Appendix to “The Contribution of Health Behaviors to Depression Risk across Birth Cohorts”

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Flow Chart

HRS respondents (excl. spouse):
546,676 p-yrs

HRS respondents, alive:
245,474 p-yrs

Non-respondents:
Not interviewed yet: 165,894 p-yrs
Died: 91,434 p-yrs
Alive: 27,325 p-yrs
Dropped from sample: 14,547 p-yrs

HRS respondents, alive interviewed in wave 1:
12,652 p-yrs

Age ineligible (<50 or >80 years) respondents:
39,238 p-yrs

Respondents with missing values:
31,824 p-yrs

Age-eligible respondents:
195,584 p-yrs

HRS respondents, alive excl. wave 1:
234,822 p-yrs

Age-eligible HRS respondents, alive excl. wave 1 with complete information on variables of interest:
163,760 p-yrs

*Figure 1 Flowchart of sample selection. p-yrs: person-years.*
Section 1: Birth Cohort Patterns in Elevated Depressive Symptoms

Sample Characteristics

Table 1 Sample Characteristics in total sample and stratified by race/ethnicity

|                          | Total       | White       | Hispanic    | Black       |
|--------------------------|-------------|-------------|-------------|-------------|
| N person-years           | 16376       | 125446      | 5699        | 28047       |
| **Outcome**              |             |             |             |             |
| Elevated depressive symptoms yes N(%) | 35,788 (21.9) | 25,056 (19.97) | 1,820 (31.94) | 7,746 (27.62) |
| **Exposure**             |             |             |             |             |
| Age mean (sd)            | 64.7 (8.2)  | 65.32 (8.2) | 60.4 (7.1)  | 63.14 (7.91) |
| Period mean (sd)         | 2006 (6)    | 2006 (6)    | 2010 (6)    | 2007 (6)    |
| Birth cohort mean (sd)   | 1942 (10)   | 1940 (10)   | 1949 (9)    | 1944 (11)   |
| **Mediators**            |             |             |             |             |
| BMI N(%)                 |             |             |             |             |
| underweight              | 1,455 (0.9) | 1,133 (0.9) | 30 (0.53)   | 237 (0.85)  |
| normal                   | 46,892 (28.6) | 38,564 (30.74) | 1,173 (20.58) | 5,579 (19.89) |
| overweight               | 62,484 (38.2) | 48,654 (38.78) | 2,314 (40.6)  | 9,882 (35.23) |
| obese                    | 52,929 (32.3) | 37,095 (29.57) | 2,182 (38.29) | 12,349 (44.03) |
| **Alcohol Consumption N(%)** |            |             |             |             |
| non-drinker              | 105,684 (64.5) | 77,835 (62.05) | 3,990 (70.01) | 20,473 (73)  |
| moderate drinker         | 34,865 (21.3) | 29,438 (23.47) | 723 (12.69)  | 4,003 (14.27) |
| heavy drinker            | 18,693 (11.4) | 14,902 (11.88) | 637 (11.18)  | 2,824 (10.07) |
| excessive drinker        | 4,518 (2.8)  | 3,271 (2.61) | 349 (6.12)  | 747 (2.66)  |
| **Smoking no N(%)**      | 137,277 (83.8) | 106,492 (84.89) | 4,803 (84.28) | 22,215 (79.21) |
| **Vigorous physical activity yes N(%)** | 74,389 (45.4) | 58,584 (46.7) | 2,585 (45.36) | 11,079 (39.5) |
**Confounders**

|                          | 95,451 (58.4) | 72,032 (57.42) | 3,181 (55.82) | 17,672 (63.01) |
|--------------------------|----------------|----------------|----------------|----------------|
| **Sex Female N(%)**      |                |                |                |                |
| **Race/ethnicity N(%)**  |                |                |                |                |
| White                    | 125,446 (76.6) |                |                |                |
| Hispanic                 | 5,699 (3.5)    |                |                |                |
| Black                    | 28,047 (17.1)  |                |                |                |
| Other                    | 4,568 (2.8)    |                |                |                |
| **Education level N(%)** |                |                |                |                |
| Limited high-school      | 33,160 (20.3)  | 21,155 (16.86) | 2,779 (48.76)  | 8,353 (29.78)  |
| GED                      | 8,155 (5.0)    | 6,080 (4.85)   | 300 (5.26)     | 1,508 (5.38)   |
| High school graduate     | 49,373 (30.2)  | 39,793 (31.72) | 1,067 (18.72)  | 7,606 (27.2)   |
| Some college             | 37,911 (23.2)  | 29,050 (23.16) | 1,053 (18.48)  | 6,735 (24.01)  |
| College and above        | 35,161 (21.5)  | 29,368 (23.41) | 500 (8.77)     | 3,845 (13.71)  |
Descriptive Plots

eFigure 2 Prevalence of elevated depressive symptoms per 1,000 person-years by 5-year birth year groups and race/ethnicity for 10-year age groups.
Age-Period-Cohort Results

The results of the APC analysis are shown in eFigure 3. The probability of suffering from elevated depressive symptoms differs by age for the reference birth year 1945 and period 1996. The probability of elevated depressive symptoms increases between age 50 and 60, then decreases down to 14.8% (95%CI: 14-15.7) at age 70 and increases after. When stratified by sex (eFigure 4), females show a higher risk of elevated depressive symptoms from their mid-50s compared to males. The period effects show a similar distribution to the age-standardized prevalence rate of elevated depressive symptoms, but show no sex-specific differences. The association between birth cohort and the probability of elevated depressive symptoms follows a u-shaped association, when age and period are kept constant at 50 years 1996, respectively. Individuals born before 1920 and after 1950 show a higher probability of elevated depressive symptoms compared to the birth cohorts born between those years. We do not observe differences by sex. The stratification by race/ethnicity revealed that Black populations and

eFigure 3 Age-period-cohort model: Predicted age, period and cohort effects on the predicted probability of elevated depressive symptoms. 1994-2016, ages 50-80. Reference groups: Age 50, Period 1996, Birth cohort 1945.
Hispanics born after 1919 experience higher probabilities of elevated depressive symptoms than White populations (eFigure 5).
**Figure 4** Age-period-cohort model: Predicted age, period and cohort effects on the predicted probability of elevated depressive symptoms by sex. 1994-2016, ages 50-80. Reference groups: Age 50, Period 1996, Birth cohort 1945.

**Figure 5** Age-period-cohort model: Predicted age, period and cohort effects on the predicted probability of elevated depressive symptoms by race/ethnicity. 1994-2016, ages 50-80. Reference groups: Age 50, Period 1996, Birth cohort 1945.
Section 2: Counterfactual Decomposition

Section 2.1: Counterfactual Decomposition by race-ethnicity

Relative difference in depression probability by race/ethnicity

*eFigure 6 Relative difference (95% CI) between the counterfactual and natural course estimates of probability of elevated depressive symptoms by birth cohort by sex for each health behavior factor. Relative differences are calculated as counterfactual/natural course-1. Positive values indicate that the counterfactual increases depression risk and negative values indicate that the counterfactual decreases depression risk.*
Section 2.2: Alcohol Consumption

**Mediator Distribution: Alcohol Consumption**

**Figure 6** Estimated distribution of alcohol consumption categories in natural course and counterfactual scenario by birth year. Age and period are held constant at age 50 and 1996 respectively.

**Figure 7** Natural course distribution of smoking by birth cohort. "True natural course" shows the descriptive distribution as observed in the data. "Estimated natural course" is estimated based on the mediator model without holding age and period constant.

**Mediator Distribution: Alcohol Consumption**

**Natural Course**

**Counterfactual**

0.or doesn't drink  1.moderate drinker  2-heavy drinker  3.excessive drinker
eTable 2 Predicted Probability of elevated depressive symptoms in natural course and counterfactual scenario, relative difference, and contribution by birth cohort. All estimates are presented with 95% confidence intervals. Positive contributions imply that the counterfactual decreases depression risk and negative contributions imply that the counterfactual increases depression risk.

| Birth Cohort | Natural Course Scenario | Counterfactual Scenario | % relative difference | % contribution |
|--------------|-------------------------|-------------------------|-----------------------|---------------|
| 1916         | 20.24% (18.62-22.2)     | 19.53% (17.98-21.28)    | -3.49% (-5.55--1.43)  | 11.2% (4.49-19.12) |
| 1917         | 19.47% (18.19-21.12)    | 18.9% (17.64-20.41)     | -2.89% (-4.62--0.99)  | 10.08% (3.35-16.69) |
| 1918         | 22.29% (21.03-23.86)    | 21.47% (20.23-22.92)    | -3.68% (-5.47--1.93)  | 9.81% (5.06-14.38)  |
| 1919         | 16.43% (15.41-17.64)    | 16.2% (15.23-17.35)     | -1.38% (-3.12--0.42)  | 8.87% (-2.72-22.35) |
| 1920         | 19.28% (18.05-20.54)    | 18.82% (17.61-20.05)    | -2.37% (-3.85--0.79)  | 8.6% (3.01-14.34)   |
| 1921         | 17.33% (16.27-18.56)    | 16.98% (15.91-18.21)    | -1.98% (-3.56--0.21)  | 9.99% (1.16-19.46)  |
| 1922         | 19.95% (18.75-21.18)    | 19.26% (18.11-20.48)    | -3.42% (-5.11--1.79)  | 11.38% (5.97-17.27) |
| 1923         | 14.95% (14.02-15.94)    | 14.9% (14.02-15.87)     | -0.31% (-2.17-1.6)    | 5.02% (-4.40-45.65) |
| 1924         | 18.33% (17.24-19.38)    | 17.96% (16.92-19.06)    | -2.01% (-3.55--0.36)  | 8.47% (1.55-15.13)  |
| 1925         | 16.1% (15.12-17.09)     | 15.72% (14.81-16.7)     | -2.36% (-4--0.61)     | 17.49% (4.27-35.06) |
| 1926         | 18.2% (17.16-19.28)     | 17.87% (16.89-18.89)    | -1.82% (-3.31--0.21)  | 7.99% (0.81-14.88)  |
| 1927         | 14.79% (13.89-15.73)    | 14.7% (13.8-15.66)      | -0.61% (-2.23-1.07)   | 10.84% (-60.45-97.23) |
| 1928         | 18.67% (17.65-19.71)    | 18.25% (17.32-19.29)    | -2.2% (-3.73--0.55)   | 8.69% (2.09-14.99)  |
| 1929         | 20.67% (19.53-21.87)    | 19.97% (18.92-21.13)    | -3.39% (-4.87--1.82)  | 10.57% (5.58-15.24) |
| 1930         | 19.9% (18.82-21.14)     | 19.29% (18.26-20.38)    | -3.08% (-4.59--1.63)  | 10.12% (5.46-15.48) |
| 1931         | 16.72% (15.73-17.79)    | 16.36% (15.42-17.34)    | -2.17% (-3.81--0.38)  | 13.1% (2.73-23.8)   |
| 1932         | 17.73% (16.71-18.84)    | 17.2% (16.26-18.28)     | -2.98% (-4.51--1.24)  | 14.21% (6.04-21.97) |
| 1933         | 14.43% (13.6-15.38)     | 14.34% (13.5-15.29)     | -0.65% (-2.36-1.05)   | 13.91% (-239.89-206.29) |
| 1934         | 15.95% (15.03-17.02)    | 15.67% (14.75-16.78)    | -1.8% (-3.38--0.11)   | 14.17% (1.03-31.31) |
| 1935         | 15.1% (14.19-16.09)     | 14.97% (14.07-15.99)    | -0.81% (-2.5-0.89)    | 10.45% (-18.53-29.29) |
| 1936         | 16.1% (15.17-17.19)     | 15.8% (14.84-16.95)     | -1.9% (-3.53-0.17)    | 14.05% (1.09-31.55) |
| 1937         | 14.33% (13.49-15.28)    | 14.25% (13.35-15.23)    | -0.59% (-2.47-1.24)   | 13.88% (-298.52-342.78) |
| 1938         | 14.79% (13.95-15.74)    | 14.62% (13.78-15.62)    | -1.18% (-2.9-0.77)    | 20.16% (-29.07-113.61) |
| 1939         | 17.91% (17.18-18.91)    | 17.51% (16.62-18.53)    | -2.26% (-4--0.65)     | 9.85% (2.71-17.89)   |
| 1940         | 15.19% (14.37-16.06)    | 15.1% (14.27-16.02)     | -0.55% (-2.48-1.16)   | 6.83% (-16.88-35.09) |
| Year | Growth Rate | Previous Year Growth |
|------|-------------|----------------------|
| 1941 | 12.62% (11.86-13.44) | 12.69% (11.94-13.55) |
| 1942 | 21.41% (20.25-22.63) | 20.76% (19.67-21.95) |
| 1943 | 16.77% (15.87-17.79) | 16.52% (15.62-17.55) |
| 1944 | 16.13% (15.23-17.13) | 15.86% (14.96-16.8) |
| 1945 | 13.9% (13.01-14.82) | 13.9% (13.01-14.82) |
| 1946 | 17.52% (16.48-18.62) | 16.96% (15.9-18.06) |
| 1947 | 16.75% (15.7-17.84) | 16.32% (15.27-17.37) |
| 1948 | 18.42% (17.36-19.54) | 18.15% (17.04-19.26) |
| 1949 | 18.98% (17.9-19.96) | 18.52% (17.48-19.59) |
| 1950 | 20.5% (19.31-21.6) | 20.05% (18.88-21.17) |
| 1951 | 16.43% (15.38-17.36) | 16.52% (15.46-17.51) |
| 1952 | 17.81% (16.75-18.81) | 17.74% (16.71-18.75) |
| 1953 | 18.38% (17.39-19.31) | 18.29% (17.33-19.25) |
| 1954 | 24.19% (22.99-25.39) | 23.66% (22.48-24.81) |
| 1955 | 22.85% (21.8-23.89) | 22.41% (21.3-23.5) |
| 1956 | 19.01% (17.97-19.94) | 18.98% (17.98-19.99) |
| 1957 | 14.58% (13.77-15.37) | 14.92% (14.11-15.75) |
| 1958 | 18% (17.09-18.9) | 17.94% (17.01-18.89) |
| 1959 | 28.13% (26.98-29.35) | 27.48% (26.27-28.67) |
| 1960 | 21.6% (20.52-22.74) | 21.34% (20.23-22.5) |
| 1961 | 19.76% (18.72-20.75) | 19.63% (18.67-20.64) |
| 1962 | 22.15% (21.09-23.26) | 22.07% (20.96-23.12) |
| 1963 | 17.24% (16.39-18.05) | 17.7% (16.87-18.53) |
| 1964 | 16.87% (16.07-17.63) | 17.29% (16.48-18.13) |
| 1965 | 21.12% (20.07-22.2) | 21.17% (20.06-22.25) |
| 1966 | 22.81% (21.38-24.28) | 22.9% (21.39-24.45) |

Growth rates are given as a percentage change from the previous year.
**eTable 3 Predicted Probability of elevated depressive symptoms in natural course and counterfactual scenario, relative difference, and contribution by birth cohort and stratified by sex.** All estimates are presented with 95% confidence intervals. Positive contributions imply that the counterfactual decreases depression risk and negative contributions imply that the counterfactual increases depression risk.

| Birth Cohort | sex | Probability of elevated depressive symptoms (%) (95%CI) | % relative difference | % contribution |
|--------------|-----|--------------------------------------------------------|-----------------------|---------------|
| 1916         | female | 21.18% (18.62-23.82) | 20.43% (17.92-23.08) | -3.52% (-4.92--2.19) | 12.53% (6.86-20.48) |
| 1917         | female | 23.37% (21.26-25.61) | 22.58% (20.5-24.83) | -3.34% (-4.55--2.14) | 9.62% (5.82-13.44) |
| 1918         | female | 24.94% (22.83-26.97) | 24.1% (22.06-26.05) | -3.36% (-4.65--2.15) | 8.55% (5.25-12.51) |
| 1919         | female | 19.9% (18.3-21.6) | 19.45% (17.84-21.11) | -2.31% (-3.73--0.92) | 9.64% (3.96-17.35) |
| 1920         | female | 20.6% (18.98-22.38) | 20.14% (18.56-21.97) | -2.2% (-3.58--0.91) | 8.28% (3.33-14.17) |
| 1921         | female | 20.19% (18.57-21.88) | 19.84% (18.26-21.57) | -1.75% (-3.18--0.37) | 6.9% (1.54-13.95) |
| 1922         | female | 20.8% (19.13-22.54) | 20.31% (18.77-22.04) | -2.39% (-3.71--1) | 8.81% (3.5-14.93) |
| 1923         | female | 16.49% (15.2-17.93) | 16.51% (15.16-17.97) | 0.12% (-1.34--1.55) | -1.95% (-5.63-28.87) |
| 1924         | female | 20.96% (19.51-22.52) | 20.56% (19.11-22.14) | -1.88% (-3.3--0.54) | 6.75% (1.93-12.7) |
| 1925         | female | 17.87% (16.49-19.19) | 17.5% (16.13-18.83) | -2.04% (-3.53--0.61) | 13.42% (4.19-29.53) |
| 1926         | female | 22.24% (20.61-23.8) | 21.75% (20.18-23.26) | -2.2% (-3.54--0.94) | 6.91% (2.87-11.28) |
| 1927         | female | 15.84% (14.52-17.06) | 15.71% (14.42-16.86) | -0.81% (-2.26-0.66) | 12.9% (-175.75-159.95) |
| 1928         | female | 21.45% (19.91-22.93) | 20.97% (19.44-22.41) | -2.25% (-3.55--1.01) | 7.64% (3.35-12.33) |
| 1929         | female | 22.54% (20.89-24.08) | 21.95% (20.36-23.5) | -2.6% (-3.87--1.31) | 7.91% (3.9-12.5) |
| 1930         | female | 21.48% (19.89-22.99) | 20.89% (19.32-22.39) | -2.75% (-3.92--1.61) | 9.3% (5.23-14) |
| 1931         | female | 18.72% (17.29-20.17) | 18.34% (16.93-19.74) | -2.03% (-3.45--0.75) | 10.51% (3.68-20.43) |
| 1932         | female | 18.95% (17.62-20.26) | 18.46% (17.13-19.82) | -2.59% (-4.04--1.2) | 12.9% (6.13-23.56) |
| 1933         | female | 15.89% (14.63-17.01) | 15.7% (14.44-16.86) | -1.21% (-2.29--0.43) | 19.03% (-142.52-153.02) |
| 1934         | female | 16.18% (14.85-17.39) | 15.97% (14.64-17.17) | -1.29% (-2.74--0.14) | 17.79% (-80.63-98.61) |
| 1935         | female | 15.88% (14.59-16.95) | 15.76% (14.48-16.9) | -0.75% (-2.25--0.63) | 12.17% (-119.12-224.51) |
| 1936         | female | 16.67% (15.4-17.89) | 16.42% (15.2-17.64) | -1.49% (-2.88--0.07) | 15.51% (-3.33-57.41) |
| 1937         | female | 15.64% (14.41-16.76) | 15.58% (14.41-16.72) | -0.42% (-2.06--1.09) | 8.05% (-193.27-268.44) |
| 1938         | female | 15.48% (14.35-16.65) | 15.39% (14.27-16.59) | -0.59% (-2.02--0.93) | 8.47% (-229.05-203.67) |
| 1939         | female | 19.61% (18.25-20.96) | 19.29% (17.96-20.64) | -1.61% (-2.97--0.2) | 7.14% (0.8-14.15) |
| 1940         | female | 16.72% (15.52-18.01) | 16.67% (15.46-17.93) | -0.24% (-1.67-1.15) | 3.03% (-17.45-27.08) |
| Year | Gender | Value 1 | Value 2 | Value 3 | Value 4 |
|------|--------|---------|---------|---------|---------|
| 1941 | female | 13.56%  | 13.65%  | 0.69%   | 5.78%   |
| 1942 | female | 21.83%  | 21.31%  | -2.39%  | 7.76%   |
| 1943 | female | 17.48%  | 17.39%  | -0.51%  | 3.69%   |
| 1944 | female | 18.13%  | 18%     | -0.72%  | 4.35%   |
| 1945 | female | 15.13%  | 15.13%  | 0%      | 0%      |
| 1946 | female | 17.69%  | 17.38%  | -1.73%  | 11.94%  |
| 1947 | female | 19.92%  | 19.5%   | -2.1%   | 8.8%    |
| 1948 | female | 19.3%   | 19.07%  | -1.19%  | 5.42%   |
| 1949 | female | 19.22%  | 18.97%  | -1.33%  | 6.25%   |
| 1950 | female | 19.61%  | 19.43%  | -0.94%  | 4.04%   |
| 1951 | female | 17.61%  | 17.71%  | 0.58%   | 3.93%   |
| 1952 | female | 18.71%  | 18.72%  | 0.08%   | -0.59%  |
| 1953 | female | 20.09%  | 20.04%  | -0.27%  | 1.24%   |
| 1954 | female | 26.51%  | 26.08%  | -1.59%  | 3.69%   |
| 1955 | female | 24.26%  | 24%     | -1.11%  | 2.98%   |
| 1956 | female | 21.7%   | 21.79%  | 0.4%    | -1.42%  |
| 1957 | female | 16.6%   | 17.11%  | 3.1%    | -34.67% |
| 1958 | female | 21.71%  | 21.73%  | 0.12%   | -0.24%  |
| 1959 | female | 29.78%  | 29.24%  | -1.81%  | 3.67%   |
| 1960 | female | 23.36%  | 23.22%  | -0.57%  | 1.72%   |
| 1961 | female | 21.64%  | 21.7%   | 0.29%   | -0.93%  |
| 1962 | female | 24.31%  | 24.41%  | 0.39%   | -1.04%  |
| 1963 | female | 20.84%  | 21.42%  | 2.81%   | -10.28% |
| 1964 | female | 19.65%  | 20.41%  | 3.85%   | -16.61% |
| 1965 | female | 24.03%  | 24.38%  | 1.43%   | -3.86%  |
| 1966 | female | 25.6%   | 26.29%  | 2.68%   | -6.69%  |
| 1967 | male   | 21.83%  | 21.31%  | -2.37%  | 6.41%   |
| 1968 | male   | 22.77%  | 22.05%  | -3.13%  | 7.7%    |
| 1969 | male   | 24.25%  | 23.45%  | -3.28%  | 7.34%   |
| 1970 | male   | 19.06%  | 18.7%   | -1.91%  | 6.68%   |
| Year | Gender | Value 1 (Range) | Value 2 (Range) | Change 1 (Range) | Change 2 (Range) |
|------|--------|----------------|----------------|-----------------|-----------------|
| 1920 | male   | 19.57% (17.62-21.46) | 19.24% (17.36-21.21) | -1.66% (-3.29-0.18) | 5.44% (-0.57-10.82) |
| 1921 | male   | 18.17% (16.35-20.15) | 17.82% (16.03-19.79) | -1.89% (-3.64-0.01) | 7.35% (-0.03-15.4) |
| 1922 | male   | 18.3% (16.42-20.17) | 17.92% (16.11-19.79) | -2.05% (-3.82-0.12) | 7.83% (0.41-15.79) |
| 1923 | male   | 14.38% (12.9-15.72)  | 14.42% (12.97-15.9) | 0.33% (-1.66-2.22) | -2.23% (-109.45-104.49) |
| 1924 | male   | 17.15% (15.53-18.9)  | 16.85% (15.27-18.53) | -1.75% (-3.55-0.13) | 8.12% (0.68-18.4) |
| 1925 | male   | 14.78% (13.36-16.27) | 14.68% (13.28-16.25) | -0.63% (-2.81-1.23) | 7.36% (-39.14-56.96) |
| 1926 | male   | 18.11% (16.48-19.89) | 17.76% (16.17-19.54) | -1.89% (-3.59-0.15) | 7.5% (0.6-14.66) |
| 1927 | male   | 13.54% (12.17-14.98) | 13.65% (12.28-15.09) | 0.77% (-1.23-2.93) | -1.3% (-478.01-213.58) |
| 1928 | male   | 18.06% (16.57-19.78) | 17.67% (16.19-19.35) | -2.18% (-3.84-0.52) | 8.72% (2-15.63) |
| 1929 | male   | 19.46% (17.71-21.37) | 18.84% (17.22-20.8) | -3.16% (-4.69-1.46) | 10.26% (4.71-16.37) |
| 1930 | male   | 19.41% (17.69-21.37) | 18.9% (17.22-20.72) | -2.63% (-4.42-0.88) | 8.68% (2.92-14.94) |
| 1931 | male   | 17.65% (16.09-19.29) | 17.25% (15.76-19.92) | -2.27% (-4.03-0.46) | 9.57% (1.92-18.11) |
| 1932 | male   | 17.51% (16-19.16)    | 17.09% (15.55-18.81) | -2.4% (-4.18-0.64) | 10.35% (2.73-19.85) |
| 1933 | male   | 15.38% (14-16.88)    | 15.18% (13.8-16.62) | -1.25% (-3.14-0.7) | 9.87% (-7.83-37.79) |
| 1934 | male   | 16.21% (14.62-17.75) | 16.11% (14.54-17.56) | -0.61% (-2.55-1.31) | 3.65% (-7.79-18.18) |
| 1935 | male   | 15.82% (14.36-17.29) | 15.74% (14.27-17.17) | -0.48% (-2.22-1.45) | 3.2% (-9.63-19.05) |
| 1936 | male   | 16.35% (14.87-17.87) | 16.15% (14.73-17.63) | -1.25% (-3-0.57) | 6.99% (-3.33-19.55) |
| 1937 | male   | 15.05% (13.7-16.55)  | 14.97% (13.67-16.38) | -0.51% (-2.47-1.4) | 4.8% (-19.03-38.84) |
| 1938 | male   | 15.06% (13.68-16.44) | 14.97% (13.59-16.42) | -0.6% (-2.38-1.27) | 5.57% (-16.33-41.41) |
| 1939 | male   | 18.28% (16.81-19.9)  | 17.98% (16.53-19.51) | -1.66% (-3.19-0) | 6.21% (0.01-12.86) |
| 1940 | male   | 15.85% (14.38-17.4)  | 15.82% (14.39-17.34) | -0.19% (-1.99-1.56) | 0.85% (-11.65-14.04) |
| 1941 | male   | 12.79% (11.6-14.01)  | 13% (11.77-14.29) | 1.68% (-0.36-3.68) | 22% (-413.97-266.81) |
| 1942 | male   | 19.59% (17.95-21.31) | 19.07% (17.44-20.89) | -2.64% (-4.37-1) | 8.41% (3.07-14.61) |
| 1943 | male   | 15.78% (14.37-17.37) | 15.65% (14.24-17.17) | -0.78% (-2.68-1.11) | 5.04% (-7.74-22.2) |
| 1944 | male   | 15.61% (14.28-17.04) | 15.29% (13.99-16.78) | -2.05% (-3.79-0.28) | 14.84% (2.15-37.45) |
| 1945 | male   | 13.41% (12.22-14.81) | 13.41% (12.22-14.81) | 0% (0-0) | 0% (0-0) |
| 1946 | male   | 15.38% (13.96-16.93) | 15.03% (13.61-16.53) | -2.3% (-4.08-0.42) | 18.48% (3.22-58.47) |
| 1947 | male   | 17.67% (16.18-19.35) | 17.08% (15.56-18.78) | -3.33% (-5.04-1.68) | 13.94% (6.9-24.91) |
| 1948 | male   | 17.94% (16.49-19.52) | 17.59% (16.14-19.22) | -1.95% (-3.67-0.26) | 7.71% (1.12-15.51) |
| 1949 | male   | 19.16% (17.6-20.78)  | 18.83% (17.29-20.49) | -1.72% (-3.21-0.06) | 5.95% (-0.2-11.8) |
### Table 4 Predicted Probability of elevated depressive symptoms in natural course and counterfactual scenario, relative difference, and contribution by birth cohort and stratified by race/ethnicity

