Table 1 Sociodemographic characteristics of the study population by number of children (*N* = 894,608 women)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| *P*-value | **Women with** ≥ **3 children*****n* = 426,627****(47.6%)** | **Women with 1–2 children*****n* = 284,841****(31.8%)** | **Women with no children** ***n* = 183,500****(20.5%)** |  | **Variable** |
| < 0.001 | 38.70 (5.95) | 38.63(5.42) | 39.95 (5.65) |  | Mean age, years, at the beginning of the study (SD) |
| < 0.001 | 75.6 | 95.1 | 86.2 | Non-Haredi Jewish  | Ethno-religious group  |
| 6.2 | 1.6 | 0.9 | Haredi Jewish  |
| 18.2 | 3.3 | 12.9 | Arab  |
| < 0.001 | 27.2 | 21.4 | 50.9 | 0–8 | Education (years) |
| 39.9 | 28.8 | 15.2 | 9–12 |
| 32.8 | 49.8 | 33.9 | ≥ 13 |
| < 0.001 | 23.2 | 62.6 | 55.7 | Europe/America | Country of origin |
| 38.1 | 18.6 | 20.0 | Asia/Africa |
| 38.5 | 18.8 | 24.3 | Israel |
| < 0.001 | 24.4 | 10.8 | 15.7 | Small  | Size of locality of residence |
| 75.6 | 89.2 | 84.3 | Large |

SD, standard deviation

Table 2 Breast cancer mortality rates by sociodemographic characteristics among the total population (*N* = 894,608 women)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| *P*-value | Age-adjusted hazard ratio (99% CI) | Mortality rate per 10,000 during the study period |  |  |
|  | **1.00** | **86.61** | **0** | **Number of children** |
| < 0.001 | **1.375 (1.270–1.487)** | **111.75** | **1–2** |
| < 0.001 | **1.213 (1.125–1.308)** | **99.47** | **≥ 3** |
|  | 1.00 | 106.49 | Non-Haredi Jewish  | Ethno-religious group  |
| < 0.001 | 0.812 (0.690–0.956) | 81.11 | Haredi Jewish  |
| < 0.001 | 0.871 (0.793–0.956) | 85.40 | Arab  |
|  | 1.00 | 85.51 | 0–8 | Education (years) |
| < 0.001 | 1.483(1.382–1.592) | 110.21 | 9–12 |
| < 0.001 | 1.402(1.310–1.501) | 107.25 | ≥ 13 |
|  | 1.00 | 96.99 | Asia/Africa | Country of origin |
| 0.013 | 1.071 (0.997–1.143) | 105.25 | Israel |
| < 0.001 | 1.109 (1.031–1.192) | 107.60 | Europe/America |
|  | 1.00 | 84.30 | Small  | Size of locality of residence |
| < 0.001 | 1.212(1.125-1.306) | 105.10 | Large |

CI, confidence interval

Table 3 Breast cancer mortality rates by number of children in the total population and by age-based follow-up groups (30–49, 50–64, and 65–80 years)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **65-80 years age-based follow-up group** | **50-64 years age-based follow-up group** | **30**–**49 years age-based follow-up group** | **Total population** | **Number of children** |  |
| 136,152 | 173,100 | 175,033 | 183,500 | 0 | Number of women |
| 234,494 | 274,290 | 277,462 | 284,841 | 1–2 |
| 382,312 | 409,714 | 413,665 | 426,267 | ≥ 3 |
| 851,776 | 2,480,704 | 1,817,985 | 5,150,465 | 0 | Cumulative follow-up person-years |
| 1,159,285 | 3,888,177 | 3,196,267 | 8,243,729 | 1–2 |
| 1,842,596 | 5,810, 580 | 4,766,571 | 12,419,747 | ≥ 3 |
| 31.07 | 48.18 | 14.00 | **86.61** | 0 | Breast cancer mortality rate per 10,000 in the follow-up period |
| 32.11 | 58.55 | 24.36 | **111.75** | 1–2 |
| 25.21 | 52.57 | 22.51 | **99.47** | ≥ 3 |
| 49.66 | 33.62 | 13.48 | 29.29 | 0 | Breast cancer mortality rate per 100,000 person-years |
| 64.95 | 41.30 | 21.15 | 36.81 | 1–2 |
| 52.32 | 37.07 | 19.53 | 32.75 | ≥ 3 |
| 1.00 | 1.00 | **1.00** | **1.00** | 0 | Aged-adjusted hazard ratio for breast cancer mortality  |
| 1.351 (1.155–1.581)\*\* | 1.273 (1.140–1.421)\*\* | 1.195 (1.092–1.307)\*\* | **1.375 (1.270–1.487)\*** | 1–2 |
| 1.082 (0.931–1.258)\*\* | 1.141 (1.027–1.267)\*\* | 1.140 (1.114–1.166)\*\* | **1.213 (1.125–1.308)**\* | ≥ 3 |

