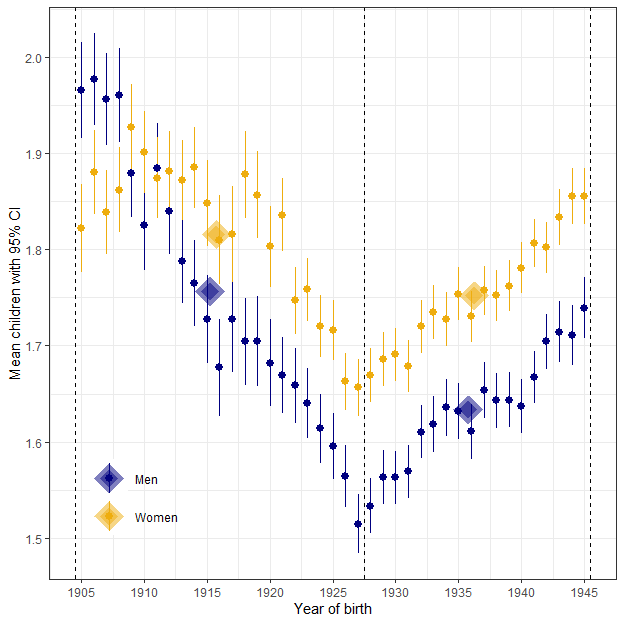
Electronic Supplement: Survival Costs and Benefits of Reproduction

Richard Meitern and Peeter Hõrak

2024-01-24

## Mean Number of Children

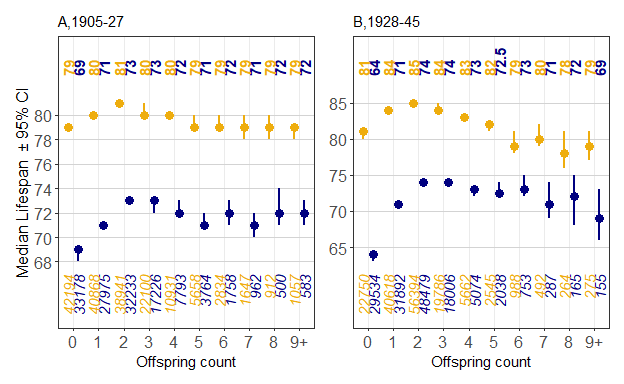
The mean number of children varies by parental birth year (YOB). Below this variation is visualized.



**Fig. S1** Average number of children for Estonians born between 1905-45in relation to their birth years. Diamonds indicate cohort averages (1905-27 and 1928-45) with 95% confidence intervals. Light symbols: women, dark symbols: men.

## Median Lifespan

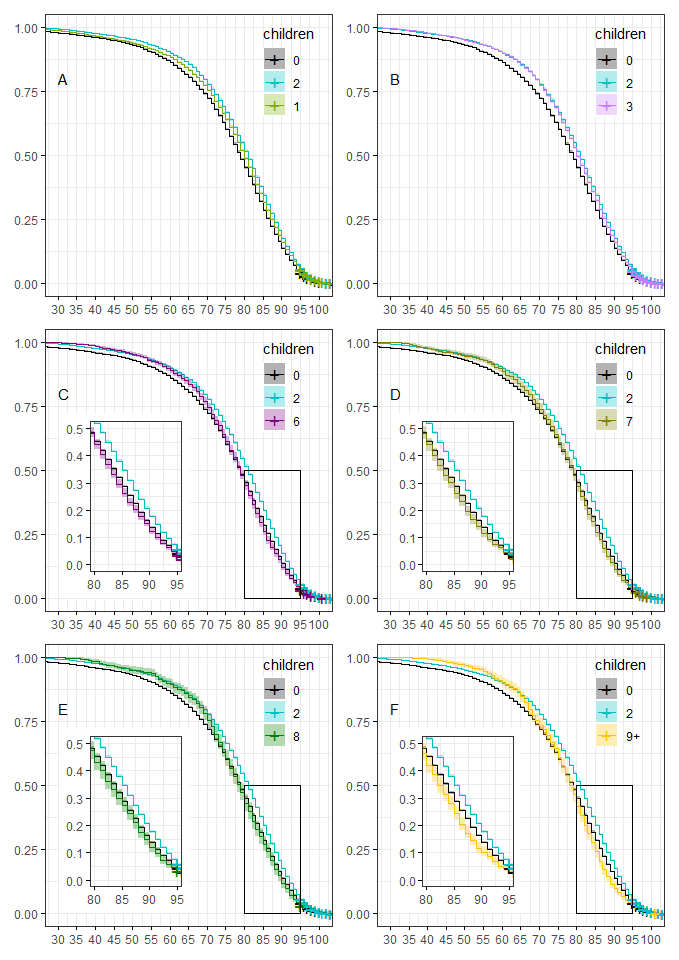
The median lifespan varies by number of children. Below this variation is visualized.



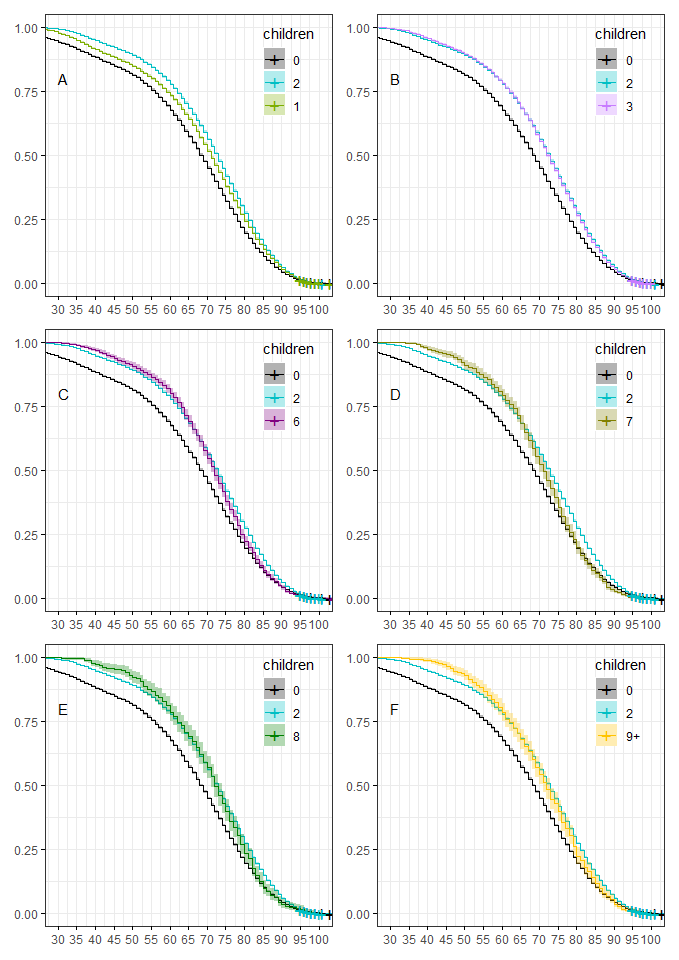
**Fig. S2** Median lifespan of Estonian women (light symbols) and men (dark symbols) in cohorts born between 1905-27 and 1928-45 in relation to their parities. Numbers near the x-axis indicate sample sizes. Numbers above the plot indicate median lifespans.

## Kaplan-Meier Survival Curves

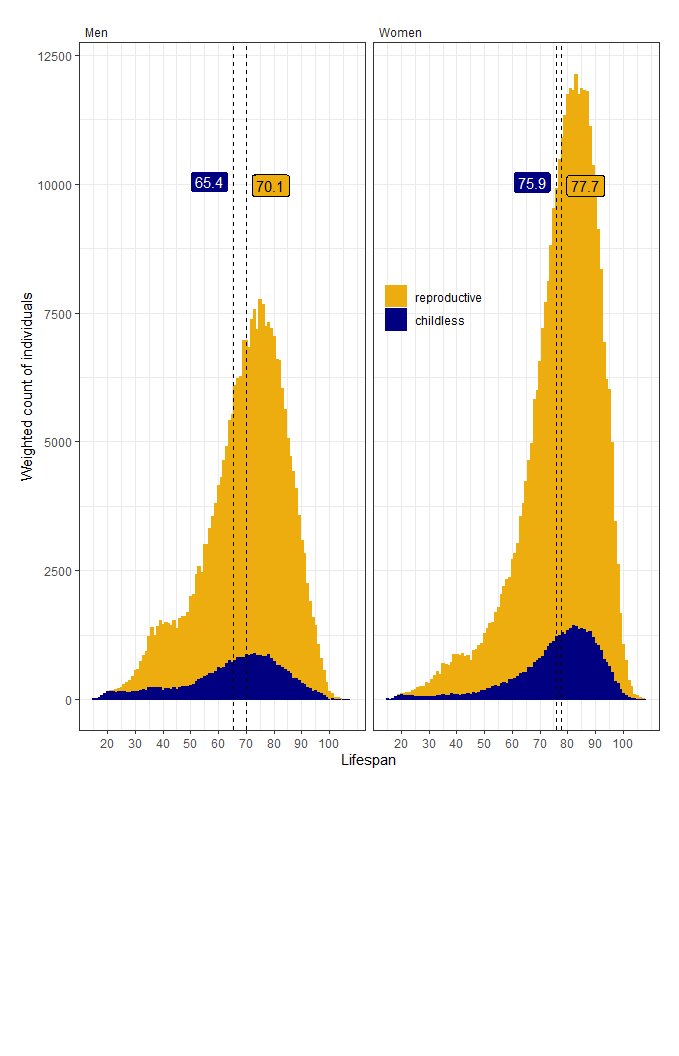
The first cohort has almost no individuals with unknown lifespan, so we can plot the Kaplan-Meier survival curves to visualize the survival patterns by parities in this cohort.



**Fig. S3** Kaplan-Meier survival curves of women born between 1905-27 in relation to parity. Shaded areas denote 95% confidence intervals.



**Fig. S4** Kaplan-Meier survival curves of men born between 1905-27 in relation to parity. Shaded areas denote 95% confidence intervals.



**Fig. S5** Distribution of completed lifespans in the 1905-27 in relation to parity. Dashed lines indicate average lifespans for childless (dark colour) and reproductive (light colour) individuals. For the latter, parental lifespans are weighed by offspring number.

## Cox Models with Random Effect All Data

To run the model with having year of birth (YOB) as a random effect. We use the coxme() function from the coxme package. This function allows us to fit a Cox proportional hazards model with random effects. The random effects are specified using the notation (1 | random effect). In our case, we want to fit a model with a random effect for YOB, so we use (1 | YOB). See the results below.

The assumption of proportional mortality hazards over time in Cox models can be relaxed by allowing for non-proportional hazards (i.e., interactions with time). Indeed the survival package provides a function cox.zph() to test the proportional hazards assumption.

The tt() term in a coxph() model in R is used to handle time-dependent covariates in a Cox proportional hazards model. This term allows the effect of a covariate to change over time, which can be useful when the proportional hazards assumption is violated.

In our case, we can use tt(children\_f) in the model, which means we are allowing the effect of children on the hazard to change over time.

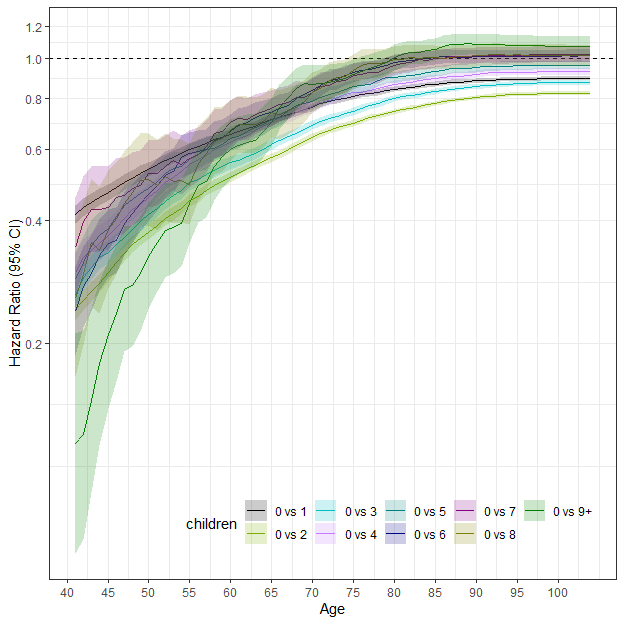
We argue that the effect of parity (children\_f) on the hazard changes non-linearly with time. We use a tt function from the gam fit for each parity. This means that as the hazard ratios differ between parities each parity has its on tt function.

Unfortunately, the cox.zph() cannot be used to test the proportional hazards assumption for models with tt() terms. Also, to best of our knowledge there is no package or published script to assess the proportional hazards assumption or to plot the hazard ratios from the model with tt() terms. Our solution is to calculate the hazard ratios for each age to get non-proportional hazards an then plot the Hazard ratios as curves using YOB as a random effect. The time dependent effect is printed as a summary table.

