

Technical Reports

Trends in suicide mortality in Europe, 1955–89

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Within Europe, there is a substantial variation in certified mortality from suicide, high rates being registered in several central European areas and a few Scandinavian countries, and low rates in Southern Europe and Britain. Trends over time in various areas of the continent have also been considerably heterogeneous^{1–4}.

Data and statistics on suicide mortality over the last few decades are available for several European countries, but it is difficult to find a summary overview of different pattern of trends in a standard and comparable format. The World Health Organization (WHO) mortality database includes death certification data from the early 1950's onwards for all major European countries, except Romania. We decided, therefore, to include in a unique publication the pattern of trends in suicide mortality between 1955 and 1989 for 25 European countries.

The present publication has two major objectives: to provide some reference documentation for epidemiology, health statistics and public health, and to offer a baseline framework for comparative inference.

This may also have useful implications for analytic epidemiology and prevention, in terms of indicating priorities for further investigation and intervention on a public health scale.

Materials and methods

Death certification numbers from suicide, stratified for sex and five-year age groups, for 25 European countries (excluding Russia, Romania, Albania and a few small countries like Andorra, Liechtenstein, etc.), were derived from copies of the original computer tapes of the World Health Organization (WHO) mortality database.

During the calendar period considered (1955–89), four different Revisions of the International Clas-

sification of Diseases (ICD) were in operation (from the Sixth to the Ninth Revision). No major change was, however, introduced in the classification or coding of suicide deaths. Thus, classification of suicides was recoded according to the Ninth Revision of the ICD.

Estimates of the resident population, generally based on official censuses, were obtained from the same WHO databank. From the matrices of certified deaths and resident populations, age-standardized rates (on the World standard population) were computed. Besides overall age-adjusted rates, truncated ones at age 35–64 were chosen for presentation⁵.

Truncated rates are of interest for at least two reasons, since: i) they provide information specifically on trends in middle age and ii) death certification in the elderly is generally less reliable, and may, therefore, introduce spurious trends in rates. In a few countries, data were missing for part of one or more calendar periods. When a single year was missing within a quinquennium, numerators and denominators were interpolated linearly from the previous and subsequent calendar year. No extrapolation was made for missing data at the beginning or the end of the calendar period considered, or when data on one or more quinquennia were not available.

Further, using the matrices of age-specific death rates for each calendar quinquennium and age group, effects of age, calendar period of death and cohort of birth have been examined for several major European countries by means of a log-linear Poisson model. This model has already been described in detail⁶. The major inherent problem of any age/period/cohort model is that the three factors are related by an exact linear relationship. Thus, when two of the three factors are defined, the third is automatically fixed. In order to overcome this problem, the three two-factor models (age/cohort; age/period; cohort/period) were developed separately. In the latter model values for cohort and period were estimated after estimation of the age effect alone. The whole model was

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subsequently defined by minimizing the sum of the euclidean distances between the three two-factor models.

This procedure is conceptually similar to that described by Osmond and Gardner^{7–8}, although the procedure of minimization implemented is based on the least squares weighted on the inverse of the log-likelihood of each two-factor model, whereas the model proposed by Osmond and Gardner used the mean residual sum of squares, minimizing the sum of distances as a measure of goodness of fit. Cohort values of earlier and more recent generations are based on fewer age-specific rates, and must therefore be considered with due caution. In general, interpretation of trends in mortality can find useful guide and suggestions in the model, but this cannot substitute careful examination of age-specific trends.

Presentation of results

For each European country one table and three figures are presented.

The table includes, for each five-year calendar period and sex, the absolute number of deaths and the overall age-standardized and truncated 35–64 years mortality rates.

The first figure includes world-standardized rates (all ages and truncated) for each 5-year calendar period in both sexes.

Age-specific rates from 30–34 to 80–84 years were plotted against the central year of birth cohort in the second figure for males and in the third for females. The points corresponding to the same age group were joined to provide more clearly spaced graphs. Thus, in this graph the cohort effect can be read in the ordinate.

To provide graphical representation of the range of variation in mortality from suicide, histograms of

overall age-standardized death rates in the most recent calendar quinquennium (1985–89, whenever available) are given.

Finally, age, cohort of birth and period of death values are graphically presented for selected countries.

Results

In the late 1980's, the range of variation in overall age-adjusted suicide mortality was over a factor ten in both sexes, the highest rates being registered in Hungary (52.1/100 000 males, 17.4/100 000 females), and the lowest ones in Malta (3.9/100 000 males, 0.7/100 000 females). High suicide mortality rates for males (i.e. between 25 and 36/100 000) were also registered in Finland, Austria, Germany, Denmark, Switzerland and France, whereas suicide mortality was low in Greece, Spain, Italy and Britain. The geographical pattern was similar for females, although overall rates were 50 to 60% lower than for males (Figure 1).

Trends in suicide mortality over calendar periods for each country are given in Figure 2 (pages 381–394). Several countries showed substantial increases, which approached 80% in Hungary and Norway, and were over 150% in Ireland (although absolute values in the two latter countries were still intermediate on European scale). Upward trends were also observed in Austria, Belgium, Bulgaria and the Netherlands (particularly at younger ages). Some decline was observed in Czechoslovakia, Germany, Portugal and Sweden, while several countries, including France, Italy, Spain, Switzerland and Britain, showed U-shaped curves in age-standardized rates, with earlier declines followed by appreciable increases from the mid 1970's onwards. These increases were generally greater in

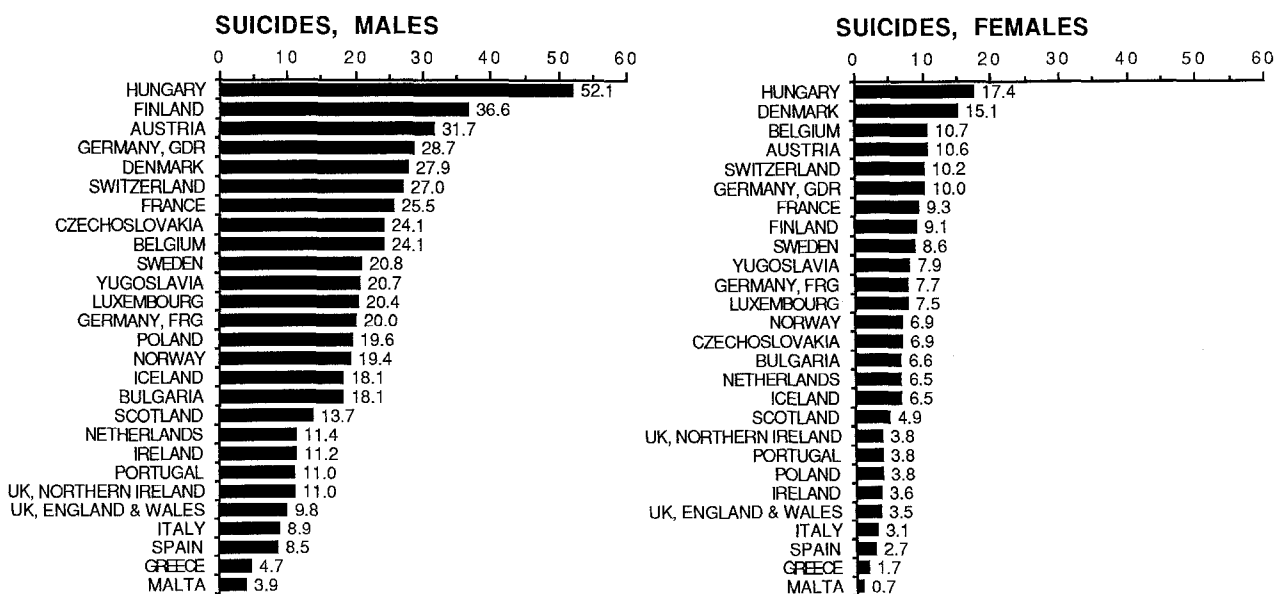


Fig. 1. Overall age-standardized (world standard) mortality rates from suicide in various European countries, 1985–89.

