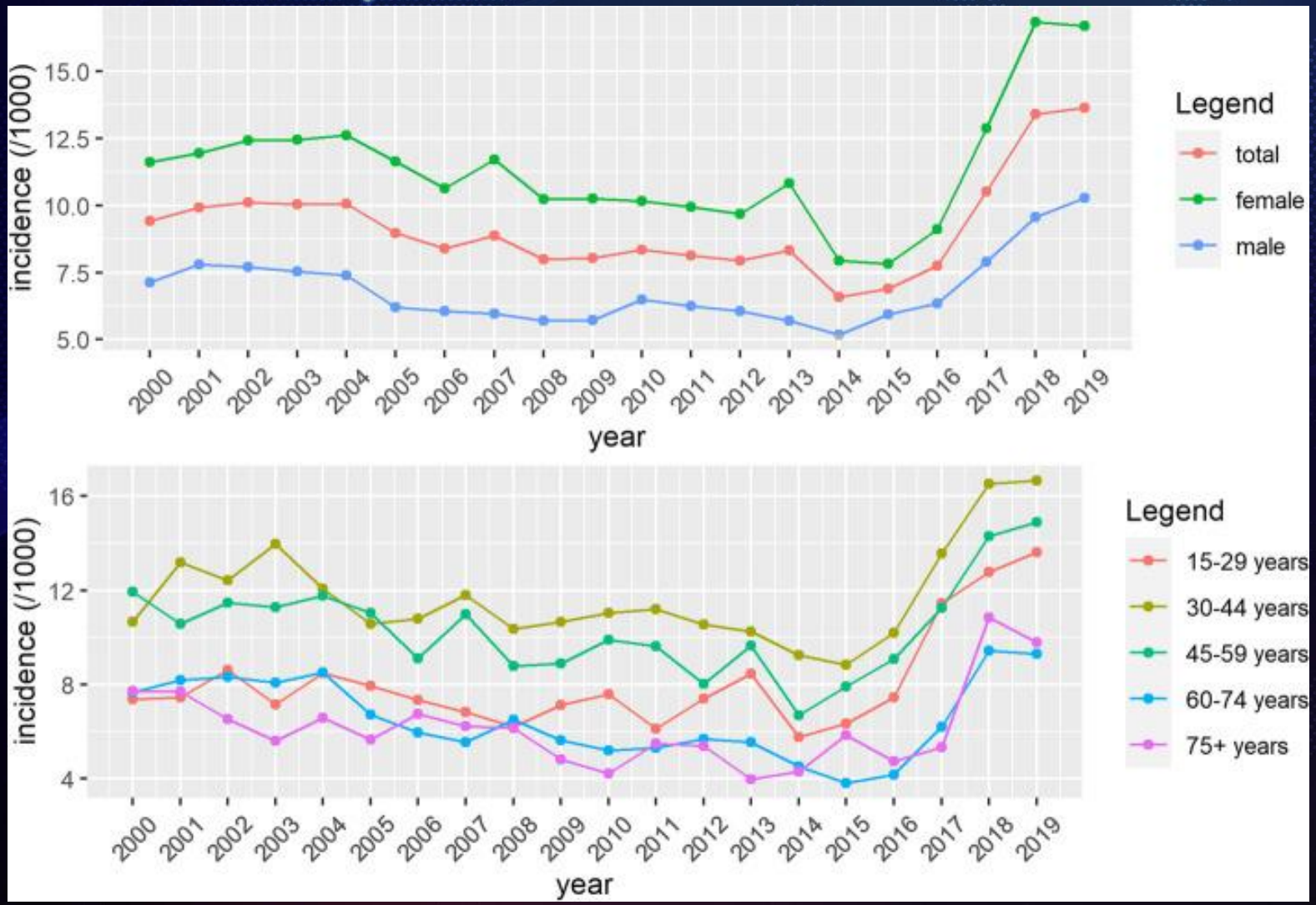

Source: Steffen A, Thom J, Jacobi F, Holstiege J, Bätzing J. Trends in prevalence of depression in Germany between 2009 and 2017 based on nationwide ambulatory claims data. J Affect Disord. 2020 Jun 15;271:239-247. doi: 10.1016/j.jad.2020.03.082. Epub 2020 Apr 18. PMID: 32479322. https://pubmed.ncbi.nlm.nih.gov/32479322/