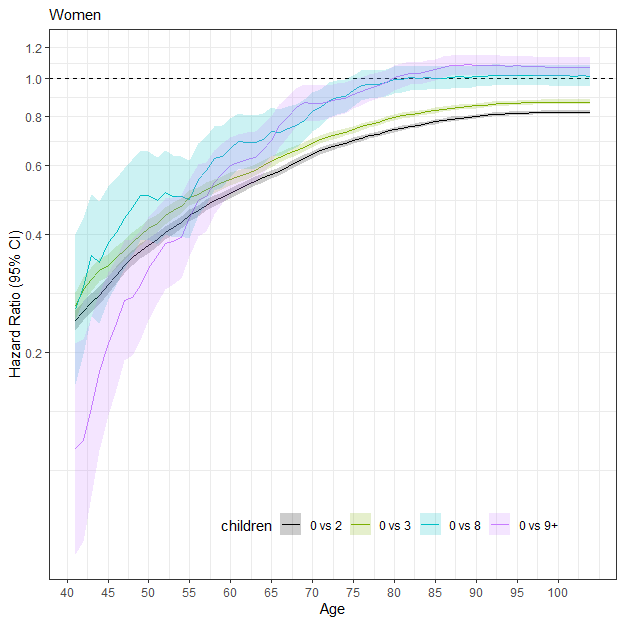
We will display the results by gender.

#### Fit Cox for Women

/n



**Figure S6**: Hazards ratios from a random effects cox model for each age for women



**Figure S7**: Hazards ratios from a random effects cox model for each age. Selected parities only for women

Table S1: Coxme models for women, with 5 year lifespan intervals

| age | children | coef | se(coef) | HR | -95CI | +95CI | z | p | stars |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 40 | 0 vs 1 | -0.925 | 0.027 | 0.397 | 0.376 | 0.418 | -34.70 | 0.000 | \*\*\* |
| 40 | 0 vs 2 | -1.488 | 0.031 | 0.226 | 0.212 | 0.240 | -48.17 | 0.000 | \*\*\* |
| 40 | 0 vs 3 | -1.426 | 0.042 | 0.240 | 0.221 | 0.261 | -34.34 | 0.000 | \*\*\* |
| 40 | 0 vs 4 | -1.296 | 0.060 | 0.274 | 0.243 | 0.307 | -21.75 | 0.000 | \*\*\* |
| 40 | 0 vs 5 | -1.329 | 0.085 | 0.265 | 0.224 | 0.313 | -15.56 | 0.000 | \*\*\* |
| 40 | 0 vs 6 | -1.622 | 0.144 | 0.197 | 0.149 | 0.262 | -11.29 | 0.000 | \*\*\* |
| 40 | 0 vs 7 | -1.178 | 0.155 | 0.308 | 0.227 | 0.417 | -7.59 | 0.000 | \*\*\* |
| 40 | 0 vs 8 | -1.600 | 0.259 | 0.202 | 0.122 | 0.335 | -6.19 | 0.000 | \*\*\* |
| 40 | 0 vs 9+ | -2.351 | 0.354 | 0.095 | 0.048 | 0.191 | -6.64 | 0.000 | \*\*\* |
| 45 | 0 vs 1 | -0.757 | 0.023 | 0.469 | 0.448 | 0.491 | -32.52 | 0.000 | \*\*\* |
| 45 | 0 vs 2 | -1.209 | 0.026 | 0.298 | 0.284 | 0.314 | -46.80 | 0.000 | \*\*\* |
| 45 | 0 vs 3 | -1.095 | 0.033 | 0.335 | 0.314 | 0.357 | -32.91 | 0.000 | \*\*\* |
| 45 | 0 vs 4 | -1.000 | 0.048 | 0.368 | 0.335 | 0.404 | -21.02 | 0.000 | \*\*\* |
| 45 | 0 vs 5 | -0.959 | 0.065 | 0.383 | 0.337 | 0.435 | -14.74 | 0.000 | \*\*\* |
| 45 | 0 vs 6 | -1.045 | 0.098 | 0.352 | 0.290 | 0.426 | -10.65 | 0.000 | \*\*\* |
| 45 | 0 vs 7 | -0.843 | 0.119 | 0.430 | 0.341 | 0.543 | -7.10 | 0.000 | \*\*\* |
| 45 | 0 vs 8 | -0.964 | 0.170 | 0.381 | 0.273 | 0.532 | -5.68 | 0.000 | \*\*\* |
| 45 | 0 vs 9+ | -1.558 | 0.214 | 0.211 | 0.139 | 0.320 | -7.29 | 0.000 | \*\*\* |
| 50 | 0 vs 1 | -0.626 | 0.020 | 0.535 | 0.514 | 0.556 | -31.03 | 0.000 | \*\*\* |
| 50 | 0 vs 2 | -0.981 | 0.022 | 0.375 | 0.359 | 0.391 | -45.39 | 0.000 | \*\*\* |
| 50 | 0 vs 3 | -0.881 | 0.028 | 0.414 | 0.393 | 0.437 | -32.02 | 0.000 | \*\*\* |
| 50 | 0 vs 4 | -0.787 | 0.039 | 0.455 | 0.422 | 0.491 | -20.24 | 0.000 | \*\*\* |
| 50 | 0 vs 5 | -0.731 | 0.052 | 0.481 | 0.434 | 0.534 | -13.94 | 0.000 | \*\*\* |
| 50 | 0 vs 6 | -0.769 | 0.077 | 0.463 | 0.398 | 0.539 | -10.00 | 0.000 | \*\*\* |
| 50 | 0 vs 7 | -0.651 | 0.097 | 0.522 | 0.432 | 0.630 | -6.73 | 0.000 | \*\*\* |
| 50 | 0 vs 8 | -0.683 | 0.132 | 0.505 | 0.390 | 0.654 | -5.18 | 0.000 | \*\*\* |
| 50 | 0 vs 9+ | -1.117 | 0.153 | 0.327 | 0.242 | 0.442 | -7.30 | 0.000 | \*\*\* |
| 55 | 0 vs 1 | -0.515 | 0.017 | 0.597 | 0.578 | 0.618 | -29.88 | 0.000 | \*\*\* |
| 55 | 0 vs 2 | -0.802 | 0.018 | 0.449 | 0.433 | 0.465 | -44.46 | 0.000 | \*\*\* |
| 55 | 0 vs 3 | -0.699 | 0.023 | 0.497 | 0.475 | 0.520 | -30.88 | 0.000 | \*\*\* |
| 55 | 0 vs 4 | -0.599 | 0.032 | 0.549 | 0.516 | 0.584 | -18.98 | 0.000 | \*\*\* |
| 55 | 0 vs 5 | -0.569 | 0.043 | 0.566 | 0.520 | 0.616 | -13.28 | 0.000 | \*\*\* |
| 55 | 0 vs 6 | -0.537 | 0.061 | 0.585 | 0.519 | 0.658 | -8.86 | 0.000 | \*\*\* |
| 55 | 0 vs 7 | -0.565 | 0.082 | 0.568 | 0.484 | 0.667 | -6.92 | 0.000 | \*\*\* |
| 55 | 0 vs 8 | -0.709 | 0.118 | 0.492 | 0.391 | 0.620 | -6.03 | 0.000 | \*\*\* |
| 55 | 0 vs 9+ | -0.817 | 0.116 | 0.442 | 0.352 | 0.554 | -7.04 | 0.000 | \*\*\* |
| 60 | 0 vs 1 | -0.428 | 0.015 | 0.652 | 0.633 | 0.671 | -29.25 | 0.000 | \*\*\* |
| 60 | 0 vs 2 | -0.672 | 0.015 | 0.511 | 0.496 | 0.526 | -44.65 | 0.000 | \*\*\* |
| 60 | 0 vs 3 | -0.590 | 0.019 | 0.555 | 0.534 | 0.575 | -31.23 | 0.000 | \*\*\* |
| 60 | 0 vs 4 | -0.476 | 0.026 | 0.621 | 0.590 | 0.654 | -18.29 | 0.000 | \*\*\* |
| 60 | 0 vs 5 | -0.451 | 0.035 | 0.637 | 0.595 | 0.683 | -12.78 | 0.000 | \*\*\* |
| 60 | 0 vs 6 | -0.411 | 0.050 | 0.663 | 0.601 | 0.730 | -8.29 | 0.000 | \*\*\* |
| 60 | 0 vs 7 | -0.363 | 0.064 | 0.695 | 0.613 | 0.789 | -5.65 | 0.000 | \*\*\* |
| 60 | 0 vs 8 | -0.406 | 0.088 | 0.666 | 0.561 | 0.791 | -4.62 | 0.000 | \*\*\* |
| 60 | 0 vs 9+ | -0.511 | 0.087 | 0.600 | 0.506 | 0.711 | -5.90 | 0.000 | \*\*\* |
| 65 | 0 vs 1 | -0.342 | 0.012 | 0.710 | 0.693 | 0.728 | -27.66 | 0.000 | \*\*\* |
| 65 | 0 vs 2 | -0.561 | 0.013 | 0.571 | 0.557 | 0.585 | -44.43 | 0.000 | \*\*\* |
| 65 | 0 vs 3 | -0.487 | 0.016 | 0.614 | 0.596 | 0.634 | -31.00 | 0.000 | \*\*\* |
| 65 | 0 vs 4 | -0.359 | 0.021 | 0.699 | 0.670 | 0.728 | -16.78 | 0.000 | \*\*\* |
| 65 | 0 vs 5 | -0.346 | 0.029 | 0.708 | 0.669 | 0.749 | -11.93 | 0.000 | \*\*\* |
| 65 | 0 vs 6 | -0.306 | 0.041 | 0.737 | 0.680 | 0.798 | -7.51 | 0.000 | \*\*\* |
| 65 | 0 vs 7 | -0.282 | 0.053 | 0.754 | 0.680 | 0.837 | -5.29 | 0.000 | \*\*\* |
| 65 | 0 vs 8 | -0.307 | 0.072 | 0.736 | 0.639 | 0.848 | -4.25 | 0.000 | \*\*\* |
| 65 | 0 vs 9+ | -0.360 | 0.069 | 0.698 | 0.609 | 0.799 | -5.19 | 0.000 | \*\*\* |
| 70 | 0 vs 1 | -0.277 | 0.010 | 0.758 | 0.743 | 0.774 | -26.42 | 0.000 | \*\*\* |
| 70 | 0 vs 2 | -0.446 | 0.011 | 0.640 | 0.627 | 0.654 | -42.05 | 0.000 | \*\*\* |
| 70 | 0 vs 3 | -0.377 | 0.013 | 0.686 | 0.668 | 0.703 | -29.00 | 0.000 | \*\*\* |
| 70 | 0 vs 4 | -0.273 | 0.018 | 0.761 | 0.735 | 0.788 | -15.45 | 0.000 | \*\*\* |
| 70 | 0 vs 5 | -0.241 | 0.024 | 0.786 | 0.750 | 0.823 | -10.19 | 0.000 | \*\*\* |
| 70 | 0 vs 6 | -0.178 | 0.033 | 0.837 | 0.785 | 0.892 | -5.44 | 0.000 | \*\*\* |
| 70 | 0 vs 7 | -0.193 | 0.044 | 0.824 | 0.757 | 0.898 | -4.44 | 0.000 | \*\*\* |
| 70 | 0 vs 8 | -0.193 | 0.058 | 0.824 | 0.736 | 0.924 | -3.32 | 0.001 | \*\*\* |
| 70 | 0 vs 9+ | -0.144 | 0.053 | 0.866 | 0.780 | 0.961 | -2.70 | 0.007 | \*\* |
| 75 | 0 vs 1 | -0.213 | 0.009 | 0.808 | 0.795 | 0.823 | -24.05 | 0.000 | \*\*\* |
| 75 | 0 vs 2 | -0.364 | 0.009 | 0.695 | 0.683 | 0.707 | -40.78 | 0.000 | \*\*\* |
| 75 | 0 vs 3 | -0.300 | 0.011 | 0.741 | 0.725 | 0.757 | -27.59 | 0.000 | \*\*\* |
| 75 | 0 vs 4 | -0.191 | 0.015 | 0.826 | 0.803 | 0.850 | -13.06 | 0.000 | \*\*\* |
| 75 | 0 vs 5 | -0.160 | 0.019 | 0.852 | 0.820 | 0.885 | -8.23 | 0.000 | \*\*\* |
| 75 | 0 vs 6 | -0.081 | 0.027 | 0.923 | 0.876 | 0.972 | -3.01 | 0.003 | \*\* |
| 75 | 0 vs 7 | -0.096 | 0.035 | 0.908 | 0.847 | 0.973 | -2.72 | 0.006 | \*\* |
| 75 | 0 vs 8 | -0.069 | 0.047 | 0.933 | 0.852 | 1.023 | -1.48 | 0.140 |  |
| 75 | 0 vs 9+ | -0.089 | 0.044 | 0.915 | 0.839 | 0.997 | -2.02 | 0.043 | \* |
| 80 | 0 vs 1 | -0.173 | 0.008 | 0.841 | 0.828 | 0.853 | -22.93 | 0.000 | \*\*\* |
| 80 | 0 vs 2 | -0.300 | 0.008 | 0.741 | 0.730 | 0.752 | -39.50 | 0.000 | \*\*\* |
| 80 | 0 vs 3 | -0.226 | 0.009 | 0.798 | 0.784 | 0.812 | -24.67 | 0.000 | \*\*\* |
| 80 | 0 vs 4 | -0.148 | 0.012 | 0.862 | 0.842 | 0.884 | -11.96 | 0.000 | \*\*\* |
| 80 | 0 vs 5 | -0.109 | 0.016 | 0.896 | 0.868 | 0.926 | -6.65 | 0.000 | \*\*\* |
| 80 | 0 vs 6 | -0.024 | 0.023 | 0.976 | 0.934 | 1.020 | -1.08 | 0.280 |  |
| 80 | 0 vs 7 | -0.037 | 0.030 | 0.963 | 0.909 | 1.021 | -1.25 | 0.210 |  |
| 80 | 0 vs 8 | -0.006 | 0.039 | 0.994 | 0.920 | 1.073 | -0.16 | 0.870 |  |
| 80 | 0 vs 9+ | 0.006 | 0.037 | 1.006 | 0.936 | 1.080 | 0.16 | 0.880 |  |
| 85 | 0 vs 1 | -0.144 | 0.007 | 0.866 | 0.855 | 0.878 | -21.54 | 0.000 | \*\*\* |
| 85 | 0 vs 2 | -0.253 | 0.007 | 0.776 | 0.766 | 0.787 | -37.99 | 0.000 | \*\*\* |
| 85 | 0 vs 3 | -0.186 | 0.008 | 0.831 | 0.818 | 0.844 | -23.15 | 0.000 | \*\*\* |
| 85 | 0 vs 4 | -0.114 | 0.011 | 0.892 | 0.874 | 0.911 | -10.53 | 0.000 | \*\*\* |
| 85 | 0 vs 5 | -0.074 | 0.014 | 0.928 | 0.902 | 0.955 | -5.16 | 0.000 | \*\*\* |
| 85 | 0 vs 6 | 0.008 | 0.020 | 1.008 | 0.969 | 1.048 | 0.40 | 0.690 |  |
| 85 | 0 vs 7 | 0.002 | 0.026 | 1.002 | 0.952 | 1.055 | 0.09 | 0.930 |  |
| 85 | 0 vs 8 | 0.005 | 0.035 | 1.005 | 0.939 | 1.076 | 0.14 | 0.880 |  |
| 85 | 0 vs 9+ | 0.053 | 0.032 | 1.054 | 0.990 | 1.122 | 1.63 | 0.100 |  |
| 90 | 0 vs 1 | -0.126 | 0.006 | 0.882 | 0.871 | 0.892 | -20.62 | 0.000 | \*\*\* |
| 90 | 0 vs 2 | -0.220 | 0.006 | 0.802 | 0.793 | 0.812 | -36.20 | 0.000 | \*\*\* |
| 90 | 0 vs 3 | -0.158 | 0.007 | 0.854 | 0.842 | 0.866 | -21.60 | 0.000 | \*\*\* |
| 90 | 0 vs 4 | -0.088 | 0.010 | 0.916 | 0.898 | 0.934 | -8.92 | 0.000 | \*\*\* |
| 90 | 0 vs 5 | -0.051 | 0.013 | 0.950 | 0.926 | 0.975 | -3.89 | 0.000 | \*\*\* |
| 90 | 0 vs 6 | 0.010 | 0.018 | 1.010 | 0.974 | 1.047 | 0.54 | 0.590 |  |
| 90 | 0 vs 7 | 0.017 | 0.024 | 1.017 | 0.970 | 1.066 | 0.71 | 0.480 |  |
| 90 | 0 vs 8 | 0.016 | 0.032 | 1.016 | 0.954 | 1.082 | 0.48 | 0.630 |  |
| 90 | 0 vs 9+ | 0.081 | 0.030 | 1.084 | 1.023 | 1.149 | 2.71 | 0.007 | \*\* |
| 95 | 0 vs 1 | -0.118 | 0.006 | 0.888 | 0.878 | 0.899 | -20.25 | 0.000 | \*\*\* |
| 95 | 0 vs 2 | -0.203 | 0.006 | 0.816 | 0.807 | 0.826 | -34.87 | 0.000 | \*\*\* |
| 95 | 0 vs 3 | -0.143 | 0.007 | 0.867 | 0.855 | 0.878 | -20.47 | 0.000 | \*\*\* |
| 95 | 0 vs 4 | -0.079 | 0.009 | 0.924 | 0.907 | 0.941 | -8.42 | 0.000 | \*\*\* |
| 95 | 0 vs 5 | -0.041 | 0.013 | 0.959 | 0.936 | 0.983 | -3.29 | 0.001 | \*\*\* |
| 95 | 0 vs 6 | 0.012 | 0.018 | 1.012 | 0.978 | 1.047 | 0.67 | 0.500 |  |
| 95 | 0 vs 7 | 0.016 | 0.023 | 1.016 | 0.971 | 1.064 | 0.70 | 0.480 |  |
| 95 | 0 vs 8 | 0.021 | 0.031 | 1.022 | 0.962 | 1.085 | 0.69 | 0.490 |  |
| 95 | 0 vs 9+ | 0.076 | 0.029 | 1.079 | 1.020 | 1.141 | 2.64 | 0.008 | \*\* |
| 100 | 0 vs 1 | -0.114 | 0.006 | 0.892 | 0.882 | 0.902 | -19.76 | 0.000 | \*\*\* |
| 100 | 0 vs 2 | -0.197 | 0.006 | 0.821 | 0.812 | 0.830 | -34.26 | 0.000 | \*\*\* |
| 100 | 0 vs 3 | -0.137 | 0.007 | 0.872 | 0.860 | 0.884 | -19.81 | 0.000 | \*\*\* |
| 100 | 0 vs 4 | -0.075 | 0.009 | 0.928 | 0.911 | 0.945 | -8.03 | 0.000 | \*\*\* |
| 100 | 0 vs 5 | -0.039 | 0.012 | 0.962 | 0.939 | 0.986 | -3.12 | 0.002 | \*\* |
| 100 | 0 vs 6 | 0.014 | 0.017 | 1.014 | 0.980 | 1.049 | 0.79 | 0.430 |  |
| 100 | 0 vs 7 | 0.023 | 0.023 | 1.023 | 0.978 | 1.070 | 0.99 | 0.320 |  |
| 100 | 0 vs 8 | 0.018 | 0.031 | 1.018 | 0.959 | 1.081 | 0.58 | 0.560 |  |
| 100 | 0 vs 9+ | 0.070 | 0.028 | 1.072 | 1.014 | 1.134 | 2.45 | 0.014 | \* |
| 105 | 0 vs 1 | -0.114 | 0.006 | 0.892 | 0.882 | 0.902 | -19.76 | 0.000 | \*\*\* |
| 105 | 0 vs 2 | -0.197 | 0.006 | 0.821 | 0.812 | 0.831 | -34.20 | 0.000 | \*\*\* |
| 105 | 0 vs 3 | -0.137 | 0.007 | 0.872 | 0.861 | 0.884 | -19.77 | 0.000 | \*\*\* |
| 105 | 0 vs 4 | -0.075 | 0.009 | 0.928 | 0.911 | 0.945 | -8.06 | 0.000 | \*\*\* |
| 105 | 0 vs 5 | -0.038 | 0.012 | 0.963 | 0.940 | 0.987 | -3.05 | 0.002 | \*\* |
| 105 | 0 vs 6 | 0.015 | 0.017 | 1.015 | 0.981 | 1.050 | 0.86 | 0.390 |  |
| 105 | 0 vs 7 | 0.024 | 0.023 | 1.024 | 0.979 | 1.071 | 1.05 | 0.300 |  |
| 105 | 0 vs 8 | 0.016 | 0.030 | 1.017 | 0.958 | 1.079 | 0.54 | 0.590 |  |
| 105 | 0 vs 9+ | 0.070 | 0.028 | 1.072 | 1.014 | 1.134 | 2.46 | 0.014 | \* |