SUICIDES

AUSTRIA

Years of Death	MALES			FEMALES		
	Deaths Number	World Stand	Trunc 35-64	Deaths Number	World Stand	Trunc 35-64
55-59	5495	28.56	51.93	2791	11.63	21.09
60-64	5358	27.58	49.89	2614	10.47	19.27
65-69	5516	28.03	50.81	2716	10.32	20.13
70-74	5828	29.30	51.87	2834	10.59	19.96
75-79	6260	30.65	50.57	2829	10.50	18.40
80-84	7150	33.66	55.56	2953	10.84	19.09
85-89	7058	31.65	49.58	2990	10.62	18.29

SUICIDES

BELGIUM

Years of Death	MALES			FEMALES		
	Deaths Number	World Stand	Trunc 35-64	Deaths Number	World Stand	Trunc 35-64
55-59	4524	15.82	28.28	1849	5.84	11.44
60-64	4647	16.20	28.52	1903	6.00	11.26
65-69	4897	16.70	28.80	2292	6.95	12.61
70-74	5077	17.18	28.60	2499	7.55	14.32
75-79	5946	20.07	32.57	3281	9.95	18.87
80-84	7258	24.34	39.15	3826	11.45	22.19
85-89*	1488	24.06	39.67	714	10.68	21.72

* Information is missing for one or more years

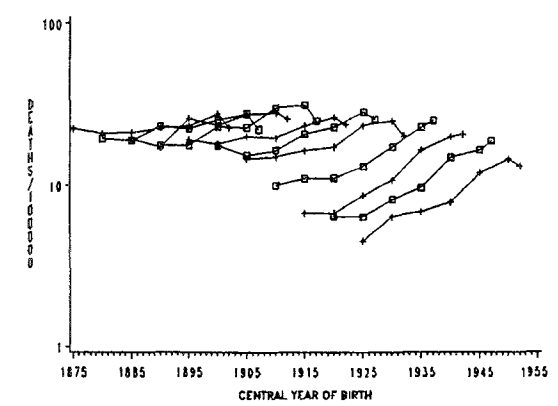
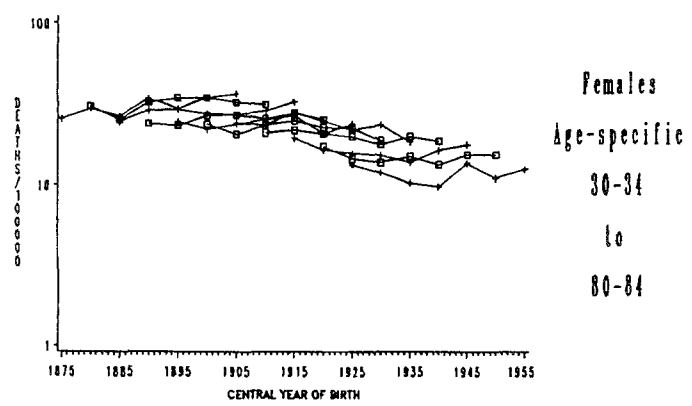
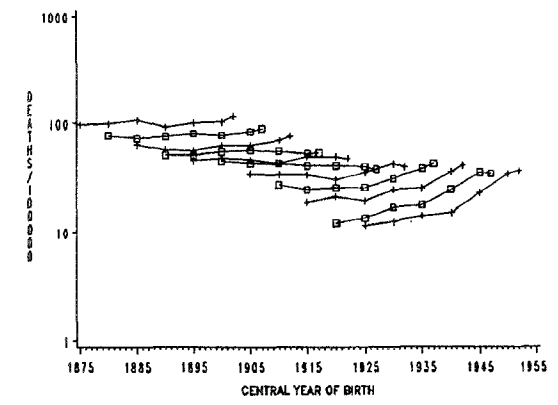
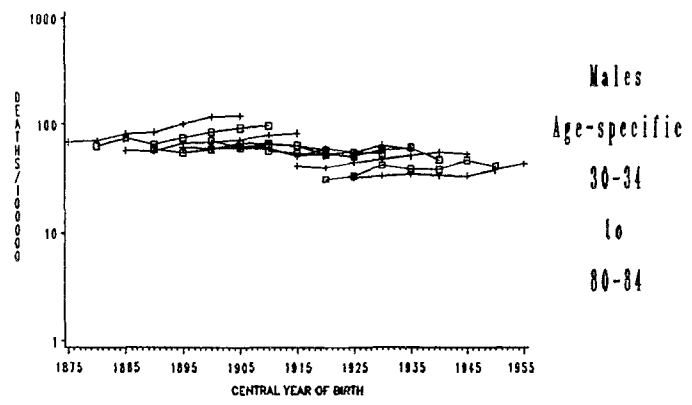
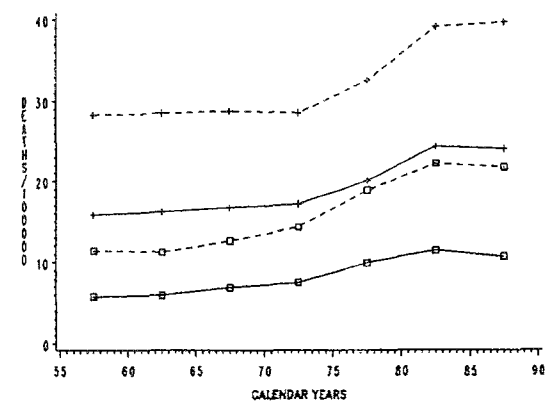
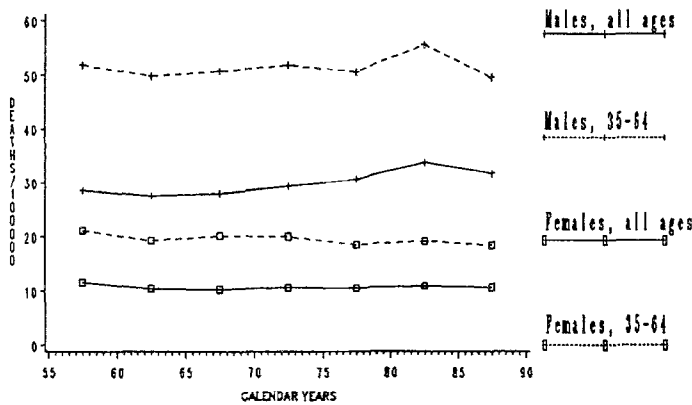


Fig. 2. Trends in age-standardized (world standard) and age-specific death certification rates from suicide in various European countries, 1955-89.