All estimates are presented with 95% confidence intervals. Positive contributions imply that the counterfactual decreases depression risk and negative contributions imply that the counterfactual increases depression risk.

| Birth Cohort | race/ethnicity | Probability of elevated depressive symptoms (% (95%CI)) | % relative difference | % contribution |
|--------------|----------------|--------------------------------------------------------|-----------------------|---------------|
|              |                | Natural Course Scenario                                | Counterfactual Scenario|               |
| 1916         | Black          | 36.03% (32.29-39.95)                                   | 33.46% (30.07-37.07)  | -7.11% (-10.42--4.12) | 16.29% (9.61-23.91) |
| 1917         | Black          | 32.9% (30.06-35.78)                                    | 30.95% (28.3-33.78)   | -5.93% (-8.5--3.72)  | 15.43% (9.74-22.73) |
| 1918         | Black          | 34.7% (32.16-37.47)                                    | 33.46% (31.06-36.1)   | -3.55% (-5.26--2.1)  | 8.48% (5.33-12.92)  |
| 1919         | Black          | 26.15% (24.16-28.24)                                   | 25.69% (23.75-27.69)  | -1.75% (-3.11--0.53) | 7.73% (2.47-14.82)  |
| 1920         | Black          | 28.63% (26.57-30.66)                                   | 28.41% (26.37-30.47)  | -0.76% (-1.67-0.13)  | 2.54% (-0.44-5.85)  |
| 1921         | Black          | 25.94% (23.95-27.97)                                   | 25.77% (23.85-27.7)   | -0.65% (-1.55-0.19)  | 3.07% (-0.8-7.55)   |
| Year | Ethnicity | Value1 (Value2-Value3) | Value2 | Value3 | Value4 (Value5-Value6) | Value5 | Value6 |
|------|-----------|-----------------------|--------|--------|-----------------------|--------|--------|
| 1922 | Black     | 28% (26.1-30.01)      | 27.86% (25.9-29.84) | -0.5% (-1.34-0.29) | 1.83% (-1.12-5.1) |
| 1923 | Black     | 23.02% (21.3-24.76)   | 23.03% (21.31-24.8) | 0.06% (-0.77-0.91) | -0.26% (-0.95-8.39) |
| 1924 | Black     | 24.72% (23.05-26.3)   | 24.65% (22.92-26.31) | -0.3% (-1.16-0.56) | 1.71% (-3.23-7.14) |
| 1925 | Black     | 21.25% (19.78-22.78)  | 21.2% (19.68-22.72) | -0.24% (-1.09-0.61) | 4.64% (-68.92-77.98) |
| 1926 | Black     | 23.68% (22.12-25.29)  | 23.52% (21.94-25.12) | -0.64% (-1.51-0.26) | 4.48% (-1.84-11.81) |
| 1927 | Black     | 19.1% (17.77-20.45)   | 19.13% (17.75-20.48) | 0.17% (-0.7-1.09) | 2.4% (-39.43-71.75) |
| 1928 | Black     | 24.15% (22.58-25.77)  | 24.06% (22.49-25.67) | -0.4% (-1.21-0.51) | 2.46% (-2.99-7.99) |
| 1929 | Black     | 26.38% (24.66-28.22)  | 26.16% (24.44-27.99) | -0.82% (-1.64-0.02) | 3.57% (-0.08-7.22) |
| 1930 | Black     | 24.3% (22.72-25.99)   | 24.2% (22.63-25.88) | -0.44% (-1.23-0.36) | 2.69% (-2.07-8.44) |
| 1931 | Black     | 21.47% (19.95-23.09)  | 21.41% (19.89-23.05) | -0.28% (-1.21-0.6) | 4.6% (-43.51-57.73) |
| 1932 | Black     | 22.04% (20.65-23.55)  | 21.97% (20.52-23.51) | -0.32% (-1.11-0.45) | 4.24% (-6.67-26.69) |
| 1933 | Black     | 21.05% (19.61-22.59)  | 21.02% (19.58-22.53) | -0.15% (-1.15-0.64) | 3.13% (-83.7-77.24) |
| 1934 | Black     | 19.81% (18.47-21.28)  | 19.79% (18.52-21.25) | -0.08% (-1.03-0.78) | -0.56% (-113.59-98.41) |
| 1935 | Black     | 20% (18.61-21.47)     | 19.99% (18.63-21.49) | -0.02% (-0.92-0.88) | -0.28% (-139.9-141.66) |
| 1936 | Black     | 21.2% (19.73-22.76)   | 21.18% (19.72-22.67) | -0.08% (-0.99-0.77) | 1.18% (-56.88-82.8) |
| 1937 | Black     | 19.5% (18.17-20.96)   | 19.47% (18.17-20.9) | -0.18% (-1.24-0.71) | -2.82% (-104.53-90.03) |
| 1938 | Black     | 18.23% (16.94-19.62)  | 18.21% (16.95-19.57) | -0.13% (-1.02-0.82) | -0.98% (-16.05-9.7) |
| 1939 | Black     | 20.01% (18.68-21.36)  | 19.93% (18.63-21.37) | -0.4% (-1.42-0.56) | -5.13% (-204.48-139.11) |
| 1940 | Black     | 18.15% (16.79-19.49)  | 18.12% (16.76-19.42) | -0.19% (-1.12-0.81) | 1.44% (-14.27-5.75) |
| 1941 | Black     | 14.53% (13.34-15.72)  | 14.61% (13.44-15.81) | 0.57% (-0.4-1.49) | 1.4% (-1.03-4.1) |
| 1942 | Black     | 24.82% (23.17-26.56)  | 24.67% (23.04-26.33) | -0.61% (-1.42-0.16) | 3.31% (-0.94-8.23) |
| 1943 | Black     | 21.01% (19.49-22.6)   | 20.92% (19.48-22.51) | -0.46% (-1.3-0.39) | 8.13% (-111.74-146.75) |
| 1944 | Black     | 23.81% (22.21-25.49)  | 23.61% (22.01-25.27) | -0.84% (-1.74-0.08) | 5.64% (-0.52-12.99) |
| 1945 | Black     | 20.28% (18.9-21.89)   | 20.28% (18.9-21.89)  | 0% (0-0) | 0% (0-0) |
| 1946 | Black     | 26.33% (24.7-28.09)   | 26.09% (24.44-27.88) | -0.9% (-1.84-0.07) | 3.95% (0.31-8.16) |
| 1947 | Black     | 24.56% (22.99-26.3)   | 24.31% (22.78-26.01) | -1.03% (-2.02-0.02) | 5.96% (0.15-12.43) |
| 1948 | Black     | 27.74% (26.24-29.4)   | 27.5% (25.97-29.19) | -0.86% (-1.66-0.11) | 3.2% (0.39-6.31) |
| 1949 | Black     | 26.91% (25.34-28.54)  | 26.64% (25.12-28.34) | -0.98% (-1.9-0.12) | 3.95% (0.49-8.07) |
| 1950 | Black     | 27.17% (25.52-28.92)  | 26.91% (25.28-28.65) | -0.97% (-1.83-0.12) | 3.74% (0.47-7.6) |
| 1951 | Black     | 22.4% (20.91-23.9)    | 22.27% (20.81-23.82) | -0.59% (-1.49-0.32) | 6.19% (-4.11-23.23) |
| Year | Race     | Hispanic | Black     | Hispanic     | White     | Black     | Hispanic | White     | Black     | Hispanic | White     | Black     | Hispanic | White     | Black     | Hispanic | White     | Black     | Hispanic | White     | Black     | Hispanic | White     |
|------|----------|----------|-----------|-------------|-----------|-----------|----------|-----------|-----------|----------|-----------|-----------|----------|-----------|-----------|----------|-----------|-----------|----------|-----------|-----------|----------|-----------|-----------|
| 1952 | Black    | 24.54%   | 22.91-26.23 | 24.3% | 22.65-25.99 | -0.98% | -2.01-0.03 | 5.63% | 0.14-13.51 |
| 1953 | Black    | 24.66%   | 23.08-26.4 | 24.43% | 22.83-26.05 | -0.93% | -1.85-0.09 | 5.26% | -0.52-11.57 |
| 1954 | Black    | 32.73%   | 30.93-34.69 | 32.2% | 30.37-34.12 | -1.6% | -2.51-0.69 | 4.23% | 1.84-6.63 |
| 1955 | Black    | 31.63%   | 29.9-33.44  | 31.18% | 29.45-32.98 | -1.44% | -2.33-0.66 | 4.06% | 1.69-6.67 |
| 1956 | Black    | 25.84%   | 24.3-27.52  | 25.52% | 24.05-27.21 | -1.24% | -2.3-0.27  | 5.86% | 1.24-10.93 |
| 1957 | Black    | 21.22%   | 19.88-22.7  | 21.21% | 19.84-22.69 | -0.05% | -1.14-0.93 | 0.54% | -135.02-67.16 |
| 1958 | Black    | 24.85%   | 23.24-26.48 | 24.56% | 23.03-26.16 | -1.18% | -2.26-0.09 | 6.26% | 0.48-13.47 |
| 1959 | Black    | 33.17%   | 31.35-34.99 | 32.64% | 30.79-34.47 | -1.6% | -2.51-0.77 | 4.13% | 2-6.44 |
| 1960 | Black    | 24.79%   | 23.2-26.38  | 24.5%  | 22.87-26.18 | -1.15% | -2.12-0.22 | 6.36% | 1.18-12.41 |
| 1961 | Black    | 22.1%    | 20.64-23.54 | 21.88% | 20.4-23.28  | -0.97% | -2.05-0.01 | 12.25% | -0.2-65.15 |
| 1962 | Black    | 24.01%   | 22.59-25.53 | 23.64% | 22.14-25.17 | -1.51% | -2.56-0.43 | 9.8% | 2.86-20.21 |
| 1963 | Black    | 19.45%   | 18.4-20.67  | 19.28% | 18.18-20.56 | -0.83% | -2.03-0.3 | -15.44% | -177.5-169.39 |
| 1964 | Black    | 18.09%   | 17.12-19.25 | 18%    | 17.04-19.19 | -0.45% | -1.51-0.73 | -3.83% | -18.24-6.32 |
| 1965 | Black    | 22.32%   | 20.95-23.83 | 22.07% | 20.67-23.55 | -1.15% | -2.22-0.08 | 12.56% | 0.69-38.93 |
| 1966 | Black    | 25.48%   | 23.56-27.51 | 25.11% | 23.24-27.18 | -1.45% | -2.54-0.36 | 7.09% | 1.93-13.96 |
| 1967 | Hispanic | 11.59%   | 9.71-13.68  | 11.61% | 9.68-13.76  | 0.21% | -2.19-2.62 | 0.29% | -2.86-3.46 |
| 1968 | Hispanic | 14.51%   | 12.67-16.41 | 14.5%  | 12.66-16.45 | -0.02% | -2.07-1.93 | 0.07% | -5.21-4.64 |
| 1969 | Hispanic | 22.37%   | 20.26-24.53 | 22.14% | 20.04-24.3 | -1.02% | -2.02-0.1 | 13.16% | -195.78-134.69 |
| 1970 | Hispanic | 21.88%   | 20.14-23.75 | 21.66% | 19.92-23.42 | -1.01% | -1.69-0.36 | 16.36% | -155.27-364.52 |
| 1971 | Hispanic | 29.31%   | 27.25-31.28 | 28.89% | 26.87-30.78 | -1.43% | -2.04-0.8 | 5.07% | 2.88-7.98 |
| 1972 | Hispanic | 30.45%   | 28.4-32.43  | 30.06% | 28.03-32  | -1.28% | -1.85-0.7 | 4.17% | 2.25-6.46 |
| 1973 | Hispanic | 33.68%   | 31.63-35.76 | 33.21% | 31.17-35.25 | -1.4% | -2.07-0.77 | 3.75% | 2.05-5.59 |
| 1974 | Hispanic | 26.25%   | 24.48-28    | 26%    | 24.26-27.69 | -0.96% | -1.6-0.34 | 4.89% | 1.66-9 |
| 1975 | Hispanic | 25.87%   | 24.15-27.5  | 25.63% | 23.91-27.25 | -0.9% | -1.49-0.33 | 4.84% | 1.83-9.34 |
| 1976 | Hispanic | 21.89%   | 20.36-23.35 | 21.71% | 20.17-23.15 | -0.84% | -1.45-0.28 | 16.78% | -110.76-275.34 |
| 1977 | Hispanic | 22.4%    | 20.81-23.94 | 22.27% | 20.71-23.79 | -0.57% | -1.1-0.06 | 8.94% | -66.78-62.72 |
| 1978 | Hispanic | 17.75%   | 16.41-18.99 | 17.65% | 16.32-18.9 | -0.56% | -1.18-0.04 | -2.91% | -7.64-0.22 |
| 1979 | Hispanic | 21.41%   | 19.93-22.86 | 21.25% | 19.73-22.69 | -0.72% | -1.27-0.24 | 16.35% | -200.39-282.05 |
| 1980 | Hispanic | 25.16%   | 23.42-26.86 | 24.86% | 23.11-26.57 | -1.21% | -1.79-0.66 | 7.52% | 3.69-13.95 |
| 1981 | Hispanic | 24.21%   | 22.44-25.91 | 23.96% | 22.19-25.66 | -1.07% | -1.64-0.49 | 8.27% | 3.65-18.79 |
| Year | Hispanic | 1931 | 20.62% (18.91-22.23) | 19.61% (19.57-22.25) | 21.1% (19.57-22.5) |
|------|---------|------|---------------------|---------------------|---------------------|
| 1932 | Hispanic | 22.03% (20.29-23.56) | 22.05% (20.52-23.59) | 21.98% (20.36-23.5) | 21.1% (19.57-22.5) |
| 1933 | Hispanic | 20.76% (19.1-22.16) | 20.46% (18.78-22.04) | 20.64% (19.85-22.95) | 20.62% (18.91-22.23) |
| 1934 | Hispanic | 23.94% (22.18-25.48) | 23.79% (22.01-25.35) | 23.25% (21.49-25.34) | 20.12% (19.75-20.5) |
| 1935 | Hispanic | 22.82% (21.17-24.29) | 22.74% (21.08-24.22) | -0.34% (0.84-0.16) | 21.1% (19.75-20.5) |
| 1936 | Hispanic | 22.44% (20.88-23.92) | 22.34% (20.79-23.77) | -0.45% (0.98-0.02) | 21.1% (19.75-20.5) |
| 1937 | Hispanic | 21.95% (20.39-23.46) | 21.89% (20.32-23.37) | -0.28% (0.78-0.23) | 21.1% (19.75-20.5) |
| 1938 | Hispanic | 22.05% (20.52-23.59) | 21.98% (20.36-23.5) | -0.34% (0.83-0.13) | 5.87% (46.43-75.35) |
| 1939 | Hispanic | 22.35% (20.81-23.87) | 22.25% (20.69-23.77) | -0.44% (0.96-0.02) | 7.19% (48.62-56.44) |
| 1940 | Hispanic | 21.12% (19.66-22.58) | 21.04% (19.61-22.51) | -0.37% (0.93-0.21) | -1.02% (-205.01-182.25) |
| 1941 | Hispanic | 17.13% (15.81-18.4) | 17.12% (15.83-18.39) | -0.04% (0.58-0.53) | -0.16% (-2.74-2.32) |
| 1942 | Hispanic | 26.61% (24.96-28.35) | 26.38% (24.75-28.11) | -0.87% (-1.37-0.42) | 4.19% (2.02-7.57) |
| 1943 | Hispanic | 24.16% (22.56-25.78) | 24.01% (22.42-25.66) | -0.59% (-1.12-0.12) | 4.67% (1.02-11.27) |
| 1944 | Hispanic | 24.37% (22.73-25.95) | 24.24% (22.64-25.83) | -0.53% (-1.01-0.08) | 3.95% (0.54-10.13) |
| 1945 | Hispanic | 21.1% (19.57-22.5) | 21.1% (19.57-22.5) | 0 (0-0) | 0 (0-0) |
| 1946 | Hispanic | 24.16% (22.43-25.72) | 23.98% (22.27-25.51) | -0.77% (-1.28-0.27) | 5.9% (2.25-14.73) |
| 1947 | Hispanic | 21.5% (19.85-22.95) | 21.49% (19.9-22.93) | -0.05% (0.54-0.42) | 1.17% (-59.34-65.38) |
| 1948 | Hispanic | 24.04% (22.36-25.47) | 23.93% (22.28-25.34) | -0.42% (-0.88-0.02) | 3.37% (0.12-10.43) |
| 1949 | Hispanic | 23.14% (21.56-24.57) | 22.99% (21.41-24.44) | -0.64% (-1.11-0.2) | 7% (1.15-23.65) |
| 1950 | Hispanic | 23% (21.49-24.53) | 22.82% (21.31-24.33) | -0.78% (-1.31-0.34) | 9.26% (2.99-34.53) |
| 1951 | Hispanic | 19.63% (18.27-20.95) | 19.61% (18.25-20.92) | -0.09% (0.66-0.42) | -1.31% (-19.21-9.47) |
| 1952 | Hispanic | 19.85% (18.52-21.16) | 19.8% (18.46-21.06) | -0.27% (-0.84-0.21) | -3.87% (-39.43-9.29) |
| 1953 | Hispanic | 20.46% (19.1-21.72) | 20.42% (19.05-21.65) | -0.2% (-0.73-0.31) | -3.23% (-134.2-91.94) |
| 1954 | Hispanic | 25.29% (23.7-26.8) | 25.17% (23.61-26.69) | -0.46% (-1.02-0.03) | 2.77% (-0.19-6.56) |
| 1955 | Hispanic | 25.75% (24.19-27.25) | 25.6% (24.04-27.09) | -0.58% (-1.08-0.11) | 3.25% (0.58-6.3) |
| 1956 | Hispanic | 23.53% (22.04-24.88) | 23.48% (22.01-24.85) | -0.2% (-0.69-0.31) | 2.09% (-3.22-9.25) |
| 1957 | Hispanic | 19.61% (18.33-20.8) | 19.63% (18.32-20.79) | 0.06% (-0.44-0.56) | 0.86% (-10.89-15.64) |
| 1958 | Hispanic | 21.62% (20.25-22.98) | 21.6% (20.26-22.98) | -0.06% (-0.61-0.48) | 1.36% (-84.68-74.71) |
| 1959 | Hispanic | 31.1% (29.43-32.89) | 30.87% (29.21-32.6) | -0.73% (-1.25-0.32) | 2.24% (1.01-4.08) |
| 1960 | Hispanic | 24.42% (22.9-26.04) | 24.32% (22.82-25.98) | -0.42% (-0.92-0.08) | 3.05% (-0.64-8.01) |
| Year | Race       | Value 1 | Value 2 | Value 3 | Value 4 | Value 5 |
|------|------------|---------|---------|---------|---------|---------|
| 1961 | Hispanic   | 22.5%   | 22.4%   | -0.46%  | 7.25%   |
| 1962 | Hispanic   | 25.48%  | 25.34%  | -0.52%  | 3.04%   |
| 1963 | Hispanic   | 20.98%  | 21%     | 0.09%   | 1.6%    |
| 1964 | Hispanic   | 19.69%  | 19.69%  | -0.01%  | -0.15%  |
| 1965 | Hispanic   | 22.31%  | 22.2%   | -0.48%  | 8.1%    |
| 1966 | Hispanic   | 25.14%  | 24.96%  | -0.73%  | 4.58%   |
| 1967 | White      | 16.65%  | 15.83%  | -4.92%  | 15.5%   |
| 1968 | White      | 16.09%  | 15.33%  | -4.71%  | 16.11%  |
| 1969 | White      | 18.22%  | 17.17%  | -5.79%  | 15.24%  |
| 1970 | White      | 13.05%  | 12.78%  | -2.07%  | 16.27%  |
| 1971 | White      | 15.46%  | 14.86%  | -3.84%  | 14.48%  |
| 1972 | White      | 14.12%  | 13.61%  | -3.6%   | 18.29%  |
| 1973 | White      | 16.2%   | 15.37%  | -5.13%  | 17.27%  |
| 1974 | White      | 12.65%  | 12.43%  | -1.74%  | 17.11%  |
| 1975 | White      | 15.1%   | 14.56%  | -3.58%  | 14.55%  |
| 1976 | White      | 13.06%  | 12.75%  | -2.43%  | 18.31%  |
| 1977 | White      | 15.57%  | 15.03%  | -3.44%  | 12.77%  |
| 1978 | White      | 12.21%  | 12.14%  | -0.5%   | 5.58%   |
| 1979 | White      | 16.48%  | 15.87%  | -3.69%  | 11.94%  |
| 1980 | White      | 17.93%  | 17.01%  | -5.09%  | 13.84%  |
| 1981 | White      | 16.29%  | 15.64%  | -3.96%  | 12.88%  |
| 1982 | White      | 13.95%  | 13.57%  | -2.77%  | 14.91%  |
| 1983 | White      | 14.47%  | 13.88%  | -4.05%  | 18.86%  |
| 1984 | White      | 12.28%  | 12.03%  | -2.04%  | 25%     |
| 1985 | White      | 12.4%   | 12.17%  | -1.89%  | 21.99%  |
| 1986 | White      | 12.43%  | 12.19%  | -1.92%  | 22.23%  |
| 1987 | White      | 13.12%  | 12.71%  | -3.14%  | 22.71%  |
| 1988 | White      | 12.56%  | 12.23%  | -2.61%  | 26.91%  |
| 1989 | White      | 12.4%   | 12.18%  | -1.77%  | 20.3%   |
| 1990 | White      | 15.4%   | 14.81%  | -3.83%  | 14.35%  |
| Year | Ethnicity | Percentage (Range) | Percentage (Range) | Change (Range) | Change (Range) |
|------|-----------|--------------------|--------------------|---------------|---------------|
| 1940 | White     | 13.51% (12.47-14.62)| 13.17% (12.1-14.27)| -2.54% (-4.81--0.27)| 15.53% (1.53-37.09) |
| 1941 | White     | 10.52% (9.67-11.49)| 10.67% (9.8-11.61)| 1.43% (-1.06-4.04)| 16.45% (-80.82-128.33) |
| 1942 | White     | 18.74% (17.28-20.08)| 17.83% (16.54-19.21)| -4.85% (-6.84--2.85)| 12.41% (7.51-17.25) |
| 1943 | White     | 14.41% (13.32-15.6)| 14.01% (12.94-15.16)| -2.76% (-4.9-0.55)| 12.87% (2.71-26.43) |
| 1944 | White     | 14.79% (13.68-16)| 14.19% (13.11-15.35)| -6.04% (-6.19--1.88)| 17.26% (8.32-26.83) |
| 1945 | White     | 11.34% (10.45-12.32)| 11.34% (10.45-12.32)| 0% (0-0)| 0% (0-0) |
| 1946 | White     | 13.81% (12.71-14.96)| 13.3% (12.29-14.48)| -3.63% (-5.7--1.49)| 20.24% (8.66-39.63) |
| 1947 | White     | 13.62% (12.55-14.77)| 13.13% (12.11-14.24)| -3.57% (-5.98--1.2)| 21.16% (7.72-44.81) |
| 1948 | White     | 15.64% (14.5-16.94)| 15.1% (14.02-16.29)| -4.3% (-5.32--1.36)| 12.59% (5.08-20.59) |
| 1949 | White     | 15.42% (14.28-16.69)| 14.78% (13.67-16.02)| -6.43% (-6.43--2.02)| 15.6% (7.51-26.09) |
| 1950 | White     | 16.58% (15.32-17.88)| 15.86% (14.57-17.11)| -6.22% (-2.38)| 13.75% (7.33-21.2) |
| 1951 | White     | 13.53% (12.4-14.63)| 13.4% (12.29-14.58)| -2.15% (-3.29-1.5)| 6.12% (-9.14-22.85) |
| 1952 | White     | 14.8% (13.65-15.96)| 14.48% (13.32-15.67)| -2.15% (-4.25-0.16)| 9.06% (-0.76-19.91) |
| 1953 | White     | 14.82% (13.7-15.87)| 14.6% (13.43-15.72)| -1.49% (-3.56-0.69)| 6.43% (-3-16.08) |
| 1954 | White     | 20.63% (19.18-22.05)| 19.73% (18.29-21.17)| -4.35% (-6.24--2.34)| 9.7% (5.41-14.23) |
| 1955 | White     | 19.16% (17.87-20.45)| 18.44% (17.05-19.78)| -3.76% (-5.65--1.88)| 9.18% (4.66-14.18) |
| 1956 | White     | 15.84% (14.64-17.05)| 15.59% (14.33-16.75)| -1.53% (-3.89-0.8)| 5.38% (-2.98-14.25) |
| 1957 | White     | 13.22% (12.2-14.19)| 13.34% (12.3-14.38)| 0.9% (-1.47-3.37)| -6.49% (-31.8-13.14) |
| 1958 | White     | 15.68% (14.48-16.84)| 15.48% (14.29-16.65)| -1.29% (-3.59-1.07)| 4.86% (-3.92-13.35) |
| 1959 | White     | 24.27% (22.64-25.88)| 23.23% (21.61-24.83)| -4.27% (-6.29--2.52)| 7.98% (4.86-11.69) |
| 1960 | White     | 18.09% (16.73-19.53)| 17.67% (16.31-19.01)| -2.31% (-4.51-0.13)| 6.25% (0.36-12.4) |
| 1961 | White     | 16.83% (15.63-18.08)| 16.52% (15.32-17.78)| -1.85% (-4.13--0.33)| 5.76% (-0.98-12.8) |
| 1962 | White     | 19.11% (17.79-20.49)| 18.78% (17.46-20.02)| -1.71% (-3.96-0.58)| 4.38% (-1.44-9.41) |
| 1963 | White     | 15.87% (14.78-16.89)| 16.01% (14.9-17.03)| 0.9% (-1.71-3.37)| -3.37% (-12.94-5.86) |
| 1964 | White     | 15.47% (14.42-16.68)| 15.74% (14.53-16.82)| -0.64% (-4.47)| -6.82% (-17.21-2.46) |
| 1965 | White     | 18.78% (17.21-20.42)| 18.76% (17.13-20.37)| -0.13% (-2.61-2.33)| 0.4% (-6.17-6.35) |
| 1966 | White     | 22.58% (20.33-25.06)| 22.24% (19.9-24.68)| -1.5% (-3.97-0.83)| 3.03% (-1.7-8.14) |
Section 2.3: Smoking

**Figure 8** Natural course distribution of smoking by birth cohort. “Empirical data” shows the descriptive distribution as observed in the data. “Estimated natural course” is estimated based on the mediator model without holding age and period constant.