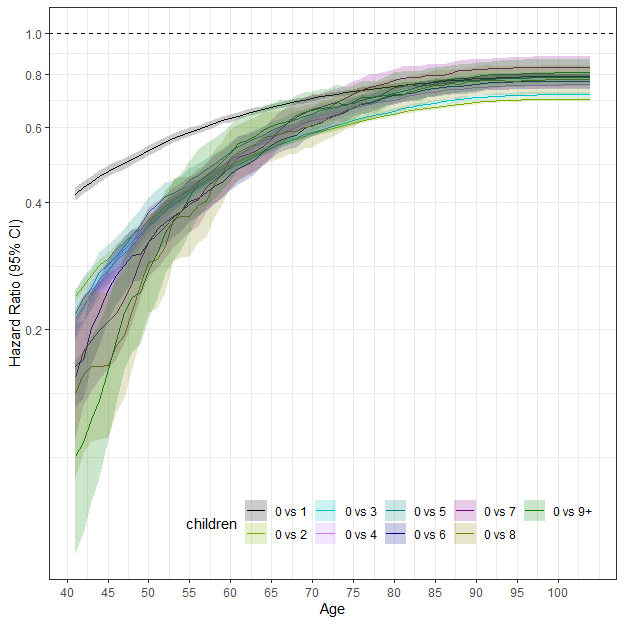
##### With the tt term

Table S2: Cox models with time-tranform (tt) term for women

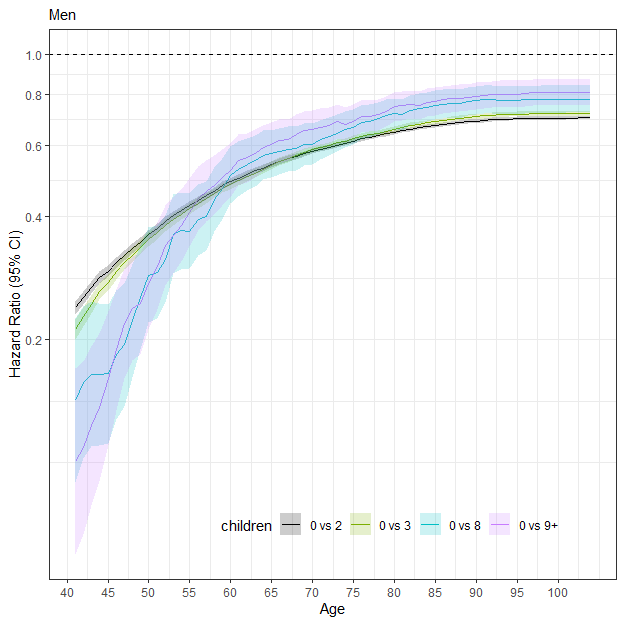
| children | coef | se(coef) | HR | -95CI | +95CI | z | p |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 0 vs 1 | -0.192 | 0.006 | 0.825 | 0.816 | 0.835 | -33.380 | 0 |
| 0 vs 2 | -0.336 | 0.006 | 0.715 | 0.707 | 0.723 | -58.152 | 0 |
| 0 vs 3 | -0.275 | 0.007 | 0.760 | 0.749 | 0.771 | -38.127 | 0 |
| 0 vs 4 | -0.213 | 0.010 | 0.808 | 0.793 | 0.824 | -21.669 | 0 |
| 0 vs 5 | -0.202 | 0.013 | 0.817 | 0.797 | 0.839 | -15.379 | 0 |
| 0 vs 6 | -0.173 | 0.018 | 0.841 | 0.812 | 0.872 | -9.530 | 0 |
| 0 vs 7 | -0.196 | 0.024 | 0.822 | 0.785 | 0.861 | -8.258 | 0 |
| 0 vs 8 | -0.251 | 0.031 | 0.778 | 0.732 | 0.828 | -7.990 | 0 |
| 0 vs 9+ | -0.229 | 0.030 | 0.795 | 0.750 | 0.843 | -7.712 | 0 |
| tt(children) | 1.064 | 0.023 | 2.898 | 2.772 | 3.030 | 46.853 | 0 |

#### Fit Cox for Men

Running the above function for males.