SUICIDES

BULGARIA

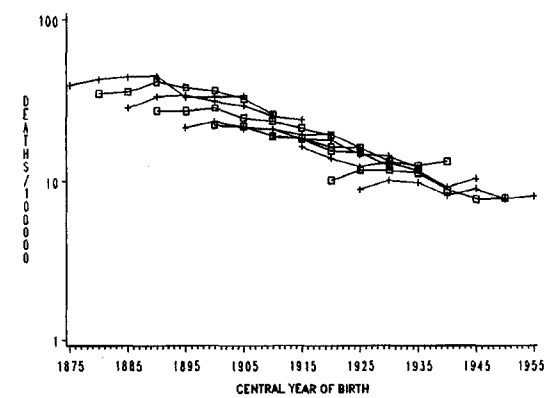
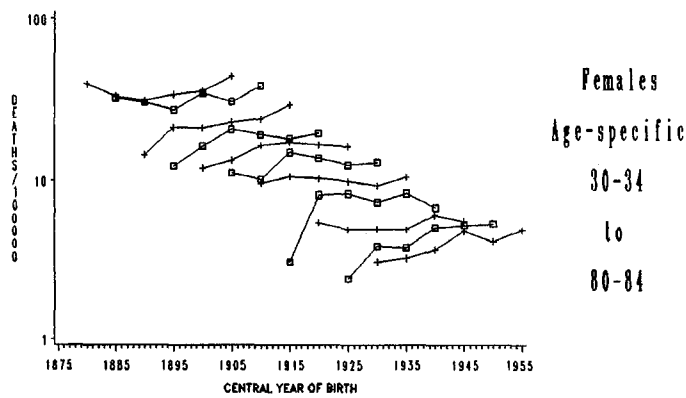
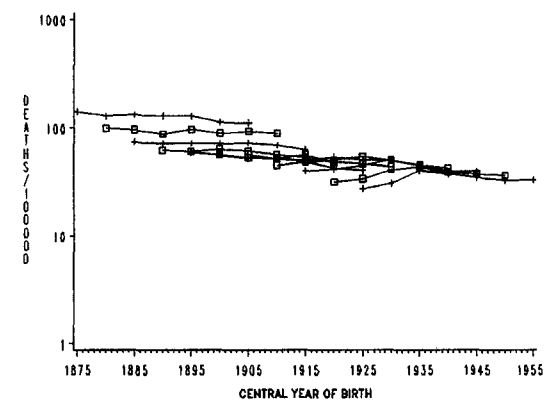
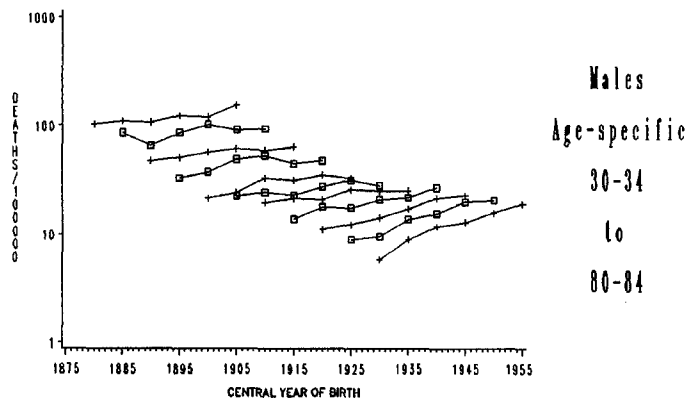
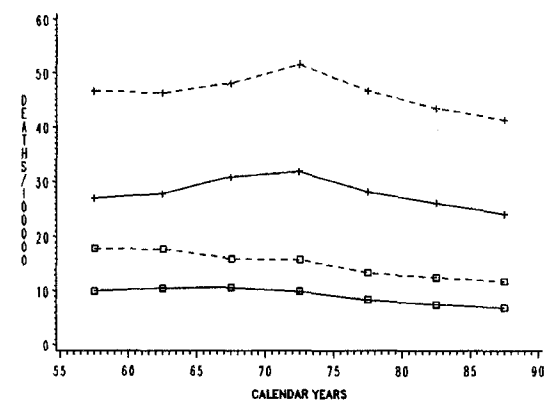
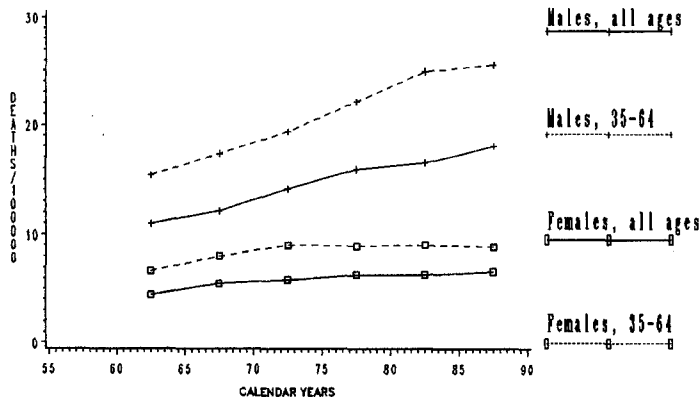
Years of Death	MALES			FEMALES		
	Deaths Number	World Stand	Trunc 35-64	Deaths Number	World Stand	Trunc 35-64
55-59						
60-64*	489	10.94	15.39	219	4.44	6.64
65-69	2847	12.13	17.35	1363	5.46	8.01
70-74	3562	14.10	19.38	1577	5.83	9.01
75-79	4292	15.94	22.16	1795	6.31	8.95
80-84	4603	16.54	24.96	1877	6.31	9.06
85-89	5138	18.09	25.60	2130	6.62	8.91

* Information is missing for one or more years

SUICIDES

CZECHOSLOVAKIA

Years of Death	MALES			FEMALES		
	Deaths Number	World Stand	Trunc 35-64	Deaths Number	World Stand	Trunc 35-64
55-59	9471	26.96	46.69	4021	9.97	17.87
60-64	10154	27.79	46.33	4474	10.49	17.76
65-69	11795	30.85	48.14	4815	10.69	16.00
70-74	12584	31.82	51.67	4716	9.91	15.86
75-79	11564	28.16	46.74	4247	8.46	13.42
80-84	11067	26.13	43.44	3908	7.51	12.52
85-89	10543	24.12	41.38	3678	6.94	11.80

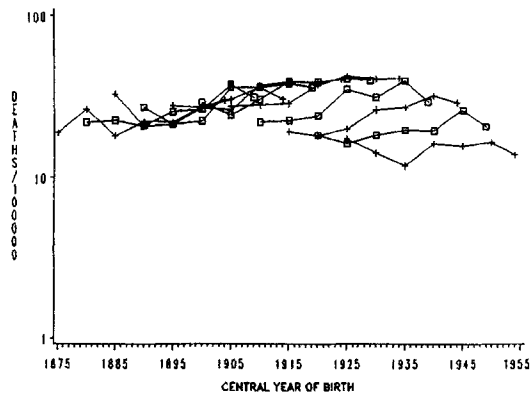
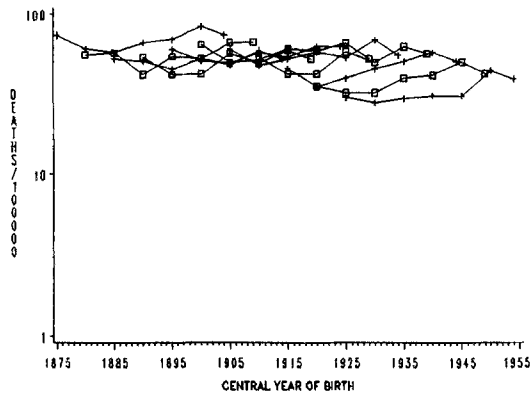
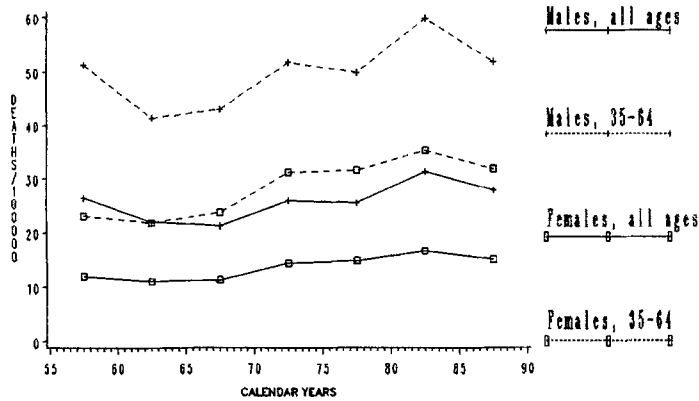


SUICIDES

DENMARK

Years of Death	MALES			FEMALES		
	Deaths Number	World Stand	Trunc 35-64	Deaths Number	World Stand	Trunc 35-64
55-59	3332	26.37	51.31	1612	12.01	23.06
60-64	2927	22.02	41.37	1552	11.06	21.88
65-69	2972	21.33	43.06	1664	11.32	23.76
70-74	3759	25.97	51.77	2223	14.36	31.24
75-79	3793	25.56	49.96	2381	14.87	31.60
80-84	4809	31.38	59.94	2756	16.65	35.33
85-89*	3540	27.89	51.98	2062	15.08	31.89