**Figure 9** Estimated distribution of smoking categories in natural course and counterfactual scenario by birth year. Age and period are held constant at age 50 and 1996 respectively.
### Table 5: Predicted Probability of elevated depressive symptoms in natural course and counterfactual scenario, relative difference, and contribution by birth cohort.

All estimates are presented with 95% confidence intervals. Positive contributions imply that the counterfactual decreases depression risk and negative contributions imply that the counterfactual increases depression risk.

| Birth Cohort | Probability of elevated depressive symptoms (% (95%CI)) | % relative difference | % contribution |
|--------------|--------------------------------------------------------|-----------------------|---------------|
|              | Natural Course Scenario | Counterfactual Scenario |                   |               |
| 1916         | 20.45% (18.51-22.27)    | 20% (18.25-21.99)     | -2.2% (-4.82-0.32) | 7.03% (-0.94-14.95) |
| 1917         | 19.77% (18.31-21.24)    | 19.08% (17.73-20.57)  | -3.53% (-5.81-1.24) | 11.8% (4.48-19.86) |
| 1918         | 22.55% (21.12-23.97)    | 21.79% (20.46-23.22)  | -3.36% (-5.51-1.18) | 8.63% (3.16-14.24) |
| 1919         | 16.56% (15.54-17.58)    | 16.22% (15.26-17.26)  | -2.02% (-4.31-0.29) | 12.37% (-1.85-27.41) |
| 1920         | 19.44% (18.29-20.72)    | 18.93% (17.81-20.08)  | -2.6% (-4.76-0.24)  | 9.05% (0.85-15.94)  |
| 1921         | 17.49% (16.4-18.62)     | 17.01% (15.94-18.1)   | -2.71% (-5.01-0.22) | 13.14% (1.15-24.57) |
| 1922         | 20.16% (19.06-21.3)     | 19.79% (18.69-20.92)  | -1.8% (-3.95-0.51)  | 5.98% (-1.66-12.52) |
| 1923         | 15% (14.13-15.94)       | 15.12% (14.27-16.07)  | 0.79% (-1.73-3.27)  | -9.61% (-84.06-23.39) |
| 1924         | 18.36% (17.37-19.31)    | 18.41% (17.48-19.32)  | 0.27% (-2.12-2.78)  | -1% (-12.64-8.58)   |
| 1925         | 16% (15.01-16.94)       | 16.16% (15.27-17.08)  | 0.98% (-1.24-3.33)  | -7.21% (-31.99-8.77) |
| 1926         | 18.26% (17.22-19.19)    | 17.94% (16.95-18.92)  | -1.73% (-3.96-0.47) | 7.19% (-1.8-16.15)  |
| 1927         | 14.6% (13.69-15.43)     | 15.06% (14.14-15.96)  | 3.11% (0.42-5.48)   | -54.59% (-509.39-246.62) |
| 1928         | 18.74% (17.71-19.77)    | 18.42% (17.4-19.29)   | -1.7% (-3.85-0.41)  | 6.49% (-1.62-15.15) |
| 1929         | 20.74% (19.6-21.89)     | 20.65% (19.53-21.71)  | -0.42% (-2.85-1.87) | 1.15% (-5.69-8.33)  |
| 1930         | 20.08% (18.94-21.21)    | 19.82% (18.79-20.85)  | -1.27% (-3.57-0.92) | 4.22% (-2.95-11.49) |
| 1931         | 16.72% (15.69-17.7)     | 16.55% (15.6-17.5)    | -1.05% (-3.31-1.21) | 6.06% (-8.13-19.63) |
| 1932         | 17.81% (16.7-18.9)      | 17.65% (16.68-18.61)  | -0.91% (-3.22-1.38) | 4.09% (-6.4-14.3)   |
| 1933         | 14.43% (13.56-15.23)    | 14.3% (13.48-15.16)   | -0.89% (-3.34-1.52) | 20.52% (-199.67-240.6) |
| 1934         | 15.96% (15.02-16.87)    | 15.93% (14.93-16.93)  | -0.21% (-2.53-2.12) | 1.53% (-16.45-19.97) |
| 1935         | 15.1% (14.13-16.01)     | 14.95% (14.01-15.93)  | -1.02% (-3.28-1.42) | 12.13% (-22.53-53.27) |
| 1936         | 16.21% (15.15-17.24)    | 16.03% (15.05-17.05)  | -1.12% (-3.36-1.44) | 7.43% (-11.96-23.88) |
| 1937         | 14.26% (13.43-15.06)    | 14.26% (13.42-15.09)  | 0% (-2.47-2.64)     | 4.44% (-252.23-305.47) |
| 1938         | 14.78% (13.94-15.6)     | 14.86% (13.96-15.75)  | 0.59% (-1.86-3.12)  | -6.72% (-149.33-35.86) |
| 1939         | 17.98% (17.02-18.97)    | 17.75% (16.81-18.71)  | -1.26% (-3.44-1.09) | 5.64% (-5.5-14.9)   |
| Year | Percent (Range) | Percent (Range) | Change (Range) | Percent (Range) |
|------|----------------|----------------|----------------|----------------|
| 1940 | 15.27% (14.33-16.15) | 15.13% (14.22-16.02) | -0.9% (-3.52-1.55) | 9.86% (-25.55-44.75) |
| 1941 | 12.52% (11.67-13.35) | 12.89% (12.02-13.73) | 2.95% (0.66-5.37) | 28.5% (5.43-83.99) |
| 1942 | 21.55% (20.36-22.73) | 21.23% (20.07-22.39) | -1.49% (-3.74-0.76) | 4.08% (-2.22-10.28) |
| 1943 | 16.76% (15.77-17.75) | 16.73% (15.75-17.73) | -0.16% (-2.33-2.05) | 0.99% (-13.18-12.86) |
| 1944 | 16.17% (15.24-17.1) | 15.81% (14.94-16.71) | -2.27% (-4.45-0.19) | 15.66% (-1.33-32.76) |
| 1945 | 13.83% (12.97-14.71) | 13.83% (12.97-14.71) | 0% (0-0) | 0% (0-0) |
| 1946 | 17.48% (16.38-18.53) | 17.46% (16.4-18.49) | -0.08% (-2.17-2.1) | 0.65% (-10.51-10.48) |
| 1947 | 16.63% (15.56-17.66) | 16.32% (15.37-17.33) | -1.85% (-4.11-0.26) | 11.14% (-1.57-25.57) |
| 1948 | 18.55% (17.57-19.49) | 18.19% (17.16-19.13) | -1.92% (-4.05-0.25) | 7.68% (-0.95-15.42) |
| 1949 | 19.06% (18.05-20.03) | 18.88% (17.9-19.87) | -0.93% (-3.27-1.22) | 3.29% (-4.42-11.46) |
| 1950 | 20.66% (19.61-21.81) | 20.44% (19.39-21.56) | -1.06% (-3.41-1.33) | 3.25% (-4.18-10.28) |
| 1951 | 16.52% (15.6-17.54) | 16.48% (15.53-17.52) | -0.23% (-2.73-2.16) | 1.18% (-13.93-16.44) |
| 1952 | 17.7% (16.77-18.76) | 17.73% (16.67-18.77) | 0.21% (-2.26-2.6) | -1.07% (-12.45-9.79) |
| 1953 | 18.36% (17.39-19.34) | 18.45% (17.45-19.46) | 0.48% (-1.81-2.52) | -1.92% (-11.35-7.23) |
| 1954 | 24.3% (23-25.43) | 23.83% (22.62-25) | -1.91% (-3.9-0.42) | 4.56% (-1.01-8.96) |
| 1955 | 22.96% (21.84-24.08) | 22.57% (21.49-23.64) | -1.7% (-3.87-0.38) | 4.34% (-0.95-9.62) |
| 1956 | 18.98% (17.91-19.93) | 18.91% (17.86-19.88) | -0.35% (-2.43-1.9) | 1.43% (-7.39-8.65) |
| 1957 | 14.5% (13.74-15.25) | 14.68% (13.85-15.46) | 1.2% (-1.2-3.47) | -22.25% (-302.63-194.69) |
| 1958 | 17.86% (16.91-18.82) | 17.81% (16.89-18.72) | -0.26% (-2.57-2.07) | 1.16% (-9.75-11.07) |
| 1959 | 28.28% (27.09-29.57) | 27.81% (26.58-29.07) | -1.67% (-3.5-0.16) | 3.3% (-0.31-6.77) |
| 1960 | 21.56% (20.49-22.66) | 21.26% (20.16-22.38) | -1.4% (-3.51-0.87) | 3.77% (-2.5-9.56) |
| 1961 | 19.76% (18.81-20.73) | 19.54% (18.57-20.49) | -1.14% (-3.19-0.83) | 3.81% (-2.77-10.56) |
| 1962 | 22.17% (21.11-23.18) | 21.79% (20.74-22.77) | -1.7% (-3.77-0.54) | 4.55% (-1.47-9.7) |
| 1963 | 17.15% (16.39-17.8) | 17.1% (16.33-17.82) | -0.24% (-2.35-2.02) | 1.18% (-11.16-11.33) |
| 1964 | 16.75% (15.97-17.42) | 16.89% (16.16-17.63) | 0.84% (-1.4-3.05) | -5.02% (-19.12-7.66) |
| 1965 | 21.03% (20.22-02) | 20.94% (19.93-21.94) | -0.43% (-2.48-1.79) | 1.31% (-5.31-7.1) |
| 1966 | 22.85% (21.3-24.26) | 22.56% (21.02-23.87) | -1.26% (-3.44-0.93) | 3.22% (-2.33-8.48) |
**eTable 6 Predicted Probability of elevated depressive symptoms in natural course and counterfactual scenario, relative difference, and contribution by birth cohort and stratified by sex.** All estimates are presented with 95% confidence intervals. Positive contributions imply that the counterfactual decreases depression risk and negative contributions imply that the counterfactual increases depression risk.

| Birth Cohort | sex | Natural Course Scenario   | Counterfactual Scenario  | % relative difference | % contribution |
|--------------|-----|---------------------------|--------------------------|-----------------------|---------------|
| 1916         | female | 21.33% (19.05-23.82) | 21.14% (19.94-23.61) | -0.92% (-3.35-1.54) | 3.2% (-5.92-11.94) |
| 1917         | female | 23.68% (21.58-25.82) | 23.35% (21.36-25.44) | -1.38% (-3.67-1)    | 4.04% (-2.94-10.08) |
| 1918         | female | 25.27% (23.29-27.37) | 24.7% (22.81-26.76) | -2.27% (-4.31-0.21) | 5.5% (0.54-10.58) |
| 1919         | female | 20.06% (18.42-21.74) | 19.86% (18.22-21.58) | -1.01% (-3.22-1.15) | 4.04% (-4.44-13.48) |
| 1920         | female | 20.81% (19.06-22.57) | 20.3% (18.52-22.14) | -2.44% (-4.61-0.35) | 8.67% (1.35-17.72) |
| 1921         | female | 20.39% (18.59-22.09) | 19.98% (18.21-21.64) | -2% (-4.33-0.21)    | 7.8% (-0.83-17.04) |
| 1922         | female | 20.95% (19.06-22.63) | 20.59% (18.84-22.31) | -1.74% (-3.82-0.44) | 6.17% (-1.55-13.87) |
| 1923         | female | 16.51% (15-17.93) | 16.56% (15.07-17.94) | 0.36% (-1.94-2.71)  | -3.84% (-58.65-37.54) |
| 1924         | female | 20.96% (19.33-22.51) | 21.07% (19.5-22.58) | 0.52% (-1.34-2.42)  | -1.81% (-9.05-4.86) |
| 1925         | female | 17.72% (16.3-19.1) | 17.93% (16.52-19.34) | 1.21% (-0.95-3.48)  | -7.79% (-27.7-5.96) |
| 1926         | female | 22.23% (20.65-23.76) | 22.08% (20.53-23.63) | -0.71% (-2.83-1.4)  | 2.31% (-4.55-8.66) |
| 1927         | female | 15.61% (14.35-16.87) | 16.02% (14.68-17.28) | 2.67% (0.53-5.12)   | -45.71% (-808.4-520.79) |
| 1928         | female | 21.49% (20.02-22.95) | 21.3% (19.84-22.77) | -0.86% (-2.88-1.36) | 2.81% (-4.75-9.31) |
| 1929         | female | 22.58% (21.03-24.12) | 22.5% (20.88-24.01) | -0.34% (-2.18-1.8)  | 0.79% (-5.17-6.68) |
| 1930         | female | 21.52% (20.02-23.1) | 21.35% (19.83-22.88) | -0.79% (-2.74-1.4)  | 2.73% (-4.86-9.05) |
| 1931         | female | 18.78% (17.43-20.14) | 18.64% (17.23-20)     | -0.72% (-2.81-1.46) | 3.5% (-8.47-14.97) |
| 1932         | female | 18.95% (17.65-20.22) | 18.89% (17.47-20.2)   | -0.31% (-2.27-1.82) | 1.45% (-10.24-11.9) |
| 1933         | female | 15.86% (14.62-17) | 15.72% (14.45-16.89) | -0.88% (-2.95-1.23) | 13.54% (-96-177.73) |
| 1934         | female | 16.08% (14.79-17.26) | 16.11% (14.83-17.26) | 0.21% (-1.97-2.29)  | -3.12% (-104.45-65.81) |
| 1935         | female | 15.82% (14.59-17.01) | 15.76% (14.49-16.9)  | -0.36% (-2.49-2.1)  | 6.8% (-203.02-258.18) |
| 1936         | female | 16.68% (15.36-18.03) | 16.58% (15.22-17.84) | -0.57% (-2.68-1.72) | 5.66% (-28.82-43.72) |
| 1937         | female | 15.57% (14.35-16.7) | 15.6% (14.34-16.72)  | 0.21% (-2.16-2.48)  | -0.31% (-193.57-164.57) |
| 1938         | female | 15.43% (14.18-16.61) | 15.55% (14.27-16.7)  | 0.82% (-1.19-3.17)  | -9.81% (-384.45-199.41) |
| 1939         | female | 19.68% (18.34-20.96) | 19.59% (18.19-20.91) | -0.44% (-2.53-1.65) | 2.09% (-7.47-10.4) |
| 1940         | female | 16.74% (15.53-17.91) | 16.67% (15.43-17.86) | -0.42% (-2.52-1.75) | 4.69% (-25.88-34.35) |
| Year | Gender | # of Males | # of Females | % Male (± Error) | % Female (± Error) |
|------|--------|------------|-------------|-----------------|------------------|
| 1941 | female | 13.42% (12.36-14.49) | 13.79% (12.68-14.92) | 2.81% (0.53-5.24) | 23.65% (3.79-79.14) |
| 1942 | female | 21.91% (20.4-23.43) | 21.59% (20.17-23.01) | -1.47% (-3.49-0.6) | 4.51% (-1.94-11.1) |
| 1943 | female | 17.49% (16.29-18.69) | 17.42% (16.21-18.63) | -0.41% (-2.43-1.7) | 3.26% (-14.37-18.54) |
| 1944 | female | 18.24% (16.99-19.56) | 17.81% (16.56-18.97) | -2.37% (-4.44-0.18) | 13.49% (1.07-26.91) |
| 1945 | female | 15.01% (13.86-16.08) | 15.01% (13.86-16.08) | 0% (0-0) | 0% (0-0) |
| 1946 | female | 17.63% (16.27-18.82) | 17.54% (16.23-18.75) | -0.5% (-2.61-1.72) | 3.64% (-13.49-18.07) |
| 1947 | female | 19.89% (18.42-21.23) | 19.7% (18.35-21.03) | -0.96% (-3.04-1.14) | 3.79% (-4.78-12.14) |
| 1948 | female | 19.28% (18-20.56) | 18.98% (17.65-20.25) | -1.54% (-3.78-0.57) | 6.63% (-2.68-17.3) |
| 1949 | female | 19.21% (17.94-20.46) | 19.03% (17.77-20.23) | -0.94% (-2.95-1.14) | 4.26% (-5.41-14.62) |
| 1950 | female | 19.61% (18.28-20.95) | 19.45% (18.13-20.72) | -0.85% (-2.92-1.32) | 3.74% (-5.58-12.33) |
| 1951 | female | 17.52% (16.3-18.8) | 17.61% (16.33-18.86) | 0.51% (-1.5-2.81) | -3.75% (-25.07-11.33) |
| 1952 | female | 18.53% (17.15-19.72) | 18.62% (17.24-19.88) | 0.5% (-1.76-2.49) | -2.68% (-13.98-8.76) |
| 1953 | female | 19.96% (18.57-21.32) | 20.24% (18.83-21.52) | 1.43% (-0.79-3.5) | -5.95% (-15.3-3.22) |
| 1954 | female | 26.49% (24.86-28.2) | 26.24% (24.66-27.85) | -0.91% (-2.86-1.02) | 1.92% (-2.39-6.49) |
| 1955 | female | 24.21% (22.74-25.77) | 24.01% (22.5-25.42) | -0.83% (-2.83-1.04) | 2.25% (-2.82-7.31) |
| 1956 | female | 21.61% (20.21-23.05) | 21.71% (20.31-23.08) | 0.45% (-1.49-2.52) | -1.32% (-8.38-4.74) |
| 1957 | female | 16.48% (15.35-17.62) | 16.71% (15.55-17.88) | 1.39% (-0.82-3.56) | -15.81% (-88.23-9.47) |
| 1958 | female | 21.61% (20.22-23.06) | 21.6% (20.18-23.04) | -0.06% (-1.97-1.95) | 0.14% (-6.88-6.14) |
| 1959 | female | 29.7% (27.83-31.4) | 29.25% (27.44-30.97) | -1.51% (-3.11-0.3) | 3.08% (-0.61-6.4) |
| 1960 | female | 23.26% (21.64-24.9) | 22.95% (21.34-24.54) | -1.31% (-3.25-1.07) | 3.59% (-3.05-9.27) |
| 1961 | female | 21.52% (20.03-22.95) | 21.29% (19.78-22.68) | -1.03% (-2.98-0.92) | 3.44% (-3.28-9.87) |
| 1962 | female | 24.32% (22.74-25.73) | 23.93% (22.4-25.33) | -1.6% (-3.59-0.45) | 4.24% (-1.17-9.29) |
| 1963 | female | 20.82% (19.43-22.13) | 20.76% (19.39-22.03) | -0.3% (-2.28-1.83) | 1.07% (-7.01-8.12) |
| 1964 | female | 19.61% (18.27-20.85) | 19.68% (18.38-20.96) | 0.34% (-1.79-2.55) | -1.41% (-11.3-7.84) |
| 1965 | female | 23.95% (22.18-25.67) | 23.82% (21.99-25.64) | -0.54% (-2.57-1.35) | 1.39% (-3.64-7.12) |
| 1966 | female | 25.73% (23.37-28) | 25.23% (22.95-27.47) | -1.93% (-4.08-0.19) | 4.68% (-0.46-9.67) |
| 1967 | male | 21.99% (19.35-25.07) | 21.02% (18.46-24.09) | -4.41% (-7.37-1.69) | 11.28% (4.21-19.58) |
| 1968 | male | 22.97% (20.78-25.61) | 22.06% (19.9-24.73) | -3.95% (-6.76-1.7) | 9.36% (3.9-16.46) |
| 1969 | male | 24.51% (22.29-27.05) | 23.42% (21.27-26) | -4.44% (-6.78-1.94) | 9.61% (3.99-14.97) |
| Year | Gender | Age | Percent | Lower 95% | Upper 95% |
|------|--------|-----|---------|-----------|-----------|
| 1920 | male   | 19.71% (17.79-21.7) | 18.95% (17.24-20.8) | -3.87% (-6.44--1.32) | 11.77% (4.39-20.46) |
| 1921 | male   | 18.27% (16.6-20.18) | 17.73% (16.11-19.59) | -2.92% (-5.58--0.41) | 10.65% (1.49-21.4) |
| 1922 | male   | 18.38% (16.6-20.29) | 17.79% (16.16-19.68) | -3.25% (-5.94--0.76) | 11.61% (2.95-22.17) |
| 1923 | male   | 14.33% (12.93-15.8) | 14.46% (13.11-16) | 0.94% (-2.01-4.05) | -8.29% (-154.99-182.11) |
| 1924 | male   | 17.11% (15.6-18.73) | 17.04% (15.58-18.7) | -0.42% (-3.12-2.31) | 2.03% (-11.51-13.8) |
| 1925 | male   | 14.64% (13.34-16.05) | 14.56% (13.28-15.98) | -0.56% (-3.09-1.86) | 5.4% (-53.04-83.1) |
| 1926 | male   | 18.13% (16.57-19.67) | 17.63% (16.17-19.13) | -2.75% (-5.37--0.1) | 10.43% (0.45-21.37) |
| 1927 | male   | 13.31% (12.12-14.55) | 13.63% (12.43-14.9) | 2.41% (-0.45-5.16) | -6.35% (-699.85-1132.52) |
| 1928 | male   | 18.11% (16.64-19.54) | 17.59% (16.15-19.05) | -2.85% (-5.38-0.18) | 10.62% (0.68-19.95) |
| 1929 | male   | 19.49% (17.79-21.25) | 19.19% (17.62-20.85) | -1.51% (-4.18-1.15) | 4.68% (-4.07-13.18) |
| 1930 | male   | 19.47% (17.76-21.18) | 18.93% (17.32-20.58) | -2.73% (-5.15--0.22) | 8.35% (0.75-16.99) |
| 1931 | male   | 17.63% (16.13-19.24) | 17.38% (15.92-18.87) | -1.41% (-3.91-1.15) | 5.55% (-4.54-16.51) |
| 1932 | male   | 17.44% (16.01-18.96) | 17.17% (15.74-18.69) | -1.55% (-4.07-1.01) | 6.78% (-4.99-18.22) |
| 1933 | male   | 15.26% (13.93-16.69) | 15.16% (13.86-16.54) | -0.59% (-3.25-2.01) | 4.71% (-24.18-29.05) |
| 1934 | male   | 16.13% (14.69-17.7) | 15.89% (14.53-17.42) | -1.52% (-4.44-1.07) | 7.95% (-6.52-26.2) |
| 1935 | male   | 15.76% (14.4-17.33) | 15.5% (14.24-17) | -1.68% (-4.44-0.98) | 10.64% (-7.42-31.12) |
| 1936 | male   | 16.33% (15.02-17.91) | 16.02% (14.71-17.45) | -1.92% (-4.57-0.7) | 10.16% (-4.1-26.56) |
| 1937 | male   | 14.92% (13.67-16.26) | 14.86% (13.62-16.22) | -0.41% (-3.04-2.2) | 4.11% (-48.02-36.48) |
| 1938 | male   | 14.99% (13.73-16.28) | 14.88% (13.66-16.19) | -0.73% (-3.38-2.07) | 6.23% (-26.35-38.8) |
| 1939 | male   | 18.32% (16.88-19.79) | 17.79% (16.41-19.24) | -2.84% (-5.43--0.28) | 10.37% (1.05-20.27) |
| 1940 | male   | 15.84% (14.6-17.22) | 15.63% (14.4-17) | -1.3% (-3.9-1.06) | 8.12% (-9.01-28.17) |
| 1941 | male   | 12.6% (11.52-13.74) | 12.91% (11.75-14.15) | 2.53% (-0.46-5.02) | 34.34% (-504.76-447.42) |
| 1942 | male   | 19.58% (18.05-21.23) | 19.04% (17.5-20.67) | -2.72% (-5.12--0.28) | 8.48% (0.88-16.11) |
| 1943 | male   | 15.76% (14.43-17.1) | 15.59% (14.28-16.96) | -1.06% (-3.72-1.44) | 6.08% (-14.08-26.93) |
| 1944 | male   | 15.6% (14.34-16.99) | 15.24% (14.02-16.57) | -2.3% (-4.86-0.37) | 15.46% (-3.71-39.81) |
| 1945 | male   | 13.27% (12.08-14.46) | 13.27% (12.08-14.46) | 0% (0-0) | 0% (0-0) |
| 1946 | male   | 15.26% (13.95-16.71) | 15.15% (13.83-16.56) | -0.73% (-3.43-1.71) | 4.91% (-18.99-33.11) |
| 1947 | male   | 17.59% (16.13-19.14) | 17.26% (15.83-18.73) | -1.85% (-4.23-0.48) | 7.61% (-2.11-17.12) |
| 1948 | male   | 17.91% (16.55-19.45) | 17.5% (16.11-18.96) | -2.29% (-5.15-0.22) | 8.69% (-0.81-19.25) |
| 1949 | male   | 19.13% (17.7-20.67) | 18.69% (17.23-20.13) | -2.3% (-4.59--0.04) | 7.74% (0.13-15.11) |
### Table 7
Predicted Probability of elevated depressive symptoms in natural course and counterfactual scenario, relative difference, and contribution by birth cohort and **stratified by race/ethnicity**. All estimates are presented with 95% confidence intervals. Positive contributions imply that the counterfactual decreases depression risk and negative contributions imply that the counterfactual increases depression risk.