**Figure S8**: Hazards ratios from a random effects cox model for each agefor men



**Figure S9**: Hazards ratios from a random effects cox model for each age. Selected parities only for men

Table S3: Coxme models for men, with 5 year lifespan intervals

| age | children | coef | se(coef) | HR | -95CI | +95CI | z | p | stars |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 40 | 0 vs 1 | -0.908 | 0.018 | 0.403 | 0.389 | 0.418 | -50.00 | 0 | \*\*\* |
| 40 | 0 vs 2 | -1.492 | 0.020 | 0.225 | 0.216 | 0.234 | -74.28 | 0 | \*\*\* |
| 40 | 0 vs 3 | -1.624 | 0.030 | 0.197 | 0.186 | 0.209 | -54.44 | 0 | \*\*\* |
| 40 | 0 vs 4 | -1.664 | 0.049 | 0.189 | 0.172 | 0.208 | -34.09 | 0 | \*\*\* |
| 40 | 0 vs 5 | -1.673 | 0.073 | 0.188 | 0.163 | 0.216 | -23.08 | 0 | \*\*\* |
| 40 | 0 vs 6 | -2.007 | 0.130 | 0.134 | 0.104 | 0.173 | -15.50 | 0 | \*\*\* |
| 40 | 0 vs 7 | -1.983 | 0.183 | 0.138 | 0.096 | 0.197 | -10.84 | 0 | \*\*\* |
| 40 | 0 vs 8 | -2.141 | 0.267 | 0.118 | 0.070 | 0.199 | -8.00 | 0 | \*\*\* |
| 40 | 0 vs 9+ | -2.566 | 0.316 | 0.077 | 0.041 | 0.143 | -8.11 | 0 | \*\*\* |
| 45 | 0 vs 1 | -0.748 | 0.016 | 0.473 | 0.459 | 0.488 | -47.91 | 0 | \*\*\* |
| 45 | 0 vs 2 | -1.222 | 0.017 | 0.295 | 0.285 | 0.304 | -73.97 | 0 | \*\*\* |
| 45 | 0 vs 3 | -1.287 | 0.023 | 0.276 | 0.264 | 0.289 | -55.30 | 0 | \*\*\* |
| 45 | 0 vs 4 | -1.293 | 0.037 | 0.274 | 0.255 | 0.295 | -35.17 | 0 | \*\*\* |
| 45 | 0 vs 5 | -1.252 | 0.053 | 0.286 | 0.258 | 0.317 | -23.72 | 0 | \*\*\* |
| 45 | 0 vs 6 | -1.388 | 0.085 | 0.250 | 0.211 | 0.295 | -16.38 | 0 | \*\*\* |
| 45 | 0 vs 7 | -1.561 | 0.131 | 0.210 | 0.162 | 0.271 | -11.96 | 0 | \*\*\* |
| 45 | 0 vs 8 | -1.802 | 0.200 | 0.165 | 0.111 | 0.244 | -9.00 | 0 | \*\*\* |
| 45 | 0 vs 9+ | -1.827 | 0.193 | 0.161 | 0.110 | 0.235 | -9.48 | 0 | \*\*\* |
| 50 | 0 vs 1 | -0.637 | 0.014 | 0.529 | 0.515 | 0.543 | -46.81 | 0 | \*\*\* |
| 50 | 0 vs 2 | -1.018 | 0.014 | 0.361 | 0.351 | 0.371 | -73.21 | 0 | \*\*\* |
| 50 | 0 vs 3 | -1.044 | 0.019 | 0.352 | 0.339 | 0.365 | -55.05 | 0 | \*\*\* |
| 50 | 0 vs 4 | -1.052 | 0.030 | 0.349 | 0.330 | 0.370 | -35.44 | 0 | \*\*\* |
| 50 | 0 vs 5 | -0.974 | 0.042 | 0.378 | 0.348 | 0.410 | -23.33 | 0 | \*\*\* |
| 50 | 0 vs 6 | -1.136 | 0.068 | 0.321 | 0.281 | 0.367 | -16.76 | 0 | \*\*\* |
| 50 | 0 vs 7 | -1.135 | 0.096 | 0.321 | 0.266 | 0.388 | -11.85 | 0 | \*\*\* |
| 50 | 0 vs 8 | -1.245 | 0.138 | 0.288 | 0.220 | 0.377 | -9.05 | 0 | \*\*\* |
| 50 | 0 vs 9+ | -1.291 | 0.134 | 0.275 | 0.211 | 0.358 | -9.64 | 0 | \*\*\* |
| 55 | 0 vs 1 | -0.536 | 0.012 | 0.585 | 0.572 | 0.599 | -45.50 | 0 | \*\*\* |
| 55 | 0 vs 2 | -0.854 | 0.012 | 0.426 | 0.416 | 0.436 | -72.60 | 0 | \*\*\* |
| 55 | 0 vs 3 | -0.870 | 0.016 | 0.419 | 0.406 | 0.432 | -55.28 | 0 | \*\*\* |
| 55 | 0 vs 4 | -0.841 | 0.024 | 0.431 | 0.411 | 0.452 | -35.05 | 0 | \*\*\* |
| 55 | 0 vs 5 | -0.800 | 0.034 | 0.449 | 0.420 | 0.481 | -23.34 | 0 | \*\*\* |
| 55 | 0 vs 6 | -0.912 | 0.054 | 0.402 | 0.361 | 0.447 | -16.83 | 0 | \*\*\* |
| 55 | 0 vs 7 | -0.927 | 0.077 | 0.396 | 0.340 | 0.461 | -11.99 | 0 | \*\*\* |
| 55 | 0 vs 8 | -0.996 | 0.109 | 0.369 | 0.298 | 0.457 | -9.16 | 0 | \*\*\* |
| 55 | 0 vs 9+ | -0.891 | 0.098 | 0.410 | 0.338 | 0.498 | -9.05 | 0 | \*\*\* |
| 60 | 0 vs 1 | -0.461 | 0.010 | 0.631 | 0.618 | 0.643 | -45.21 | 0 | \*\*\* |
| 60 | 0 vs 2 | -0.719 | 0.010 | 0.487 | 0.478 | 0.497 | -71.97 | 0 | \*\*\* |
| 60 | 0 vs 3 | -0.736 | 0.013 | 0.479 | 0.467 | 0.492 | -55.81 | 0 | \*\*\* |
| 60 | 0 vs 4 | -0.689 | 0.020 | 0.502 | 0.483 | 0.522 | -34.83 | 0 | \*\*\* |
| 60 | 0 vs 5 | -0.649 | 0.028 | 0.523 | 0.495 | 0.552 | -23.04 | 0 | \*\*\* |
| 60 | 0 vs 6 | -0.768 | 0.045 | 0.464 | 0.425 | 0.506 | -17.24 | 0 | \*\*\* |
| 60 | 0 vs 7 | -0.723 | 0.062 | 0.486 | 0.430 | 0.548 | -11.71 | 0 | \*\*\* |
| 60 | 0 vs 8 | -0.682 | 0.082 | 0.506 | 0.430 | 0.594 | -8.29 | 0 | \*\*\* |
| 60 | 0 vs 9+ | -0.654 | 0.077 | 0.520 | 0.447 | 0.605 | -8.44 | 0 | \*\*\* |
| 65 | 0 vs 1 | -0.404 | 0.009 | 0.668 | 0.656 | 0.679 | -45.50 | 0 | \*\*\* |
| 65 | 0 vs 2 | -0.623 | 0.009 | 0.537 | 0.528 | 0.546 | -72.43 | 0 | \*\*\* |
| 65 | 0 vs 3 | -0.625 | 0.011 | 0.536 | 0.524 | 0.547 | -56.06 | 0 | \*\*\* |
| 65 | 0 vs 4 | -0.571 | 0.017 | 0.565 | 0.547 | 0.584 | -34.55 | 0 | \*\*\* |
| 65 | 0 vs 5 | -0.527 | 0.023 | 0.591 | 0.564 | 0.618 | -22.51 | 0 | \*\*\* |
| 65 | 0 vs 6 | -0.606 | 0.036 | 0.545 | 0.508 | 0.585 | -16.80 | 0 | \*\*\* |
| 65 | 0 vs 7 | -0.574 | 0.050 | 0.563 | 0.510 | 0.622 | -11.41 | 0 | \*\*\* |
| 65 | 0 vs 8 | -0.560 | 0.068 | 0.571 | 0.500 | 0.653 | -8.21 | 0 | \*\*\* |
| 65 | 0 vs 9+ | -0.506 | 0.063 | 0.603 | 0.532 | 0.682 | -7.98 | 0 | \*\*\* |
| 70 | 0 vs 1 | -0.354 | 0.008 | 0.702 | 0.691 | 0.713 | -45.14 | 0 | \*\*\* |
| 70 | 0 vs 2 | -0.546 | 0.008 | 0.579 | 0.571 | 0.588 | -72.47 | 0 | \*\*\* |
| 70 | 0 vs 3 | -0.536 | 0.010 | 0.585 | 0.574 | 0.596 | -55.71 | 0 | \*\*\* |
| 70 | 0 vs 4 | -0.476 | 0.014 | 0.622 | 0.605 | 0.639 | -33.73 | 0 | \*\*\* |
| 70 | 0 vs 5 | -0.439 | 0.020 | 0.644 | 0.620 | 0.670 | -22.00 | 0 | \*\*\* |
| 70 | 0 vs 6 | -0.502 | 0.030 | 0.606 | 0.571 | 0.643 | -16.51 | 0 | \*\*\* |
| 70 | 0 vs 7 | -0.412 | 0.041 | 0.662 | 0.611 | 0.718 | -9.99 | 0 | \*\*\* |
| 70 | 0 vs 8 | -0.505 | 0.059 | 0.603 | 0.538 | 0.677 | -8.61 | 0 | \*\*\* |
| 70 | 0 vs 9+ | -0.421 | 0.054 | 0.656 | 0.590 | 0.729 | -7.82 | 0 | \*\*\* |
| 75 | 0 vs 1 | -0.316 | 0.007 | 0.729 | 0.719 | 0.739 | -44.68 | 0 | \*\*\* |
| 75 | 0 vs 2 | -0.488 | 0.007 | 0.614 | 0.606 | 0.622 | -72.25 | 0 | \*\*\* |
| 75 | 0 vs 3 | -0.474 | 0.009 | 0.622 | 0.612 | 0.633 | -55.47 | 0 | \*\*\* |
| 75 | 0 vs 4 | -0.410 | 0.012 | 0.663 | 0.647 | 0.680 | -33.06 | 0 | \*\*\* |
| 75 | 0 vs 5 | -0.379 | 0.018 | 0.684 | 0.661 | 0.708 | -21.58 | 0 | \*\*\* |
| 75 | 0 vs 6 | -0.403 | 0.026 | 0.669 | 0.635 | 0.704 | -15.40 | 0 | \*\*\* |
| 75 | 0 vs 7 | -0.334 | 0.036 | 0.716 | 0.667 | 0.768 | -9.30 | 0 | \*\*\* |
| 75 | 0 vs 8 | -0.410 | 0.050 | 0.663 | 0.601 | 0.732 | -8.14 | 0 | \*\*\* |
| 75 | 0 vs 9+ | -0.376 | 0.047 | 0.687 | 0.626 | 0.754 | -7.92 | 0 | \*\*\* |
| 80 | 0 vs 1 | -0.287 | 0.007 | 0.750 | 0.741 | 0.760 | -43.92 | 0 | \*\*\* |
| 80 | 0 vs 2 | -0.440 | 0.006 | 0.644 | 0.636 | 0.652 | -70.74 | 0 | \*\*\* |
| 80 | 0 vs 3 | -0.423 | 0.008 | 0.655 | 0.645 | 0.665 | -54.29 | 0 | \*\*\* |
| 80 | 0 vs 4 | -0.362 | 0.011 | 0.696 | 0.681 | 0.712 | -32.13 | 0 | \*\*\* |
| 80 | 0 vs 5 | -0.325 | 0.016 | 0.723 | 0.700 | 0.745 | -20.45 | 0 | \*\*\* |
| 80 | 0 vs 6 | -0.339 | 0.024 | 0.713 | 0.681 | 0.746 | -14.41 | 0 | \*\*\* |
| 80 | 0 vs 7 | -0.257 | 0.032 | 0.773 | 0.726 | 0.823 | -7.99 | 0 | \*\*\* |
| 80 | 0 vs 8 | -0.335 | 0.045 | 0.716 | 0.655 | 0.782 | -7.45 | 0 | \*\*\* |
| 80 | 0 vs 9+ | -0.295 | 0.042 | 0.744 | 0.685 | 0.808 | -7.01 | 0 | \*\*\* |
| 85 | 0 vs 1 | -0.265 | 0.006 | 0.767 | 0.758 | 0.776 | -42.69 | 0 | \*\*\* |
| 85 | 0 vs 2 | -0.402 | 0.006 | 0.669 | 0.661 | 0.677 | -68.22 | 0 | \*\*\* |
| 85 | 0 vs 3 | -0.379 | 0.007 | 0.685 | 0.675 | 0.695 | -51.65 | 0 | \*\*\* |
| 85 | 0 vs 4 | -0.318 | 0.011 | 0.727 | 0.712 | 0.743 | -30.14 | 0 | \*\*\* |
| 85 | 0 vs 5 | -0.277 | 0.015 | 0.758 | 0.736 | 0.780 | -18.62 | 0 | \*\*\* |
| 85 | 0 vs 6 | -0.298 | 0.022 | 0.742 | 0.711 | 0.775 | -13.52 | 0 | \*\*\* |
| 85 | 0 vs 7 | -0.228 | 0.030 | 0.796 | 0.750 | 0.845 | -7.48 | 0 | \*\*\* |
| 85 | 0 vs 8 | -0.285 | 0.042 | 0.752 | 0.693 | 0.816 | -6.81 | 0 | \*\*\* |
| 85 | 0 vs 9+ | -0.264 | 0.040 | 0.768 | 0.711 | 0.830 | -6.67 | 0 | \*\*\* |
| 90 | 0 vs 1 | -0.248 | 0.006 | 0.781 | 0.771 | 0.790 | -41.04 | 0 | \*\*\* |
| 90 | 0 vs 2 | -0.376 | 0.006 | 0.687 | 0.679 | 0.695 | -65.73 | 0 | \*\*\* |
| 90 | 0 vs 3 | -0.350 | 0.007 | 0.704 | 0.695 | 0.714 | -49.35 | 0 | \*\*\* |
| 90 | 0 vs 4 | -0.296 | 0.010 | 0.744 | 0.729 | 0.759 | -28.92 | 0 | \*\*\* |
| 90 | 0 vs 5 | -0.253 | 0.014 | 0.776 | 0.755 | 0.798 | -17.59 | 0 | \*\*\* |
| 90 | 0 vs 6 | -0.279 | 0.021 | 0.756 | 0.725 | 0.789 | -13.07 | 0 | \*\*\* |
| 90 | 0 vs 7 | -0.198 | 0.030 | 0.821 | 0.775 | 0.870 | -6.69 | 0 | \*\*\* |
| 90 | 0 vs 8 | -0.259 | 0.040 | 0.772 | 0.713 | 0.835 | -6.41 | 0 | \*\*\* |
| 90 | 0 vs 9+ | -0.234 | 0.038 | 0.791 | 0.734 | 0.852 | -6.16 | 0 | \*\*\* |
| 95 | 0 vs 1 | -0.237 | 0.006 | 0.789 | 0.780 | 0.798 | -39.79 | 0 | \*\*\* |
| 95 | 0 vs 2 | -0.362 | 0.006 | 0.696 | 0.689 | 0.704 | -64.11 | 0 | \*\*\* |
| 95 | 0 vs 3 | -0.337 | 0.007 | 0.714 | 0.704 | 0.724 | -48.03 | 0 | \*\*\* |
| 95 | 0 vs 4 | -0.285 | 0.010 | 0.752 | 0.738 | 0.767 | -28.19 | 0 | \*\*\* |
| 95 | 0 vs 5 | -0.244 | 0.014 | 0.784 | 0.762 | 0.806 | -17.12 | 0 | \*\*\* |
| 95 | 0 vs 6 | -0.263 | 0.021 | 0.769 | 0.738 | 0.802 | -12.47 | 0 | \*\*\* |
| 95 | 0 vs 7 | -0.188 | 0.029 | 0.829 | 0.782 | 0.877 | -6.43 | 0 | \*\*\* |
| 95 | 0 vs 8 | -0.261 | 0.040 | 0.770 | 0.712 | 0.833 | -6.51 | 0 | \*\*\* |
| 95 | 0 vs 9+ | -0.223 | 0.038 | 0.800 | 0.744 | 0.862 | -5.92 | 0 | \*\*\* |
| 100 | 0 vs 1 | -0.235 | 0.006 | 0.791 | 0.781 | 0.800 | -39.45 | 0 | \*\*\* |
| 100 | 0 vs 2 | -0.358 | 0.006 | 0.699 | 0.691 | 0.707 | -63.58 | 0 | \*\*\* |
| 100 | 0 vs 3 | -0.334 | 0.007 | 0.716 | 0.706 | 0.726 | -47.73 | 0 | \*\*\* |
| 100 | 0 vs 4 | -0.281 | 0.010 | 0.755 | 0.741 | 0.770 | -27.89 | 0 | \*\*\* |
| 100 | 0 vs 5 | -0.239 | 0.014 | 0.787 | 0.766 | 0.810 | -16.84 | 0 | \*\*\* |
| 100 | 0 vs 6 | -0.262 | 0.021 | 0.770 | 0.739 | 0.802 | -12.47 | 0 | \*\*\* |
| 100 | 0 vs 7 | -0.184 | 0.029 | 0.832 | 0.786 | 0.881 | -6.30 | 0 | \*\*\* |
| 100 | 0 vs 8 | -0.252 | 0.040 | 0.777 | 0.719 | 0.841 | -6.32 | 0 | \*\*\* |
| 100 | 0 vs 9+ | -0.215 | 0.037 | 0.806 | 0.749 | 0.868 | -5.74 | 0 | \*\*\* |
| 105 | 0 vs 1 | -0.235 | 0.006 | 0.791 | 0.782 | 0.800 | -39.40 | 0 | \*\*\* |
| 105 | 0 vs 2 | -0.358 | 0.006 | 0.699 | 0.692 | 0.707 | -63.50 | 0 | \*\*\* |
| 105 | 0 vs 3 | -0.333 | 0.007 | 0.717 | 0.707 | 0.726 | -47.67 | 0 | \*\*\* |
| 105 | 0 vs 4 | -0.280 | 0.010 | 0.756 | 0.741 | 0.771 | -27.84 | 0 | \*\*\* |
| 105 | 0 vs 5 | -0.239 | 0.014 | 0.788 | 0.766 | 0.810 | -16.82 | 0 | \*\*\* |
| 105 | 0 vs 6 | -0.262 | 0.021 | 0.769 | 0.738 | 0.802 | -12.50 | 0 | \*\*\* |
| 105 | 0 vs 7 | -0.184 | 0.029 | 0.832 | 0.786 | 0.881 | -6.29 | 0 | \*\*\* |
| 105 | 0 vs 8 | -0.251 | 0.040 | 0.778 | 0.719 | 0.841 | -6.31 | 0 | \*\*\* |
| 105 | 0 vs 9+ | -0.215 | 0.037 | 0.807 | 0.750 | 0.868 | -5.73 | 0 | \*\*\* |