* Information is missing for one or more years

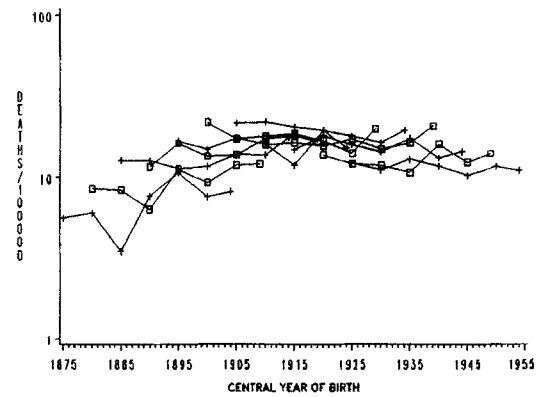
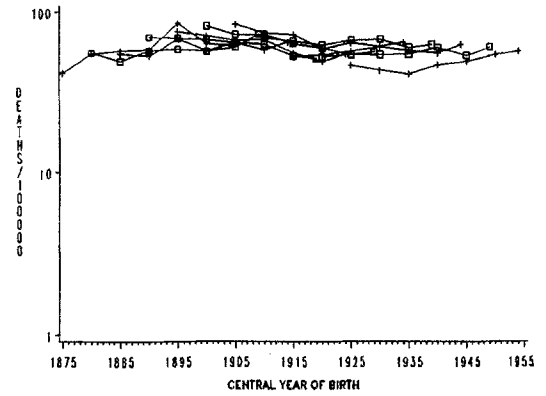
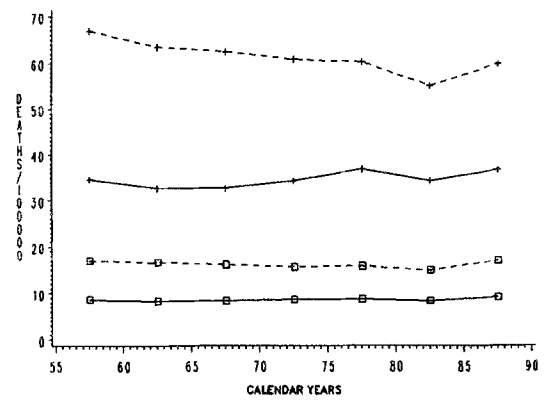


SUICIDES

FINLAND

Years of Death	MALES			FEMALES		
	Deaths Number	World Stand	Trunc 35-64	Deaths Number	World Stand	Trunc 35-64
55-59	3535	34.49	66.92	1035	8.56	16.97
60-64	3548	32.62	63.46	1057	8.31	16.58
65-69	3753	32.66	62.43	1094	8.29	16.15
70-74	4186	34.32	60.81	1185	8.61	15.63
75-79	4752	36.81	60.23	1244	8.64	15.82
80-84	4679	34.35	55.07	1266	8.37	14.93
85-89*	4155	36.64	59.87	1128	9.14	17.04

* Information is missing for one or more years



SUICIDES

SUICIDES

FRANCE

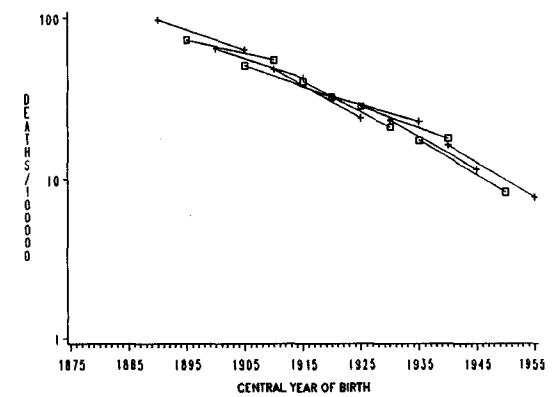
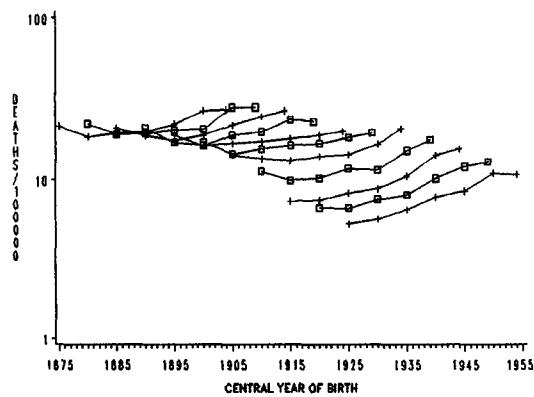
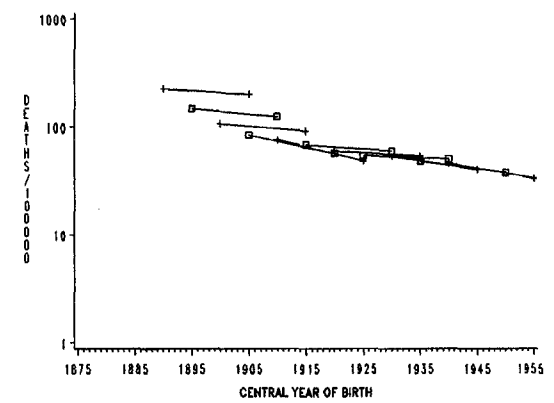
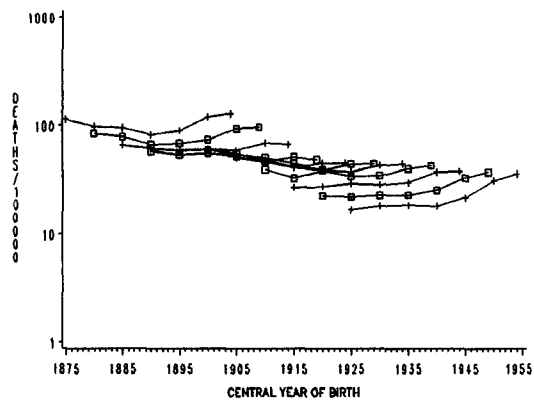
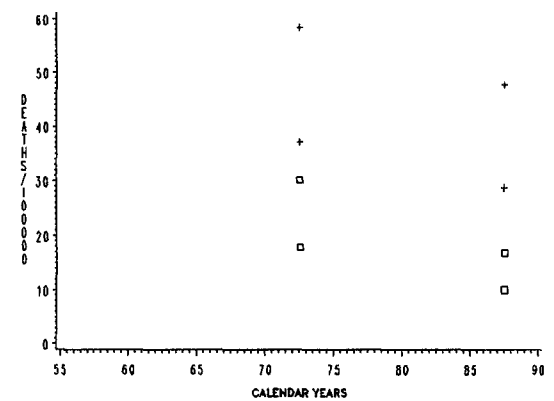
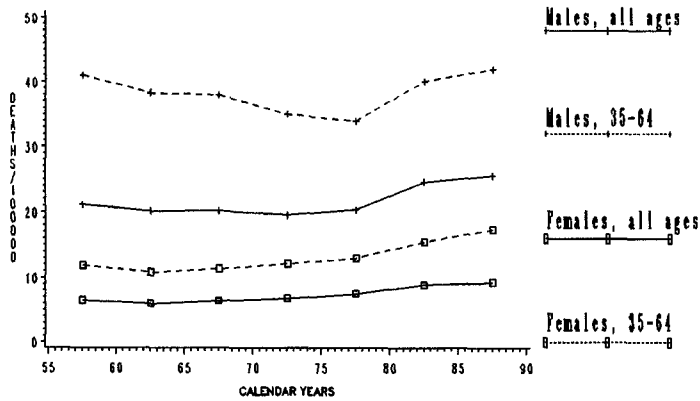
GERMANY, GDR