| Birth Cohort | race/ethnicity | Probability of elevated depressive symptoms (%(95%CI)) | % relative difference | % contribution |
|--------------|----------------|---------------------------------------------------------|-----------------------|----------------|
| 1916         | Black          | 34.43% (31.33-37.8)                                      | -4.21% (-6.24--2.45)  | 10.3% (5.57-15.22) |
| 1917         | Black          | 31.78% (29.37-34.28)                                     | -5.08% (-6.73--3.35)  | 14.11% (9.17-19.13) |
| 1918         | Black          | 34.3% (31.85-36.59)                                      | -4.04% (-5.62--2.38)  | 9.9% (5.85-13.82)  |
| 1919         | Black          | 26.09% (24.2-27.95)                                      | -2.95% (-4.7--1.15)   | 13.2% (4.99-22.9)  |
| 1920         | Black          | 28.76% (26.76-30.87)                                     | -1.39% (-3.09--0.36)  | 4.73% (-1.28-10.38) |
| 1921         | Black          | 26.06% (24.13-28.12)                                     | -1.53% (-3.28--0.11)  | 6.84% (-0.52-14.91) |
| 1922         | Black          | 28.12% (26.16-30.2)                                      | -0.14% (-1.8--1.57)   | 0.53% (-5.81-6.77)  |
| Year | Race | Value 1 | Value 2 | Value 3 | Value 4 |
|------|------|---------|---------|---------|---------|
| 1923 | Black | 23.08% | 23.15% | 0.3% | -2.56% |
| 1924 | Black | 24.8% | 24.68% | -0.48% | 2.87% |
| 1925 | Black | 21.26% | 21.42% | 0.8% | -13.2% |
| 1926 | Black | 23.79% | 23.26% | -2.2% | 14.86% |
| 1927 | Black | 19.04% | 19.38% | 1.8% | 25.88% |
| 1928 | Black | 24.19% | 23.96% | -0.95% | 5.75% |
| 1929 | Black | 26.37% | 26.23% | -0.55% | 2.38% |
| 1930 | Black | 24.3% | 24.37% | 0.31% | -1.49% |
| 1931 | Black | 21.42% | 21.42% | 0.03% | 0.48% |
| 1932 | Black | 21.97% | 22.14% | 0.78% | -10.21% |
| 1933 | Black | 20.97% | 20.98% | 0.04% | 1.89% |
| 1934 | Black | 19.74% | 20.03% | 1.47% | 22.81% |
| 1935 | Black | 19.95% | 20.01% | 0.31% | 5.83% |
| 1936 | Black | 21.19% | 21.11% | -0.4% | 9.12% |
| 1937 | Black | 19.52% | 19.39% | -0.62% | -9.38% |
| 1938 | Black | 18.26% | 18.18% | -0.43% | -3.94% |
| 1939 | Black | 20.09% | 19.75% | -1.72% | -15.14% |
| 1940 | Black | 18.27% | 17.86% | -2.25% | -20.58% |
| 1941 | Black | 14.52% | 14.64% | 0.85% | 2.19% |
| 1942 | Black | 24.97% | 24.36% | -2.44% | 12.86% |
| 1943 | Black | 21.04% | 20.83% | -0.99% | 17.02% |
| 1944 | Black | 23.83% | 23.31% | -2.17% | 14.34% |
| 1945 | Black | 20.22% | 20.22% | 0% | 0% |
| 1946 | Black | 26.21% | 26.15% | -0.23% | 1.15% |
| 1947 | Black | 24.46% | 23.85% | -2.53% | 14.58% |
| 1948 | Black | 27.68% | 27.18% | -1.8% | 6.65% |
| 1949 | Black | 26.86% | 26.52% | -1.25% | 5.21% |
| 1950 | Black | 27.13% | 26.73% | -1.46% | 5.64% |
| 1951 | Black | 22.44% | 21.88% | -2.49% | 24.24% |
| 1952 | Black | 24.49% | 23.89% | -2.45% | 13.73% |
| Year | Group       | Proportion | Proportion | Change     | Change | Growth |
|------|-------------|------------|------------|------------|--------|--------|
| 1953 | Black       | 24.63% (23.11-26.11) | 23.98% (22.49-25.46) | -0.65% (-4.12--0.88) | 14.93% (5.11-25.98) |
| 1954 | Black       | 32.77% (30.85-34.49) | 31.3% (29.49-33.16) | -1.47% (-5.93--2.92) | 11.82% (7.78-15.9) |
| 1955 | Black       | 31.66% (29.82-33.49) | 30.49% (28.78-32.32) | -1.17% (-5.35--2.13) | 10.29% (6.01-14.77) |
| 1956 | Black       | 25.8% (24.3-27.37) | 24.87% (23.37-26.55) | -1.57% (-5.28--1.74) | 16.7% (7.93-26.4) |
| 1957 | Black       | 21.22% (19.89-22.7) | 20.85% (19.49-22.4) | -1.17% (-3.63-0.06) | 31.76% (-231.38-384.42) |
| 1958 | Black       | 24.82% (23.28-26.43) | 23.92% (22.35-25.53) | -0.89% (-5.35--1.74) | 19.67% (10.11-32.87) |
| 1959 | Black       | 33.11% (31.23-35.19) | 32.08% (30.24-34.07) | -1.03% (-4.63--1.6) | 8.05% (4.05-12.11) |
| 1960 | Black       | 24.75% (23.16-26.49) | 24% (22.35-25.65) | -0.75% (-4.79--1.37) | 16.77% (7.82-29.75) |
| 1961 | Black       | 22.06% (20.63-23.51) | 21.61% (20.17-23.14) | -0.45% (-3.82--0.3) | 24.06% (2.96-106.46) |
| 1962 | Black       | 23.94% (22.44-25.52) | 23.38% (21.84-24.9) | -0.56% (-3.98--0.52) | 15.49% (3.61-29.33) |
| 1963 | Black       | 19.43% (18.28-20.71) | 19.04% (17.88-20.22) | -0.39% (-3.92--0.15) | -38.74% (-351.71-315.11) |
| 1964 | Black       | 18.11% (16.94-19.27) | 18.11% (16.98-19.3) | 0.01% (-1.85-1.9) | 0.1% (-21.19-19.05) |
| 1965 | Black       | 22.35% (20.95-23.76) | 22.23% (20.8-23.78) | -0.12% (-2.27-1.21) | 6.03% (-14.65-31.99) |
| 1966 | Black       | 25.57% (23.7-27.55) | 25.49% (23.65-27.53) | -0.08% (-1.83-1.4) | 1.17% (-7.24-8.87) |
| 1916 | Hispanic    | 11.91% (9.74-14.4) | 11.06% (9.11-13.41) | -0.85% (-12.14--2.33) | -8.94% (-19.52--2.85) |
| 1917 | Hispanic    | 14.78% (12.8-17.18) | 13.69% (11.83-15.8) | -1.09% (-11.6--3.03) | -17.03% (-36.66--6.08) |
| 1918 | Hispanic    | 22.53% (20.35-24.87) | 21.29% (19.18-23.66) | -1.24% (-8.65--2.16) | 73.48% (-674.8-700.41) |
| 1919 | Hispanic    | 21.73% (20.01-23.71) | 21.07% (19.27-23.19) | -0.66% (-6.07-0.07) | 50.54% (-611.06-712.86) |
| 1920 | Hispanic    | 29.13% (27.02-31.3) | 28.59% (26.64-30.68) | -0.54% (-4.47-0.76) | 6.63% (-2.88-16.13) |
| 1921 | Hispanic    | 30.15% (28.18-32.39) | 29.85% (27.87-31.97) | -0.3% (-3.15-1.45) | 3.46% (-4.97-10.84) |
| 1922 | Hispanic    | 33.44% (31.38-35.63) | 33.3% (31.22-35.46) | 0.14% (-2.46-1.64) | 0.89% (-4.67-6.72) |
| 1923 | Hispanic    | 26.06% (24.32-27.98) | 25.79% (23.99-27.7) | -0.27% (-3.62-1.43) | 5.59% (-8.06-18.72) |
| 1924 | Hispanic    | 25.72% (24.12-27.56) | 25.23% (23.58-26.94) | -0.49% (-4.45-0.53) | 10.63% (-2.79-24.97) |
| 1925 | Hispanic    | 21.72% (20.26-23.39) | 21.45% (20.09-23.07) | -0.27% (-4.21-1.72) | 24.62% (-358.59-698.98) |
| 1926 | Hispanic    | 22.37% (20.9-23.94) | 21.37% (19.88-22.93) | -1.0% (-7.09-1.52) | 73.77% (-428.35-457.26) |
| 1927 | Hispanic    | 17.59% (16.3-19.02) | 17.29% (16.18-17.1) | -0.3% (-4.55-1.47) | -8.55% (-30.32-6.55) |
| 1928 | Hispanic    | 21.32% (19.86-22.85) | 20.43% (19.06-21.96) | -0.89% (-6.95--1.15) | 74.36% (-1371.59-1160.76) |
| 1929 | Hispanic    | 25.01% (23.53-26.71) | 24.42% (22.86-26.08) | -0.59% (-5.01-0.37) | 14.62% (-2.86-35.11) |
| 1930 | Hispanic    | 23.98% (22.45-25.71) | 23.65% (22.11-25.38) | -0.33% (-3.83-1.23) | 11.39% (-12.89-34.91) |
| 1931 | Hispanic    | 20.39% (18.99-22.11) | 19.88% (18.43-21.47) | -0.51% (-5.33-0.55) | -38.65% (-1076.3-432.58) |
| Year | Hispanic |
|------|----------|
| 1932 | 21.8% (20.47-23.41) | 21.68% (20.21-23.29) | -0.52% (-3.24-2.29) | 11.91% (-316.02-513.73) |
| 1933 | 20.54% (19.21-22.05) | 20.33% (18.85-21.98) | -1.04% (-3.81-1.92) | -12.71% (-398.69-416.53) |
| 1934 | 23.77% (22.21-25.5) | 23.78% (22.19-25.52) | 0.02% (-2.35-2.68) | 0.77% (-28.94-23.25) |
| 1935 | 22.67% (21.15-24.41) | 22.4% (20.89-24.06) | -1.19% (-3.73-1.48) | 16.08% (-47.8-98.7) |
| 1936 | 22.35% (20.9-23.94) | 21.93% (20.43-23.65) | -1.83% (-4.65-0.92) | 30.32% (-157.1-335.18) |
| 1937 | 21.5% (20.35-23.51) | 21.74% (20.21-23.35) | -0.72% (-3.36-2.12) | 15.47% (-260.19-213.22) |
| 1938 | 21.99% (20.57-23.61) | 22% (20.45-23.7) | 0.06% (-2.6-2.72) | 3.5% (-216.71-542.03) |
| 1939 | 22.26% (20.79-24.01) | 21.95% (20.44-23.55) | -1.39% (-4.01-1.18) | 23.71% (-115.55-421.03) |
| 1940 | 21.05% (19.64-22.67) | 20.97% (19.5-22.52) | -0.38% (-2.96-2.48) | 11.74% (-370.4-490.87) |
| 1941 | 17.08% (15.86-18.46) | 17.38% (16.13-18.76) | 1.75% (-1.21-4.64) | 7.22% (-5.59-20.57) |
| 1942 | 26.56% (25.07-28.34) | 26.23% (24.61-28.02) | -1.24% (-3.45-1.34) | 6.23% (-6.72-17.63) |
| 1943 | 24.15% (22.69-25.85) | 24.14% (22.56-25.91) | -0.02% (-2.75-2.76) | 0.38% (-25.5-23.07) |
| 1944 | 24.36% (22.77-26.14) | 24.07% (22.47-25.85) | -1.17% (-3.61-1.46) | 8.78% (-13.29-29.56) |
| 1945 | 21.08% (19.59-22.69) | 21.08% (19.59-22.69) | 0% (0-0) | 0% (0-0) |
| 1946 | 24.18% (22.63-25.91) | 24.16% (22.51-25.83) | -0.08% (-2.71-2.79) | 0.32% (-27.56-21.12) |
| 1947 | 21.55% (20.14-23.17) | 20.85% (19.42-22.35) | -3.26% (-6.03-0.5) | 60.79% (-967.54-853.66) |
| 1948 | 24% (22.66-25.59) | 23.63% (22.21-25.15) | -1.51% (-4.06-0.71) | 12.19% (-6.38-39.17) |
| 1949 | 23.15% (21.7-24.6) | 22.83% (21.43-24.34) | -1.39% (-4.01-1.37) | 16.29% (-18.72-60.13) |
| 1950 | 22.91% (21.51-24.45) | 22.54% (21.17-24.06) | -1.62% (-4.12-1.03) | 21.06% (-20.33-78.85) |
| 1951 | 19.52% (18.24-20.9) | 19.28% (18.05-20.62) | -1.2% (-4.36-1.89) | -13.41% (-159.17-27.49) |
| 1952 | 19.82% (18.53-21.27) | 19.65% (18.34-20.96) | -0.88% (-3.59-1.59) | -10.39% (-137.9-200.88) |
| 1953 | 20.42% (19.09-21.79) | 20.39% (19.14-21.72) | -0.14% (-2.82-2.57) | -0.04% (-201.02-352.97) |
| 1954 | 25.24% (23.77-26.84) | 24.53% (23.06-26.06) | -2.78% (-5.41-0.23) | 16.77% (1.6-34.86) |
| 1955 | 25.78% (24.22-27.42) | 25.59% (24.06-27.2) | -0.7% (-3.14-1.81) | 4.23% (-11.4-16.8) |
| 1956 | 23.51% (22.25-25.14) | 23.53% (22.05-25.14) | 0.09% (-2.45-2.92) | -0.95% (-41.15-27.69) |
| 1957 | 19.61% (18.34-21) | 19.7% (18.4-21.08) | 0.48% (-2.1-3.25) | 6.38% (-63.49-105.87) |
| 1958 | 21.65% (20.32-23.16) | 21.44% (20.03-22.9) | -0.98% (-3.48-1.68) | 17.59% (-689.66-295.34) |
| 1959 | 31.13% (29.49-32.96) | 30.8% (29.11-32.55) | -1.04% (-3.28-1.46) | 3.37% (-4.54-9.99) |
| 1960 | 24.47% (22.95-26.19) | 23.9% (22.45-25.55) | -2.3% (-4.77-0.29) | 17.28% (-2.48-37.6) |
| 1961 | 22.49% (21.09-23.99) | 22.22% (20.84-23.78) | -1.17% (-3.89-1.56) | 19.12% (-49.98-153.54) |
| Year | Hispanic | White  |
|------|----------|--------|
| 1962 | 25.48% (23.98-27.09) | 25.02% (23.6-26.55) | -1.81% (-4.34-0.73) | 10.64% (-4.31-26.8) |
| 1963 | 20.96% (19.72-22.21) | 20.61% (19.35-21.88) | -1.63% (-4.16-1.39) | -12.47% (-922.17-860.11) |
| 1964 | 19.64% (18.36-20.86) | 19.31% (18.1-20.51) | -1.67% (-4.52-1.33) | -22.65% (-211.09-20.24) |
| 1965 | 22.26% (20.84-23.63) | 21.96% (20.51-23.37) | -1.34% (-3.77-1.45) | 21.95% (-184.74-227.78) |
| 1966 | 25.11% (23.21-27.12) | 24.61% (22.75-26.47) | -1.99% (-4.79-0.68) | 12.33% (-4.9-33.42) |
| 1967 | 16.68% (14.56-18.86) | 16.35% (14.46-18.58) | -1.94% (-5.07-1.06) | 6.02% (-3.52-16.15) |
| 1968 | 16.22% (14.52-17.95) | 15.58% (13.99-17.28) | -3.96% (-6.81-1.25) | 13.08% (4.12-22.57) |
| 1969 | 18.34% (16.49-20.26) | 17.49% (15.8-19.25) | -4.62% (-7.05-2.28) | 11.73% (6.04-18.62) |
| 1970 | 13.07% (11.8-14.4) | 12.69% (11.43-13.99) | -2.92% (-5.5-0.5) | 20.61% (2.75-61.84) |
| 1971 | 15.54% (13.82-17.16) | 15.05% (13.51-16.46) | -3.13% (-5.64-0.62) | 11.35% (2.34-21.17) |
| 1972 | 14.17% (12.7-15.58) | 13.68% (12.23-15.04) | -3.49% (-6.06-0.89) | 16.59% (4.34-36.09) |
| 1973 | 16.33% (14.71-17.88) | 15.84% (14.28-17.32) | -3.03% (-5.3-0.68) | 9.74% (2.3-17.24) |
| 1974 | 12.64% (11.37-13.8) | 12.52% (11.28-13.76) | -0.89% (-3.36-1.44) | 7.57% (-17.97-56.65) |
| 1975 | 15.09% (13.73-16.31) | 14.79% (13.49-16.04) | -1.95% (-4.41-0.55) | 7.95% (-2.16-16.95) |
| 1976 | 12.94% (11.75-14.03) | 12.93% (11.79-14.06) | -0.09% (-2.64-2.33) | 0.24% (-24.65-24.38) |
| 1977 | 15.52% (14.2-16.84) | 15.12% (13.79-16.36) | -2.61% (-4.83-0.28) | 9.41% (1.04-18.15) |
| 1978 | 12.03% (10.96-13.09) | 12.18% (11.11-13.23) | 1.31% (-1.38-3.88) | -17.41% (-222.33-106.51) |
| 1979 | 16.48% (15.18-17.76) | 16.04% (14.77-17.26) | -2.69% (-5.15-0.4) | 8.44% (1.3-16.36) |
| 1980 | 17.88% (16.45-19.22) | 17.38% (15.98-18.73) | -2.8% (-4.97-0.57) | 7.55% (1.42-13.83) |
| 1981 | 16.34% (15.05-17.59) | 15.96% (14.71-17.23) | -2.3% (-4.7-0.14) | 7.68% (-0.5-15.44) |
| 1982 | 13.92% (12.7-15.05) | 13.56% (12.41-14.67) | -2.57% (-5.07-0.18) | 13.18% (0.92-33.11) |
| 1983 | 14.43% (13.28-15.51) | 14.07% (12.92-15.13) | -2.54% (-4.93-0.14) | 11.16% (0.64-25.14) |
| 1984 | 12.2% (11.09-13.2) | 12% (10.9-12.96) | -1.62% (-4.01-0.86) | 18.43% (-60.12-147.31) |
| 1985 | 12.29% (11.1-13.43) | 12.19% (11.05-13.23) | -0.77% (-3.14-1.67) | 9.07% (-47.36-66.78) |
| 1986 | 12.36% (11.09-13.45) | 12.15% (10.95-13.21) | -1.73% (-4.62-0.78) | 16.97% (-30.41-95.16) |
| 1987 | 13.11% (11.85-14.21) | 12.83% (11.62-13.92) | -2.14% (-4.51-0.71) | 14.69% (-4.8-49.49) |
| 1988 | 12.45% (11.32-13.55) | 12.21% (11.07-13.27) | -1.91% (-4.3-0.73) | 18.06% (-17.82-96.11) |
| 1989 | 12.29% (11.15-13.32) | 12.15% (11.04-13.16) | -1.14% (-3.62-1.74) | 12.36% (-51.73-78.39) |
| 1990 | 15.41% (14.15-16.58) | 14.92% (13.69-16.04) | -3.18% (-5.29-0.66) | 11.81% (2.43-21.13) |
| 1991 | 13.53% (12.41-14.58) | 13.16% (12.05-14.18) | -2.76% (-5.12-0.58) | 15.66% (3.68-38) |
| Year | Race | Percent (Last 2 yrs)  | Percent (Last 3 yrs)  | Percent (Last 4 yrs)  | Percent (Last 5 yrs)  |
|------|------|----------------------|----------------------|----------------------|----------------------|
| 1941 | White| 10.39% (9.4-11.24)  | 10.52% (9.54-11.38) | 1.24% (-1.3-3.81)    | 14.87% (-45.89-201.07)|
| 1942 | White| 18.94% (17.43-20.32)| 18.17% (16.74-19.5) | -4.07% (-6.28--1.83) | 9.94% (4.59-15.62)   |
| 1943 | White| 14.34% (13.14-15.5) | 14.06% (12.89-15.22)| -1.92% (-4.31-0.39)  | 8.79% (-1.98-21.54)  |
| 1944 | White| 14.73% (13.53-15.9) | 14.27% (13.06-15.43)| -3.15% (-5.4--0.72)  | 13.17% (3.38-24.78)  |
| 1945 | White| 11.21% (10.18-12.16)| 11.21% (10.18-12.16)| 0% (0-0)              | 0% (0-0)             |
| 1946 | White| 13.66% (12.43-14.79)| 13.51% (12.3-14.65) | -1.14% (-3.7-1.25)   | 6.51% (-8.01-22.17)  |
| 1947 | White| 13.46% (12.28-14.58)| 12.97% (11.79-14.05)| -3.58% (-5.85--1.15) | 21.21% (7.5-48.71)   |
| 1948 | White| 15.69% (14.41-16.91)| 15.23% (13.97-16.39)| -2.9% (-5.34--0.57)  | 10.34% (2.01-19.42)  |
| 1949 | White| 15.39% (14.13-16.59)| 15.03% (13.76-16.18)| -2.35% (-4.82-0.01)  | 8.45% (0.04-17.66)   |
| 1950 | White| 16.65% (15.25-17.89)| 16.17% (14.85-17.39)| -2.84% (-5.01--0.5)  | 8.64% (1.58-15.78)   |
| 1951 | White| 13.53% (12.4-14.65) | 13.3% (12.19-14.36)| -1.67% (-4.07-1.1)   | 9.83% (-6.68-27.68)  |
| 1952 | White| 14.67% (13.5-15.77) | 14.42% (13.27-15.49)| -1.73% (-4.38-0.8)   | 7.04% (-3.17-18.55)  |
| 1953 | White| 14.73% (13.57-15.77)| 14.56% (13.43-15.62)| -1.18% (-3.51--1.22) | 4.72% (-5.2-15.03)   |
| 1954 | White| 20.66% (19.24-22.05)| 19.99% (18.51-21.31)| -3.25% (-5.33--1.02) | 7.02% (2.33-11.65)   |
| 1955 | White| 19.1% (17.78-20.35) | 18.72% (17.34-19.9) | -1.97% (-4.26-0.25)  | 4.7% (-0.58-10.49)   |
| 1956 | White| 15.68% (14.51-16.8) | 15.56% (14.36-16.61)| -0.8% (-3.12-1.49)   | 2.82% (-5.77-10.89)  |
| 1957 | White| 13.07% (12.03-14.01)| 13.22% (12.13-14.13)| 1.17% (-1.59-3.63)   | -8.36% (-32.46-12.97)|
| 1958 | White| 15.49% (14.21-16.61)| 15.42% (14.12-16.49)| -0.48% (-3.02-2.11)  | 1.62% (-8.48-11.57)  |
| 1959 | White| 24.38% (22.66-25.84) | 23.79% (21.92-25.3) | -2.4% (-4.54--0.32)  | 3.83% (0.58-8.52)    |
| 1960 | White| 18.04% (16.58-19.37)| 17.72% (16.2-19.11) | -1.76% (-4.16-0.61)  | 4.51% (-1.61-10.95)  |
| 1961 | White| 16.8% (15.56-18)    | 16.57% (15.28-17.85)| -1.38% (-3.76-1.06)  | 4.24% (-3.26-11.37)  |
| 1962 | White| 19.02% (17.58-20.38)| 18.66% (17.24-20.03)| -1.91% (-4.34-0.32)  | 4.39% (-0.76-10.62)  |
| 1963 | White| 15.65% (14.53-16.76)| 15.47% (14.34-16.55)| -1.15% (-3.58-1.36)  | 4.31% (-4.87-13.25)  |
| 1964 | White| 15.25% (14.1-16.39) | 15.16% (14.09-16.35)| -0.58% (-3.08-1.84)  | 2.09% (-7.31-11.74)  |
| 1965 | White| 18.58% (17.05-20.23)| 18.24% (16.75-19.85)| -1.83% (-4.43-0.49)  | 4.57% (-1.25-11.07)  |
| 1966 | White| 22.44% (20.21-24.92)| 21.8% (19.62-24.14) | -2.84% (-5.38--0.29) | 5.79% (0.56-10.55)   |
Section 2.4. Physical Activity

Mediator Distribution: Physical Activity

|               | empirical data | estimated natural course |
|---------------|----------------|--------------------------|
| %             |                |                          |
| Birth Year    |                |                          |
| 1920          |                |                          |
| 1930          |                |                          |
| 1940          |                |                          |
| 1950          |                |                          |
| 1960          |                |                          |

- no vig. phys. activity
- vig. phys. activity

eFigure 10 Natural course distribution of smoking by birth cohort. "Empirical data" shows the descriptive distribution as observed in the data. "Estimated natural course" is estimated based on the mediator model without holding age and period constant.