# PREVALENCE OF DEPRESSION IN FLANDERS, BELGIUM FROM 2000 TO 2019, AGE-STANDARDIZED (A) AND PER AGE GROUP (B)

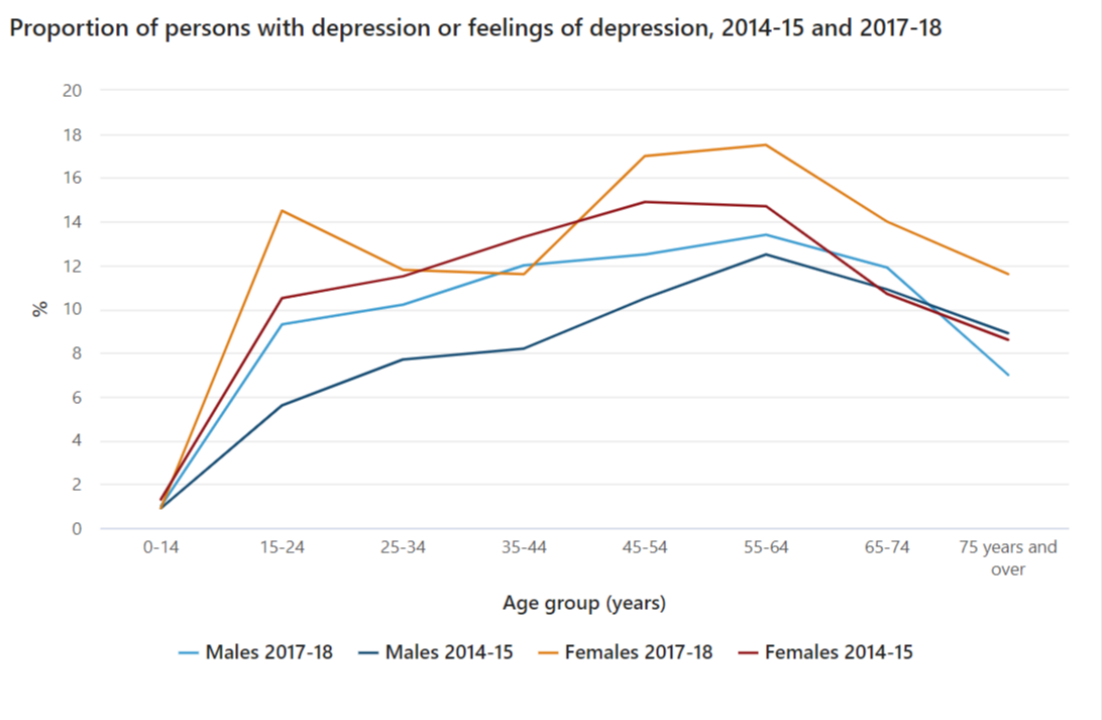


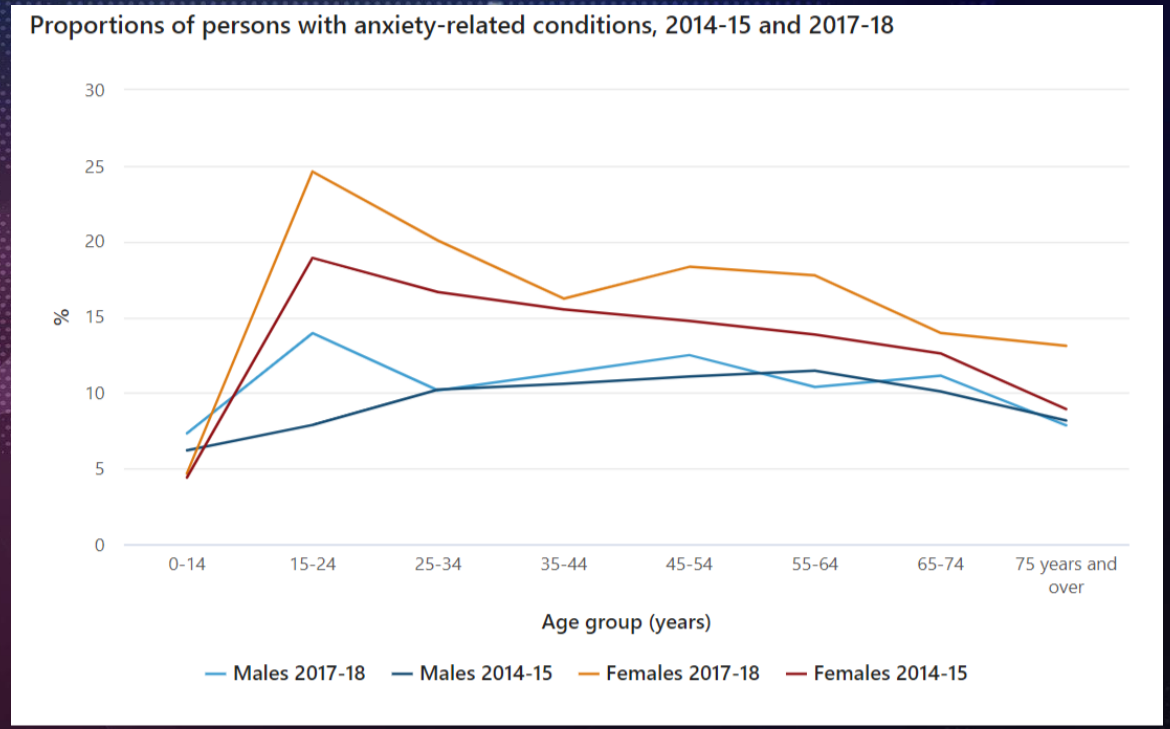

Source: Walrave, R., Beerten, S. G., Mamouris, P., Coteur, K., Van Nuland, M., Van Pottelbergh, G., Casas, L., & Vaes, B. (2022). Trends in the epidemiology of depression and comorbidities from 2000 to 2019 in Belgium. BMC primary care, 23(1), 163. https://doi.org/10.1186/s12875-022-01769-w https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9241171/

INCIDENCE OF DEPRESSION IN FLANDERS, BELGIUM FROM 2000 TO 2019, AGE-STANDARDIZED (A) AND PER AGE GROUP (B)



- IN 2017-18, ONE IN FIVE (20.1%) OR 4.8 MILLION AUSTRALIANS HAD A MENTAL OR BEHAVIOURAL CONDITION, AN INCREASE FROM 4.0 MILLION AUSTRALIANS (17.5%) IN 2014-15.
- IN 2017-18, 3.2 MILLION AUSTRALIANS (13.1%) HAD AN ANXIETY-RELATED CONDITION, AN INCREASE FROM 11.2% IN 2014-15.
- ONE IN TEN PEOPLE (10.4%) HAD DEPRESSION OR FEELINGS OF DEPRESSION, AN INCREASE FROM 8.9% IN 2014-15.



