STA2201 Lab 1

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2023-01-15

Data

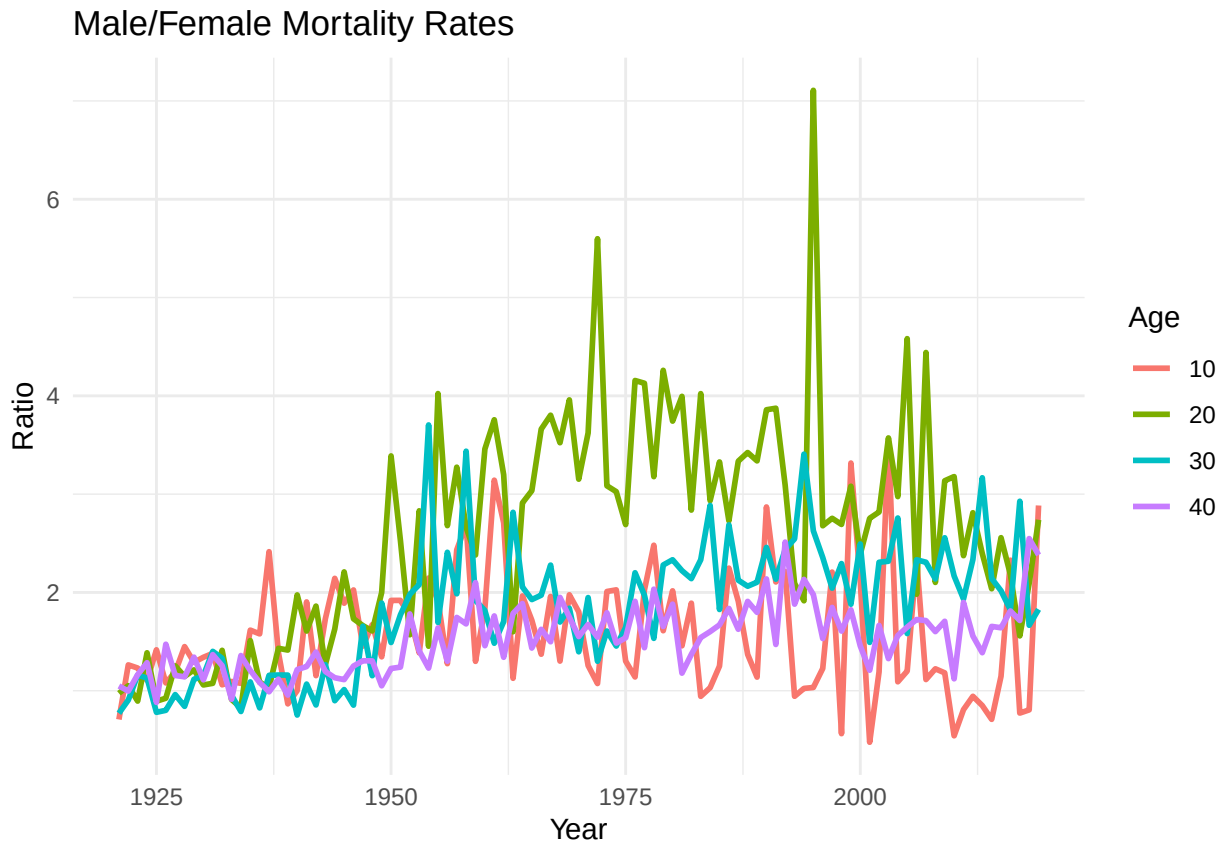
Mortality Rate Data:

```
##   Year Age   Female     Male    Total
## 1 1921   0 0.097771 0.129068 0.113758
## 2 1921   1 0.012949 0.014421 0.013696
## 3 1921   2 0.005210 0.007372 0.006306
## 4 1921   3 0.004706 0.004567 0.004636
## 5 1921   4 0.004611 0.004326 0.004467
## 6 1921   5 0.003722 0.003614 0.003667
```