Mediator Distribution: Physical Activity

|               | Natural Course | Counterfactual |
|---------------|----------------|---------------|
| %             |                |               |
| Birth Year    |                |               |
| 1920          |                |               |
| 1930          |                |               |
| 1940          |                |               |
| 1950          |                |               |
| 1960          |                |               |

- no vig. phys. activity
- vig. physical activity

eFigure 11 Estimated distribution of physical activity categories in natural course and counterfactual scenario by birth year. Age and period are held constant at age 50 and 1996 respectively.
eTable 8 Predicted Probability of elevated depressive symptoms in natural course and counterfactual scenario, relative difference, and contribution by birth cohort. All estimates are presented with 95% confidence intervals. Positive contributions imply that the counterfactual decreases depression risk and negative contributions imply that the counterfactual increases depression risk.

| Birth Cohort | Probability of elevated depressive symptoms (% (95%CI)) | % relative difference | % contribution |
|--------------|--------------------------------------------------------|-----------------------|----------------|
| Natural Course Scenario | Counterfactual Scenario | | |
| 1916 | 20.35% (18.57-22.17) | 19.56% (17.8-21.37) | -3.87% (-7.55--0.31) | 12.22% (0.97-24.93) |
| 1917 | 19.68% (18.19-21.07) | 19.41% (17.98-20.78) | -1.34% (-5.55-2.16) | 4.45% (-8.26-18.11) |
| 1918 | 22.48% (21.06-23.75) | 21.8% (20.46-23.15) | -3.01% (-6.49-0.99) | 7.89% (-2.67-16.83) |
| 1919 | 16.58% (15.47-17.66) | 16.85% (15.71-17.88) | 1.63% (-2.05-5.73) | -10.32% (-46.89-12.06) |
| 1920 | 19.51% (18.28-20.85) | 19.05% (17.85-20.23) | -2.29% (-5.68-1.38) | 8.28% (-5.02-19.39) |
| 1921 | 17.55% (16.37-18.73) | 17.46% (16.26-18.54) | -0.5% (-4.03-3.23) | 2.68% (-18.32-19.99) |
| 1922 | 20.29% (18.97-21.59) | 19.43% (18.21-20.59) | -4.22% (-7.32--1.01) | 13.43% (3.4-23.44) |
| 1923 | 15.21% (14.25-16.19) | 15.28% (14.3-16.26) | 0.54% (-3.46-4.53) | -4.83% (-141.18-49.95) |
| 1924 | 18.6% (17.49-19.71) | 18.43% (17.35-19.53) | -0.88% (-4.59-2.62) | 3.37% (-11.93-18.22) |
| 1925 | 16.26% (15.37-17.37) | 16.09% (15.08-17.14) | -1.08% (-4.64-2.92) | 7.83% (-24.19-35.81) |
| 1926 | 18.43% (17.37-19.57) | 18.33% (17.26-19.5) | -0.52% (-4.24-3.24) | 2.27% (-14.56-16.86) |
| 1927 | 14.93% (13.98-15.9) | 15.02% (14.04-15.93) | 0.56% (-3.21-4.66) | -9.22% (-234.29-93.23) |
| 1928 | 18.96% (17.99-19.97) | 18.63% (17.59-19.66) | -1.71% (-5.9-2.12) | 6.24% (-8.53-22.18) |
| 1929 | 20.94% (19.67-22.14) | 20.45% (19.19-21.57) | -2.31% (-5.91-1.39) | 7.06% (-4.52-17.58) |
| 1930 | 20.22% (18.89-21.38) | 19.59% (18.36-20.67) | -2.63% (-6.57-0.32) | 10.07% (-1.09-21.35) |
| 1931 | 16.87% (15.87-17.88) | 16.77% (15.7-17.78) | -0.57% (-4.42-3.21) | 3.56% (-22.7-26.31) |
| 1932 | 18% (17.01-18.99) | 17.54% (16.5-18.57) | -2.53% (-6.12-0.95) | 11.12% (-4.58-27.99) |
| 1933 | 14.57% (13.7-15.45) | 14.71% (13.8-15.64) | 1.02% (-2.56-4.98) | -10.55% (-582.35-626.23) |
| 1934 | 16.1% (15.1-17.1) | 15.86% (14.89-16.91) | -1.49% (-5.23-2.35) | 11.4% (-24.08-39.05) |
| 1935 | 15.21% (14.27-16.18) | 15.23% (14.32-16.22) | 0.19% (-3.88-3.82) | -2.95% (-108.06-56.13) |
| 1936 | 16.32% (15.27-17.29) | 16.03% (15.09-17.06) | -1.76% (-5.58-2.38) | 13.5% (-18.13-37.5) |
| 1937 | 14.38% (13.55-15.26) | 14.54% (13.75-15.46) | 1.15% (-3.07-5.15) | -10.24% (-619.75-806.46) |
| 1938 | 14.94% (14.03-15.95) | 14.99% (14.16-15.95) | 0.33% (-3.77-4.68) | -3.44% (-229.78-163.42) |
| 1939 | 18.12% (17.15-19.25) | 17.76% (16.75-18.78) | -1.99% (-5.72-1.48) | 9.21% (-7.19-24.35) |
| Year | Value 1 (Range) | Value 2 (Range) | Change 1 (Range) | Change 2 (Range) |
|------|----------------|----------------|-----------------|-----------------|
| 1940 | 15.37% (14.47-16.31) | 15.23% (14.29-16.18) | -0.89% (-4.66-3.19) | 10.87% (-47.41-55.48) |
| 1941 | 12.76% (11.9-13.69) | 12.96% (12.1-13.83) | 1.63% (-2.14-6) | 16.78% (-36.82-68.63) |
| 1942 | 21.73% (20.45-22.96) | 20.68% (19.41-21.84) | -4.83% (-7.98-1.81) | 13.38% (5.38-22.41) |
| 1943 | 16.95% (15.94-17.96) | 16.59% (15.53-17.59) | -2.1% (-5.67-1.4) | 11.94% (-9.4-34.18) |
| 1944 | 16.27% (15.35-17.29) | 15.98% (15.01-16.93) | -1.72% (-5.23-1.96) | 12.46% (-17.26-39.26) |
| 1945 | 14% (13.07-14.99) | 14% (13.07-14.99) | 0% (0-0) | 0% (0-0) |
| 1946 | 17.69% (16.56-18.92) | 16.93% (15.74-18.2) | -4.28% (-7.95-0.67) | 20.39% (3.49-36.74) |
| 1947 | 16.8% (15.71-17.91) | 16.65% (15.49-17.76) | -0.83% (-4.56-2.89) | 5.31% (-20.01-26.65) |
| 1948 | 18.63% (17.55-19.78) | 17.99% (16.96-19.09) | -3.43% (-6.61-0.17) | 14.16% (0.74-27.46) |
| 1949 | 19.16% (18.03-20.3) | 18.23% (17.17-19.31) | -4.81% (-8.24-1.62) | 17.7% (6.1-30.7) |
| 1950 | 20.75% (19.64-21.89) | 19.56% (18.35-20.8) | -5.75% (-9.03-2.52) | 17.44% (8.03-28.36) |
| 1951 | 16.62% (15.64-17.64) | 16.41% (15.34-17.4) | -1.28% (-4.88-2.67) | 7.82% (-21.01-33.13) |
| 1952 | 17.86% (16.89-18.93) | 17.69% (16.68-18.73) | -0.95% (-4.47-3.08) | 4.77% (-16.61-20.73) |
| 1953 | 18.43% (17.44-19.4) | 18.44% (17.44-19.49) | 0.08% (-3.66-3.91) | -0.06% (-16.89-14.54) |
| 1954 | 24.26% (23.1-25.58) | 23.59% (22.4-24.83) | -2.73% (-5.92-0.51) | 6.69% (-1.25-13.75) |
| 1955 | 22.92% (21.92-24.19) | 22.29% (21.2-23.45) | -2.72% (-6.23-0.69) | 7.11% (-1.82-15.71) |
| 1956 | 18.98% (18.2-20.03) | 19.15% (18.16-20.16) | 0.91% (-2.81-4.66) | -3.76% (-19.63-10.48) |
| 1957 | 14.61% (13.77-15.54) | 15.18% (14.36-16.05) | 3.95% (-0.06-8.36) | -75.37% (-990.94-1235.25) |
| 1958 | 17.85% (16.99-18.81) | 18.27% (17.22-19.34) | 2.34% (-1.7-6.46) | -10.35% (-33.57-7.45) |
| 1959 | 28.22% (26.91-29.55) | 27.17% (25.79-28.48) | -3.71% (-6.84-0.67) | 7.21% (-1.36-13.61) |
| 1960 | 21.57% (20.37-22.82) | 21.26% (20.09-22.43) | -1.43% (-4.7-2.11) | 4.54% (-6.26-12.97) |
| 1961 | 19.81% (18.81-20.92) | 19.45% (18.41-20.51) | -1.8% (-5.59-1.8) | 6.15% (-6.92-18.49) |
| 1962 | 22.08% (20.98-23.23) | 21.77% (20.66-22.88) | -1.38% (-5.01-2.18) | 3.67% (-6.3-13.73) |
| 1963 | 17.1% (16.37-17.99) | 17.77% (16.94-18.68) | 3.98% (-0.32-7.76) | -22.63% (-48.46-1.59) |
| 1964 | 16.8% (16.01-17.65) | 17.3% (16.5-18.22) | 2.98% (-0.72-6.85) | -17.63% (-47.93-3.89) |
| 1965 | 20.97% (19.93-22.23) | 20.99% (19.85-22.3) | 0.14% (-3.48-4.24) | -0.11% (-13.13-10.13) |
| 1966 | 22.67% (21.12-24.34) | 22.4% (20.91-24.09) | -1.16% (-5.16-2.64) | 2.98% (-6.87-12.97) |
eTable 9 Predicted Probability of elevated depressive symptoms in natural course and counterfactual scenario, relative difference, and contribution by birth cohort and stratified by sex. All estimates are presented with 95% confidence intervals. Positive contributions imply that the counterfactual decreases depression risk and negative contributions imply that the counterfactual increases depression risk.

| Birth Cohort | sex  | Probability of elevated depressive symptoms (% (95%CI)) | % relative difference | % contribution |
|--------------|------|--------------------------------------------------------|-----------------------|---------------|
|              |      | Natural Course Scenario                                  | Counterfactual Scenario |                |
| 1916         | female | 21.58% (19.07-24.13)                                   | 20.92% (18.38-23.35)   | -3.02% (-6.47-0.68) | 10.11% (-2.59-22.57) |
| 1917         | female | 23.84% (21.62-25.99)                                   | 23.2% (21-25.26)       | -2.68% (-6.06-0.73)  | 7.36% (-2.04-16.21)   |
| 1918         | female | 25.31% (23.2-27.29)                                    | 24.6% (22.5-26.54)     | -2.78% (-5.55--0.06) | 6.85% (0.14-14.2)     |
| 1919         | female | 20.1% (18.38-21.74)                                    | 20.16% (18.36-21.94)   | 0.34% (-3.29-3.69)   | -1.27% (-17.26-11.96) |
| 1920         | female | 20.78% (18.82-22.72)                                   | 20.61% (18.6-22.36)    | -0.83% (-4.48-2.64)  | 3.1% (-10.71-15.84)   |
| 1921         | female | 20.38% (18.45-22.23)                                   | 20.4% (18.42-22.22)    | 0.13% (-2.99-3.74)   | -0.57% (-17.91-12.6)  |
| 1922         | female | 20.97% (18.82-22.84)                                   | 20.81% (18.75-22.62)   | -0.75% (-3.94-2.49)  | 2.9% (-10.03-13.84)   |
| 1923         | female | 16.61% (14.94-18.06)                                   | 17.12% (15.38-18.57)   | 3.07% (-0.52-6.89)   | -31.01% (-254.92-98.92) |
| 1924         | female | 21.18% (19.46-22.79)                                   | 21.15% (19.32-22.74)   | -0.12% (-3.25-3.19)  | 0.16% (-11.26-11.81)  |
| 1925         | female | 17.95% (16.42-19.42)                                   | 18.15% (16.54-19.65)   | 1.11% (-2.15-4.48)   | -7.05% (-38.43-12.91) |
| 1926         | female | 22.44% (20.83-23.99)                                   | 22.21% (20.49-23.77)    | -1% (-4.11-2.22)     | 2.91% (-7.25-12.73)   |
| 1927         | female | 15.87% (14.5-17.16)                                    | 16.29% (14.87-17.53)   | 2.63% (-0.98-6.44)   | -36.76% (-1020.85-456.2) |
| 1928         | female | 21.69% (20.15-23.26)                                   | 21.48% (19.83-22.98)   | -0.97% (-4.05-2.31)  | 3.38% (-8.18-13.37)   |
| 1929         | female | 22.76% (21.03-24.48)                                   | 22.48% (20.84-24.29)   | -1.19% (-4.58-2.09)  | 3.57% (-6.71-13.88)   |
| 1930         | female | 21.69% (20.09-23.4)                                    | 21.33% (19.71-23.07)   | -1.67% (-4.68-1.41)  | 5.41% (-4.91-15.22)   |
| 1931         | female | 18.88% (17.44-20.39)                                   | 18.79% (17.35-20.37)   | -0.47% (-4.07-2.97)  | 1.95% (-17.97-21.27)  |
| 1932         | female | 19.13% (17.81-20.71)                                   | 18.86% (17.36-20.39)   | -1.42% (-4.81-1.82)  | 6.99% (-10.22-24.25)  |
| 1933         | female | 15.94% (14.65-17.31)                                   | 15.99% (14.76-17.24)   | 0.34% (-3.82-3.95)   | -3.03% (-272.18-247.55) |
| 1934         | female | 16.22% (14.89-17.5)                                    | 16.2% (14.91-17.42)    | -0.11% (-3.44-3.65)  | 3.37% (-164.45-144.59) |
| 1935         | female | 15.94% (14.61-17.21)                                   | 15.99% (14.78-17.18)   | 0.35% (-3.82)        | -0.24% (-234.79-245.73) |
| 1936         | female | 16.81% (15.54-18.06)                                   | 16.68% (15.36-17.93)   | -0.77% (-3.99-2.96)  | 8.58% (-52.93-59.18)   |
| 1937         | female | 15.72% (14.47-16.91)                                   | 15.77% (14.48-16.95)   | 0.33% (-3.08-3.9)    | -0.02% (-553.52-427.67) |
| 1938         | female | 15.57% (14.4-16.82)                                    | 15.71% (14.43-16.9)    | 0.92% (-2.88-4.85)   | -4.28% (-549.28-486.86) |
| 1939         | female | 19.85% (18.46-21.16)                                   | 19.43% (18.04-20.77)   | -2.09% (-5.29-0.98)  | 8.82% (-4.39-22.19)   |
| 1940         | female | 16.83% (15.48-18.18)                                   | 16.63% (15.3-17.98)    | -1.17% (-4.42-2.38)  | 12.12% (-35.17-61.44)  |
| Year | Gender | Male | Female | Change in Male | Change in Female | Change in Male Percentage | Change in Female Percentage |
|------|--------|------|--------|---------------|------------------|--------------------------|--------------------------|
| 1941 | male   | 13.56% (12.49-14.69) | 13.92% (12.73-15.12) | 2.63% (-0.89-6.47) | 22.39% (-9.87-36.85) |
| 1942 | female | 22.05% (20.52-23.64) | 21.17% (19.53-22.86) | 3.29% (-7.82-4.53) | 12.55% (2.35-22.43)  |
| 1943 | female | 17.6% (16.18-18.93)  | 17.36% (15.89-18.75) | 3.01% (-8.31-5.30) | 10.64% (17.78-36.72) |
| 1944 | female | 18.27% (16.77-19.6)  | 17.96% (16.57-19.2)  | -1.67% (-5.2-3.53) | 10.19% (-10.61-30.12) |
| 1945 | female | 15.15% (13.9-16.34)  | 15.15% (13.9-16.34)  | 0% (0-0)          | 0% (0-0)                 |
| 1946 | female | 17.8% (16.3-19.07)   | 17.36% (15.92-18.61) | 2.49% (-5.9-0.72) | 16.65% (-7.78-45.46)  |
| 1947 | female | 20.11% (18.62-21.41) | 19.44% (17.96-20.68) | 3.32% (-6.59-0.28) | 13.06% (1.37-27.75)  |
| 1948 | female | 19.43% (17.93-20.69) | 18.74% (17.37-20.05) | 3.51% (-6.76-0.56) | 15.87% (2.87-31.63)  |
| 1949 | female | 19.35% (17.97-20.68) | 18.61% (17.28-19.83) | 3.8% (-6.82-0.37) | 17.59% (1.63-33.3)   |
| 1950 | female | 19.78% (18.43-21.1)  | 18.93% (17.6-20.22)  | 4.31% (-7.76-1.28) | 18.34% (5.63-32.61)  |
| 1951 | female | 17.69% (16.47-18.95) | 17.31% (16.1-18.56)  | 2.13% (-5.89-1.23) | 15.23% (-10.14-41.53) |
| 1952 | female | 18.71% (17.39-19.93) | 18.34% (17.1-19.62)  | 1.99% (-5.08-3.17) | 10.72% (-7.89-27.73) |
| 1953 | female | 20.09% (18.8-21.33)  | 19.79% (18.49-21.06) | 1.51% (-4.89-1.55) | 5.77% (-7.02-19.63)  |
| 1954 | female | 26.6% (24.97-28.09)  | 25.48% (23.86-27.09) | -1.3% (-7.06-1.34) | 9.7% (3.17-16.37)   |
| 1955 | female | 24.34% (22.88-25.78) | 23.42% (21.8-24.88)  | 3.79% (-6.88-0.73) | 10.27% (1.92-18.04) |
| 1956 | female | 21.75% (20.24-23.29) | 21.35% (19.81-22.73) | -1.83% (-4.93-1.66) | 6.2% (-5.91-16.02)  |
| 1957 | female | 16.6% (15.42-17.71)  | 17.02% (15.67-18.18) | 2.52% (-1.04-6.33) | 27.75% (-140.96-19.69) |
| 1958 | female | 21.68% (20.23-23.02) | 21.43% (19.95-22.86) | 1.13% (-4.32-1.88) | 4.11% (-6.24-14.39) |
| 1959 | female | 29.75% (27.9-31.48)  | 28.38% (26.58-30.06) | -4.62% (-7.28-0.86) | 9.32% (4.21-14.71)  |
| 1960 | female | 23.28% (21.69-24.84) | 22.62% (20.95-24.14) | -0.97% (-4.76-3.79) | 8.2% (-0.98-17.33) |
| 1961 | female | 21.59% (20.01-23.07) | 21.05% (19.55-22.47) | -3.73% (-5.5-0.8) | 8.47% (-2.83-18.54) |
| 1962 | female | 24.28% (22.78-25.78) | 23.41% (21.91-24.83) | -3.57% (-6.31-0.5) | 9.73% (1.35-16.6)  |
| 1963 | female | 20.83% (19.59-22.12) | 20.63% (19.46-21.88) | -0.93% (-4.59-2.42) | 3.73% (-9.48-15.73) |
| 1964 | female | 19.71% (18.43-21.07) | 19.73% (18.45-21.1)  | 0.11% (-3.52-3.7) | -0.47% (-16.96-15.24) |
| 1965 | female | 24% (22.01-25.79)    | 23.43% (21.62-25.27) | -2.37% (-5.44-0.88) | 6.52% (-2.42-14.92) |
| 1966 | female | 25.67% (23.38-27.97) | 24.99% (22.7-27.34)  | -2.62% (-5.55-0.66) | 6.46% (-1.61-13.91) |
| 1967 | male   | 21.82% (19.04-24.56) | 20.73% (17.8-23.51)  | 5.03% (-9.07-0.72) | 13.22% (2.14-24.8)  |
| 1968 | male   | 22.9% (20.45-25.52)  | 21.71% (19.32-24.1)  | 5.19% (-9-1.82) | 12.27% (4.63-22.53) |
| 1969 | male   | 24.42% (21.94-26.75) | 23.21% (20.85-25.58) | -4.94% (-8.5-1.16) | 11.17% (2.51-18.99) |
| 1970 | male   | 19.25% (17.19-21.06) | 18.64% (16.58-20.42) | -3.15% (-6.95-0.65) | 10.84% (-2.83-23.86) |
| Year | Gender | Value 1 (Range) | Value 2 (Range) | Percentage 1 (Percentage) | Percentage 2 (Percentage) |
|------|--------|----------------|----------------|--------------------------|--------------------------|
| 1920 | male   | 19.76% (17.74-21.62) | 19.04% (17.04-20.98) | -3.67% (-7.3-0.38) | 11.56% (-1.13-24.35) |
| 1921 | male   | 18.41% (16.52-20.23) | 17.8% (15.73-19.75) | -3.31% (-7.27-0.52) | 12.55% (-2.08-28.28) |
| 1922 | male   | 18.55% (16.56-20.35) | 17.89% (15.9-19.79) | -3.55% (-7.54-0.75) | 13.19% (-2.67-28.73) |
| 1923 | male   | 14.6% (13.03-16.25)  | 14.56% (12.95-16.14) | -0.24% (-4.54-3.97) | 5.29% (-134.28-121.95) |
| 1924 | male   | 17.41% (15.53-19.16) | 17.01% (15.17-18.59) | -2.26% (-5.98-2.02) | 10.31% (-9.97-26.88) |
| 1925 | male   | 14.94% (13.43-16.51) | 14.67% (13.14-16.17) | -1.75% (-5.42-2.54) | 16.91% (-82.52-119.37) |
| 1926 | male   | 18.27% (16.56-19.89) | 17.67% (15.88-19.35) | -3.29% (-7.54-0.96) | 12.76% (-3.79-29.14) |
| 1927 | male   | 13.67% (12.23-15.21) | 13.73% (12.29-15.09) | 0.48% (-3.82-5.03) | 6.05% (-772.97-384.6) |
| 1928 | male   | 18.28% (16.47-19.98) | 17.64% (15.88-19.16) | -3.45% (-7.08-0.62) | 13.69% (-2.54-28.49) |
| 1929 | male   | 19.68% (17.78-21.45) | 19.16% (17.22-20.73) | -2.67% (-6.36-1.23) | 8.8% (-4.26-20.12) |
| 1930 | male   | 19.6% (17.76-21.29)  | 19% (17.05-20.64)  | -3.04% (-6.81-1.31) | 9.35% (-4.12-23.07) |
| 1931 | male   | 17.84% (16.14-19.53) | 17.51% (15.72-18.98) | -1.86% (-5.57-2.07) | 8.31% (-8.78-24.77) |
| 1932 | male   | 17.69% (15.96-19.26) | 17.34% (15.58-18.84) | -1.92% (-5.99-2.01) | 7.71% (-9.75-26.39) |
| 1933 | male   | 15.52% (13.96-17.05) | 15.45% (13.84-16.94) | -0.39% (-4.45-3.65) | 3.75% (-40.96-40.58) |
| 1934 | male   | 16.35% (14.71-17.95) | 16.38% (14.73-17.95) | 0.2% (-3.84-4.46) | -0.73% (-32.81-24.22) |
| 1935 | male   | 15.95% (14.39-17.48) | 16.03% (14.47-17.52) | 0.52% (-4.16-4.92) | -4.18% (-43.65-26.04) |
| 1936 | male   | 16.5% (14.97-18)    | 16.52% (14.86-18.13) | 0.12% (-4.09-4.26) | -0.75% (-27.6-22.42) |
| 1937 | male   | 15.2% (13.78-16.6)  | 15.42% (13.86-16.89) | 1.47% (-2.73-6.52) | -11.97% (-113.92-28.58) |
| 1938 | male   | 15.21% (13.72-16.62) | 15.43% (13.9-16.96)  | 1.5% (-2.76-5.98) | -12.65% (-93.84-32.51) |
| 1939 | male   | 18.49% (16.83-20.03) | 18.31% (16.65-19.81) | -0.98% (-5.02-3.3) | 3.25% (-12.88-18.6) |
| 1940 | male   | 16.04% (14.48-17.61) | 16.11% (14.56-17.54) | 0.51% (-4.02-4.95) | -4.29% (-39.31-25.94) |
| 1941 | male   | 12.91% (11.54-14.11) | 13.31% (11.93-14.55) | 3.15% (-1.41-8.17) | 41.95% (-753.42-863.49) |
| 1942 | male   | 19.73% (18.1-21.4)  | 19.34% (17.57-21.06) | -1.96% (-5.52-2.07) | 6.21% (-6.68-17.54) |
| 1943 | male   | 15.91% (14.4-17.37)  | 15.85% (14.37-17.29) | -0.32% (-4.25-4.18) | 2.35% (-37.99-30.69) |
| 1944 | male   | 15.67% (14.22-17.15) | 15.41% (13.98-16.85) | -1.63% (-5.96-2.45) | 11.02% (-21.51-53.34) |
| 1945 | male   | 13.44% (12.13-14.87) | 13.44% (12.13-14.87) | 0% (0-0) | 0% (0-0) |
| 1946 | male   | 15.42% (13.94-17.07) | 15.17% (13.66-16.72) | -1.65% (-5.93-2.34) | 12.43% (-24.9-60.35) |
| 1947 | male   | 17.73% (16.1-19.42)  | 17.26% (15.67-18.88) | -2.62% (-6.6-1.08) | 10.66% (-4.74-28.35) |
| 1948 | male   | 17.98% (16.48-19.63) | 17.56% (16.04-19.25) | -2.31% (-6.15-1.96) | 9.53% (-8.22-24.03) |
| 1949 | male   | 19.2% (17.55-20.8)  | 18.86% (17.18-20.54) | -1.78% (-5.93-2.11) | 5.86% (-6.89-20.76) |
| Birth Cohort | race/ethnicity | Natural Course Scenario | Counterfactual Scenario | % relative difference | % contribution |
|-------------|---------------|-------------------------|-------------------------|------------------------|---------------|
| 1916        | Black         | 34.26% (31.07-37.53)    | 31.95% (29.13-35.09)    | -6.74% (-9.11--4.3)   | 16.66% (10.14-22.8) |
| 1917        | Black         | 31.54% (29.1-34.02)     | 30.27% (28.32-38.5)     | -4.03% (-6.32--1.59)  | 11.39% (4.26-18.35) |
| 1918        | Black         | 34.09% (31.79-36.37)    | 32.4% (30.23-34.79)     | -4.95% (-7.34--2.67)  | 12.22% (6.91-17.84) |
| 1919        | Black         | 25.95% (24.14-27.83)    | 25.55% (23.8-27.4)      | -1.56% (-3.99-1.05)   | 7.15% (-4.92-19.44) |
| 1920        | Black         | 28.69% (26.86-30.75)    | 27.78% (25.97-29.75)    | -3.17% (-5.6-0.75)    | 10.79% (2.66-19.6) |
| 1921        | Black         | 25.98% (24.14-28.11)    | 25.41% (23.6-27.3)      | -2.19% (-4.55-0.61)   | 10.25% (-2.85-21.6) |
| 1922        | Black         | 28.17% (26.36-30.16)    | 26.91% (25.08-28.81)    | -4.47% (-6.64--1.84)  | 16.14% (6.64-24.72) |