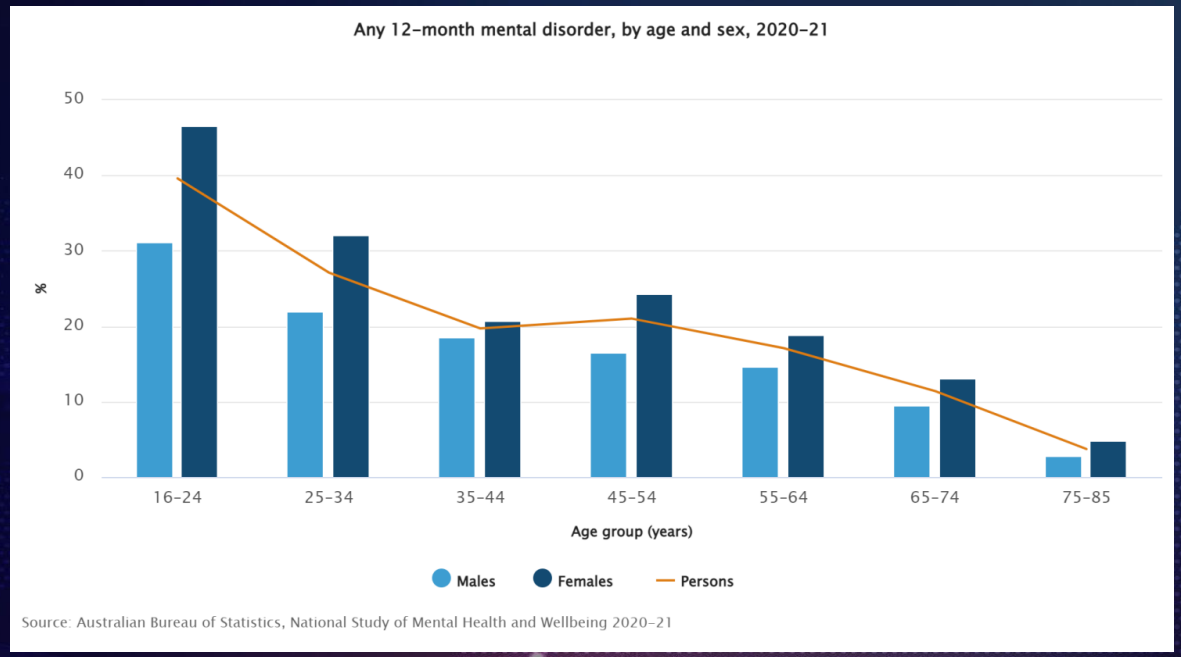




Source: Australian Bureau of Statistics. (2017-18). Mental health. ABS. https://www.abs.gov.au/statistics/health/mental-health/mental-health/2017-18

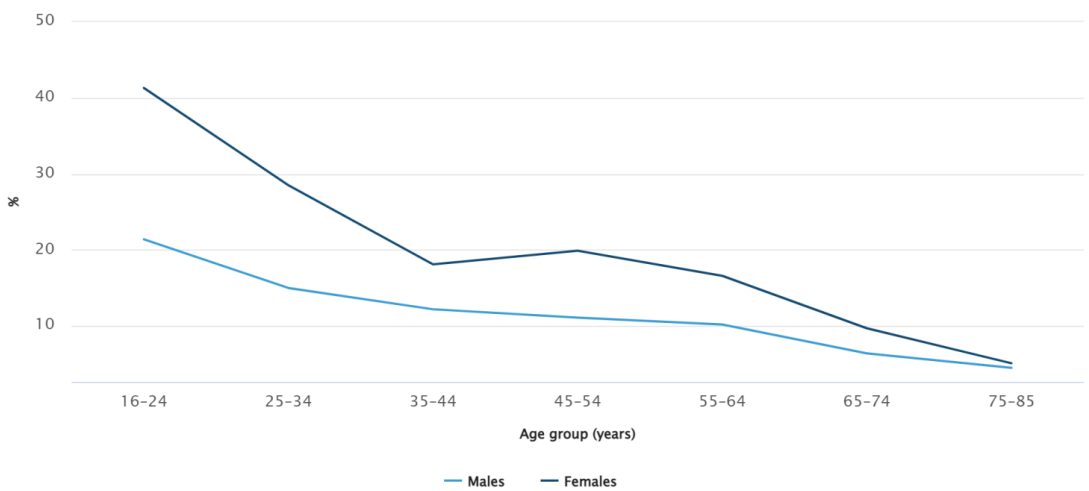
THE MENTAL HEALTH SITUATION FOR AUSTRALIANS HAS CONTINUED TO DETERIORATE BETWEEN 2020 AND 2021. OF THE 19.6 MILLION AUSTRALIANS AGED 16-85 YEARS

- OVER TWO IN FIVE AUSTRALIANS AGED 16-85 YEARS (43.7% OR 8.6 MILLION PEOPLE) HAD EXPERIENCED A MENTAL DISORDER AT SOME TIME IN THEIR LIFE
- ONE IN FIVE (21.4% OR 4.2 MILLION PEOPLE) HAD A 12-MONTH MENTAL DISORDER (16.8% OR 3.3 MILLION PEOPLE)
- ALMOST TWO IN FIVE PEOPLE (39.6%) AGED 16-24 YEARS HAD A 12-MONTH MENTAL DISORDER
- ANXIETY WAS THE MOST COMMON GROUP OF 12-MONTH MENTAL DISORDERS, 16.8% (3.3 MILLION PEOPLE) HAD A 12-MONTH ANXIETY DISORDER
- 7.5% (1.5 MILLION PEOPLE) HAD A 12-MONTH AFFECTIVE DISORDER
- 3.3% (650,800 PEOPLE) HAD A 12-MONTH SUBSTANCE USE DISORDER.