Years of Death	MALES			FEMALES		
	Deaths Number	World Stand	Trunc 35-64	Deaths Number	World Stand	Trunc 35-64
55-59	26846	21.09	40.96	9864	6.45	11.82
60-64	26906	20.05	38.23	9375	5.96	10.75
65-69	28000	20.11	37.94	10299	6.35	11.30
70-74	28757	19.47	34.98	11577	6.79	12.07
75-79	31443	20.28	33.91	13130	7.45	12.96
80-84	40071	24.55	40.04	16309	8.81	15.43
85-89*	34591	25.51	41.94	14199	9.27	17.32

Years of Death	MALES			FEMALES		
	Deaths Number	World Stand	Trunc 35-64	Deaths Number	World Stand	Trunc 35-64
55-59						
60-64						
65-69						
70-74*	7005	37.09	58.35	4892	17.85	30.09
75-79						
80-84						
85-89*	2873	28.66	47.69	1417	9.99	16.83

* Information is missing for one or more years

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SUICIDES

GERMANY, FRG

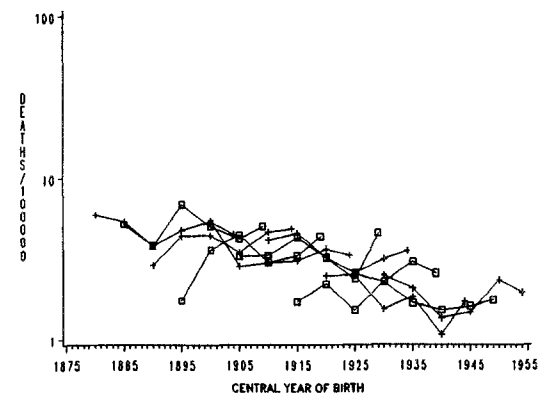
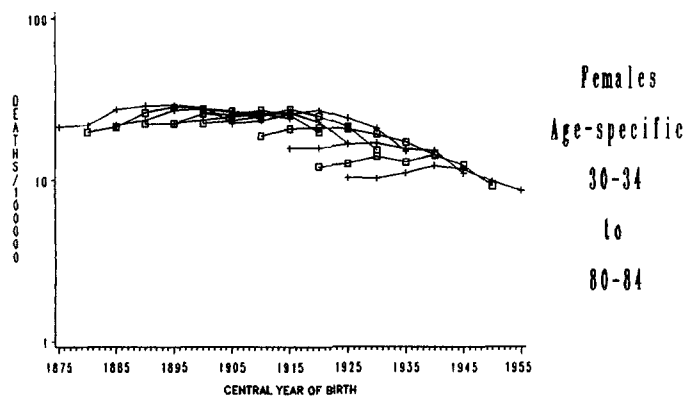
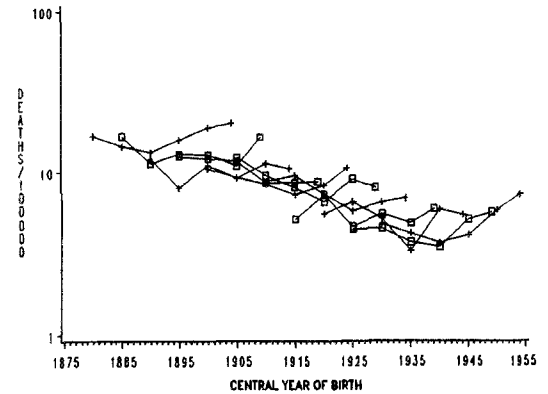
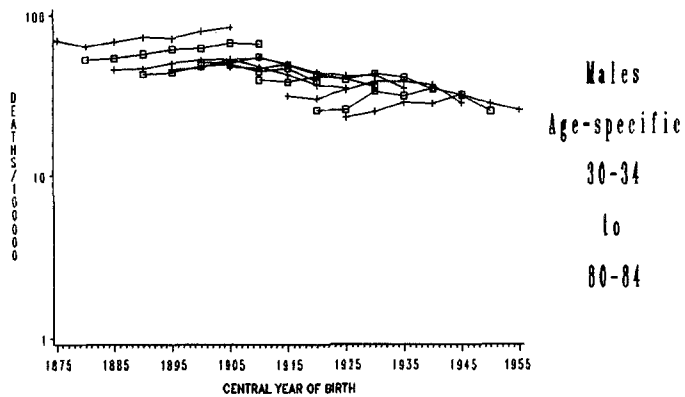
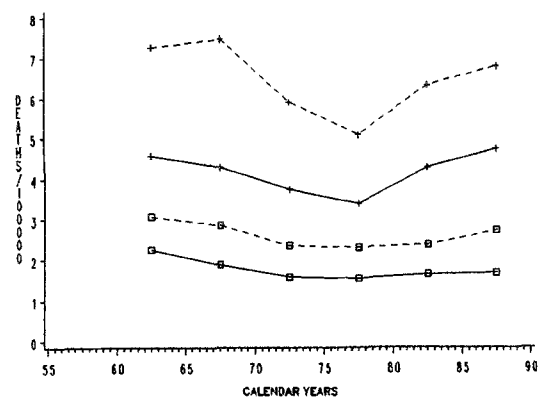
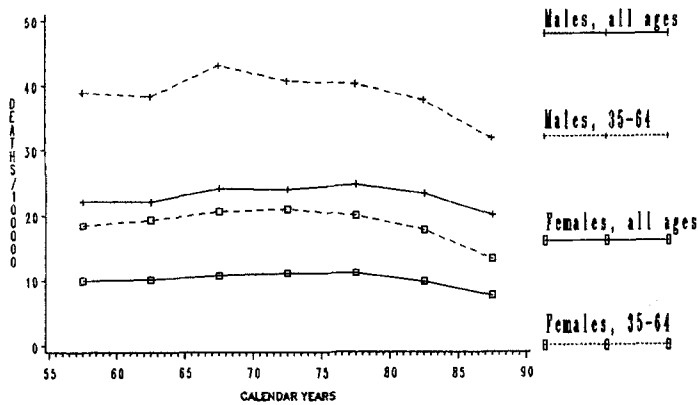
Years of Death	MALES			FEMALES		
	Deaths Number	World Stand	Trunc 35-64	Deaths Number	World Stand	Trunc 35-64
55-59	31005	22.18	38.92	17035	9.94	18.42
60-64	34146	22.15	38.33	19344	10.08	19.31
65-69	39595	24.21	43.09	22225	10.71	20.61
70-74	40449	24.05	40.74	23638	11.12	21.00
75-79	42829	24.81	40.26	24137	11.12	20.02
80-84	42710	23.38	37.73	22308	9.79	17.75
85-89	38599	20.03	31.79	18282	7.65	13.28

SUICIDES

GREECE

Years of Death	MALES			FEMALES		
	Deaths Number	World Stand	Trunc 35-64	Deaths Number	World Stand	Trunc 35-64
55-59						
60-64*	816	4.57	7.26	427	2.25	3.07
65-69	990	4.29	7.47	475	1.88	2.86
70-74	944	3.75	5.90	434	1.57	2.35
75-79	915	3.40	5.08	442	1.53	2.30
80-84	1230	4.28	6.32	511	1.64	2.37
85-89*	1153	4.72	6.78	458	1.67	2.73