*Table 10 Predicted Probability of elevated depressive symptoms in natural course and counterfactual scenario, relative difference, and contribution by birth cohort and stratified by race/ethnicity. All estimates are presented with 95% confidence intervals. Positive contributions imply that the counterfactual decreases depression risk and negative contributions imply that the counterfactual increases depression risk.*
| Year | Ethnicity | Percentage (Range) | Percentage (Range) | % Change | % Change |
|------|-----------|--------------------|--------------------|----------|----------|
| 1923 | Black     | 23.14% (21.46-24.8) | 22.79% (21.22-24.41) | -1.5% (-4.07-1.37) | 12.69% (-13.25-39.22) |
| 1924 | Black     | 24.85% (23.18-26.5) | 24.42% (22.84-26.06) | -1.72% (-3.98-0.79) | 9.52% (-4.45-23.42) |
| 1925 | Black     | 21.31% (19.82-22.88) | 21.09% (19.67-22.59) | -1.03% (-3.66-1.47) | 19.65% (-163.86-332.31) |
| 1926 | Black     | 23.71% (22.12-25.36) | 23.6% (22.08-25.18) | -0.47% (-2.8-2.39) | 3.6% (-21.47-21.11) |
| 1927 | Black     | 19.15% (17.81-20.58) | 19.31% (17.97-20.76) | 0.81% (-1.9-3.73) | 11.74% (-92.32-146.72) |
| 1928 | Black     | 24.23% (22.75-25.92) | 24.05% (22.59-25.66) | -0.73% (-3.03-1.74) | 4.67% (-12.01-20.02) |
| 1929 | Black     | 26.43% (24.74-28.22) | 25.79% (24.23-27.46) | -2.38% (-4.57-0.01) | 10.23% (0.04-19.97) |
| 1930 | Black     | 24.37% (22.8-26.03) | 23.93% (22.44-25.52) | -1.8% (-4.33-0.89) | 10.78% (-6-27.12) |
| 1931 | Black     | 21.45% (19.99-23.09) | 21.65% (20.19-23.19) | 0.97% (-1.63-3.75) | -12.74% (-437.61-360.57) |
| 1932 | Black     | 22.07% (20.69-23.62) | 21.97% (20.57-23.5) | -0.41% (-2.84-2.34) | 6.59% (-42.83-61.43) |
| 1933 | Black     | 21% (19.49-22.49) | 21.27% (19.75-22.74) | 1.27% (-1.28-4.28) | -17.28% (-509.06-413.67) |
| 1934 | Black     | 19.78% (18.37-21.21) | 19.88% (18.49-21.25) | 0.55% (-2.06-3.56) | 12.09% (-269.44-378.93) |
| 1935 | Black     | 19.96% (18.52-21.42) | 20.21% (18.76-21.68) | 1.29% (-1.54-4.18) | 18.26% (-398.77-494.07) |
| 1936 | Black     | 21.23% (19.77-22.77) | 21.11% (19.58-22.6) | -0.54% (-3.23-2.38) | 10.3% (-357.65-193.49) |
| 1937 | Black     | 19.49% (18.09-20.95) | 19.47% (18.15-20.91) | -0.08% (-3.06-2.85) | 0.4% (-242.9-235.94) |
| 1938 | Black     | 18.26% (16.94-19.75) | 18.1% (16.88-19.43) | -0.86% (-3.6-2.34) | -7.98% (-70.56-20.88) |
| 1939 | Black     | 20.07% (18.77-21.51) | 19.69% (18.34-21.21) | -1.91% (-4.56-0.8) | -20.16% (-462.08-638.74) |
| 1940 | Black     | 18.27% (16.95-19.76) | 17.83% (16.54-19.27) | -2.37% (-5.02-0.63) | -21.38% (-122.23-5.62) |
| 1941 | Black     | 14.63% (13.5-15.94) | 14.63% (13.48-15.87) | 0% (-3.07-3.07) | 0.06% (-8.66-8.24) |
| 1942 | Black     | 25.03% (23.4-26.73) | 23.73% (22.16-25.41) | -5.17% (-7.39-2.83) | 27.64% (13.95-43.76) |
| 1943 | Black     | 21.1% (19.56-22.81) | 20.4% (18.96-21.97) | -3.3% (-5.77-0.67) | 60.49% (-639.84-628.98) |
| 1944 | Black     | 23.84% (22.23-25.59) | 23.11% (21.53-24.84) | -3.03% (-5.44-0.54) | 20.39% (3.74-41.27) |
| 1945 | Black     | 20.29% (18.89-21.86) | 20.29% (18.89-21.86) | 0% (0-0) | 0% (0-0) |
| 1946 | Black     | 26.25% (24.55-28.11) | 25.42% (23.79-27.23) | -3.16% (-5.59-0.56) | 13.74% (2.56-26.55) |
| 1947 | Black     | 24.35% (22.73-26.01) | 24.51% (22.95-26.18) | 0.69% (-1.98-3.47) | -3.72% (-25.14-11.21) |
| 1948 | Black     | 27.68% (26.08-29.36) | 27.19% (25.56-28.83) | -1.76% (-3.89-0.67) | 6.61% (-2.57-14.38) |
| 1949 | Black     | 26.81% (25.22-28.48) | 26.23% (24.61-27.89) | -2.16% (-4.46-0.37) | 8.91% (-1.53-18.77) |
| 1950 | Black     | 27.11% (25.49-28.79) | 26.42% (24.78-28.18) | -2.56% (-4.76-0.05) | 10.53% (0.2-19.86) |
| 1951 | Black     | 22.34% (20.95-23.81) | 22.51% (21.1-24.08) | 0.78% (-1.87-3.67) | -8.48% (-65.33-22.01) |
| 1952 | Black     | 24.4% (22.85-26.06) | 24.38% (22.87-25.98) | -0.08% (-2.47-2.42) | 0.73% (-16.25-15.4) |
| Year | Ethnicity | 1920-1929 | 1929-1939 | 1930-1939 | 1931-1940 | 1942-1950 | 1951-1960 | 1961-1970 | 1971-1980 | 1981-1990 | 1991-2000 | 2001-2010 | 2011-2020 |
|------|-----------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| 1923 | Black     | 21.22%     | 24.68%     | 32.91%     | 32.11%     | 24.58%     | 24.27%     | 2.37%      | 21.68%     | 25.32%     | 9.77%      | 19.49%     | 23.16%     |
| 1922 | Black     | 21.16%     | 24.68%     | 31.91%     | 32.11%     | 24.58%     | 24.27%     | 2.37%      | 21.68%     | 25.32%     | 9.77%      | 19.49%     | 23.16%     |
| 1921 | Black     | 21.12%     | 24.68%     | 31.91%     | 32.11%     | 24.58%     | 24.27%     | 2.37%      | 21.68%     | 25.32%     | 9.77%      | 19.49%     | 23.16%     |
| 1920 | Black     | 21.11%     | 24.68%     | 31.91%     | 32.11%     | 24.58%     | 24.27%     | 2.37%      | 21.68%     | 25.32%     | 9.77%      | 19.49%     | 23.16%     |
| 1919 | Black     | 21.10%     | 24.68%     | 31.91%     | 32.11%     | 24.58%     | 24.27%     | 2.37%      | 21.68%     | 25.32%     | 9.77%      | 19.49%     | 23.16%     |
| 1918 | Black     | 21.09%     | 24.68%     | 31.91%     | 32.11%     | 24.58%     | 24.27%     | 2.37%      | 21.68%     | 25.32%     | 9.77%      | 19.49%     | 23.16%     |
| 1917 | Black     | 21.08%     | 24.68%     | 31.91%     | 32.11%     | 24.58%     | 24.27%     | 2.37%      | 21.68%     | 25.32%     | 9.77%      | 19.49%     | 23.16%     |
| 1916 | Black     | 21.07%     | 24.68%     | 31.91%     | 32.11%     | 24.58%     | 24.27%     | 2.37%      | 21.68%     | 25.32%     | 9.77%      | 19.49%     | 23.16%     |

**Note:** The data represents the percentage change over the specified periods for different ethnic groups.
| Year | Race     | Percentage (%) | Margin (%) | Change (%) | Margin (%) |
|------|----------|----------------|------------|------------|------------|
| 1932 | Hispanic | 21.97% (20.42-23.51) | 19.93% (18.54-21.48) | -9.26% (-12.65--5.71) | 181.8% (-1565.97-1849.38) |
| 1933 | Hispanic | 20.65% (19.23-22.22) | 19.44% (18.08-20.95) | -5.88% (-9.56--2.12) | -92.76% (-2468.66-2884.05) |
| 1934 | Hispanic | 23.78% (22.16-25.51) | 22.75% (21.17-24.42) | -4.32% (-7.73--0.84) | 37.51% (7.69-91) |
| 1935 | Hispanic | 22.64% (21.09-24.24) | 22.19% (20.7-23.8) | -1.96% (-5.42--1.45) | 27.38% (-60.01-140.57) |
| 1936 | Hispanic | 22.25% (20.79-23.81) | 21.65% (20.2-23.34) | -2.69% (-6.43--0.62) | 47.58% (-141.26-371.04) |
| 1937 | Hispanic | 21.77% (20.29-23.4) | 21.57% (20.18-23.2) | -0.91% (-4.52--2.89) | 20.56% (-442.25-406.7) |
| 1938 | Hispanic | 21.88% (20.42-23.49) | 21.52% (20.09-23.18) | -1.62% (-5.37--2.06) | 33.7% (-405.67-507.06) |
| 1939 | Hispanic | 22.2% (20.73-23.76) | 21.44% (20.04-23.14) | -3.44% (-7.04--0.44) | 61.82% (-285.27-365.14) |
| 1940 | Hispanic | 21.03% (19.58-22.65) | 20.37% (18.8-22.01) | -3.14% (-6.63--0.45) | -8% (-1711.43-1310.68) |
| 1941 | Hispanic | 17.03% (15.77-18.4) | 16.58% (15.28-17.99) | -2.61% (-6.86--1.2) | -10.83% (-35.78-4.07) |
| 1942 | Hispanic | 26.54% (24.86-28.35) | 24.63% (22.98-26.42) | -7.18% (-10.34--3.79) | 35.38% (19.18-53.16) |
| 1943 | Hispanic | 24.07% (22.41-25.71) | 23.05% (21.46-24.78) | -4.22% (-7.81--0.67) | 34.35% (6.18-76.57) |
| 1944 | Hispanic | 24.27% (22.69-25.96) | 23.57% (22.03-25.2) | -2.89% (-6.28-0.81) | 21.83% (-8.07-53.65) |
| 1945 | Hispanic | 21.04% (19.59-22.54) | 21.04% (19.59-22.54) | 0% (0-0) | 0% (0-0) |
| 1946 | Hispanic | 24.03% (22.28-25.75) | 23.09% (21.51-24.69) | -3.92% (-7.24--0.24) | 32.97% (2.02-71.45) |
| 1947 | Hispanic | 21.36% (19.96-22.75) | 21.77% (20.32-23.32) | 1.94% (1.92-5.54) | -8.88% (-885.22-714.43) |
| 1948 | Hispanic | 23.97% (22.5-25.51) | 23.55% (22.04-25.07) | -1.77% (-5.2-1.89) | 15.77% (-18.32--45.99) |
| 1949 | Hispanic | 23.08% (21.58-24.75) | 22.3% (20.82-23.82) | -3.34% (-6.59-0.05) | 38.45% (-2.92-121.06) |
| 1950 | Hispanic | 22.94% (21.33-24.48) | 21.86% (20.38-23.42) | -4.7% (-7.85--1.07) | 58.21% (9.87-180.18) |
| 1951 | Hispanic | 19.6% (18.4-20.98) | 19.65% (18.37-21.16) | 0.27% (-3.45-4.17) | 2.77% (-124.41-105.47) |
| 1952 | Hispanic | 19.81% (18.4-21.29) | 19.48% (18.15-20.99) | -1.62% (-5.56-2.41) | 22.06% (-540.77-103.63) |
| 1953 | Hispanic | 20.42% (19.1-21.88) | 20.25% (18.9-21.79) | -0.84% (-4.44-3.5) | -9.12% (-596.28-500) |
| 1954 | Hispanic | 25.28% (23.65-26.94) | 24.5% (23.05-26.27) | -3.07% (-6.19-0.41) | 17.84% (-2.23-40.37) |
| 1955 | Hispanic | 25.71% (24.17-27.49) | 24.78% (23.26-26.52) | -3.61% (-6.93--0.32) | 20.18% (1.69-39.09) |
| 1956 | Hispanic | 23.5% (22.05-25.09) | 23.31% (21.9-24.96) | -0.78% (-4.22-1.39) | 8.82% (-39.3-42.34) |
| 1957 | Hispanic | 19.59% (18.27-20.93) | 19.5% (18.24-20.97) | -0.44% (-4.28-1.36) | -4.56% (-159.68-70.8) |
| 1958 | Hispanic | 21.66% (20.16-23.21) | 21.25% (19.84-22.74) | -1.86% (-5.46-1.88) | 45.4% (-619.1-519.73) |
| 1959 | Hispanic | 31.23% (29.55-33.03) | 29.02% (27.35-30.85) | -7.07% (-10.05--4.25) | 21.82% (12.97-31.27) |
| 1960 | Hispanic | 24.46% (22.82-26.29) | 23.18% (21.72-24.76) | -5.21% (-8.34--1.78) | 37.37% (14.68-67.77) |
| 1961 | Hispanic | 22.57% (21.26-24.11) | 21.34% (19.98-22.81) | -5.46% (-8.76--2.02) | 80% (21.51-357.18) |
| Year | Hispanic | White |
|------|----------|-------|
| 1962 | 25.51%   | 16.32%|
| 1963 | 20.96%   | 16.46%|
| 1964 | 19.59%   | 16.49%|
| 1965 | 22.15%   | 16.51%|
| 1966 | 24.94%   | 16.47%|
| 1967 | 16.92%   | 16.53%|
| 1968 | 16.35%   | 16.57%|
| 1969 | 18.46%   | 16.61%|
| 1970 | 13.19%   | 16.66%|
| 1971 | 15.72%   | 16.71%|
| 1972 | 14.32%   | 16.76%|
| 1973 | 16.55%   | 16.81%|
| 1974 | 12.88%   | 16.86%|
| 1975 | 15.35%   | 16.92%|
| 1976 | 13.24%   | 16.97%|
| 1977 | 15.71%   | 17.02%|
| 1978 | 12.37%   | 17.07%|
| 1979 | 16.7%    | 17.12%|
| 1980 | 18.08%   | 17.17%|
| 1981 | 16.53%   | 17.22%|
| 1982 | 14.09%   | 17.27%|
| 1983 | 14.63%   | 17.32%|
| 1984 | 12.37%   | 17.37%|
| 1985 | 12.49%   | 17.42%|
| 1986 | 12.52%   | 17.47%|
| 1987 | 13.29%   | 17.52%|
| 1988 | 12.61%   | 17.57%|
| 1989 | 12.48%   | 17.62%|
| 1990 | 15.55%   | 17.67%|
| 1991 | 13.63%   | 17.72%|

Note: All values are percentages.
| Year | Race | Value 1 | Value 2 | Value 3 | Value 4 |
|------|------|---------|---------|---------|---------|
| 1941 | White| 10.6% (9.63-11.58) | 10.56% (9.61-11.53) | -0.29% (-5-4.43) | -0.13% (-200.63-272.07) |
| 1942 | White| 19% (17.54-20.38) | 17.62% (16.19-19.01) | -7.25% (-11.14--3.15) | 18.19% (7.63-28.28) |
| 1943 | White| 14.46% (13.26-15.71) | 13.87% (12.65-15.13) | -4.01% (-8-0.08) | 18.78% (-0.42-37.57) |
| 1944 | White| 14.79% (13.55-16.06) | 14.17% (12.96-15.41) | -4.16% (-8.37--0.04) | 17.95% (0.19-35.34) |
| 1945 | White| 11.32% (10.33-12.38) | 11.32% (10.33-12.38) | 0% (0-0) | 11.32% (0-0) |
| 1946 | White| 13.82% (12.61-15.03) | 13.21% (12.1-14.41) | -4.41% (-8.5-0.23) | 25.61% (-1.49-53.54) |
| 1947 | White| 13.53% (12.29-14.7) | 13.23% (12.12-14.53) | -2.2% (-6.48-2.27) | 12.96% (-1.6-42.15) |
| 1948 | White| 15.78% (14.57-17.15) | 14.99% (13.89-16.29) | -4.95% (-8.89--0.96) | 17.75% (3.52-31.17) |
| 1949 | White| 15.53% (14.32-16.86) | 14.49% (13.28-15.79) | -6.63% (-10.33--2.89) | 25.14% (10.44-38.8) |
| 1950 | White| 16.82% (15.46-18.18) | 15.46% (14.13-16.82) | -8.06% (-10.99--4.18) | 25.27% (13.21-34.49) |
| 1951 | White| 13.66% (12.46-14.95) | 13.13% (11.98-14.32) | -3.88% (-7.7-0.22) | 23.29% (-1.05-49.44) |
| 1952 | White| 14.87% (13.63-16.16) | 14.2% (12.99-15.36) | -4.5% (-7.97--0.66) | 19.38% (2.86-36.17) |
| 1953 | White| 14.89% (13.76-16.04) | 14.33% (13.14-15.41) | -3.71% (-7.68-0.66) | 15.56% (-2.63-32.6) |
| 1954 | White| 20.71% (19.12-22.34) | 19.41% (18.01-20.85) | -6.21% (-10.01--2.7) | 13.67% (6.05-21.36) |
| 1955 | White| 19.21% (17.75-20.64) | 18.14% (16.84-19.46) | -5.55% (-9.25--1.61) | 13.77% (4.03-22.27) |
| 1956 | White| 15.77% (14.52-16.96) | 15.45% (14.28-16.7) | -1.98% (-5.81-1.78) | 7% (-6.92-20.12) |
| 1957 | White| 13.21% (12.21-14.21) | 12.34% (12.2-14.33) | 0.22% (-3.82-4.19) | -1.39% (-39.26-27.08) |
| 1958 | White| 15.53% (14.4-16.68) | 15.47% (14.28-16.72) | -0.36% (-4.5-3.93) | 1.95% (-15.44-15.48) |
| 1959 | White| 24.3% (22.62-25.91) | 23.02% (21.37-24.61) | -5.27% (-8.85--1.46) | 9.99% (2.9-16.29) |
| 1960 | White| 18.01% (16.59-19.52) | 17.57% (16.11-19.03) | -2.41% (-6.05-1.96) | 6.33% (-5.51-16.4) |
| 1961 | White| 16.82% (15.53-18) | 16.38% (15.08-17.75) | -2.61% (-6.49-1.59) | 8.42% (-4.85-19) |
| 1962 | White| 18.95% (17.59-20.31) | 18.55% (17.21-19.94) | -2.07% (-5.79-1.88) | 5.14% (-5.02-14.13) |
| 1963 | White| 15.64% (14.5-16.79) | 15.84% (14.72-16.98) | 1.33% (-2.91-5.79) | -5% (-22.55-9.31) |
| 1964 | White| 15.3% (14.23-16.51) | 15.33% (14.26-16.49) | 0% (-3.71-4.35) | -0.85% (-17.88-14.14) |
| 1965 | White| 18.6% (17.16-20.07) | 18.08% (16.58-19.77) | -2.79% (-6.75-0.9) | 6.91% (-2.37-16.88) |
| 1966 | White| 22.34% (20.07-24.73) | 21.17% (19.06-23.46) | -5.23% (-8.82-1.48) | 10.72% (2.99-17.99) |
Section 2.5: BMI

Mediator Distribution: BMI

| empirical data | estimated natural course |
|----------------|-------------------------|
| %              | %                       |
| 1920, 1930, 1940, 1950, 1960 | 1920, 1930, 1940, 1950, 1960 |

eFigure 12 Natural course distribution of smoking by birth cohort. "Empirical data" shows the descriptive distribution as observed in the data. "Estimated natural course" is estimated based on the mediator model without holding age and period constant.

Mediator Distribution: BMI

| Natural Course | Counterfactual |
|----------------|---------------|
| %              | %             |
| 1920, 1930, 1940, 1950, 1960 | 1920, 1930, 1940, 1950, 1960 |

eFigure 13 Estimated distribution of BMI categories in natural course and counterfactual scenario by birth year. Age and period are held constant at age 50 and 1996 respectively.
**etTable 11 Predicted probability of elevated depressive symptoms in natural course and counterfactual scenario, relative difference, and contribution by birth cohort. All estimates are presented with 95% confidence intervals. Positive contributions imply that the counterfactual decreases depression risk and negative contributions imply that the counterfactual increases depression risk**

| Birth Cohort | Probability of elevated depressive symptoms (% (95%CI)) | % relative difference | % contribution |
|--------------|-------------------------------------------------------|----------------------|---------------|
|              | Natural Course Scenario                               | Counterfactual Scenario |               |
| 1916         | 20.2% (18.32-22.09)                                   | 20.9% (19.03-22.89)   | 3.5% (2.02-4.88) | -11.09% (-17.56--6.19) |
| 1917         | 19.59% (18.21-21.11)                                  | 20.33% (18.86-21.9)   | 3.74% (2.29-5.22) | -12.84% (-18.63--7.72) |
| 1918         | 22.24% (20.96-23.69)                                  | 22.96% (21.65-24.48)  | 3.24% (1.86-4.58) | -8.74% (-12.46--4.86) |
| 1919         | 16.51% (15.49-17.69)                                  | 17.16% (16.09-18.41)  | 3.93% (2.59-5.32) | -24.65% (-43.45--14.55) |
| 1920         | 19.26% (18.1-20.63)                                   | 19.81% (18.61-21.25)  | 2.83% (1.48-4.37) | -10.06% (-16.31--5.22) |
| 1921         | 17.41% (16.23-18.73)                                  | 17.95% (16.77-19.25)  | 3.1% (1.65-4.51)  | -15.21% (-26.04--7.75) |
| 1922         | 20.05% (18.78-21.43)                                  | 20.45% (19.24-21.85)  | 2.01% (0.65-3.41) | -6.44% (-11.92--2.09) |
| 1923         | 15.11% (14.17-16.14)                                  | 15.56% (14.66-16.6)   | 3% (1.49-4.48)    | -37.3% (-175.83--14.34) |
| 1924         | 18.42% (17.42-19.48)                                  | 18.88% (17.85-19.98)  | 2.51% (1.33-3.88) | -10.03% (-16.74--5.39) |
| 1925         | 16.07% (15.15-17.03)                                  | 16.43% (15.52-17.45)  | 2.27% (0.73-3.81) | -16.61% (-35.31--5.09) |
| 1926         | 18.21% (17.23-19.22)                                  | 18.62% (17.68-19.72)  | 2.24% (0.7-3.6)   | -9.4% (-16.74--3.06) |
| 1927         | 14.76% (13.86-15.64)                                  | 15.09% (14.2-16.01)   | 2.26% (0.71-3.81) | -35.63% (-226.73-48.34) |
| 1928         | 18.74% (17.75-19.7)                                   | 19.09% (18.03-20.2)   | 1.89% (0.54-3.19) | -7.4% (-12.99--2.11) |
| 1929         | 20.74% (19.53-21.91)                                  | 21.12% (19.83-22.27)  | 1.86% (0.39-3.29) | -5.48% (-10.17--1.15) |
| 1930         | 19.99% (18.81-21.09)                                  | 20.22% (18.98-21.42)  | 1.19% (-0.11-2.55) | -3.88% (-8.51-0.36) |
| 1931         | 16.74% (15.65-17.71)                                  | 17.02% (15.91-18.04)  | 1.65% (0.06-3.16) | -9.36% (-21.21--0.29) |
| 1932         | 17.8% (16.72-18.82)                                   | 18.01% (16.96-19.15)  | 1.2% (-0.23-2.63) | -5.42% (-12.6-1.06) |
| 1933         | 14.46% (13.61-15.33)                                  | 14.7% (13.84-15.57)   | 1.72% (0.04-3.26) | -35.62% (-327.54-314.39) |
| 1934         | 15.92% (14.9-16.88)                                   | 15.99% (15-16.99)     | 0.46% (-1.06-1.94) | -3.62% (-19.49-8.03) |
| 1935         | 15.07% (14.14-16.05)                                  | 15.21% (14.28-16.22)  | 0.96% (-0.58-2.49) | -12.08% (-67.8-8.31) |
| 1936         | 16.17% (15.22-17.27)                                  | 16.26% (15.28-17.43)  | 0.62% (-0.85-2.25) | -4.1% (-18.33-6.44) |
| 1937         | 14.27% (13.39-15.15)                                  | 14.46% (13.55-15.39)  | 1.32% (-0.06-2.9) | -22.27% (-640.96-622.55) |
| 1938         | 14.78% (13.84-15.77)                                  | 14.96% (13.98-15.98)  | 1.19% (-0.29-2.78) | -17.53% (-153.62-34.76) |
| 1939         | 17.91% (16.86-18.99)                                  | 18% (16.98-19.11)     | 0.52% (-0.91-2)   | -2.51% (-9.84-4.18) |
| 1940         | 15.23% (14.32-16.09)                                  | 15.26% (14.3-16.15)   | 0.22% (-1.41-1.73) | -2.25% (-29.39-18.81) |
| Year | High | Low | Mid | Std | High | Low | Mid | Std |
|------|------|-----|-----|-----|------|-----|-----|-----|
| 1941 | 12.6% (11.72-13.43) | 12.72% (11.84-13.57) | 0.92% (-0.77-2.58) | 9.31% (-9.2-41.16) |
| 1942 | 21.48% (20.33-22.6) | 21.36% (20.19-22.5) | -0.56% (-1.78-0.67) | 1.62% (-1.84-5.14) |
| 1943 | 16.74% (15.76-17.67) | 16.72% (15.75-17.7) | -0.08% (-1.61-1.53) | 0.51% (-9.18-9.99) |
| 1944 | 16.12% (15.25-17.04) | 16.17% (15.31-17.13) | 0.34% (-1.22-1.73) | -2.8% (-14.25-8.97) |
| 1945 | 13.87% (13.02-14.74) | 13.87% (13.02-14.74) | 0% (0-0) | 0% (0-0) |
| 1946 | 17.49% (16.33-18.61) | 17.37% (16.37-18.47) | -0.67% (-2.23-0.78) | 3.29% (-3.99-11.36) |
| 1947 | 16.64% (15.64-17.63) | 16.68% (15.68-17.7) | 0.28% (-1.17-1.69) | -1.57% (-11.33-6.66) |
| 1948 | 18.49% (17.46-19.51) | 18.35% (17.34-19.37) | -0.77% (-2.26-0.62) | 3.08% (-2.41-8.72) |
| 1949 | 18.99% (17.98-20.04) | 18.73% (17.76-19.81) | -1.38% (-2.77-0.06) | 5.13% (-0.2-10.34) |
| 1950 | 20.59% (19.57-21.75) | 20.2% (19.2-21.36) | -1.9% (-3.25-0.6) | 5.75% (1.82-10.06) |
| 1951 | 16.49% (15.6-17.47) | 16.33% (15.43-17.36) | -1% (-2.55-0.63) | 6.27% (-4.15-16.75) |
| 1952 | 17.65% (16.78-18.72) | 17.56% (16.66-18.65) | -0.53% (-1.92-0.83) | 2.31% (-3.98-9.03) |
| 1953 | 18.26% (17.43-19.27) | 18.19% (17.32-19.22) | -0.4% (-1.8-1.05) | 1.65% (-4.44-7.37) |
| 1954 | 24.08% (22.96-25.21) | 23.76% (22.68-24.91) | -1.34% (-2.67-0.11) | 3.21% (0.28-6.19) |
| 1955 | 22.76% (21.78-23.9) | 22.38% (21.4-23.51) | -1.67% (-3.07-0.35) | 4.27% (0.87-7.83) |
| 1956 | 18.88% (17.97-19.85) | 18.63% (17.74-19.64) | -1.28% (-2.69-0.24) | 4.8% (-0.91-10.22) |
| 1957 | 14.55% (13.83-15.35) | 14.5% (13.8-15.22) | -0.3% (-1.75-1.38) | 6.39% (-93.19-105.56) |
| 1958 | 17.8% (16.94-18.73) | 17.67% (16.81-18.6) | -0.72% (-2.2-0.77) | 3.31% (-3.38-10.18) |
| 1959 | 28.11% (26.9-29.45) | 27.47% (26.28-28.72) | -2.29% (-3.53-1.08) | 4.49% (2.12-6.99) |
| 1960 | 21.5% (20.44-22.66) | 20.99% (19.88-22.12) | -2.36% (-3.68-1.04) | 6.69% (2.95-10.33) |
| 1961 | 19.76% (18.79-20.8) | 19.24% (18.31-20.28) | -2.6% (-4.09-1.11) | 8.67% (3.74-13.75) |
| 1962 | 22.08% (21.1-23.15) | 21.37% (20.41-22.44) | -3.21% (-4.64-1.6) | 8.66% (4.26-12.59) |
| 1963 | 17.11% (16.37-17.9) | 16.75% (16.01-17.57) | -2.09% (-3.63-0.55) | 11.1% (3.04-19.51) |
| 1964 | 16.81% (16.07-17.55) | 16.38% (15.62-17.13) | -2.52% (-3.95-1.08) | 14.3% (6.67-23.15) |
| 1965 | 20.97% (19.92-22.03) | 20.29% (19.3-21.31) | -3.23% (-4.56-1.86) | 9.52% (5.55-13.48) |
| 1966 | 22.73% (21.29-24.19) | 21.85% (20.5-23.21) | -3.85% (-5.24-2.5) | 9.81% (6.56-13.69) |
**eTable 12 Predicted Probability of elevated depressive symptoms in natural course and counterfactual scenario, relative difference, and contribution by birth cohort and stratified by sex.** All estimates are presented with 95% confidence intervals. Positive contributions imply that the counterfactual decreases depression risk and negative contributions imply that the counterfactual increases depression risk.