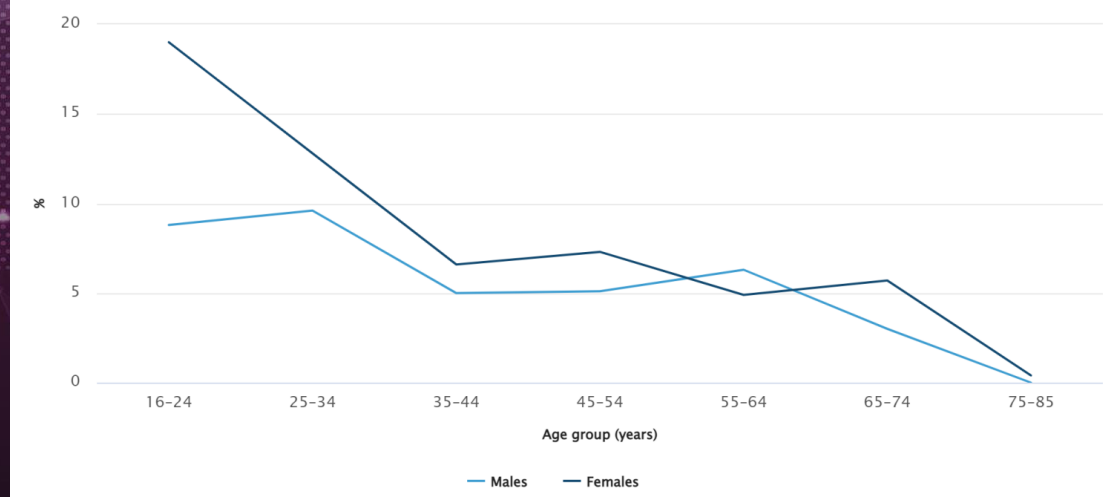
Source: Australian Bureau of Statistics. (2020-21). National Study of Mental Health and Wellbeing. ABS. https://www.abs.gov.au/statistics/health/mental-health/national-study-mental-health-and-wellbeing/2020-21.



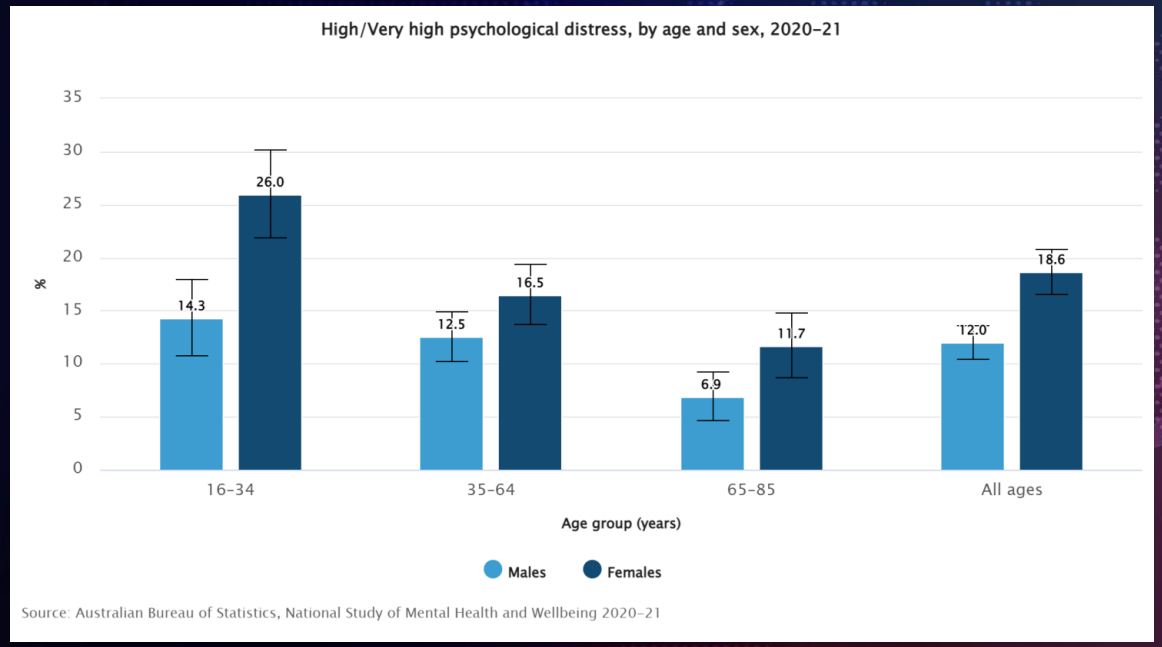

Source: Australian Bureau of Statistics, National Study of Mental Health and Wellbeing 2020–21



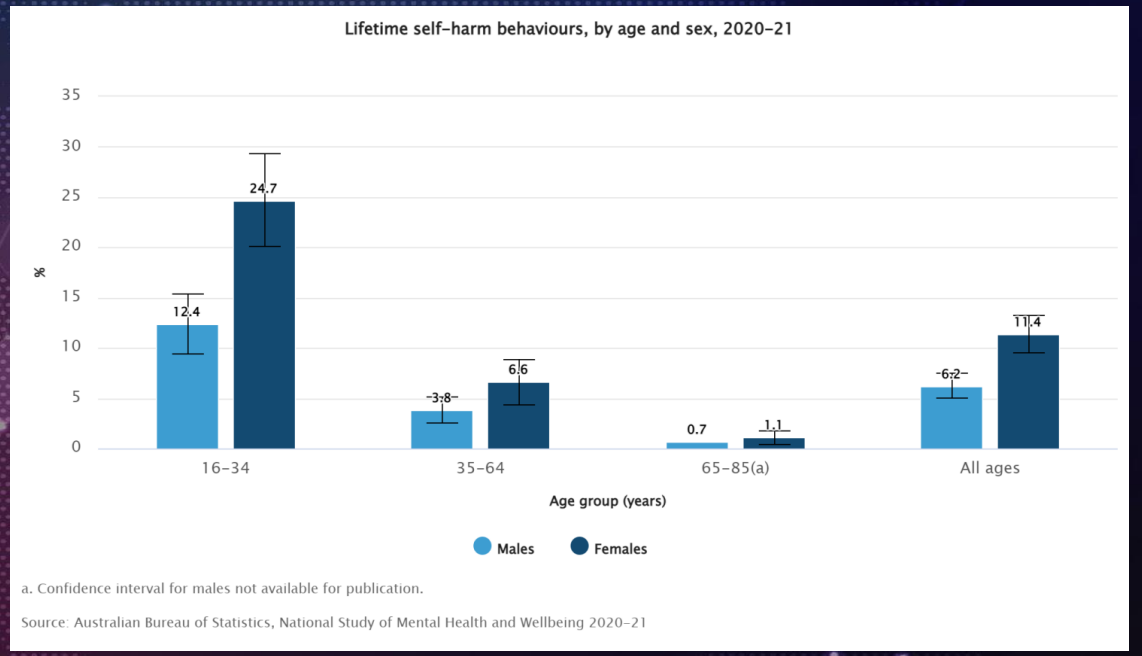

Source: Australian Bureau of Statistics, National Study of Mental Health and Wellbeing 2020–21