* Information is missing for one or more years



SUICIDES

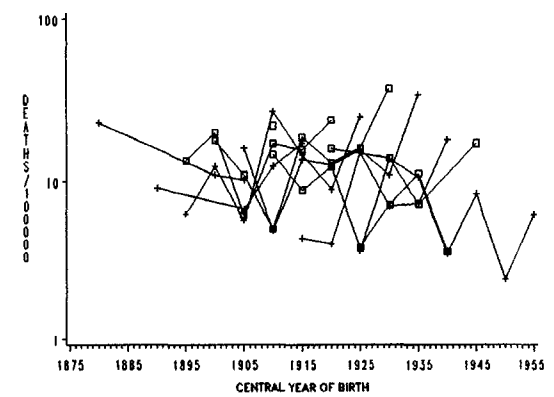
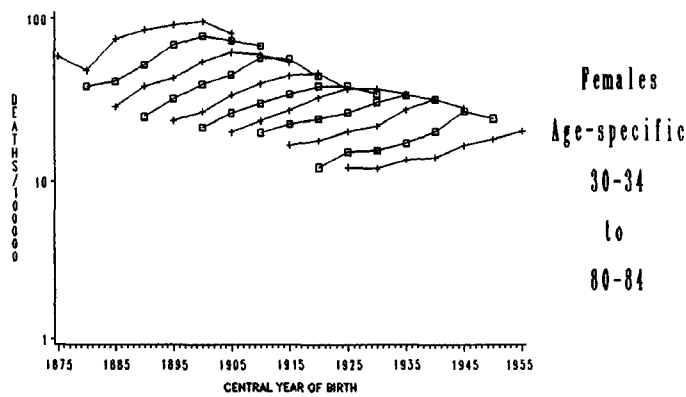
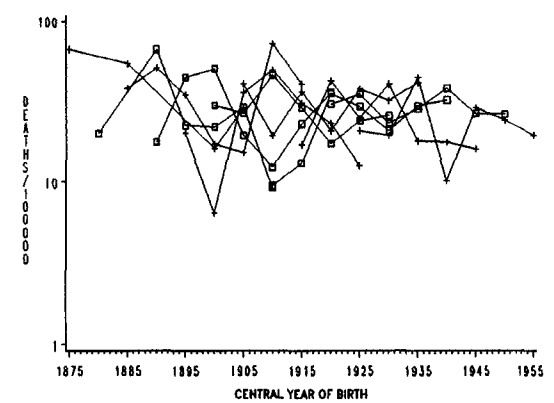
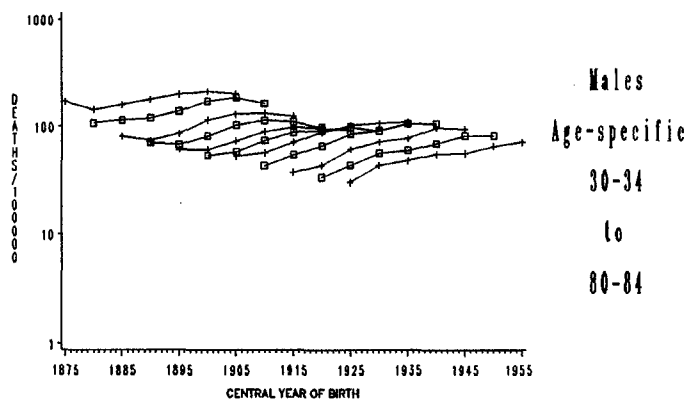
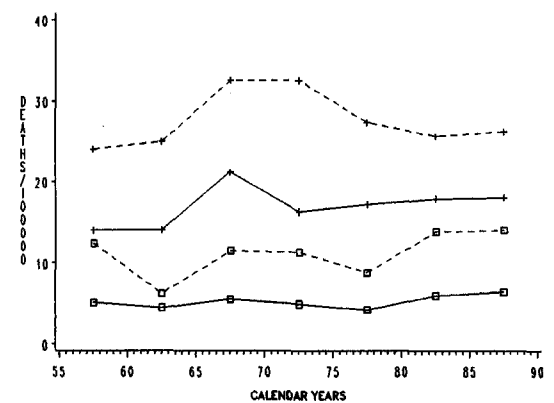
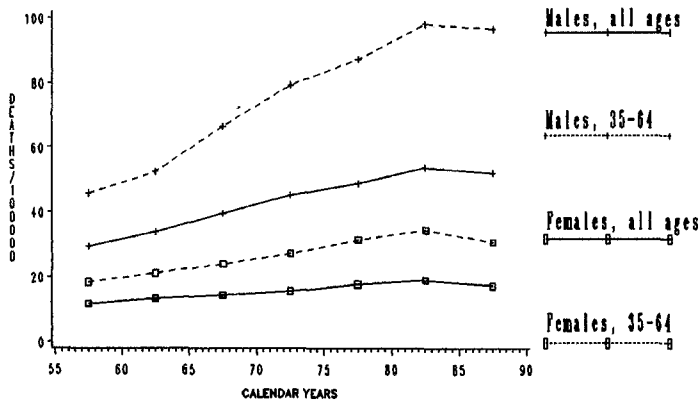
HUNGARY

Years of Death	MALES			FEMALES		
	Deaths	World Stand	Trunc 35-64	Deaths	World Stand	Trunc 35-64
	Number			Number		
55-59	7530	29.33	45.67	3418	11.62	18.28
60-64	9029	33.71	52.34	4107	13.23	21.12
65-69	11227	39.52	66.62	4884	14.34	23.98
70-74	13524	45.21	79.49	5755	15.61	27.17
75-79	15163	48.78	87.57	6868	17.78	31.50
80-84	16792	53.79	98.13	7367	19.01	34.50
85-89	16321	52.12	96.73	6776	17.36	30.81

SUICIDES

ICELAND

Years of Death	MALES			FEMALES		
	Deaths	World Stand	Trunc 35-64	Deaths	World Stand	Trunc 35-64
	Number			Number		
55-59	57	14.07	24.10	20	5.14	12.42
60-64	62	14.12	25.02	20	4.51	6.30
65-69	101	21.21	32.68	25	5.57	11.54
70-74	82	16.31	32.62	24	4.94	11.35
75-79	97	17.20	27.37	23	4.25	8.87
80-84	111	17.92	25.69	35	6.01	13.91
85-89	118	18.06	26.26	44	6.51	14.09



SUICIDES

IRELAND

Years of Death	MALES			FEMALES		
	Deaths Number	World Stand	Trunc 35-64	Deaths Number	World Stand	Trunc 35-64
55-59	292	3.72	7.49	74	1.00	2.05
60-64	271	3.65	7.05	82	1.10	2.21
65-69	244	3.19	6.11	71	0.94	1.94
70-74	336	4.47	7.82	110	1.47	3.00
75-79	582	7.15	10.81	256	3.18	6.02
80-84	844	9.74	16.07	349	4.13	8.66
85-89*	811	11.22	16.62	258	3.59	7.25