Population Data:

```
##   Year Age   Female     Male    Total
## 1 1921   0 30156.82 31530.26 61687.08
## 2 1921   1 30391.48 31319.44 61710.92
## 3 1921   2 30962.11 31784.99 62747.10
## 4 1921   3 31305.74 32030.55 63336.29
## 5 1921   4 31363.62 32045.61 63409.23
## 6 1921   5 31174.78 31846.67 63021.45
```

Q1



Q2

```
## # A tibble: 6 x 3
## # Groups:   Year [6]
##    Year Age    Rate
##   <dbl> <chr> <dbl>
## 1  1921 106   6
## 2  1922 98    0.603
## 3  1923 104   0.524
## 4  1924 107   6
## 5  1925 98    0.514
## 6  1926 106   4.16
```

Year	Age	Rate
1921	106	6.000
1922	98	0.603
1923	104	0.524
1924	107	6.000
1925	98	0.514
1926	106	4.165
1927	106	6.000
1928	104	2.132
1929	104	1.323

(continued)

Year	Age	Rate
1930	105	6.000
1931	104	1.250
1932	105	6.000
1933	104	0.583
1934	106	6.000
1935	104	0.509
1936	106	4.248
1937	105	6.000
1938	104	0.892
1939	105	6.000
1940	104	1.066
1941	105	4.276
1942	104	0.787
1943	105	1.593
1944	98	0.455
1945	104	0.645
1946	105	1.010
1947	104	0.558
1948	99	0.677
1949	102	0.573
1950	102	0.629
1951	110+	2.649
1952	107	0.676
1953	106	1.163
1954	110+	4.082
1955	107	1.020
1956	110+	4.082
1957	107	2.083
1958	110+	4.082
1959	108	4.082
1960	107	1.802
1961	106	0.877
1962	108	1.961
1963	109	2.157
1964	109	2.250
1965	109	4.105
1966	105	1.242
1967	107	1.344
1968	97	0.513
1969	109	4.096
1970	107	2.791
1971	107	1.422
1972	107	1.345
1973	105	0.771
1974	107	1.500
1974	109	1.500
1975	108	6.000
1975	110+	6.000
1976	106	0.857
1976	108	0.857

(continued)

Year	Age	Rate
1977	103	1.100
1978	109	3.000
1979	109	0.857
1980	110+	1.500
1981	107	1.385
1982	109	1.500
1983	110+	1.500
1984	110+	6.000
1985	110+	6.000
1986	109	1.500
1987	109	1.000
1988	108	0.857
1989	108	0.720
1990	108	0.643
1991	103	0.527
1992	108	1.235
1993	109	1.636
1994	109	1.333
1995	107	0.979
1996	109	1.600
1997	107	0.886
1998	110+	1.121
1999	110+	1.676
2000	106	1.120
2001	110+	1.091
2002	107	1.463
2003	109	3.000
2004	108	1.000
2005	108	2.118
2006	110+	3.000
2007	107	0.738
2008	109	1.041
2009	110+	1.522
2010	108	0.987
2011	110+	2.228
2012	109	0.981
2013	110+	0.981
2014	110+	1.205
2015	110+	1.829
2016	110+	1.050
2017	110+	1.215
2018	110+	0.859
2019	110+	1.477

Q3

```
## # A tibble: 111 x 4
##    Age   std_Male std_Female std_Total
##    <chr>    <dbl>      <dbl>     <dbl>
##  1 0     0.0330     0.0256    0.0294
```

```
##  2 1     0.00396    0.00352   0.00374
##  3 2     0.00175    0.00154   0.00164
##  4 3     0.00127    0.00113   0.00120
##  5 4     0.000987   0.000925  0.000947
##  6 5     0.000820   0.000748  0.000776
##  7 6     0.000849   0.000631  0.000731
##  8 7     0.000749   0.000590  0.000664
##  9 8     0.000693   0.000496  0.000590
## 10 9     0.000604   0.000473  0.000530
## # ... with 101 more rows
```