Source: Australian Bureau of Statistics, National Study of Mental Health and Wellbeing 2020–21



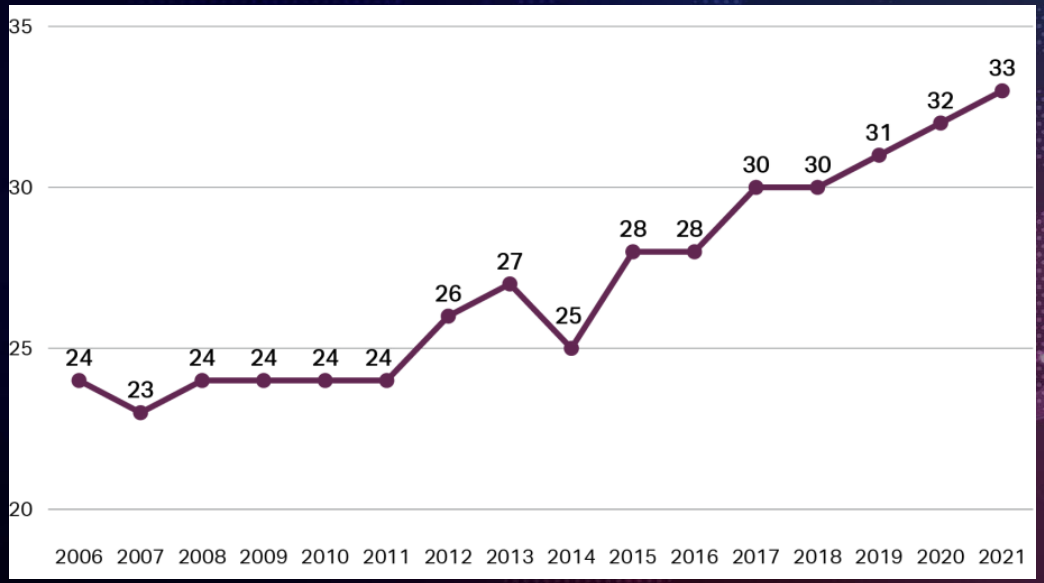

Source: Australian Bureau of Statistics, National Study of Mental Health and Wellbeing 2020–21



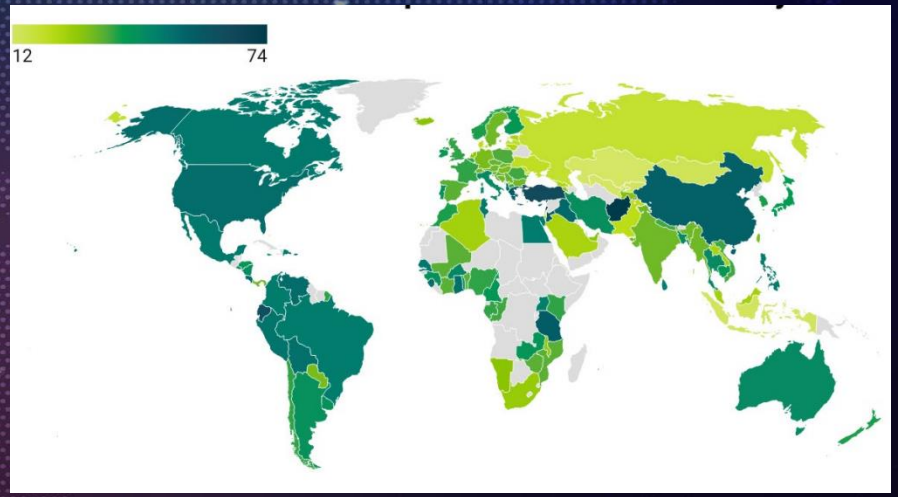

a. Confidence interval for males not available for publication.

Source: Australian Bureau of Statistics, National Study of Mental Health and Wellbeing 2020–21