##### With the tt term

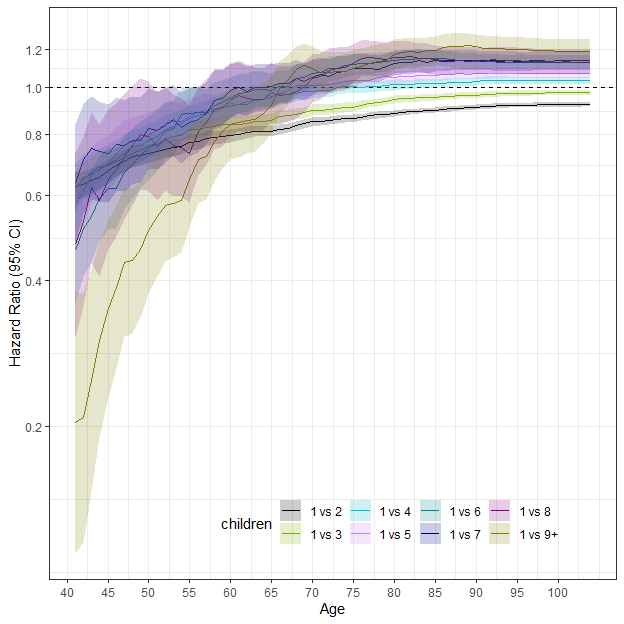
Table S4: Cox models with time-tranform (tt) term for men

| children | coef | se(coef) | HR | -95CI | +95CI | z | p |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 0 vs 1 | -0.163 | 0.006 | 0.849 | 0.839 | 0.859 | -26.901 | 0.000 |
| 0 vs 2 | -0.252 | 0.006 | 0.777 | 0.769 | 0.786 | -42.884 | 0.000 |
| 0 vs 3 | -0.193 | 0.007 | 0.825 | 0.813 | 0.837 | -26.511 | 0.000 |
| 0 vs 4 | -0.108 | 0.010 | 0.898 | 0.880 | 0.916 | -10.501 | 0.000 |
| 0 vs 5 | -0.045 | 0.014 | 0.956 | 0.930 | 0.983 | -3.134 | 0.002 |
| 0 vs 6 | -0.060 | 0.021 | 0.942 | 0.904 | 0.982 | -2.836 | 0.005 |
| 0 vs 7 | 0.053 | 0.029 | 1.054 | 0.996 | 1.116 | 1.813 | 0.070 |
| 0 vs 8 | -0.049 | 0.040 | 0.953 | 0.881 | 1.030 | -1.218 | 0.223 |
| 0 vs 9+ | -0.004 | 0.037 | 0.996 | 0.926 | 1.072 | -0.102 | 0.919 |
| tt(children) | 1.375 | 0.018 | 3.956 | 3.822 | 4.095 | 77.933 | 0.000 |

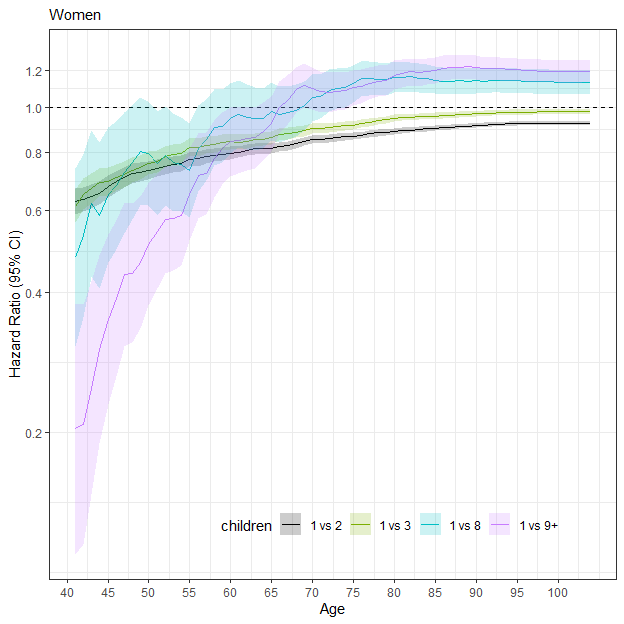
## Cox Models with Random Effect Without 0 Parity Individuals

The following section displays the same results as the section above without the 0 parity individuals.