| Birth Cohort | sex | Probability of elevated depressive symptoms (% (95%CI)) | % relative difference | % contribution |
|--------------|-----|--------------------------------------------------------|-----------------------|----------------|
| 1916         | female | 21.2% (18.84-23.75) | 22.35% (19.96-24.92) | 5.4% (3.63-7.2) | -18.57% (-31.7--11.81) |
| 1917         | female | 23.61% (21.55-25.74) | 24.87% (22.74-27.11) | 5.34% (3.8-6.86) | -14.71% (-20.66--10.29) |
| 1918         | female | 24.96% (22.99-26.97) | 26.13% (24.08-28.21) | 4.67% (3.12-6.38) | -11.65% (-16.66--7.64) |
| 1919         | female | 19.96% (18.42-21.63) | 21.09% (19.45-22.79) | 5.65% (4.7-4.3) | -22.91% (-35.48--14.94) |
| 1920         | female | 20.51% (18.81-22.07) | 21.34% (19.65-23.06) | 4.07% (2.37-5.8) | -15.27% (-24.24--8.54) |
| 1921         | female | 20.23% (18.55-21.8) | 21.2% (19.47-22.92) | 4.78% (2.99-6.41) | -18.87% (-29.81--11.34) |
| 1922         | female | 20.73% (19.08-22.42) | 21.47% (19.73-23.25) | 3.57% (1.96-5.21) | -13.11% (-20.67--6.69) |
| 1923         | female | 16.53% (15.16-17.82) | 17.45% (16.05-18.89) | 5.56% (3.68-7.4) | -60.58% (-294.8--24.22) |
| 1924         | female | 21.02% (19.46-22.57) | 21.81% (20.22-23.43) | 3.77% (2.07-5.41) | -13.15% (-21.44--9.1) |
| 1925         | female | 17.79% (16.41-19.14) | 18.42% (17.04-19.85) | 3.59% (1.84-5.62) | -23.34% (-49.47--10.47) |
| 1926         | female | 22.22% (20.66-23.84) | 22.89% (21.3-24.44) | 3.05% (1.47-4.69) | -9.51% (-15.28--4.52) |
| 1927         | female | 15.72% (14.55-16.99) | 16.33% (15.11-17.64) | 3.91% (2.06-5.61) | -71.07% (-1024.74-617.62) |
| 1928         | female | 21.49% (20.05-22.98) | 22.19% (20.74-23.8) | 3.28% (1.58-4.76) | -10.97% (-17.47--5.07) |
| 1929         | female | 22.57% (21.05-24.32) | 23.36% (21.81-25.08) | 3.48% (1.72-5.01) | -10.5% (-15.97--5.29) |
| 1930         | female | 21.44% (19.91-22.98) | 21.94% (20.37-23.51) | 2.34% (0.71-3.85) | -7.91% (-14.11--2.29) |
| 1931         | female | 18.74% (17.4-20.12) | 19.28% (17.87-20.78) | 2.9% (0.95-4.73) | -14.75% (-27.7--5.03) |
| 1932         | female | 18.93% (17.65-20.3) | 19.37% (18.05-20.77) | 2.34% (0.62-3.98) | -11.47% (-22.07--3.08) |
| 1933         | female | 15.83% (14.65-16.99) | 16.29% (15.04-17.56) | 2.92% (0.97-4.67) | -50.89% (-649.69-492.51) |
| 1934         | female | 16.05% (14.81-17.33) | 16.23% (15.17-15.52) | 1.13% (-0.96-2.9) | -15.66% (-135.08-122.41) |
| 1935         | female | 15.8% (14.57-17.01) | 16.09% (14.87-17.32) | 1.87% (0.3-3.76) | -30.44% (-421.68-381.64) |
| 1936         | female | 16.64% (15.4-17.95) | 16.94% (15.66-18.23) | 1.8% (-0.05-3.76) | -18.65% (-74.63-1.84) |
| 1937         | female | 15.56% (14.39-16.73) | 15.99% (14.78-17.21) | 2.73% (0.89-4.52) | -50.98% (-836.55-705.27) |
| 1938         | female | 15.42% (14.25-16.57) | 15.9% (14.68-17.11) | 3.12% (1.24-4.78) | -56.66% (-1264.91-958.06) |
| 1939         | female | 19.65% (18.32-20.97) | 19.9% (18.52-21.22) | 1.27% (-0.27-2.77) | -5.49% (-13.17-1.15) |
| Year | Gender | Mean Age (Min - Max) | Lower 95% CI | Upper 95% CI |
|------|--------|----------------------|--------------|--------------|
| 1940 | female | 16.66% (15.38-18.03) | 16.84% (15.57-18.2) | 1.1% (-0.73-2.8) | -11.79% (-67.23-8.78) |
| 1941 | female | 13.45% (12.42-14.6)  | 13.8% (12.73-14.99) | 2.59% (0.8-4.51)  | 21.38% (5.19-83.55) |
| 1942 | female | 21.76% (20.27-23.28) | 21.68% (20.19-23.29) | -0.35% (-1.97-1.35) | 1.06% (-4.54-6.33) |
| 1943 | female | 17.43% (16.28-18.73) | 17.48% (16.29-18.78) | 0.31% (-1.39-1.97) | -2.27% (-19.25-10.24) |
| 1944 | female | 18.13% (16.98-19.43) | 18.36% (17.13-19.66) | 1.22% (-0.39-2.94) | -7.35% (-20.47-2.45) |
| 1945 | female | 15.04% (13.92-16.2)  | 15.04% (13.92-16.2) | 0% (0-0) | 0% (0-0) |
| 1946 | female | 17.66% (16.41-18.94) | 17.58% (16.31-18.9) | -0.47% (-2.24-1.23) | 3.4% (-10.21-16.51) |
| 1947 | female | 19.95% (18.66-21.35) | 19.94% (18.52-21.27) | -0.03% (-1.86-1.64) | 0.06% (-7.37-7.42) |
| 1948 | female | 19.27% (17.98-20.51) | 19.12% (17.86-20.38) | -0.73% (-2.33-0.99) | 3.51% (-4.92-10.72) |
| 1949 | female | 19.21% (17.99-20.45) | 18.93% (17.66-20.22) | -1.44% (-3.14-0.27) | 6.91% (-1.37-14.7) |
| 1950 | female | 19.61% (18.32-20.83) | 19.21% (17.97-20.5)  | -2.05% (-3.65-0.43) | 8.86% (1.72-16.74) |
| 1951 | female | 17.54% (16.47-18.85) | 17.4% (16.28-18.63) | -0.84% (-2.65-0.92) | 5.87% (-7.24-21.52) |
| 1952 | female | 18.55% (17.46-19.87) | 18.49% (17.4-19.69)  | -0.28% (-2.14-1.56) | 1.41% (-8.3-11.11) |
| 1953 | female | 19.95% (18.78-21.29) | 19.9% (18.78-21.18)  | -0.25% (-2.13-1.41) | 0.81% (-6.09-8.14) |
| 1954 | female | 26.43% (24.9-28.1)  | 25.95% (24.5-27.64)  | -1.82% (-3.19-0.44) | 4.3% (1.03-7.44) |
| 1955 | female | 24.2% (22.78-25.63)  | 23.6% (22.27-25.09)  | -2.47% (-3.96-0.94) | 6.54% (2.49-10.69) |
| 1956 | female | 21.61% (20.21-23.07) | 21.17% (19.88-22.59) | -2.04% (-3.88-0.44) | 6.54% (1.54-12.93) |
| 1957 | female | 16.51% (15.4-17.62)  | 16.61% (15.54-17.82) | 0.61% (-1.22-2.49) | -6.68% (-48.96-18.2) |
| 1958 | female | 21.55% (20.21-23.01) | 21.37% (20.05-22.85) | -0.85% (-2.67-0.87) | 2.69% (-2.84-8.58) |
| 1959 | female | 29.59% (27.98-31.26) | 28.64% (26.99-30.39) | -3.2% (-4.61-1.72) | 6.5% (3.52-9.55) |
| 1960 | female | 23.21% (21.79-24.77) | 22.45% (20.97-23.92) | -3.29% (-4.89-1.63) | 9.32% (4.46-13.97) |
| 1961 | female | 21.51% (20.18-22.86) | 20.81% (19.47-22.13) | -3.26% (-4.92-1.77) | 10.89% (6.01-17.1) |
| 1962 | female | 24.23% (22.93-25.74) | 23.13% (21.87-24.48) | -4.53% (-6.04-2.94) | 11.96% (7.74-16.32) |
| 1963 | female | 20.79% (19.71-22.02) | 20.18% (19.08-21.48) | -2.96% (-4.54-1.33) | 10.72% (5.01-16.79) |
| 1964 | female | 19.68% (18.56-20.92) | 19.1% (18.04-20.34)  | -2.93% (-4.61-1.16) | 12.58% (4.99-20.19) |
| 1965 | female | 23.97% (22.35-25.93) | 22.96% (21.42-24.79) | -4.2% (-5.81-2.53) | 11.4% (6.84-15.88) |
| 1966 | female | 25.66% (23.46-28.17) | 24.51% (22.44-26.91) | -4.51% (-6.01-2.85) | 10.98% (7.15-18.08) |
| 1916 | male   | 21.45% (18.59-24.35) | 21.09% (18.24-24.03) | -1.68% (-3.21-0.12) | 4.54% (0.33-8.9) |
| 1917 | male   | 22.58% (20.11-24.97) | 22.33% (19.92-24.8)  | -1.13% (-2.51-0.24) | 2.77% (-0.55-6.29) |
| 1918 | male   | 24.07% (21.89-26.31) | 24.03% (21.77-26.35) | -0.19% (-1.5-1.2)  | 0.5% (-2.76-3.31) |
| Year | Sex | 1919     | 1920     | 1921     | 1922     | 1923     | 1924     | 1925     | 1926     | 1927     | 1928     | 1929     | 1930     | 1931     | 1932     | 1933     | 1934     | 1935     | 1936     | 1937     | 1938     | 1939     | 1940     | 1941     | 1942     | 1943     | 1944     | 1945     | 1946     | 1947     | 1948     |
|------|-----|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
|      |     | 19.05%  | 19.03%  | -0.13%  | -0.15%  | 0.01%   | 0.01%   | 0.33%   | 0.85%   | 0.3%    | 0.2%    | 0.7%    | 0.1%    | -0.01%  | -0.01%  | 0.1%    | 0.02%   | 0.11%   | 0.32%   | 0.17%   | 0.46%   | 0.08%   | 0.15%   | 0.21%   | 0.15%   | 0.15%   | 0.13%   | 0.07%   | 0.12%   | 0.17%   |
|      |     | (17.2-20.97) | (17.13-20.96) | (-1.53-1.1) | (-1.52-1.1) | (-1.12-1.36) | (-1.12-1.36) | (-0.96-1.56) | (-0.3-2.11) | (-0.98-1.53) | (-0.96-1.56) | (-0.98-1.42) | (-0.57-1.94) | (-1.16-1.37) | (-0.91-1.74) | (-1.29-1.1) | (-1.28-1.32) | (-1.22-1.34) | (-1.34-1.17) | (-1.55-0.96) | (-1.14-1.3) | (-1.51-1.16) | (-1.79-0.81) | (-1.4-1.2) | (-1.51-1.3) | (-1.26-1.22) | (-1.07-1.63) | (-1.04-1.43) | (-1.15-1.3) | (-1.15-1.3) | (-1.27-1.07) | (-4.45-5.36) |
| Birth Cohort | race/ethnicity | Probability of elevated depressive symptoms (% (95%CI)) | % relative difference | % contribution |
|--------------|---------------|--------------------------------------------------------|-----------------------|---------------|
|              |               | Natural Course Scenario | Counterfactual Scenario |                      |               |
| 1916         | Black         | 33.41% (30.17-36.63)    | 33.46% (30.29-36.69)   | 0.17% (-0.78-1.06)  | -0.51% (-2.82-1.99) |
| 1917         | Black         | 30.97% (28.36-33.64)    | 31.09% (28.46-33.74)   | 0.37% (-0.56-1.2)   | -1.16% (-3.37-1.58) |
| 1918         | Black         | 33.56% (31.1-35.92)     | 33.69% (31.29-36.06)   | 0.39% (-0.51-1.25)  | -0.96% (-3.14-1.26) |
| 1919         | Black         | 25.66% (23.53-27.59)    | 25.87% (23.82-27.79)   | 0.82% (-0.11-1.72)  | -3.96% (-8.83-0.45) |
| 1920         | Black         | 28.44% (26.28-30.49)    | 28.62% (26.46-30.74)   | 0.63% (-0.2-1.41)   | -2.19% (-5.35-0.67) |
| 1921         | Black         | 25.83% (23.84-27.79)    | 26.04% (24.02-28.04)   | 0.8% (-0.09-1.64)   | -3.82% (-8.78-0.37) |
| 1922         | Black         | 28.01% (25.99-30.07)    | 28.14% (26.07-30.12)   | 0.45% (-0.41-1.3)   | -1.56% (-5.07-1.5)  |
| Year | Race   | Black            | White            | Mixed            | Other            | % Black | % White | % Mixed | % Other |
|------|--------|------------------|------------------|------------------|------------------|---------|---------|---------|---------|
| 1923 |        | 23.03% (21.29-24.79) | 23.22% (21.39-24.95) | 0.8% (-0.08-1.78) | -6.49% (-22.04-0.55) |
| 1924 |        | 24.72% (23.04-26.4)  | 24.89% (23.22-26.61) | 0.69% (-0.12-1.76) | -3.59% (-10.35-0.76) |
| 1925 |        | 21.21% (19.68-22.74) | 21.37% (19.87-22.94) | 0.75% (-0.16-1.71) | -12.06% (-242.04-110.5) |
| 1926 |        | 23.61% (21.98-25.29) | 23.82% (22.27-25.41) | 0.88% (-0.11-1.84) | -6.17% (-16.73-0.74) |
| 1927 |        | 19.09% (17.73-20.51) | 19.25% (17.95-20.7)  | 0.84% (-0.19-1.89) | 12.15% (-59.97-106.08) |
| 1928 |        | 24.18% (22.71-25.74) | 24.33% (22.9-25.95)  | 0.65% (-0.21-1.6)  | -3.97% (-11.32-1.31) |
| 1929 |        | 26.37% (24.69-28.21) | 26.5% (24.88-28.35) | 0.49% (-0.39-1.39) | -1.98% (-6.78-1.59) |
| 1930 |        | 24.37% (22.88-26.09) | 24.47% (22.96-26.13) | 0.42% (-0.43-1.34) | -2.43% (-8.21-2.5)  |
| 1931 |        | 21.51% (20.02-23.01) | 21.62% (20.18-23.15) | 0.55% (-0.33-1.44) | -8.46% (-88.58-36.98) |
| 1932 |        | 22.11% (20.72-23.57) | 22.14% (20.77-23.6)  | 0.16% (-0.8-1.15)  | -1.76% (-24.31-10.35) |
| 1933 |        | 21.07% (19.67-22.58) | 21.14% (19.76-22.66) | 0.31% (-0.65-1.2)  | -4.51% (-115.76-80.5) |
| 1934 |        | 19.81% (18.46-21.3)  | 19.81% (18.47-21.27) | -0.01% (-0.93-0.94) | -0.09% (-191.89-139.27) |
| 1935 |        | 19.99% (18.62-21.43) | 19.99% (18.63-21.46) | 0.01% (-0.87-1.03) | 0.66% (-195.44-99.92) |
| 1936 |        | 21.22% (19.79-22.71) | 21.19% (19.81-22.69) | -0.16% (-1.05-0.78) | 3.41% (-92.74-125.72) |
| 1937 |        | 19.46% (18.14-20.84) | 19.48% (18.19-20.78) | 0.07% (-0.82-0.98) | 1.24% (-168.35-88.34) |
| 1938 |        | 18.19% (17.05-19.5)  | 18.24% (17.06-19.52) | 0.24% (-0.71-1.32) | 2.19% (-7.96-17.19) |
| 1939 |        | 19.98% (18.66-21.41) | 20.04% (18.76-21.44) | 0.28% (-0.58-1.3)  | 3.42% (-107.66-174.66) |
| 1940 |        | 18.14% (16.89-19.51) | 18.26% (17.02-19.65) | 0.67% (-0.24-1.56) | 5.7% (-2.33-24.43) |
| 1941 |        | 14.52% (13.44-15.76) | 14.64% (13.54-15.88) | 0.86% (-0.21-1.89) | 2.16% (-0.54-4.86) |
| 1942 |        | 24.82% (23.18-26.48) | 24.88% (23.2-26.62)  | 0.22% (-0.59-0.99) | -1.27% (-6.43-3.11) |
| 1943 |        | 20.93% (19.51-22.54) | 20.99% (19.57-22.58) | 0.28% (-0.58-1.24) | -3.63% (-194.28-117.71) |
| 1944 |        | 23.68% (22.14-25.4)  | 23.7% (22.24-25.42)  | 0.09% (-0.78-0.93) | -0.56% (-7.41-5.39) |
| 1945 |        | 20.2% (18.79-21.8)   | 20.2% (18.79-21.8)   | 0% (0-0)          | 0% (0-0)         |
| 1946 |        | 26.18% (24.37-28.19) | 26.01% (24.23-27.95) | -0.64% (-1.43-0.23) | 2.86% (-1.08-6.73) |
| 1947 |        | 24.34% (22.66-26.15) | 24.27% (22.62-26.07) | -0.32% (-1.16-0.6) | 1.96% (-3.73-7.66) |
| 1948 |        | 27.65% (26.03-29.4)  | 27.46% (25.85-29.26) | -0.69% (-1.48-0.12) | 2.56% (-0.46-5.54) |
| 1949 |        | 26.83% (25.3-28.53)  | 26.59% (25.02-28.29) | -0.87% (-1.73-0.4) | 3.42% (0.2-7.09) |
| 1950 |        | 27.14% (25.6-28.78)  | 26.88% (25.33-28.54) | -0.95% (-1.82-0.18) | 3.72% (0.72-7.3) |
| 1951 |        | 22.37% (20.98-23.83) | 22.24% (20.86-23.67) | -0.57% (-1.5-0.32) | 5.83% (-3.85-20.33) |
| 1952 |        | 24.44% (23.04-25.95) | 24.27% (22.84-25.77) | -0.71% (-1.54-0.17) | 4.24% (-0.97-9.55) |
| Year | Ethnicity | Percent (95% CI) |
|------|-----------|-----------------|
| 1953 | Black     | 24.57% (23.16-26.1) | 24.4% (22.99-25.93) | -0.69% (-1.56-0.31) | 3.85% (-1.79-9.64) |
| 1954 | Black     | 32.49% (30.77-34.3) | 32.25% (30.54-34.0) | -0.74% (-1.61-0.04) | 1.92% (-0.1-4.18) |
| 1955 | Black     | 31.45% (29.74-33.22) | 31.17% (29.48-32.88) | -0.89% (-1.64-0.1) | 2.52% (0.27-4.5) |
| 1956 | Black     | 25.62% (24.03-27.22) | 25.45% (23.93-27.09) | -0.66% (-1.6-0.25) | 3.18% (1.21-7.99) |
| 1957 | Black     | 21.2% (19.86-22.58) | 21.07% (19.74-22.43) | -0.62% (-1.6-0.27) | 10.16% (-130.19-119.55) |
| 1958 | Black     | 24.62% (23.15-26.18) | 24.46% (23.03-26.1) | -0.65% (-1.52-0.22) | 3.71% (-1.5-9.5) |
| 1959 | Black     | 32.91% (31.17-34.78) | 32.58% (30.83-34.41) | -1.02% (-1.85-0.23) | 2.62% (0.59-4.85) |
| 1960 | Black     | 24.62% (23.05-26.16) | 24.42% (22.84-26) | -0.82% (-1.75-0.12) | 4.68% (-0.74-10.08) |
| 1961 | Black     | 22.03% (20.66-23.43) | 21.83% (20.43-23.26) | -0.93% (-1.83-0.01) | 10.77% (-0.55-46.14) |
| 1962 | Black     | 23.83% (22.38-25.25) | 23.62% (22.17-25.02) | -0.85% (-1.63-0.07) | 5.6% (0.47-12.12) |
| 1963 | Black     | 19.39% (18.25-20.56) | 19.29% (18.14-20.46) | -0.52% (-1.49-0.48) | -9.75% (-164.42-190.92) |
| 1964 | Black     | 18.15% (16.97-19.38) | 18.02% (16.84-19.2) | -0.73% (-1.6-0.27) | -6.45% (-25.88-3.03) |
| 1965 | Black     | 22.4% (21.04-23.9) | 22.2% (20.79-23.68) | -0.88% (-1.75-0.07) | 8.75% (-0.73-27.74) |
| 1966 | Black     | 25.63% (23.76-27.5) | 25.36% (23.52-27.27) | -1.05% (-1.9-0.21) | 4.93% (0.97-10.18) |
| 1967 | Hispanic  | 12.13% (10.03-14.15) | 12.47% (10.32-14.5) | 2.81% (1.28-4.47) | 3.76% (1.64-6.8) |
| 1968 | Hispanic  | 14.98% (13.05-16.91) | 15.45% (13.46-17.38) | 3.18% (1.75-4.72) | 7.79% (4.22-14.25) |
| 1969 | Hispanic  | 22.72% (20.57-24.73) | 23.21% (21.01-25.33) | 2.15% (0.86-3.47) | -25.73% (-197.77-229.64) |
| 1970 | Hispanic  | 22.08% (20.4-23.78) | 22.62% (20.94-24.35) | 2.48% (1.29-3.81) | -41.11% (-352.64-446.09) |
| 1971 | Hispanic  | 29.44% (27.56-31.42) | 29.81% (27.89-31.78) | 1.26% (0.19-2.53) | -4.32% (-9.05-0.64) |
| 1972 | Hispanic  | 30.48% (28.6-32.42) | 30.92% (29.01-32.98) | 1.45% (0.34-2.56) | -4.75% (-8.42-1.09) |
| 1973 | Hispanic  | 33.73% (31.75-35.69) | 33.93% (32.35-35.88) | 0.58% (-0.51-1.59) | -1.53% (-4.21-1.32) |
| 1974 | Hispanic  | 26.32% (24.6-28.01) | 26.64% (24.95-28.28) | 1.22% (0.04-2.41) | -6.1% (-13.09-0.23) |
| 1975 | Hispanic  | 25.93% (24.21-27.48) | 26.22% (24.54-27.7) | 1.12% (0.11-2.17) | -6.08% (-12.99-0.55) |
| 1976 | Hispanic  | 21.95% (20.45-23.33) | 22.17% (20.68-23.55) | 0.98% (-0.23-2.22) | -17.3% (-247.75-300.88) |
| 1977 | Hispanic  | 22.39% (20.9-23.79) | 22.78% (21.28-24.21) | 1.73% (0.53-3.01) | -26.06% (-155.65-175.07) |
| 1978 | Hispanic  | 17.83% (16.61-19.06) | 18.06% (16.79-19.24) | 1.29% (0.07-2.57) | 6.94% (0.42-15.79) |
| 1979 | Hispanic  | 21.44% (20.08-22.86) | 21.77% (20.45-23.15) | 1.58% (0.43-2.84) | -32.14% (-810.64-733.31) |
| 1980 | Hispanic  | 25.1% (23.52-26.74) | 25.45% (23.87-27.07) | 1.39% (0.2-2.58) | -8.63% (-18.94-1.19) |
| 1981 | Hispanic  | 24.2% (22.69-25.84) | 24.52% (22.97-26.16) | 1.33% (0.15-2.59) | -10.51% (-25.82-1.11) |
| 1982 | Hispanic  | 20.64% (19.21-22.15) | 20.96% (19.52-22.42) | 1.57% (0.4-2.99) | 29.06% (-592.69-707.11) |
| Year | Hispanic | 20.72-23.58 | 20.92-23.63 | 0.66 | -0.67-1.82 | -11.62 | 197.97-79.39 |
|------|----------|--------------|--------------|------|-------------|--------|-------------|
| 1933 | Hispanic | 20.71% | 20.1% | 1.42% | 0.01-2.75 | 27.23% | 346.55-500.41 |
| 1934 | Hispanic | 23.78% | 23.77% | -0.03% | -1.2-1.21 | 0.17% | -12.09-12.85 |
| 1935 | Hispanic | 22.65% | 22.63% | -0.1% | -1.39-1.27 | 0.87% | -31.88-29.24 |
| 1936 | Hispanic | 22.31% | 22.22% | -0.41% | -1.68-0.97 | 6.87% | -51.68-72.28 |
| 1937 | Hispanic | 21.86% | 21.71% | -0.65% | -1.93-0.71 | 13.48% | -82.42-170.75 |
| 1938 | Hispanic | 21.92% | 21.76% | -0.72% | -2.05-0.65 | 13.9% | -188.12-179.22 |
| 1939 | Hispanic | 22.32% | 22.07% | -1.1% | -2.44-0.25 | 18.02% | -71.39-101.9 |
| 1940 | Hispanic | 21.04% | 20.99% | -0.21% | -1.64-1.13 | 2.63% | -221.54-247.27 |
| 1941 | Hispanic | 17.15% | 17.1% | -0.26% | -1.77-1.25 | -1.22% | -9.61-5.62 |
| 1942 | Hispanic | 26.61% | 26.32% | -1.1% | -2.46-0.14 | 5.32% | -69.12-13.12 |
| 1943 | Hispanic | 24.07% | 23.92% | -0.63% | -1.83-0.95 | 4.99% | -5.49-16.44 |
| 1944 | Hispanic | 24.28% | 24.22% | -0.27% | -1.49-0.95 | 2.02% | -7.17-11.97 |
| 1945 | Hispanic | 21.04% | 21.04% | 0% | 0% | 0% | 0% |
| 1946 | Hispanic | 24.09% | 23.97% | -0.49% | -1.76-0.74 | 3.96% | -6.17-14.82 |
| 1947 | Hispanic | 21.41% | 21.48% | 0.31% | -1.02-1.66 | -0.5% | -314.82-272.48 |
| 1948 | Hispanic | 23.89% | 23.91% | 0.08% | -1.13-1.36 | -0.32% | -14.4-10.88 |
| 1949 | Hispanic | 22.97% | 22.9% | -0.3% | -1.65-1.09 | 3.66% | -18.36-21.58 |
| 1950 | Hispanic | 22.81% | 22.72% | -0.4% | -1.69-0.95 | 5.44% | -19.58-31.34 |
| 1951 | Hispanic | 19.46% | 19.53% | 0.34% | -0.96-1.77 | 3.86% | -16.38-37.03 |
| 1952 | Hispanic | 19.68% | 19.78% | 0.49% | -0.79-1.81 | 6.37% | -26.91-53.02 |
| 1953 | Hispanic | 20.3% | 20.38% | 0.41% | -0.89-1.84 | 9.25% | -190.99-189.83 |
| 1954 | Hispanic | 25.13% | 25.06% | -0.28% | -1.46-0.97 | 1.75% | -6.41-9.05 |
| 1955 | Hispanic | 25.6% | 25.47% | -0.49% | -1.79-0.91 | 5.91% | -5.7-10.1 |
| 1956 | Hispanic | 23.37% | 23.23% | -0.6% | -1.95-0.62 | 5.79% | -7.55-21.44 |
| 1957 | Hispanic | 19.51% | 19.34% | -0.88% | -2.22-0.43 | -11.27% | -70.88-10.31 |
| 1958 | Hispanic | 21.53% | 21.33% | -0.9% | -2.09-0.52 | 19.81% | -481.39-241.47 |
| 1959 | Hispanic | 30.94% | 30.29% | -2.1% | -3.18-0.92 | 6.6% | 2.86-10.04 |
| 1960 | Hispanic | 24.28% | 23.75% | -2.14% | -3.38-0.96 | 16.28% | 6.9-30.78 |
| 1961 | Hispanic | 22.37% | 21.88% | -2.19% | -3.57-0.76 | 36.27% | -1.49-185.84 |
| Year | Ethnicity | Percentage (Lower, Upper) | Percentage (Lower, Upper) | Rate of Change (Lower, Upper) | Rate of Change (Lower, Upper) |
|------|-----------|--------------------------|--------------------------|------------------------------|------------------------------|
| 1962 | Hispanic  | 25.32% (23.97-26.87)     | 24.69% (23.34-26.15)     | -2.47% (-3.71--1.13)        | 14.44% (6.93-24.43)          |
| 1963 | Hispanic  | 20.9% (19.77-22.17)      | 20.51% (19.43-21.69)     | -1.86% (-3.18--0.44)        | -30.53% (-784.36-722.19)     |
| 1964 | Hispanic  | 19.61% (18.54-20.79)     | 19.17% (18.11-20.27)     | -2.82% (-3.76--0.96)        | -30.49% (-185.24--6.58)      |
| 1965 | Hispanic  | 22.28% (20.85-23.7)      | 21.78% (20.37-23.19)     | -2.26% (-3.64--0.87)        | 36.9% (260.34-296)           |
| 1966 | Hispanic  | 25.17% (23.21-27.26)     | 24.49% (22.59-26.42)     | -2.73% (-4.11--1.48)        | 16.55% (8.82-33.88)          |
| 1916 | White     | 16.74% (14.48-18.93)     | 17.36% (15.02-19.58)     | 3.74% (2.21-5.14)           | -11.42% (-19.43--6.22)       |
| 1917 | White     | 16.16% (14.31-17.89)     | 16.76% (14.84-18.57)     | 3.71% (2.18-5.14)           | -12.28% (-19.86--7.07)       |
| 1918 | White     | 18.21% (16.41-19.98)     | 18.83% (16.94-20.71)     | 3.41% (2.05-4.84)           | -8.9% (-13.52--5.24)         |
| 1919 | White     | 13.09% (11.84-14.43)     | 13.61% (12.24-14.99)     | 3.95% (2.52-5.43)           | -28.66% (-78.37--13.73)      |
| 1920 | White     | 15.53% (14.03-17.04)     | 16.04% (14.49-17.54)     | 3.29% (1.6-4.78)            | -12.06% (-20.42--5.35)       |
| 1921 | White     | 14.16% (12.75-15.58)     | 14.61% (13.16-16.07)     | 3.17% (1.55-4.83)           | -15.42% (-31.98--7.05)       |
| 1922 | White     | 16.33% (14.79-17.92)     | 16.73% (15.13-18.31)     | 2.5% (0.92-3.95)            | -8.14% (-14.05--2.78)        |
| 1923 | White     | 12.73% (11.51-14.02)     | 13.11% (11.84-14.42)     | 3.03% (1.45-4.81)           | -25.75% (-103.97--7.93)      |
| 1924 | White     | 15.13% (13.87-16.45)     | 15.5% (14.1-16.88)       | 2.46% (0.8-4.13)            | -9.73% (-18.54-3.41)         |
| 1925 | White     | 13.07% (11.82-14.25)     | 13.4% (12.12-14.6)       | 2.48% (0.79-4.15)           | -18.08% (-52.25--5.17)       |
| 1926 | White     | 15.52% (14.14-16.91)     | 15.81% (14.39-17.22)     | 1.82% (0.31-3.37)           | -6.57% (-13.61--1.08)        |
| 1927 | White     | 12.21% (11.1-13.36)      | 12.49% (11.35-13.66)     | 2.27% (0.62-3.82)           | -28% (-145.69-0.28)          |
| 1928 | White     | 16.47% (15.13-17.95)     | 16.68% (15.26-18.1)      | 1.25% (-0.29-2.91)          | -4.01% (-9.26-0.96)          |
| 1929 | White     | 17.84% (16.35-19.42)     | 18.01% (16.54-19.63)     | 0.95% (-0.65-2.55)          | -2.57% (-7.28-1.89)          |
| 1930 | White     | 16.32% (15.06-17.73)     | 16.47% (15.1-17.9)       | 0.94% (-0.56-2.51)          | -2.94% (-8.49-1.9)           |
| 1931 | White     | 13.94% (12.69-15.16)     | 14.08% (12.83-15.34)     | 1.05% (-0.6-2.74)           | -5.13% (-17.64-2.98)         |
| 1932 | White     | 14.47% (13.33-15.69)     | 14.59% (13.4-15.86)      | 0.84% (-0.92-2.56)          | -3.73% (-12.64-4.32)         |
| 1933 | White     | 12.25% (11.18-13.4)      | 12.39% (11.3-13.53)      | 1.08% (-0.61-2.88)          | -12.88% (-105.34-41)         |
| 1934 | White     | 12.35% (11.24-13.48)     | 12.49% (11.36-13.64)     | 1.11% (-0.62-2.79)          | -12.51% (-94.82-14.19)       |
| 1935 | White     | 12.39% (11.29-13.53)     | 12.49% (11.34-13.63)     | 0.8% (-0.83-2.34)           | -8.2% (-81.71-17.21)         |
| 1936 | White     | 13.12% (11.98-14.34)     | 13.17% (12.02-14.41)     | 0.44% (-1.18-2.06)          | -3.1% (-18.94-10.23)         |
| 1937 | White     | 12.47% (11.37-13.65)     | 12.54% (11.46-13.65)     | 0.59% (-1.28-2.28)          | -5.6% (-44.19-18.79)         |
| 1938 | White     | 12.31% (11.24-13.44)     | 12.38% (11.28-13.51)     | 0.56% (-1.03-2.24)          | -6.2% (-71.26-39.51)         |
| 1939 | White     | 15.34% (14.05-16.65)     | 15.33% (14.06-16.58)     | -0.05% (-1.8-1.69)          | 0.16% (-6.8-7.26)            |
| 1940 | White     | 13.48% (12.31-14.64)     | 13.46% (12.28-14.67)     | -0.11% (-1.81-1.6)          | 0.7% (-12.27-12.59)          |
| Year | Race  | 1941  | 1942  | 1943  | 1944  | 1945  | 1946  | 1947  | 1948  | 1949  | 1950  | 1951  | 1952  | 1953  | 1954  | 1955  | 1956  | 1957  | 1958  | 1959  | 1960  | 1961  | 1962  | 1963  | 1964  | 1965  | 1966  |
|------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|      |       | 10.49% (9.47-11.46) | 10.58% (9.57-11.58) | 0.84% (-0.91-2.62) | 10.14% (-53.65-114.43) | 18.76% (17.24-20.33) | 18.59% (17.11-20.15) | -0.89% (-2.4.61) | 2.25% (-1.56-6.08) | 14.3% (13.12-15.57) | 14.24% (13.01-15.52) | -0.44% (-1.98-1.2) | 2.14% (-5.75-10.81) | 14.65% (13.49-16.02) | 14.54% (13.34-15.87) | -0.77% (-2.3-0.75) | 3.37% (-3.35-10.36) | 11.25% (10.26-12.35) | 11.25% (10.26-12.35) | 0% (0-0) | 0% (0-0) | 13.67% (12.5-14.97) | 13.58% (12.37-14.82) | -0.72% (-2.37-0.7) | 3.99% (-4.52-15.2) | 13.41% (12.26-14.65) | 13.27% (12.1-14.45) | -1.06% (-2.64-0.62) | 6.54% (-3.94-21.36) | 15.63% (14.37-17.11) | 15.41% (14.18-16.73) | -1.37% (-3.05-0.32) | 4.82% (-1.18-11.1) | 15.37% (14.18-16.78) | 15.11% (13.86-16.44) | -1.66% (-3.4-0.17) | 6.08% (0.58-13.24) | 16.61% (15.3-18.11) | 16.27% (15-17.65) | -2.05% (-3.78-0.42) | 6.3% (1.34-12.31) | 13.55% (12.46-14.73) | 13.3% (12.21-14.56) | -1.84% (-3.54-0.06) | 10.97% (0.39-25.27) | 14.68% (13.54-16.01) | 14.41% (13.31-15.64) | -1.86% (-3.6-0.1) | 7.8% (0.48-16.35) | 14.74% (13.64-16.02) | 14.46% (13.39-15.64) | -1.92% (-3.38-0.28) | 8% (1.26-16.02) | 20.52% (19.08-22.05) | 19.96% (18.61-21.42) | -2.68% (-4.25-1.15) | 5.94% (2.71-9.41) | 19.03% (17.65-20.45) | 18.53% (17.21-19.97) | -2.63% (-4.24-1.27) | 6.3% (3.08-10.49) | 15.66% (14.45-16.99) | 15.28% (14.13-16.58) | -2.37% (-4-0.89) | 8.33% (3.28-14.65) | 13.12% (12.12-14.27) | 12.87% (11.88-13.99) | -1.91% (-3.6-0.09) | 13.55% (0.4-32.47) | 15.45% (14.29-16.85) | 15.06% (13.93-16.38) | -2.47% (-4.12-0.98) | 9.12% (3.52-16.82) | 24.18% (22.46-26.1) | 23.4% (21.73-25.24) | -3.2% (-4.63-1.7) | 5.94% (3.29-8.9) | 17.94% (16.52-19.46) | 17.32% (15.93-18.8) | -3.47% (-5.21-2) | 9.37% (5.28-14.66) | 16.77% (15.48-18.11) | 16.16% (14.91-17.55) | -3.6% (-5.26-1.83) | 11.1% (6.01-16.86) | 18.93% (17.48-20.51) | 18.16% (16.87-19.63) | -4.1% (-5.71-2.51) | 10.16% (6.28-14.33) | 15.66% (14.52-16.85) | 15.01% (13.97-16.18) | -4.11% (-5.62-2.51) | 14.76% (9.08-21.15) | 15.33% (14.22-16.57) | 14.63% (13.55-15.77) | -4.53% (-6.17-2.87) | 17.09% (10.92-24.7) | 18.65% (17.09-20.26) | 17.66% (16.08-19.13) | -5.33% (-7.05-3.64) | 13.48% (9-18.4) | 22.5% (20.27-24.9) | 21.16% (18.85-23.42) | -5.96% (-7.63-4.38) | 11.92% (8.37-16.15) |
Section 3: Sensitivity Analysis