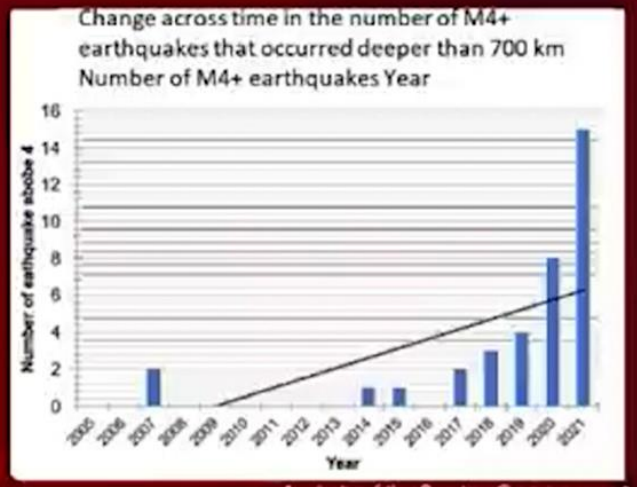
THE GLOBAL RISE OF UNHAPPINESS. NEGATIVE EXPERIENCE INDEX IN 2021. WORLDWIDE

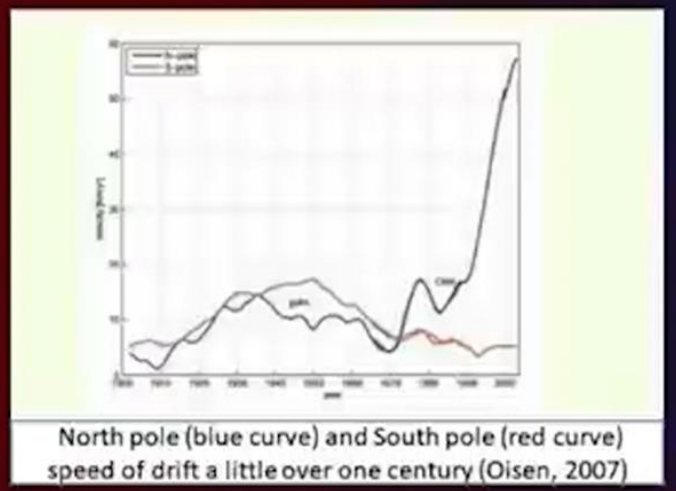


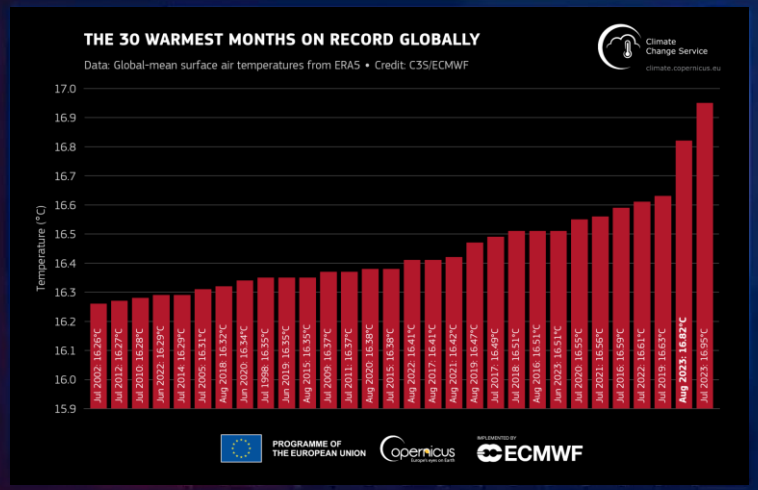

PERCENTAGE OF PEOPLE WHO EXPERIENCED STRESS IN 2021

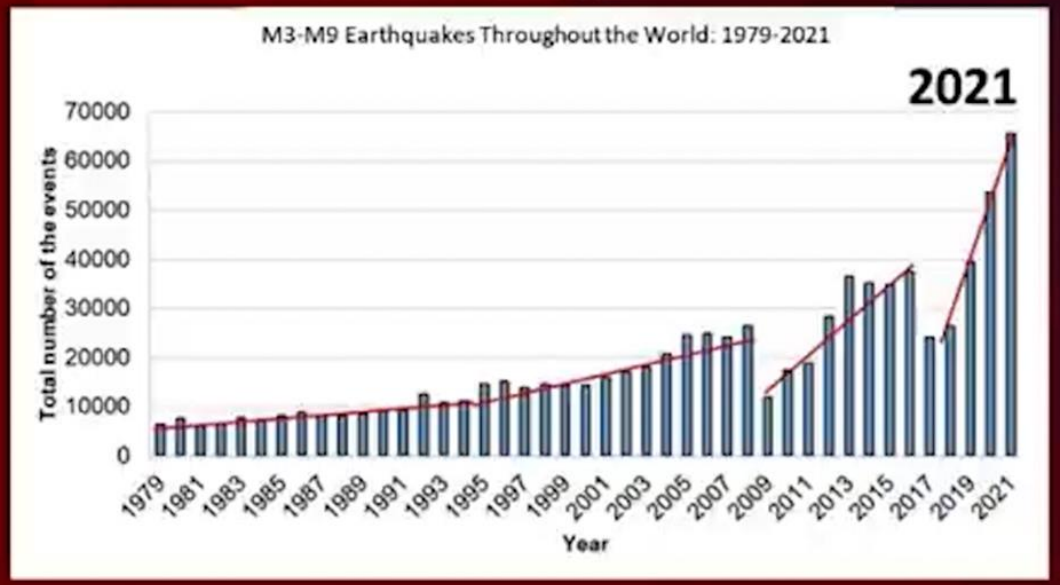


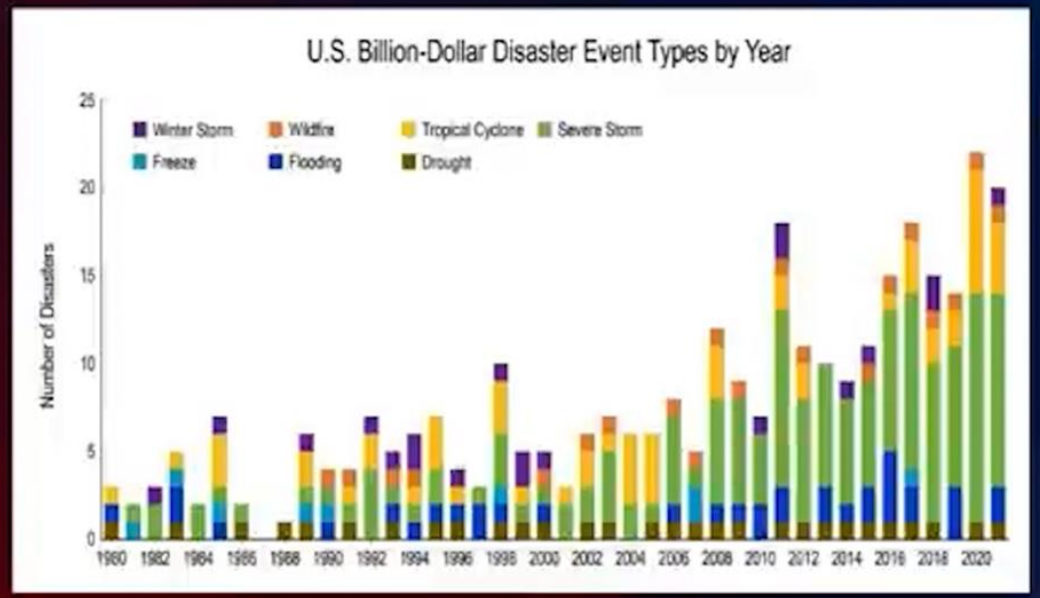

Source: https://www.gallup.com/analytics/349280/gallup-global-emotions-report.aspx