\*Adjusted for age at the beginning of the study

\*\*Adjusted for entry year in the aged follow-up period

Table 4 Results of multivariable Cox models for predicting breast cancer mortality rates by number of children and sociodemographic variables (hazard ratio) in the total population and by age-based follow-up groups (30–49, 50–64, and 65–80 years)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **\*\*Model D****65–80 years age-based follow-up group** | **\*\*Model C****50–64 years age-based follow-up group** | **Model B\*\*****30–49 years age-based follow-up group**  | **\*Model A****total population** |  |  |
| **752,958** | **857,104** | **866,160** | **894,608** |  | **N** |
| 1.00 | 1.00 | 1.00 | 1.00 | 0 | Number of children |
| **1.237 (1.045–1.466)** | **1.071 (0.949–1.209)** | **1.656 (1.349–2.033)** | 1.216 (1.117–1.324) | 1–2 |
| **0.989 (0.834–1.173)** | **0.935 (0.830–1.054)** | **1.551 (1.271–1.893)** | 1.056 (0.970–1.149) | ≥ 3 |
| 1.00 | 1.00 | 1.00 | 1.00 | Non-Haredi Jewish  | Ethno-religious group  |
| 0.711 (0.54–0.935) | 0.873 (0.703–1.084) | **0.720 (0.623–0.865)** | 0.776 (0.658–0.915) | Haredi Jewish  |
| 0.825 (0.648–1.051) | 1.079 (0.922–1.263) | 0.784 (0.601–0.962) | 0.852 (0.715–0.911) | Arab  |
| 1.00 | 1.00 | 1.00 | 1.00 | 0–8 | Education (years) |
| **1.478 (1.263–1.665)** | **1.558 (1.392–1.745)** | 1. | 1.471 (1.361–1.589) | 9–12 |
| **1.422 (1.263–1.729)** | **1.598 (1.428–1.788)** | 0.965 (0.886–1.051) | 1.388 (1.283–1.501) | ≥ 13 |
| 1.00 | 1.00 | 1.00 | 1.00 | Asia/Africa | Country of origin |
| 0.977 (0.836–1.142) | 0.950 (0.855–1.055) | 1.028 (0.873–1.210) | 0.994 (0.923–1.072) | Israel |
| 1.019 (0.963–1.203) | 1.088 (0.974–1.215) | **1.254 (1.059–1.487)** | 1.136 (1.050–1.230) | Europe/America |
| 1.00 | 1.00 | 1.00 | 1.00 | Small  | Size of locality of residence |
| **1.278 (1.077–1.516)** | **1.123 (1.007–1.251)** | **1.298 (1.094–1.541)** | 1.205 (1.113–1.304) | Large |

\* Adjusted for age at the beginning of study

\*\* Adjusted for entry year in the aged follow-up period

Fig. 1 Analysis of breast cancer mortality rates by number of children, adjusted for age at the beginning of the follow-up period, level of education, ethno-religious group, country of origin, and size of locality of residence in the total population and by age-based follow-up groups (30–49, 50–64, and 65–80 years)

|  |  |
| --- | --- |
|  |  |
| Entire study period |  |
| 30–49 years age-based study period |  |
| 50–64 years age-based study period |  |
| 65–80 years age-based study period |  |