Sensitivity to APC and Decomposition Reference Groups

Sensitivity Analysis Relative Difference: Alcohol Consumption

Figure 14 Sensitivity Analysis for Alcohol Consumption. A: detrended dimension: period, reference dimension for decomposition: cohort. B: detrended dimension: cohort, reference dimension for decomposition: cohort. C: detrended dimension: cohort, reference dimension for decomposition: period. D: detrended dimension: period, reference dimension for decomposition: period.
Figure 15 Sensitivity Analysis for Smoking. 

**A:** detrended dimension: period, reference dimension for decomposition: cohort 

**B:** detrended dimension: cohort, reference dimension for decomposition: cohort,

**C:** detrended dimension: cohort, reference dimension for decomposition: period,

**D:** detrended dimension: period, reference dimension for decomposition: period.
Figure 16: Sensitivity Analysis for Physical Activity.

A: detrended dimension: period, reference dimension for decomposition: cohort
B: detrended dimension: cohort, reference dimension for decomposition: cohort
C: detrended dimension: cohort, reference dimension for decomposition: period
D: detrended dimension: period, reference dimension for decomposition: period.
Figure 17: Sensitivity Analysis for BMI.

A: Detrended dimension: period, reference dimension for decomposition: cohort
B: Detrended dimension: cohort, reference dimension for decomposition: cohort,
C: Detrended dimension: cohort, reference dimension for decomposition: period,
D: Detrended dimension: period, reference dimension for decomposition: period.
Sensitivity to within-individual heterogeneity

In order to test the influence of first separating individual-level effects from between-individual level heterogeneity, we employ a mixed effects model based on Eq.5 from Bell (2014)\(^1\). This method is an extension of the hierarchical age-period-cohort (HAPC) model developed by Yang and Land\(^2\). In the HAPC model, period and cohort are included as random intercepts, while age polynomials are included in the fixed part of the model. Hence, the outcome, i.e. depression, is estimated within each cohort and time period as a function of age polynomials and confounders, i.e. sex, education and race/ethnicity. Bell extended this formula by adding cohort polynomials into the fixed effects part of the model in order to estimate the continuous cohort trend in addition to estimating cohort-level differences around that trend in the random part of the model\(^1\). We repeated the main analysis with this extension of the HAPC model instead of the Carstensen model, including the population-averaging step that follows afterwards.

eFigure 18 shows the relative difference for every mediator for the Carstensen approach and the mixed effects model. We conclude that accounting for within-individual heterogeneity through a mixed effects model does not strongly affect our main results.
Sensitivity to Misclassification of Health Behaviors

We assessed the sensitivity of our main results to misclassification of health behaviors. First, we obtained positive predictive values (PPV) and negative predictive values (NPV) for correctly assessing objectively measured health behavior through self-reported measures from the literature (eTable 14). Due to the large variance in reported PPVs and NPVs in the literature, we chose the lowest reported values (i.e. the worst misclassification scenarios) for alcohol consumption, physical activity and smoking. For BMI, the HRS objectively measured BMI from wave 8 (2006) onward. We used the self-reported and objectively measured BMI from the HRS data to calculate the PPV and NPV for correctly specifying BMI in the HRS data. The PPVs and NPVs for each health behavior can be found in eTable 14.

We accounted for misclassification in the bootstrap-sampling step. Taking smoking as an example, after drawing a random sample from the data, we select all individuals originally...
identified as smokers in the data and randomly assign 1-PPV% to be non-smokers. Similarly, for those originally identified as non-smokers, we randomly assign 1-NPV% to be smokers. We repeat this in every bootstrap iteration. We then run our main analysis with the reclassified health behavior variable.

eFigure 19 shows the relative difference in the main analysis and the analysis that accounts for misclassification. We find minor differences at the extremes of birth cohort for smoking and BMI. This is likely because the sample sizes at the extremes of birth cohort are smallest compared to the rest of the data and the effect estimates are reduced due to the added uncertainty of misclassification. Due to the small changes, we conclude that our main results (relative difference) are robust to misclassification bias.

teTable 14 Positive and negative predictive values (PPV and NPV) for each health behavior.

| Health Behavior (exposure)                              | PPV  | NPV  |
|---------------------------------------------------------|------|------|
| Alcohol Consumption (heavy/excessive drinker)³         | 0.50 | 0.93 |
| Smoking (current smoker)⁴                              | 0.86 | 0.92 |
| Physical activity (vigorous physical activity)⁵         | 0.25 | 0.69 |
| BMI (BMI > 25)⁶                                        | 0.73 | 0.98 |

Data obtained from: ³McKenna et al. 2018; ⁴Newell et al. 1999; ⁵Murphy et al. 2015; ⁶2016 RAND HRS Longitudinal File
Figure 19 Relative difference (95% CI) between the counterfactual and natural course estimates of probability of elevated depressive symptoms by birth cohort (counterfactual scenario/natural course scenario-1) for each health behavior factor in the main analysis and after taking misclassification of health behavior into account.
Section 4: Additional Analysis

Section 4.1: Bootstrap Stability

Bootstrap Stability

Figure 20 Bootstrap Stability. Standard Deviation of the mean predicted probability of elevated depressive symptoms across bootstrap iterations (Age 50, Period 1996, Cohort 1960). Results are presented by mediator for the natural course and counterfactual scenario. Maximum bootstrap iterations 499. Monte Carlo Iterations: 50.
Bootstrap Stability. Standard Deviation of the mean predicted probability of elevated depressive symptoms across bootstrap iterations (Age 50, Period 1996, Cohort 1960). Results are presented by mediator and sex for the natural course and counterfactual scenario. Maximum bootstrap iterations 499. Monte Carlo Iterations: 50
Figure 22 Bootstrap Stability. Standard Deviation of the mean predicted probability of elevated depressive symptoms across bootstrap iterations (Age 50, Period 1996, Cohort 1960). Results are presented by mediator and race/ethnicity for the natural course and counterfactual scenario. Maximum bootstrap iterations 499. Monte Carlo Iterations: 50.
Section 4.2: Counterfactual Decomposition for Smoking as Categorical Variable

![Relative difference in depression probability (95% CI) for smoking (never/ever/current)](image)

*Figure 23* Relative difference (95% CI) between the counterfactual and natural course estimates of probability of elevated depressive symptoms by birth cohort (counterfactual scenario/natural course scenario-1) for smoking (never/ever/current). Sample Size: 163,660.

Section 4.3: Assessing the presence of panel attrition and panel conditioning

We performed two tests to assess whether panel attrition and/or panel conditioning are present in our study. We assessed the relationship between elevated depressive symptoms and time-in-sample with a logistic regression model and allowed for non-linearity through natural cubic
splines. We adjusted the model for age, sex, race/ethnicity, education, birth cohort, BMI, physical activity, smoking, alcohol consumption and whether the participant responded in the next wave (eFigure 24). We find a non-linear negative association with populations that participated in the sample for more than four waves, showing a decreased probability of elevated depressive symptoms. In a second step, we selected populations that participated in one wave and compared them to populations that participated in two waves. After matching the populations based on all relevant characteristics, we find no difference in elevated depressive symptoms between the two groups (eTable 15). We conclude that there is evidence for panel attrition but not panel conditioning.

As a next step, we repeated the main analysis in observations that participated in the survey for the first time to assess the extent to which panel attrition might affect the decomposition results. eFigure 25 shows that the relative difference is attenuated for alcohol consumption in the older cohorts and BMI in the younger cohorts, while the relative difference of physical activity and BMI is increased in the older cohorts. However, the overall trend in the relative difference across cohorts stays the same for all health behavior factors. We conclude that the main results are not meaningfully affected by panel attrition.
Association between time-in-sample and predicted probability of elevated depressive symptoms. Other covariates are held constant.
### Table 15
Levels of elevated depressive symptoms stratified by time-in-sample before and after matching.

| Before Matching Time-in-sample | After Matching Time-in-sample | p-value |
|--------------------------------|-------------------------------|---------|
|                                | 1 wave | 2 waves | p-value | 1 wave | 2 waves | p-value |
| N                              | 24670  | 1610    | <0.001  | 1201   | 1201    | 0.452   |
| elevated depressive symptoms = 1 N (%) | 5362 (21.7) | 419 (26.0) | <0.001 | 311 (25.9) | 294 (24.5) | 0.452   |
| Age (mean (SD))                | 61.55 (8.12) | 60.13 (8.42) | <0.001 | 60.50 (7.57) | 60.54 (8.64) | 0.900   |
| Birth Cohort (in 2-3-year intervals) N (%) | 1916-1918 | 772 (3.1) | 14 (0.9) | 12 (1.0) | 12 (1.0) | 1.000   |
|                                | 1918-1921 | 728 (3.0) | 12 (0.7) | 9 (0.7)  | 9 (0.7)  |         |
|                                | 1921-1923 | 1342 (5.4) | 17 (1.1) | 15 (1.2) | 15 (1.2) |         |
|                                | 1923-1926 | 903 (3.7) | 85 (5.3) | 68 (5.7) | 68 (5.7) |         |
|                                | 1926-1928 | 1380 (5.6) | 128 (8.0) | 102 (8.5) | 102 (8.5) |         |
|                                | 1928-1930 | 927 (3.8) | 100 (6.2) | 77 (6.4) | 77 (6.4) |         |
|                                | 1930-1933 | 1282 (5.2) | 31 (1.9) | 24 (2.0) | 24 (2.0) |         |
|                                | 1933-1935 | 1978 (8.0) | 43 (2.7) | 39 (3.2) | 39 (3.2) |         |
|                                | 1935-1938 | 1428 (5.8) | 37 (2.3) | 31 (2.6) | 31 (2.6) |         |
|                                | 1938-1940 | 2288 (9.3) | 58 (3.6) | 48 (4.0) | 48 (4.0) |         |
|                                | 1940-1942 | 1438 (5.8) | 56 (3.5) | 42 (3.5) | 42 (3.5) |         |
|                                | 1942-1945 | 1026 (4.2) | 64 (4.0) | 46 (3.8) | 46 (3.8) |         |
|                                | 1945-1947 | 1347 (5.5) | 106 (6.6) | 80 (6.7) | 80 (6.7) |         |
|                                | 1947-1950 | 1095 (4.4) | 109 (6.8) | 73 (6.1) | 73 (6.1) |         |
|                                | 1950-1952 | 1774 (7.2) | 190 (11.8) | 151 (12.6) | 151 (12.6) |         |
|                                | 1952-1954 | 1252 (5.1) | 162 (10.1) | 108 (9.0) | 108 (9.0) |         |
|                                | 1954-1957 | 1323 (5.4) | 136 (8.4) | 91 (7.6) | 91 (7.6) |         |
|                                | 1957-1959 | 1820 (7.4) | 215 (13.4) | 167 (13.9) | 167 (13.9) |         |
|                                | 1959-1962 | 448 (1.8) | 31 (1.9) | 17 (1.4) | 17 (1.4) |         |
|                                | 1962-1964 | 119 (0.5) | 16 (1.0) | 1 (0.1)  | 1 (0.1)  |         |
| Period (mean (SD))             | 2001.40 (6.41) | 2004.81 (5.98) | <0.001 | 2004.31 (6.36) | 2004.49 (5.94) | 0.466   |
|                                | N (%)          | N (%)          | N (%)          | N (%)          |        |
|--------------------------------|----------------|----------------|----------------|----------------|--------|
|                                |                |                |                |                | 1.000  |
| Sex = Female                  | 13844 (56.1)   | 712 (44.2)     | 578 (48.1)     | 578 (48.1)     | <0.001 |
| Education level               |                |                |                |                | 0.004  |
| Lt High-school                | 5501 (22.3)    | 405 (25.2)     | 288 (24.0)     | 288 (24.0)     | 1.000  |
| GED                            | 1207 (4.9)     | 84 (5.2)       | 40 (3.3)       | 40 (3.3)       |        |
| High-school graduate          | 7274 (29.5)    | 451 (28.0)     | 346 (28.8)     | 346 (28.8)     |        |
| Some college                  | 5649 (22.9)    | 391 (24.3)     | 293 (24.4)     | 293 (24.4)     |        |
| College and above             | 5039 (20.4)    | 279 (17.3)     | 234 (19.5)     | 234 (19.5)     |        |
|                                |                |                |                |                |        |
| Race/ethnicity                |                |                |                |                | <0.001 |
| White                         | 18684 (75.7)   | 1066 (66.2)    | 899 (74.9)     | 899 (74.9)     | 1.000  |
| Black                         | 4402 (17.8)    | 373 (23.2)     | 241 (20.1)     | 241 (20.1)     |        |
| Hispanic                      | 927 (3.8)      | 90 (5.6)       | 35 (2.9)       | 35 (2.9)       |        |
| Other                         | 657 (2.7)      | 81 (5.0)       | 26 (2.2)       | 26 (2.2)       |        |
|                                |                |                |                |                |        |
| BMI                            |                |                |                |                | 0.003  |
| underweight                   | 164 (0.7)      | 20 (1.2)       | 3 (0.2)        | 3 (0.2)        | 1.000  |
| normal                        | 7602 (30.8)    | 450 (28.0)     | 308 (25.6)     | 308 (25.6)     |        |
| overweight                    | 9680 (39.2)    | 634 (39.4)     | 496 (41.3)     | 496 (41.3)     |        |
| obese                         | 7224 (29.3)    | 506 (31.4)     | 394 (32.8)     | 394 (32.8)     |        |
|                                |                |                |                |                |        |
| Alcohol Consumption           |                |                |                |                | <0.001 |
| No or does not drink          | 15800 (64.0)   | 982 (61.0)     | 834 (69.4)     | 834 (69.4)     | 1.000  |
| Moderate drinker              | 5190 (21.0)    | 313 (19.4)     | 228 (19.0)     | 228 (19.0)     |        |
| Heavy drinker                 | 2937 (11.9)    | 211 (13.1)     | 117 (9.7)      | 117 (9.7)      |        |
| Excessive drinker             | 743 (3.0)      | 104 (6.5)      | 22 (1.8)       | 22 (1.8)       |        |
|                                |                |                |                |                |        |
| Current Smoker = Yes          | 4645 (18.8)    | 395 (24.5)     | 199 (16.6)     | 199 (16.6)     | 1.000  |
| Vigorous physical activity =  |                |                |                |                |        |
| yes                            | 12127 (49.2)   | 729 (45.3)     | 557 (46.4)     | 557 (46.4)     | 1.000  |
|                                |                |                |                |                |        |

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eFigure 25 Relative difference (95% CI) between the counterfactual and natural course estimates of probability of elevated depressive symptoms by birth cohort (counterfactual scenario/natural course scenario-1) for each health behavior factor in the main analysis and in first timers.
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