Change across time in the number of M4+ earthquakes that occurred deeper than 700 km
Number of M4+ earthquakes Year
Number of earthquake above 4
Year
Analysts of the Creative Society project


North pole (blue curve) and South pole (red curve) speed of drift a little over one century (Oisen, 2007)


THE 30 WARMEST MONTHS ON RECORD GLOBALLY
Data: Global-mean surface air temperatures from ERA5 • Credit: C3S/ECMWF
Climate Change Service
Temperature (°C)
PROGRAMME OF THE EUROPEAN UNION
Copernicus
ECMWF


M3-M9 Earthquakes Throughout the World: 1979-2021
2021
Total number of the events
Year


U.S. Billion-Dollar Disaster Event Types by Year
Winter Storm
Wildfire
Tropical Cyclone
Severe Storm
Freeze
Flooding
Drought
Number of Disasters

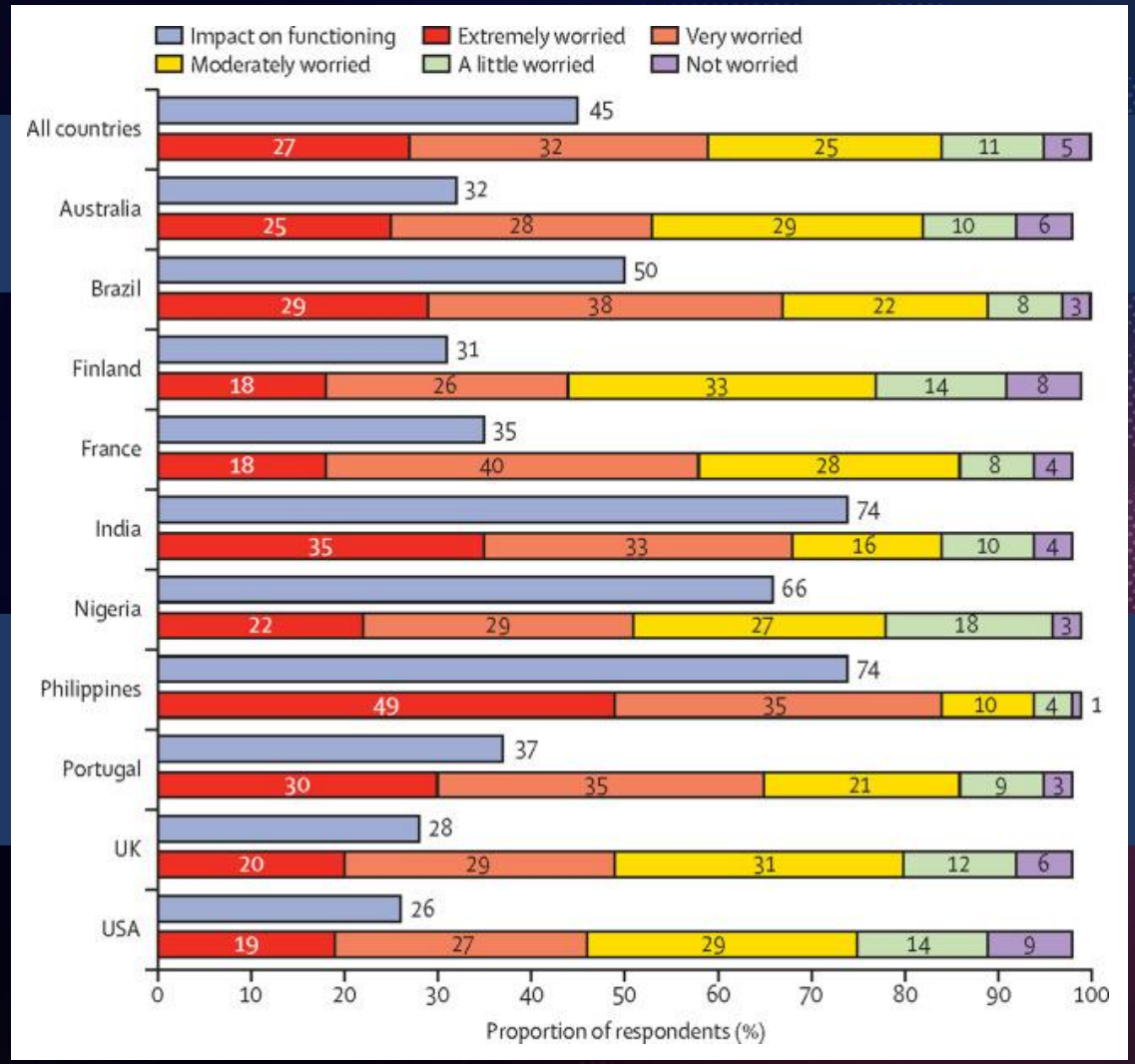



Figure 1.
Worry about climate change and impact on functioning

Source: https://www.thelancet.com/journals/lanplh/article/PIIS2542-5196(21)00278-3/fulltext#seccestitle180
Hickman, C., Marks, E., Pihkala, P., Clayton, S., Lewandowski, R. E., Mayall, E. E., Wray, B., Mellor, C., & van Susteren, L. (2021). Climate anxiety in children and young people and their beliefs about government responses to climate change: a global survey. The Lancet. Planetary health, 5(12), e863–e873. https://doi.org/10.1016/S2542-5196(21)00278-3

DISTRESS ABOUT CLIMATE CHANGE IS ASSOCIATED WITH YOUNG PEOPLE PERCEIVING THAT THEY HAVE NO FUTURE, THAT HUMANITY IS DOOMED, AND THAT GOVERNMENTS ARE FAILING TO RESPOND ADEQUATELY, AND WITH FEELINGS OF BETRAYAL AND ABANDONMENT BY GOVERNMENTS AND ADULTS.