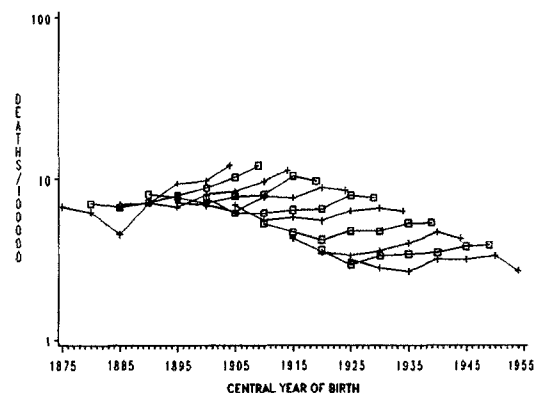
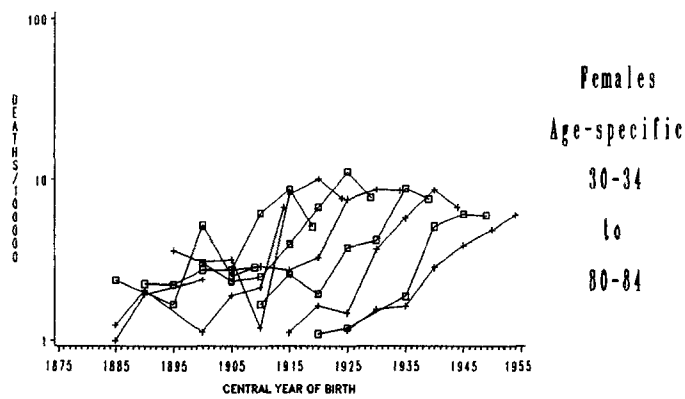
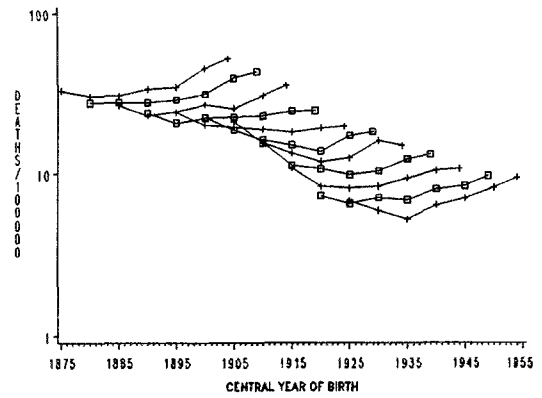
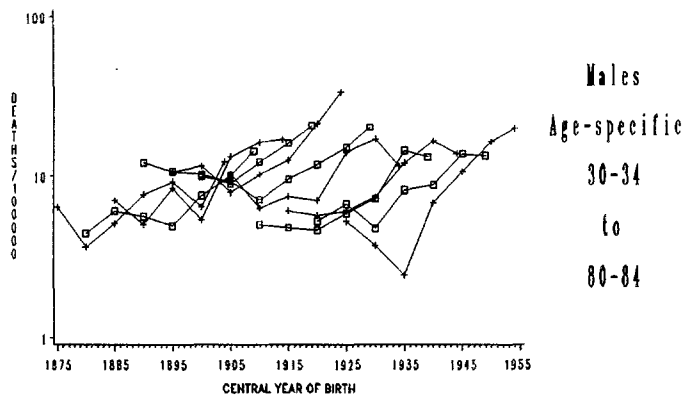
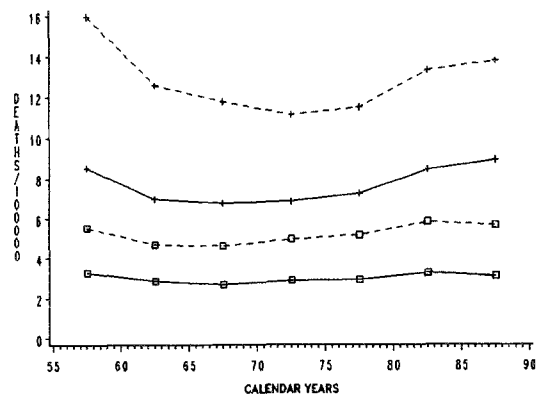
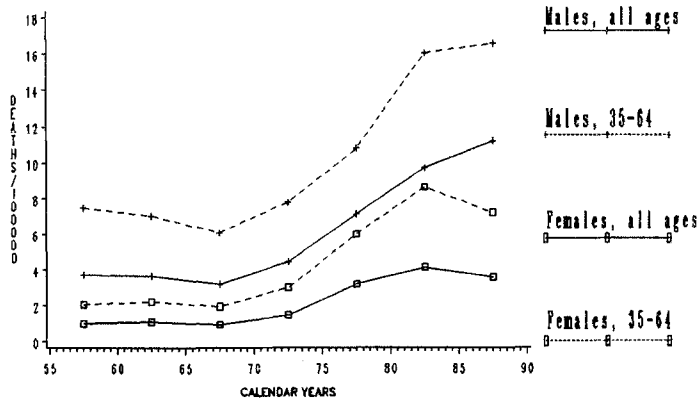
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ITALY

SUICIDES

Years of Death	MALES			FEMALES		
	Deaths Number	World Stand	Trunc 35-64	Deaths Number	World Stand	Trunc 35-64
55-59	11254	8.54	15.97	4694	3.28	5.54
60-64	9841	6.98	12.57	4338	2.86	4.69
65-69	9981	6.78	11.78	4305	2.68	4.62
70-74	10669	6.86	11.14	4925	2.88	4.96
75-79	12047	7.27	11.51	5410	2.91	5.18
80-84	14653	8.46	13.32	6391	3.25	5.85
85-89*	13022	8.93	13.79	5325	3.11	5.68

* Information is missing for one or more years



SUICIDES

SUICIDES

LUXEMBOURG

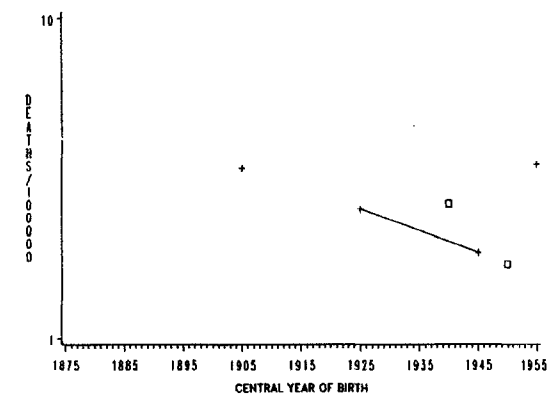
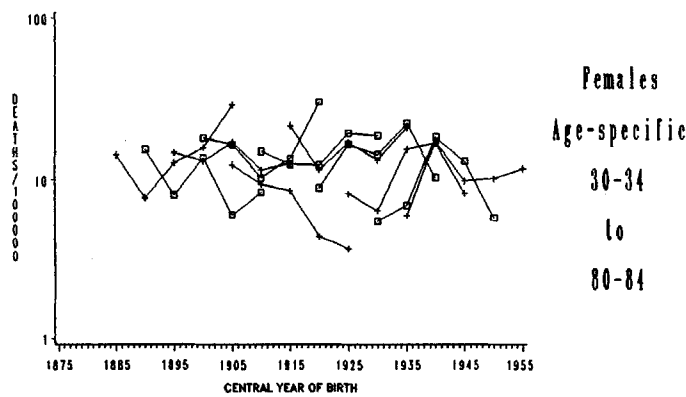
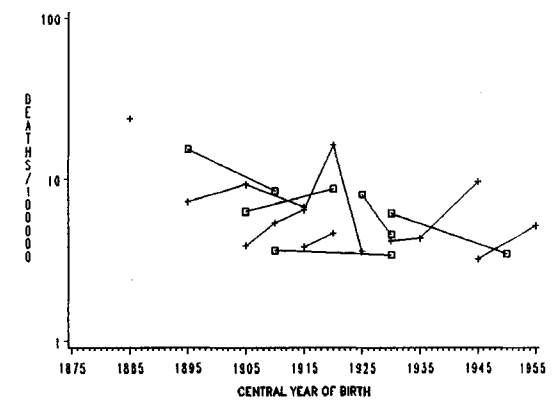
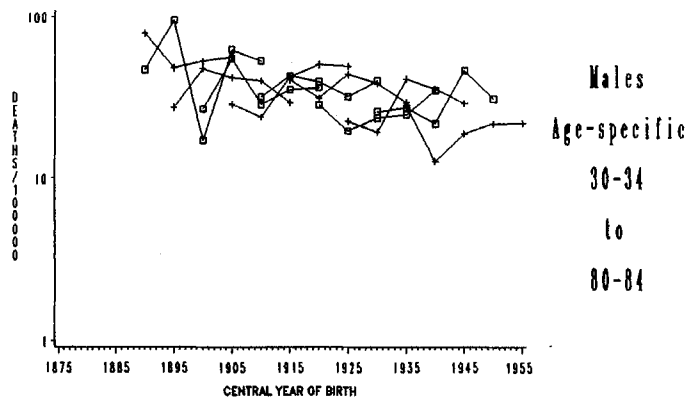
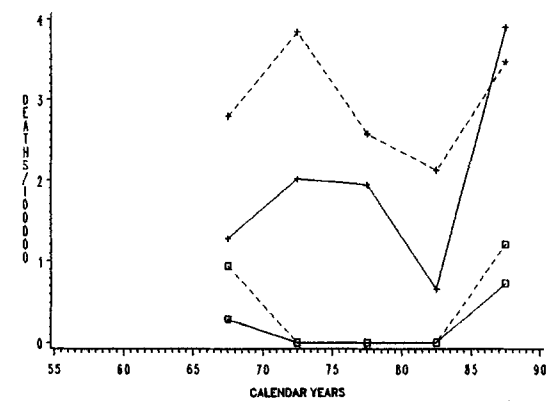
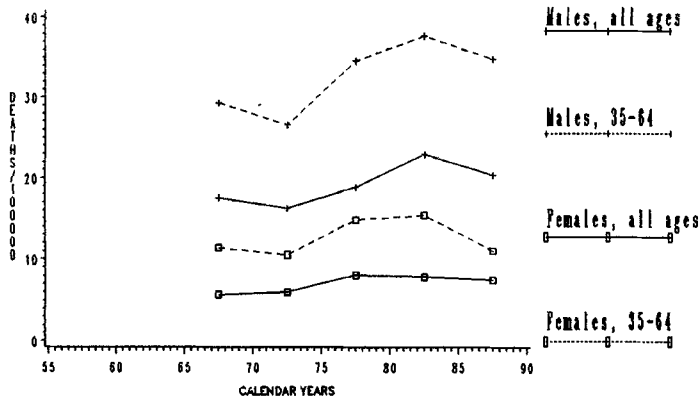
MALTA