#### Fit Cox for Women



**Figure S10**: Hazards ratios from a random effects cox model for each age for women



**Figure S11**: Hazards ratios from a random effects cox model for each age. Selected parities only for women

Table S5: Coxme models for women, with 5 year lifespan intervals

| age | children | coef | se(coef) | HR | -95CI | +95CI | z | p | stars |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 40 | 1 vs 2 | -0.488 | 0.034 | 0.614 | 0.574 | 0.656 | -14.39 | 0.000 | \*\*\* |
| 40 | 1 vs 3 | -0.538 | 0.044 | 0.584 | 0.536 | 0.637 | -12.23 | 0.000 | \*\*\* |
| 40 | 1 vs 4 | -0.525 | 0.062 | 0.592 | 0.524 | 0.668 | -8.52 | 0.000 | \*\*\* |
| 40 | 1 vs 5 | -0.601 | 0.087 | 0.548 | 0.462 | 0.650 | -6.93 | 0.000 | \*\*\* |
| 40 | 1 vs 6 | -0.936 | 0.145 | 0.392 | 0.296 | 0.521 | -6.47 | 0.000 | \*\*\* |
| 40 | 1 vs 7 | -0.535 | 0.156 | 0.586 | 0.432 | 0.796 | -3.43 | 0.001 | \*\*\* |
| 40 | 1 vs 8 | -0.956 | 0.259 | 0.385 | 0.231 | 0.639 | -3.69 | 0.000 | \*\*\* |
| 40 | 1 vs 9+ | -1.733 | 0.354 | 0.177 | 0.088 | 0.354 | -4.89 | 0.000 | \*\*\* |
| 45 | 1 vs 2 | -0.394 | 0.028 | 0.675 | 0.639 | 0.713 | -14.10 | 0.000 | \*\*\* |
| 45 | 1 vs 3 | -0.367 | 0.035 | 0.693 | 0.647 | 0.742 | -10.47 | 0.000 | \*\*\* |
| 45 | 1 vs 4 | -0.365 | 0.049 | 0.694 | 0.631 | 0.764 | -7.43 | 0.000 | \*\*\* |
| 45 | 1 vs 5 | -0.360 | 0.066 | 0.698 | 0.613 | 0.795 | -5.43 | 0.000 | \*\*\* |
| 45 | 1 vs 6 | -0.479 | 0.099 | 0.620 | 0.510 | 0.752 | -4.83 | 0.000 | \*\*\* |
| 45 | 1 vs 7 | -0.311 | 0.119 | 0.733 | 0.580 | 0.926 | -2.60 | 0.009 | \*\* |
| 45 | 1 vs 8 | -0.434 | 0.170 | 0.648 | 0.464 | 0.904 | -2.55 | 0.011 | \* |
| 45 | 1 vs 9+ | -1.050 | 0.214 | 0.350 | 0.230 | 0.532 | -4.90 | 0.000 | \*\*\* |
| 50 | 1 vs 2 | -0.313 | 0.023 | 0.731 | 0.699 | 0.765 | -13.63 | 0.000 | \*\*\* |
| 50 | 1 vs 3 | -0.277 | 0.029 | 0.758 | 0.717 | 0.802 | -9.64 | 0.000 | \*\*\* |
| 50 | 1 vs 4 | -0.251 | 0.040 | 0.778 | 0.720 | 0.842 | -6.28 | 0.000 | \*\*\* |
| 50 | 1 vs 5 | -0.222 | 0.053 | 0.801 | 0.722 | 0.889 | -4.17 | 0.000 | \*\*\* |
| 50 | 1 vs 6 | -0.286 | 0.078 | 0.752 | 0.646 | 0.875 | -3.68 | 0.000 | \*\*\* |
| 50 | 1 vs 7 | -0.193 | 0.097 | 0.825 | 0.682 | 0.998 | -1.98 | 0.047 | \* |
| 50 | 1 vs 8 | -0.229 | 0.132 | 0.795 | 0.613 | 1.030 | -1.73 | 0.083 |  |
| 50 | 1 vs 9+ | -0.679 | 0.153 | 0.507 | 0.375 | 0.685 | -4.43 | 0.000 | \*\*\* |
| 55 | 1 vs 2 | -0.259 | 0.019 | 0.772 | 0.744 | 0.801 | -13.79 | 0.000 | \*\*\* |
| 55 | 1 vs 3 | -0.199 | 0.023 | 0.820 | 0.783 | 0.858 | -8.51 | 0.000 | \*\*\* |
| 55 | 1 vs 4 | -0.145 | 0.032 | 0.865 | 0.812 | 0.921 | -4.50 | 0.000 | \*\*\* |
| 55 | 1 vs 5 | -0.134 | 0.043 | 0.875 | 0.803 | 0.952 | -3.08 | 0.002 | \*\* |
| 55 | 1 vs 6 | -0.119 | 0.061 | 0.888 | 0.788 | 1.001 | -1.95 | 0.051 |  |
| 55 | 1 vs 7 | -0.165 | 0.082 | 0.848 | 0.722 | 0.995 | -2.02 | 0.044 | \* |
| 55 | 1 vs 8 | -0.313 | 0.118 | 0.731 | 0.580 | 0.921 | -2.66 | 0.008 | \*\* |
| 55 | 1 vs 9+ | -0.433 | 0.116 | 0.649 | 0.516 | 0.815 | -3.72 | 0.000 | \*\*\* |
| 60 | 1 vs 2 | -0.227 | 0.015 | 0.797 | 0.773 | 0.821 | -14.70 | 0.000 | \*\*\* |
| 60 | 1 vs 3 | -0.172 | 0.019 | 0.842 | 0.811 | 0.875 | -8.92 | 0.000 | \*\*\* |
| 60 | 1 vs 4 | -0.089 | 0.026 | 0.915 | 0.869 | 0.963 | -3.37 | 0.001 | \*\*\* |
| 60 | 1 vs 5 | -0.076 | 0.036 | 0.927 | 0.864 | 0.994 | -2.14 | 0.032 | \* |
| 60 | 1 vs 6 | -0.049 | 0.050 | 0.952 | 0.863 | 1.050 | -0.98 | 0.330 |  |
| 60 | 1 vs 7 | -0.013 | 0.065 | 0.987 | 0.870 | 1.120 | -0.20 | 0.840 |  |
| 60 | 1 vs 8 | -0.058 | 0.088 | 0.943 | 0.794 | 1.121 | -0.66 | 0.510 |  |
| 60 | 1 vs 9+ | -0.172 | 0.087 | 0.842 | 0.710 | 0.998 | -1.98 | 0.048 | \* |
| 65 | 1 vs 2 | -0.206 | 0.013 | 0.814 | 0.794 | 0.834 | -16.26 | 0.000 | \*\*\* |
| 65 | 1 vs 3 | -0.152 | 0.016 | 0.859 | 0.832 | 0.886 | -9.61 | 0.000 | \*\*\* |
| 65 | 1 vs 4 | -0.046 | 0.022 | 0.955 | 0.915 | 0.996 | -2.14 | 0.033 | \* |
| 65 | 1 vs 5 | -0.042 | 0.029 | 0.959 | 0.906 | 1.015 | -1.44 | 0.150 |  |
| 65 | 1 vs 6 | -0.011 | 0.041 | 0.989 | 0.913 | 1.072 | -0.26 | 0.800 |  |
| 65 | 1 vs 7 | 0.005 | 0.053 | 1.005 | 0.905 | 1.116 | 0.09 | 0.930 |  |
| 65 | 1 vs 8 | -0.022 | 0.072 | 0.978 | 0.849 | 1.127 | -0.31 | 0.760 |  |
| 65 | 1 vs 9+ | -0.082 | 0.069 | 0.922 | 0.804 | 1.056 | -1.18 | 0.240 |  |
| 70 | 1 vs 2 | -0.160 | 0.010 | 0.852 | 0.835 | 0.869 | -15.32 | 0.000 | \*\*\* |
| 70 | 1 vs 3 | -0.105 | 0.013 | 0.900 | 0.877 | 0.923 | -8.11 | 0.000 | \*\*\* |
| 70 | 1 vs 4 | -0.016 | 0.018 | 0.984 | 0.950 | 1.019 | -0.90 | 0.370 |  |
| 70 | 1 vs 5 | 0.011 | 0.024 | 1.011 | 0.965 | 1.059 | 0.46 | 0.650 |  |
| 70 | 1 vs 6 | 0.068 | 0.033 | 1.070 | 1.003 | 1.141 | 2.06 | 0.039 | \* |
| 70 | 1 vs 7 | 0.048 | 0.044 | 1.049 | 0.963 | 1.143 | 1.10 | 0.270 |  |
| 70 | 1 vs 8 | 0.045 | 0.058 | 1.046 | 0.934 | 1.173 | 0.78 | 0.440 |  |
| 70 | 1 vs 9+ | 0.091 | 0.053 | 1.095 | 0.987 | 1.216 | 1.71 | 0.088 |  |
| 75 | 1 vs 2 | -0.145 | 0.009 | 0.865 | 0.851 | 0.880 | -16.68 | 0.000 | \*\*\* |
| 75 | 1 vs 3 | -0.091 | 0.011 | 0.913 | 0.894 | 0.933 | -8.44 | 0.000 | \*\*\* |
| 75 | 1 vs 4 | 0.008 | 0.015 | 1.008 | 0.979 | 1.037 | 0.53 | 0.590 |  |
| 75 | 1 vs 5 | 0.035 | 0.020 | 1.035 | 0.996 | 1.076 | 1.78 | 0.075 |  |
| 75 | 1 vs 6 | 0.110 | 0.027 | 1.117 | 1.060 | 1.177 | 4.13 | 0.000 | \*\*\* |
| 75 | 1 vs 7 | 0.091 | 0.035 | 1.095 | 1.022 | 1.174 | 2.57 | 0.010 | \*\* |
| 75 | 1 vs 8 | 0.117 | 0.047 | 1.124 | 1.025 | 1.231 | 2.50 | 0.013 | \* |
| 75 | 1 vs 9+ | 0.095 | 0.044 | 1.099 | 1.008 | 1.199 | 2.14 | 0.033 | \* |
| 80 | 1 vs 2 | -0.121 | 0.007 | 0.886 | 0.873 | 0.899 | -16.56 | 0.000 | \*\*\* |
| 80 | 1 vs 3 | -0.055 | 0.009 | 0.946 | 0.930 | 0.963 | -6.13 | 0.000 | \*\*\* |
| 80 | 1 vs 4 | 0.014 | 0.012 | 1.014 | 0.990 | 1.039 | 1.16 | 0.250 |  |
| 80 | 1 vs 5 | 0.050 | 0.016 | 1.052 | 1.018 | 1.086 | 3.05 | 0.002 | \*\* |
| 80 | 1 vs 6 | 0.132 | 0.023 | 1.141 | 1.092 | 1.193 | 5.87 | 0.000 | \*\*\* |
| 80 | 1 vs 7 | 0.116 | 0.030 | 1.123 | 1.060 | 1.191 | 3.91 | 0.000 | \*\*\* |
| 80 | 1 vs 8 | 0.147 | 0.039 | 1.158 | 1.072 | 1.251 | 3.74 | 0.000 | \*\*\* |
| 80 | 1 vs 9+ | 0.157 | 0.037 | 1.170 | 1.090 | 1.257 | 4.30 | 0.000 | \*\*\* |
| 85 | 1 vs 2 | -0.106 | 0.006 | 0.900 | 0.889 | 0.911 | -16.56 | 0.000 | \*\*\* |
| 85 | 1 vs 3 | -0.044 | 0.008 | 0.957 | 0.942 | 0.972 | -5.63 | 0.000 | \*\*\* |
| 85 | 1 vs 4 | 0.021 | 0.011 | 1.021 | 1.000 | 1.043 | 1.96 | 0.050 | \* |
| 85 | 1 vs 5 | 0.059 | 0.014 | 1.061 | 1.031 | 1.091 | 4.09 | 0.000 | \*\*\* |
| 85 | 1 vs 6 | 0.139 | 0.020 | 1.149 | 1.105 | 1.195 | 7.01 | 0.000 | \*\*\* |
| 85 | 1 vs 7 | 0.131 | 0.026 | 1.140 | 1.084 | 1.200 | 5.03 | 0.000 | \*\*\* |
| 85 | 1 vs 8 | 0.134 | 0.035 | 1.143 | 1.067 | 1.224 | 3.83 | 0.000 | \*\*\* |
| 85 | 1 vs 9+ | 0.180 | 0.032 | 1.198 | 1.124 | 1.275 | 5.61 | 0.000 | \*\*\* |
| 90 | 1 vs 2 | -0.091 | 0.006 | 0.913 | 0.903 | 0.923 | -15.70 | 0.000 | \*\*\* |
| 90 | 1 vs 3 | -0.034 | 0.007 | 0.967 | 0.953 | 0.980 | -4.75 | 0.000 | \*\*\* |
| 90 | 1 vs 4 | 0.031 | 0.010 | 1.031 | 1.012 | 1.051 | 3.16 | 0.002 | \*\* |
| 90 | 1 vs 5 | 0.066 | 0.013 | 1.069 | 1.042 | 1.097 | 5.06 | 0.000 | \*\*\* |
| 90 | 1 vs 6 | 0.126 | 0.018 | 1.135 | 1.095 | 1.176 | 6.89 | 0.000 | \*\*\* |
| 90 | 1 vs 7 | 0.132 | 0.024 | 1.141 | 1.088 | 1.196 | 5.47 | 0.000 | \*\*\* |
| 90 | 1 vs 8 | 0.130 | 0.032 | 1.138 | 1.069 | 1.212 | 4.04 | 0.000 | \*\*\* |
| 90 | 1 vs 9+ | 0.195 | 0.030 | 1.215 | 1.146 | 1.288 | 6.55 | 0.000 | \*\*\* |
| 95 | 1 vs 2 | -0.082 | 0.006 | 0.922 | 0.912 | 0.932 | -14.71 | 0.000 | \*\*\* |
| 95 | 1 vs 3 | -0.026 | 0.007 | 0.974 | 0.961 | 0.987 | -3.83 | 0.000 | \*\*\* |
| 95 | 1 vs 4 | 0.033 | 0.009 | 1.034 | 1.015 | 1.053 | 3.54 | 0.000 | \*\*\* |
| 95 | 1 vs 5 | 0.070 | 0.013 | 1.073 | 1.047 | 1.100 | 5.59 | 0.000 | \*\*\* |
| 95 | 1 vs 6 | 0.122 | 0.018 | 1.130 | 1.092 | 1.170 | 6.95 | 0.000 | \*\*\* |
| 95 | 1 vs 7 | 0.126 | 0.023 | 1.134 | 1.083 | 1.187 | 5.42 | 0.000 | \*\*\* |
| 95 | 1 vs 8 | 0.130 | 0.031 | 1.139 | 1.072 | 1.210 | 4.22 | 0.000 | \*\*\* |
| 95 | 1 vs 9+ | 0.185 | 0.029 | 1.203 | 1.137 | 1.273 | 6.43 | 0.000 | \*\*\* |
| 100 | 1 vs 2 | -0.080 | 0.005 | 0.923 | 0.913 | 0.933 | -14.59 | 0.000 | \*\*\* |
| 100 | 1 vs 3 | -0.024 | 0.007 | 0.976 | 0.964 | 0.989 | -3.55 | 0.000 | \*\*\* |
| 100 | 1 vs 4 | 0.034 | 0.009 | 1.034 | 1.016 | 1.053 | 3.66 | 0.000 | \*\*\* |
| 100 | 1 vs 5 | 0.069 | 0.012 | 1.072 | 1.046 | 1.098 | 5.57 | 0.000 | \*\*\* |
| 100 | 1 vs 6 | 0.121 | 0.017 | 1.128 | 1.090 | 1.167 | 6.93 | 0.000 | \*\*\* |
| 100 | 1 vs 7 | 0.128 | 0.023 | 1.137 | 1.087 | 1.189 | 5.62 | 0.000 | \*\*\* |
| 100 | 1 vs 8 | 0.123 | 0.031 | 1.131 | 1.065 | 1.201 | 4.03 | 0.000 | \*\*\* |
| 100 | 1 vs 9+ | 0.175 | 0.028 | 1.192 | 1.127 | 1.260 | 6.16 | 0.000 | \*\*\* |
| 105 | 1 vs 2 | -0.080 | 0.005 | 0.923 | 0.914 | 0.933 | -14.52 | 0.000 | \*\*\* |
| 105 | 1 vs 3 | -0.024 | 0.007 | 0.977 | 0.964 | 0.990 | -3.50 | 0.000 | \*\*\* |
| 105 | 1 vs 4 | 0.034 | 0.009 | 1.034 | 1.016 | 1.053 | 3.63 | 0.000 | \*\*\* |
| 105 | 1 vs 5 | 0.070 | 0.012 | 1.073 | 1.047 | 1.099 | 5.65 | 0.000 | \*\*\* |
| 105 | 1 vs 6 | 0.122 | 0.017 | 1.129 | 1.092 | 1.169 | 7.00 | 0.000 | \*\*\* |
| 105 | 1 vs 7 | 0.130 | 0.023 | 1.139 | 1.089 | 1.191 | 5.68 | 0.000 | \*\*\* |
| 105 | 1 vs 8 | 0.122 | 0.030 | 1.129 | 1.064 | 1.199 | 3.99 | 0.000 | \*\*\* |
| 105 | 1 vs 9+ | 0.175 | 0.028 | 1.192 | 1.127 | 1.260 | 6.17 | 0.000 | \*\*\* |