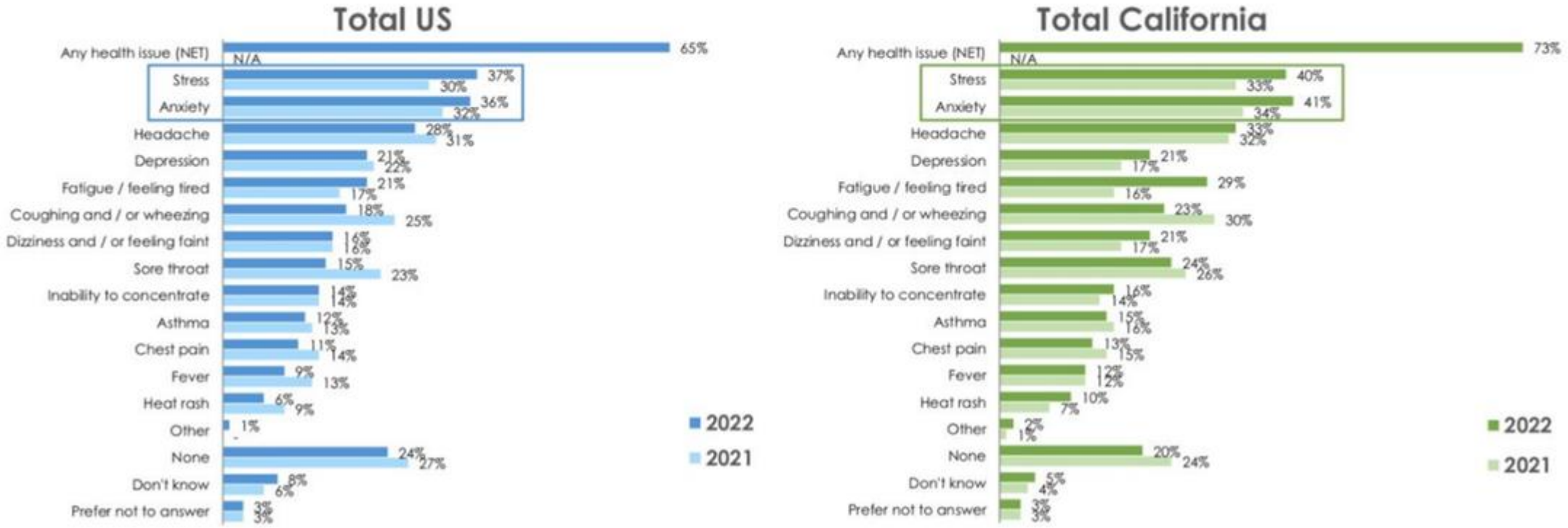
Source: https://www.thelancet.com/journals/lanplh/article/PIIS2542-5196(21)00278-3/fulltext#seccestitle180

Hickman, C., Marks, E., Pihkala, P., Clayton, S., Lewandowski, R. E., Mayall, E. E., Wray, B., Mellor, C., & van Susteren, L. (2021). Climate anxiety in children and young people and their beliefs about government responses to climate change: a global survey. The Lancet. Planetary health, 5(12), e863–e873. https://doi.org/10.1016/S2542-5196(21)00278-3

Total US
Total California

# Nearly 2 in 3 youth in the U.S. – and 3 in 4 in California – have experienced at least one mental or physical health-related issue stemming from a natural disaster or environmental event.

Alarmingly, there has been an increase in stress and anxiety in Gen Z youth across the US as well as in California, compared to last year.




https://news.blueshieldca.com/2022/05/03/in-the-news-blue-shield-of-california-survey-finds-climate-change-is-taking-a-toll-on-gen-z-mental-health

DR. KYOICHI NAKAGAWA, DIRECTOR OF ISUZU HOSPITAL IN TOKYO, JAPAN, IS ONE OF THE FOUNDERS OF MODERN MAGNETIC RESEARCH IN RELATION TO HEALTH, SAYS:

"THE HUMAN BODY IS ESSENTIALLY A LARGE ELECTROMAGNETIC FIELD THAT OPERATES UNDER THE INFLUENCE OF ELECTRICALLY CHARGED IONS. THE NERVOUS SYSTEM IS IN PART CONTROLLED BY CHANGING PATTERNS OF IONS AND OF ELECTROMAGNETIC FIELDS. THEREFORE, EVERY THOUGHT AND/OR ACTION CAUSES THE ELECTRIC TRANSFER OF SIGNALS FROM THE BRAIN TO THE CORRESPONDING LIMB. THE EXISTENCE OF EVERY CELL IN OUR BODY IS BASED ON ELECTRICITY. A DISTURBANCE OF THE MAGNETIC BALANCE CAUSES DYSFUNCTION OF THE CELLS, CAUSING DISEASES, PAIN, MENTAL OR EMOTIONAL PROBLEMS, INSOMNIA AND OTHER BODILY IMBALANCES".

THE EFFECTS OF MAGNETIC FIELD DEFICIENCY SYNDROME ARE CHARACTERIZED BY:

- RAPID FATIGUE
- SLEEPINESS
- GENERAL WEAKNESS
- NERVOUSNESS, EMOTIONAL LABILITY AND IRRITABILITY
- SLEEP DISTURBANCES, INSOMNIA
- ATTENTION DEFICIT
- ABSENT-MINDEDNESS, FORGETFULNESS
- GENERALISED MYOFASCIAL PAINS THROUGHOUT THE BODY
- TENSION IN THE SHOULDER, BACK, NECK AREA,
- STIFFNESS IN MOVEMENT,
- FREQUENT HEADACHES, HEAVINESS IN THE HEAD
- DIZZINESS
- LOSS OF APPETITE,
- HABITUAL CONSTIPATION,
- VISUAL DISTURBANCES
- REDUCED IMMUNITY, A TENDENCY TO FALL ILL FREQUENTLY.