Age	std_Male	std_Female	std_Total
0	0.03299	0.02564	0.02937
1	0.00396	0.00352	0.00374
2	0.00175	0.00154	0.00164
3	0.00127	0.00113	0.00120
4	0.00099	0.00093	0.00095
5	0.00082	0.00075	0.00078
6	0.00085	0.00063	0.00073
7	0.00075	0.00059	0.00066
8	0.00069	0.00050	0.00059
9	0.00060	0.00047	0.00053
10	0.00056	0.00047	0.00051
11	0.00054	0.00045	0.00049
12	0.00055	0.00047	0.00050
13	0.00055	0.00047	0.00050
14	0.00057	0.00052	0.00053
15	0.00062	0.00050	0.00055
16	0.00067	0.00059	0.00062
17	0.00069	0.00065	0.00064
18	0.00073	0.00070	0.00069
19	0.00077	0.00080	0.00076
20	0.00074	0.00085	0.00077
21	0.00085	0.00091	0.00085
22	0.00085	0.00093	0.00087
23	0.00088	0.00100	0.00092
24	0.00086	0.00107	0.00094
25	0.00083	0.00099	0.00089
26	0.00090	0.00108	0.00098
27	0.00091	0.00111	0.00100
28	0.00098	0.00116	0.00106
29	0.00094	0.00112	0.00101
30	0.00101	0.00121	0.00109
31	0.00080	0.00111	0.00094
32	0.00101	0.00133	0.00116
33	0.00098	0.00123	0.00109
34	0.00094	0.00122	0.00106
35	0.00123	0.00139	0.00130
36	0.00110	0.00138	0.00123
37	0.00110	0.00134	0.00120
38	0.00133	0.00149	0.00139

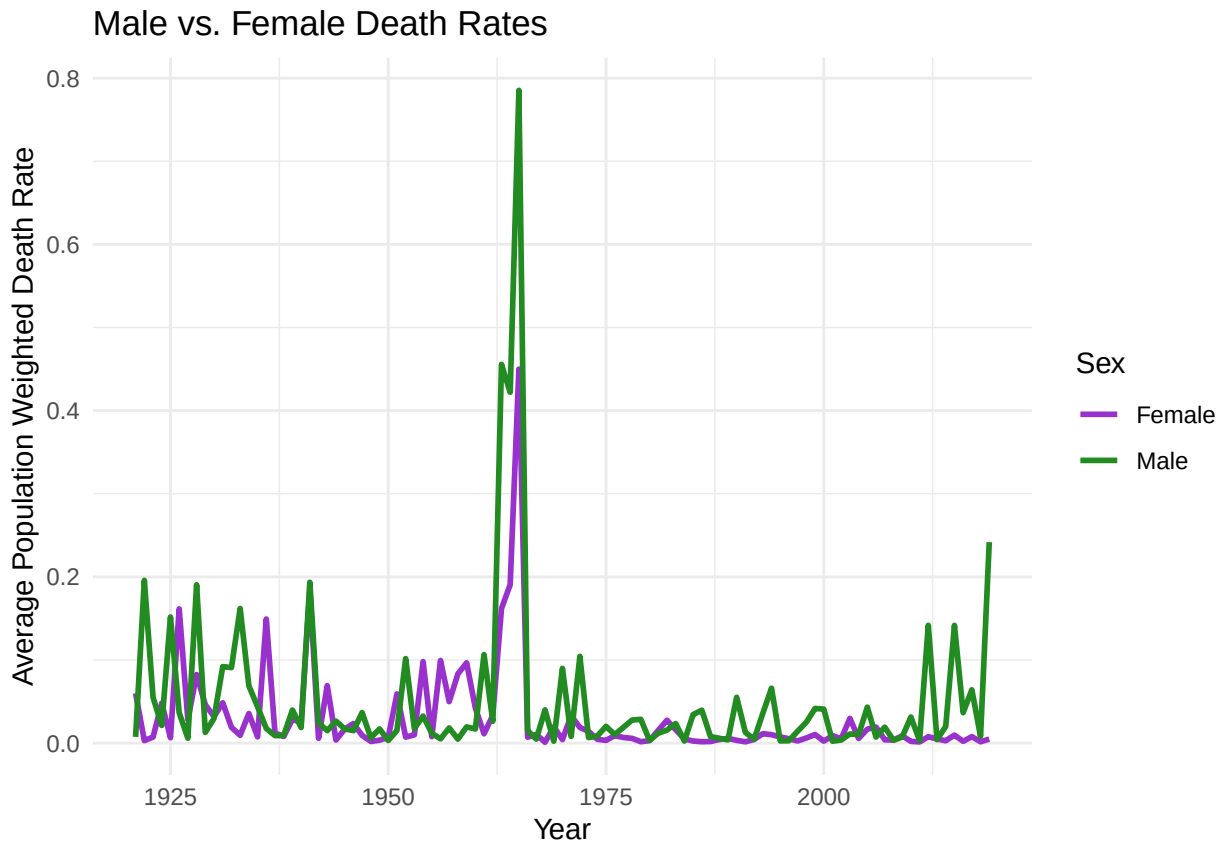
(continued)