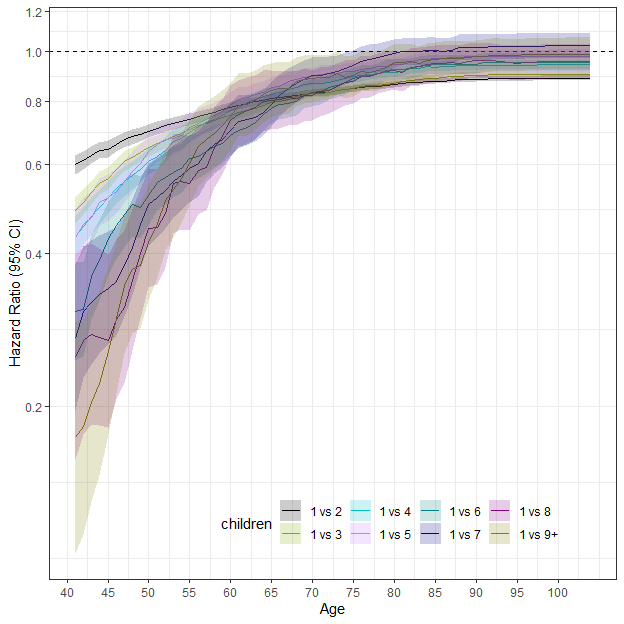
##### With the tt term

Table S6: Cox models with time-tranform (tt) term for women

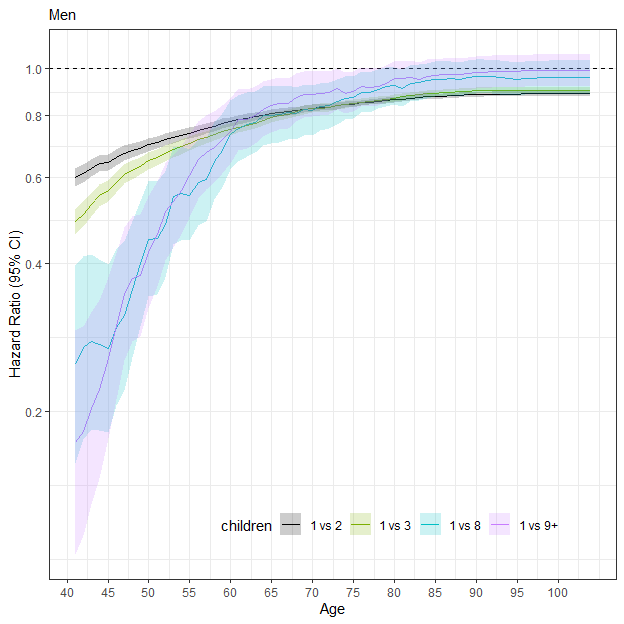
| children | coef | se(coef) | HR | -95CI | +95CI | z | p |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 1 vs 2 | -0.129 | 0.006 | 0.879 | 0.870 | 0.889 | -23.111 | 0.000 |
| 1 vs 3 | -0.049 | 0.007 | 0.952 | 0.939 | 0.965 | -6.920 | 0.000 |
| 1 vs 4 | 0.034 | 0.010 | 1.034 | 1.015 | 1.055 | 3.444 | 0.001 |
| 1 vs 5 | 0.068 | 0.013 | 1.070 | 1.043 | 1.098 | 5.115 | 0.000 |
| 1 vs 6 | 0.120 | 0.018 | 1.127 | 1.087 | 1.168 | 6.508 | 0.000 |
| 1 vs 7 | 0.122 | 0.024 | 1.130 | 1.078 | 1.184 | 5.083 | 0.000 |
| 1 vs 8 | 0.095 | 0.032 | 1.100 | 1.034 | 1.171 | 3.012 | 0.003 |
| 1 vs 9+ | 0.140 | 0.030 | 1.150 | 1.084 | 1.220 | 4.644 | 0.000 |
| tt(children) | 0.793 | 0.049 | 2.209 | 2.007 | 2.431 | 16.216 | 0.000 |

#### Fit Cox for Men

Running the above function for males.



**Figure S12**: Hazards ratios from a random effects cox model for each agefor men



**Figure S13**: Hazards ratios from a random effects cox model for each age. Selected parities only for men

Table S7: Coxme models for men, with 5 year lifespan intervals

| age | children | coef | se(coef) | HR | -95CI | +95CI | z | p | stars |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 40 | 1 vs 2 | -0.539 | 0.023 | 0.583 | 0.557 | 0.610 | -23.32 | 0.000 | \*\*\* |
| 40 | 1 vs 3 | -0.759 | 0.032 | 0.468 | 0.440 | 0.498 | -23.74 | 0.000 | \*\*\* |
| 40 | 1 vs 4 | -0.901 | 0.050 | 0.406 | 0.368 | 0.448 | -17.91 | 0.000 | \*\*\* |
| 40 | 1 vs 5 | -0.960 | 0.074 | 0.383 | 0.331 | 0.442 | -13.05 | 0.000 | \*\*\* |
| 40 | 1 vs 6 | -1.351 | 0.130 | 0.259 | 0.201 | 0.334 | -10.38 | 0.000 | \*\*\* |
| 40 | 1 vs 7 | -1.387 | 0.183 | 0.250 | 0.174 | 0.358 | -7.57 | 0.000 | \*\*\* |
| 40 | 1 vs 8 | -1.551 | 0.268 | 0.212 | 0.125 | 0.358 | -5.79 | 0.000 | \*\*\* |
| 40 | 1 vs 9+ | -1.998 | 0.317 | 0.136 | 0.073 | 0.252 | -6.31 | 0.000 | \*\*\* |
| 45 | 1 vs 2 | -0.441 | 0.019 | 0.643 | 0.620 | 0.667 | -23.49 | 0.000 | \*\*\* |
| 45 | 1 vs 3 | -0.575 | 0.025 | 0.563 | 0.536 | 0.591 | -23.02 | 0.000 | \*\*\* |
| 45 | 1 vs 4 | -0.662 | 0.038 | 0.516 | 0.479 | 0.556 | -17.43 | 0.000 | \*\*\* |
| 45 | 1 vs 5 | -0.662 | 0.054 | 0.516 | 0.464 | 0.573 | -12.34 | 0.000 | \*\*\* |
| 45 | 1 vs 6 | -0.847 | 0.085 | 0.429 | 0.363 | 0.507 | -9.93 | 0.000 | \*\*\* |
| 45 | 1 vs 7 | -1.073 | 0.131 | 0.342 | 0.265 | 0.442 | -8.19 | 0.000 | \*\*\* |
| 45 | 1 vs 8 | -1.313 | 0.201 | 0.269 | 0.182 | 0.398 | -6.55 | 0.000 | \*\*\* |
| 45 | 1 vs 9+ | -1.359 | 0.193 | 0.257 | 0.176 | 0.375 | -7.04 | 0.000 | \*\*\* |
| 50 | 1 vs 2 | -0.360 | 0.016 | 0.698 | 0.677 | 0.719 | -23.07 | 0.000 | \*\*\* |
| 50 | 1 vs 3 | -0.433 | 0.020 | 0.648 | 0.623 | 0.675 | -21.37 | 0.000 | \*\*\* |
| 50 | 1 vs 4 | -0.499 | 0.031 | 0.607 | 0.572 | 0.645 | -16.29 | 0.000 | \*\*\* |
| 50 | 1 vs 5 | -0.453 | 0.042 | 0.636 | 0.585 | 0.691 | -10.65 | 0.000 | \*\*\* |
| 50 | 1 vs 6 | -0.653 | 0.068 | 0.521 | 0.455 | 0.595 | -9.56 | 0.000 | \*\*\* |
| 50 | 1 vs 7 | -0.693 | 0.096 | 0.500 | 0.414 | 0.604 | -7.21 | 0.000 | \*\*\* |
| 50 | 1 vs 8 | -0.801 | 0.138 | 0.449 | 0.343 | 0.588 | -5.81 | 0.000 | \*\*\* |
| 50 | 1 vs 9+ | -0.865 | 0.134 | 0.421 | 0.324 | 0.548 | -6.44 | 0.000 | \*\*\* |
| 55 | 1 vs 2 | -0.306 | 0.013 | 0.737 | 0.718 | 0.756 | -23.56 | 0.000 | \*\*\* |
| 55 | 1 vs 3 | -0.354 | 0.017 | 0.702 | 0.680 | 0.726 | -21.16 | 0.000 | \*\*\* |
| 55 | 1 vs 4 | -0.364 | 0.025 | 0.695 | 0.662 | 0.729 | -14.73 | 0.000 | \*\*\* |
| 55 | 1 vs 5 | -0.345 | 0.035 | 0.709 | 0.662 | 0.759 | -9.89 | 0.000 | \*\*\* |
| 55 | 1 vs 6 | -0.484 | 0.055 | 0.616 | 0.553 | 0.686 | -8.87 | 0.000 | \*\*\* |
| 55 | 1 vs 7 | -0.530 | 0.078 | 0.589 | 0.505 | 0.685 | -6.83 | 0.000 | \*\*\* |
| 55 | 1 vs 8 | -0.595 | 0.109 | 0.551 | 0.445 | 0.683 | -5.46 | 0.000 | \*\*\* |
| 55 | 1 vs 9+ | -0.505 | 0.099 | 0.603 | 0.497 | 0.732 | -5.12 | 0.000 | \*\*\* |
| 60 | 1 vs 2 | -0.250 | 0.011 | 0.779 | 0.762 | 0.796 | -23.04 | 0.000 | \*\*\* |
| 60 | 1 vs 3 | -0.288 | 0.014 | 0.750 | 0.730 | 0.771 | -20.72 | 0.000 | \*\*\* |
| 60 | 1 vs 4 | -0.267 | 0.020 | 0.765 | 0.736 | 0.797 | -13.16 | 0.000 | \*\*\* |
| 60 | 1 vs 5 | -0.242 | 0.029 | 0.785 | 0.743 | 0.831 | -8.46 | 0.000 | \*\*\* |
| 60 | 1 vs 6 | -0.380 | 0.045 | 0.684 | 0.626 | 0.746 | -8.49 | 0.000 | \*\*\* |
| 60 | 1 vs 7 | -0.357 | 0.062 | 0.700 | 0.620 | 0.790 | -5.76 | 0.000 | \*\*\* |
| 60 | 1 vs 8 | -0.312 | 0.082 | 0.732 | 0.623 | 0.861 | -3.78 | 0.000 | \*\*\* |
| 60 | 1 vs 9+ | -0.295 | 0.078 | 0.744 | 0.639 | 0.867 | -3.80 | 0.000 | \*\*\* |
| 65 | 1 vs 2 | -0.213 | 0.009 | 0.808 | 0.794 | 0.823 | -23.11 | 0.000 | \*\*\* |
| 65 | 1 vs 3 | -0.230 | 0.012 | 0.795 | 0.777 | 0.813 | -19.72 | 0.000 | \*\*\* |
| 65 | 1 vs 4 | -0.195 | 0.017 | 0.823 | 0.796 | 0.850 | -11.54 | 0.000 | \*\*\* |
| 65 | 1 vs 5 | -0.161 | 0.024 | 0.851 | 0.813 | 0.892 | -6.79 | 0.000 | \*\*\* |
| 65 | 1 vs 6 | -0.255 | 0.036 | 0.775 | 0.722 | 0.832 | -7.02 | 0.000 | \*\*\* |
| 65 | 1 vs 7 | -0.238 | 0.051 | 0.788 | 0.714 | 0.870 | -4.72 | 0.000 | \*\*\* |
| 65 | 1 vs 8 | -0.220 | 0.068 | 0.803 | 0.702 | 0.918 | -3.22 | 0.001 | \*\* |
| 65 | 1 vs 9+ | -0.175 | 0.064 | 0.839 | 0.741 | 0.951 | -2.76 | 0.006 | \*\* |
| 70 | 1 vs 2 | -0.188 | 0.008 | 0.829 | 0.816 | 0.842 | -23.59 | 0.000 | \*\*\* |
| 70 | 1 vs 3 | -0.189 | 0.010 | 0.828 | 0.812 | 0.844 | -18.93 | 0.000 | \*\*\* |
| 70 | 1 vs 4 | -0.143 | 0.014 | 0.867 | 0.843 | 0.892 | -9.93 | 0.000 | \*\*\* |
| 70 | 1 vs 5 | -0.113 | 0.020 | 0.893 | 0.858 | 0.929 | -5.60 | 0.000 | \*\*\* |
| 70 | 1 vs 6 | -0.186 | 0.031 | 0.830 | 0.782 | 0.881 | -6.09 | 0.000 | \*\*\* |
| 70 | 1 vs 7 | -0.108 | 0.041 | 0.897 | 0.827 | 0.973 | -2.62 | 0.009 | \*\* |
| 70 | 1 vs 8 | -0.198 | 0.059 | 0.820 | 0.731 | 0.920 | -3.37 | 0.001 | \*\*\* |
| 70 | 1 vs 9+ | -0.121 | 0.054 | 0.886 | 0.797 | 0.985 | -2.25 | 0.025 | \* |
| 75 | 1 vs 2 | -0.168 | 0.007 | 0.845 | 0.834 | 0.857 | -23.84 | 0.000 | \*\*\* |
| 75 | 1 vs 3 | -0.164 | 0.009 | 0.849 | 0.834 | 0.864 | -18.61 | 0.000 | \*\*\* |
| 75 | 1 vs 4 | -0.113 | 0.013 | 0.893 | 0.871 | 0.915 | -8.96 | 0.000 | \*\*\* |
| 75 | 1 vs 5 | -0.088 | 0.018 | 0.916 | 0.885 | 0.949 | -4.93 | 0.000 | \*\*\* |
| 75 | 1 vs 6 | -0.120 | 0.026 | 0.887 | 0.842 | 0.934 | -4.57 | 0.000 | \*\*\* |
| 75 | 1 vs 7 | -0.062 | 0.036 | 0.940 | 0.876 | 1.009 | -1.71 | 0.087 |  |
| 75 | 1 vs 8 | -0.136 | 0.050 | 0.873 | 0.791 | 0.964 | -2.69 | 0.007 | \*\* |
| 75 | 1 vs 9+ | -0.108 | 0.048 | 0.898 | 0.818 | 0.986 | -2.26 | 0.024 | \* |
| 80 | 1 vs 2 | -0.149 | 0.006 | 0.862 | 0.851 | 0.873 | -23.19 | 0.000 | \*\*\* |
| 80 | 1 vs 3 | -0.141 | 0.008 | 0.868 | 0.855 | 0.882 | -17.69 | 0.000 | \*\*\* |
| 80 | 1 vs 4 | -0.092 | 0.011 | 0.912 | 0.892 | 0.933 | -8.03 | 0.000 | \*\*\* |
| 80 | 1 vs 5 | -0.059 | 0.016 | 0.943 | 0.913 | 0.973 | -3.68 | 0.000 | \*\*\* |
| 80 | 1 vs 6 | -0.081 | 0.024 | 0.922 | 0.881 | 0.966 | -3.42 | 0.001 | \*\*\* |
| 80 | 1 vs 7 | -0.008 | 0.032 | 0.992 | 0.931 | 1.057 | -0.25 | 0.810 |  |
| 80 | 1 vs 8 | -0.083 | 0.045 | 0.920 | 0.842 | 1.005 | -1.85 | 0.064 |  |
| 80 | 1 vs 9+ | -0.050 | 0.042 | 0.951 | 0.876 | 1.033 | -1.18 | 0.240 |  |
| 85 | 1 vs 2 | -0.133 | 0.006 | 0.876 | 0.865 | 0.886 | -22.06 | 0.000 | \*\*\* |
| 85 | 1 vs 3 | -0.118 | 0.007 | 0.888 | 0.875 | 0.902 | -15.83 | 0.000 | \*\*\* |
| 85 | 1 vs 4 | -0.068 | 0.011 | 0.934 | 0.915 | 0.954 | -6.38 | 0.000 | \*\*\* |
| 85 | 1 vs 5 | -0.030 | 0.015 | 0.970 | 0.942 | 0.999 | -2.03 | 0.042 | \* |
| 85 | 1 vs 6 | -0.058 | 0.022 | 0.943 | 0.903 | 0.985 | -2.64 | 0.008 | \*\* |
| 85 | 1 vs 7 | 0.005 | 0.031 | 1.005 | 0.946 | 1.067 | 0.16 | 0.870 |  |
| 85 | 1 vs 8 | -0.052 | 0.042 | 0.949 | 0.875 | 1.031 | -1.24 | 0.220 |  |
| 85 | 1 vs 9+ | -0.036 | 0.040 | 0.965 | 0.893 | 1.043 | -0.91 | 0.360 |  |
| 90 | 1 vs 2 | -0.124 | 0.006 | 0.883 | 0.873 | 0.893 | -21.40 | 0.000 | \*\*\* |
| 90 | 1 vs 3 | -0.107 | 0.007 | 0.899 | 0.886 | 0.912 | -14.80 | 0.000 | \*\*\* |
| 90 | 1 vs 4 | -0.062 | 0.010 | 0.940 | 0.921 | 0.959 | -5.98 | 0.000 | \*\*\* |
| 90 | 1 vs 5 | -0.022 | 0.015 | 0.978 | 0.951 | 1.006 | -1.53 | 0.130 |  |
| 90 | 1 vs 6 | -0.055 | 0.021 | 0.947 | 0.908 | 0.987 | -2.55 | 0.011 | \* |
| 90 | 1 vs 7 | 0.022 | 0.030 | 1.022 | 0.964 | 1.083 | 0.74 | 0.460 |  |
| 90 | 1 vs 8 | -0.040 | 0.041 | 0.960 | 0.887 | 1.040 | -1.00 | 0.320 |  |
| 90 | 1 vs 9+ | -0.021 | 0.038 | 0.979 | 0.909 | 1.055 | -0.55 | 0.580 |  |
| 95 | 1 vs 2 | -0.121 | 0.006 | 0.886 | 0.876 | 0.896 | -21.14 | 0.000 | \*\*\* |
| 95 | 1 vs 3 | -0.103 | 0.007 | 0.902 | 0.890 | 0.915 | -14.48 | 0.000 | \*\*\* |
| 95 | 1 vs 4 | -0.060 | 0.010 | 0.942 | 0.923 | 0.961 | -5.88 | 0.000 | \*\*\* |
| 95 | 1 vs 5 | -0.021 | 0.014 | 0.979 | 0.952 | 1.007 | -1.50 | 0.130 |  |
| 95 | 1 vs 6 | -0.046 | 0.021 | 0.955 | 0.916 | 0.995 | -2.20 | 0.028 | \* |
| 95 | 1 vs 7 | 0.024 | 0.029 | 1.025 | 0.967 | 1.085 | 0.83 | 0.410 |  |
| 95 | 1 vs 8 | -0.051 | 0.040 | 0.950 | 0.878 | 1.028 | -1.27 | 0.210 |  |
| 95 | 1 vs 9+ | -0.016 | 0.038 | 0.984 | 0.914 | 1.059 | -0.44 | 0.660 |  |
| 100 | 1 vs 2 | -0.120 | 0.006 | 0.887 | 0.877 | 0.897 | -20.97 | 0.000 | \*\*\* |
| 100 | 1 vs 3 | -0.103 | 0.007 | 0.903 | 0.890 | 0.915 | -14.45 | 0.000 | \*\*\* |
| 100 | 1 vs 4 | -0.058 | 0.010 | 0.943 | 0.925 | 0.962 | -5.73 | 0.000 | \*\*\* |
| 100 | 1 vs 5 | -0.019 | 0.014 | 0.982 | 0.954 | 1.009 | -1.30 | 0.190 |  |
| 100 | 1 vs 6 | -0.048 | 0.021 | 0.953 | 0.915 | 0.993 | -2.27 | 0.023 | \* |
| 100 | 1 vs 7 | 0.027 | 0.029 | 1.028 | 0.970 | 1.088 | 0.94 | 0.350 |  |
| 100 | 1 vs 8 | -0.043 | 0.040 | 0.957 | 0.885 | 1.035 | -1.09 | 0.280 |  |
| 100 | 1 vs 9+ | -0.010 | 0.038 | 0.990 | 0.920 | 1.066 | -0.27 | 0.790 |  |
| 105 | 1 vs 2 | -0.120 | 0.006 | 0.887 | 0.877 | 0.897 | -20.93 | 0.000 | \*\*\* |
| 105 | 1 vs 3 | -0.102 | 0.007 | 0.903 | 0.890 | 0.915 | -14.44 | 0.000 | \*\*\* |
| 105 | 1 vs 4 | -0.058 | 0.010 | 0.944 | 0.925 | 0.963 | -5.70 | 0.000 | \*\*\* |
| 105 | 1 vs 5 | -0.018 | 0.014 | 0.982 | 0.955 | 1.010 | -1.29 | 0.200 |  |
| 105 | 1 vs 6 | -0.049 | 0.021 | 0.952 | 0.914 | 0.992 | -2.33 | 0.020 | \* |
| 105 | 1 vs 7 | 0.028 | 0.029 | 1.028 | 0.971 | 1.089 | 0.94 | 0.350 |  |
| 105 | 1 vs 8 | -0.043 | 0.040 | 0.958 | 0.886 | 1.035 | -1.09 | 0.280 |  |
| 105 | 1 vs 9+ | -0.010 | 0.038 | 0.990 | 0.920 | 1.066 | -0.26 | 0.790 |  |

##### With the tt term

Table S8: Cox models with time-tranform (tt) term for men

| children | coef | se(coef) | HR | -95CI | +95CI | z | p |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 1 vs 2 | -0.106 | 0.006 | 0.899 | 0.889 | 0.909 | -18.397 | 0.000 |
| 1 vs 3 | -0.053 | 0.007 | 0.948 | 0.935 | 0.962 | -7.347 | 0.000 |
| 1 vs 4 | 0.032 | 0.010 | 1.032 | 1.012 | 1.053 | 3.073 | 0.002 |
| 1 vs 5 | 0.099 | 0.014 | 1.104 | 1.073 | 1.136 | 6.849 | 0.000 |
| 1 vs 6 | 0.093 | 0.021 | 1.098 | 1.053 | 1.144 | 4.413 | 0.000 |
| 1 vs 7 | 0.210 | 0.029 | 1.234 | 1.165 | 1.307 | 7.173 | 0.000 |
| 1 vs 8 | 0.131 | 0.040 | 1.140 | 1.054 | 1.232 | 3.279 | 0.001 |
| 1 vs 9+ | 0.189 | 0.038 | 1.208 | 1.123 | 1.301 | 5.040 | 0.000 |
| tt(children) | 1.044 | 0.035 | 2.840 | 2.654 | 3.039 | 30.251 | 0.000 |