Age	std_Male	std_Female	std_Total
39	0.00117	0.00145	0.00129
40	0.00149	0.00148	0.00147
41	0.00114	0.00131	0.00121
42	0.00167	0.00183	0.00172
43	0.00149	0.00158	0.00150
44	0.00146	0.00160	0.00150
45	0.00187	0.00183	0.00181
46	0.00177	0.00184	0.00174
47	0.00192	0.00186	0.00184
48	0.00214	0.00206	0.00205
49	0.00221	0.00212	0.00209
50	0.00264	0.00233	0.00241
51	0.00232	0.00201	0.00205
52	0.00305	0.00281	0.00284
53	0.00301	0.00258	0.00268
54	0.00335	0.00276	0.00293
55	0.00360	0.00296	0.00317
56	0.00391	0.00317	0.00339
57	0.00424	0.00340	0.00364
58	0.00476	0.00421	0.00429
59	0.00504	0.00416	0.00439
60	0.00581	0.00493	0.00515
61	0.00533	0.00409	0.00440
62	0.00681	0.00576	0.00606
63	0.00719	0.00613	0.00641
64	0.00774	0.00646	0.00681
65	0.00910	0.00809	0.00832
66	0.00803	0.00718	0.00722
67	0.00925	0.00830	0.00837
68	0.01062	0.01029	0.01011
69	0.01136	0.01012	0.01040
70	0.01248	0.01224	0.01203
71	0.01135	0.01037	0.01033
72	0.01523	0.01474	0.01457
73	0.01602	0.01510	0.01531
74	0.01678	0.01693	0.01654
75	0.01882	0.02051	0.01940
76	0.02004	0.02224	0.02096
77	0.02019	0.02172	0.02079
78	0.02478	0.02709	0.02596
79	0.02496	0.02623	0.02568
80	0.02399	0.02672	0.02541
81	0.02163	0.02259	0.02189
82	0.02761	0.03002	0.02912
83	0.02928	0.03281	0.03152
84	0.03299	0.03591	0.03496
85	0.03411	0.03934	0.03761

(continued)

Age	std_Male	std_Female	std_Total
86	0.03698	0.04278	0.04106
87	0.04045	0.04449	0.04351
88	0.03846	0.04388	0.04230
89	0.03960	0.04115	0.04138
90	0.04479	0.05143	0.04955
91	0.03481	0.03719	0.03509
92	0.04567	0.04790	0.04616
93	0.04309	0.05361	0.04721
94	0.05597	0.05671	0.05180
95	0.05442	0.05984	0.05013
96	0.06148	0.05923	0.04713
97	0.08375	0.07506	0.06595
98	0.09496	0.08417	0.07331
99	0.12424	0.10223	0.08313
100	0.13832	0.09278	0.07290
101	0.15837	0.12518	0.09952
102	0.21392	0.14338	0.11353
103	0.37057	0.25233	0.20767
104	1.01171	0.44861	0.36312
105	1.29042	1.26577	1.27175
106	1.13480	1.21070	1.19961
107	1.11908	0.91734	0.79175
108	1.47954	0.95260	0.78164
109	1.23872	0.95528	0.84887
110+	1.55167	1.64018	1.19706

Q4



From the looks of this graph, men tend to see a much higher variability in their death rates, often attaining greater average levels than Women. This is especially notable in the years after the 1960s, where men's rates fluctuate over a very short period while women's remain fairly constant. between the women's rates and rates much greater.