Years of Death	MALES			FEMALES		
	Deaths Number	World Stand	Trunc 35-64	Deaths Number	World Stand	Trunc 35-64
55-59						
60-64						
65-69*	100	17.55	29.33	39	5.70	11.43
70-74	174	16.25	25.59	67	6.00	10.54
75-79	197	18.85	34.62	90	8.07	14.87
80-84	246	22.95	37.75	90	7.86	15.43
85-89	228	20.37	34.87	95	7.48	11.06

Years of Death	MALES			FEMALES		
	Deaths Number	World Stand	Trunc 35-64	Deaths Number	World Stand	Trunc 35-64
55-59						
60-64						
65-69*	8	1.28	2.79	2	0.29	0.94
70-74*	9	2.01	3.84	0	0.00	0.00
75-79*	9	1.94	2.57	0	0.00	0.00
80-84*	1	0.66	2.12	0	0.00	0.00
85-89*	29	3.90	3.47	6	0.73	1.21

* Information is missing for one or more years

* Information is missing for one or more years



SUICIDES

NETHERLANDS

Years of Death	MALES			FEMALES		
	Deaths Number	World Stand	Trunc 35-64	Deaths Number	World Stand	Trunc 35-64
55-59	2152	7.36	12.24	1408	4.52	8.82
60-64	2397	7.54	12.79	1455	4.34	8.33
65-69	2662	7.84	13.45	1598	4.42	8.55
70-74	3359	9.29	16.17	2286	5.95	11.47
75-79	3933	10.23	17.34	2671	6.56	12.80
80-84	4811	11.67	19.39	3087	7.00	12.69
85-89*	4006	11.44	17.91	2375	6.45	12.00

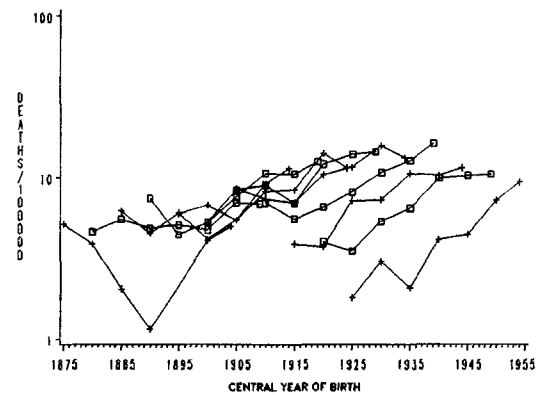
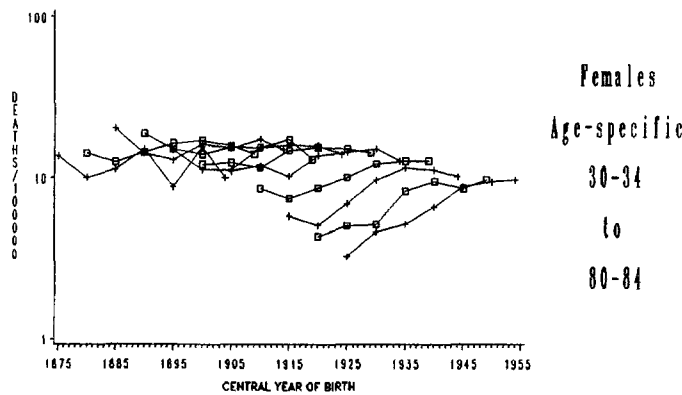
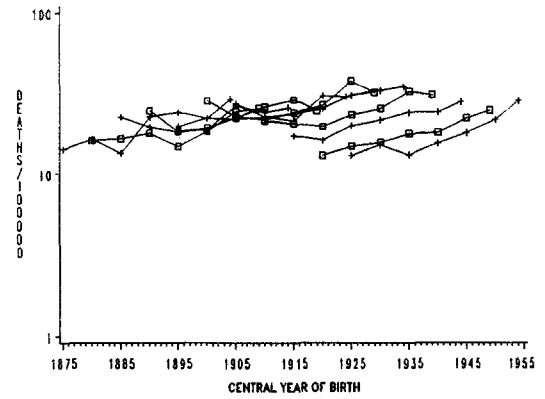
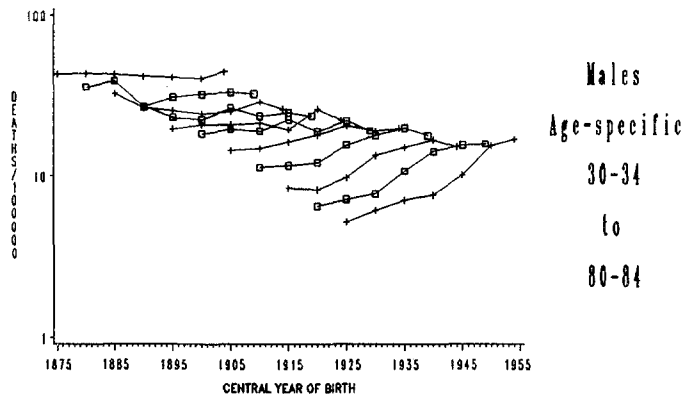
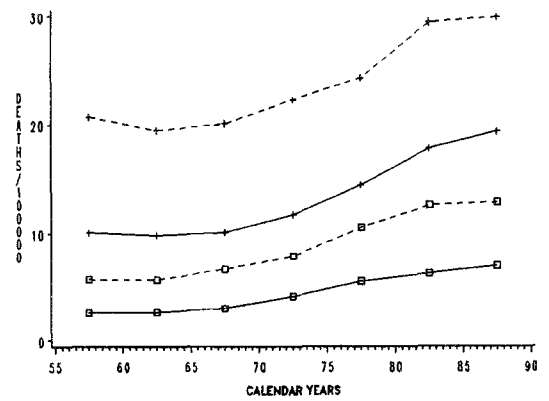
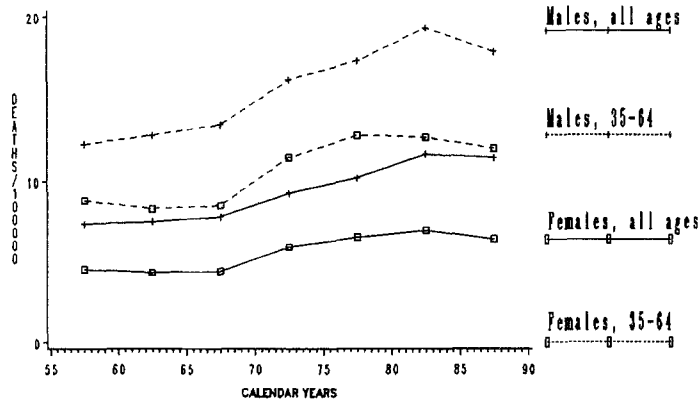
* Information is missing for one or more years

SUICIDES

NORWAY

Years of Death	MALES			FEMALES		
	Deaths Number	World Stand	Trunc 35-64	Deaths Number	World Stand	Trunc 35-64
55-59	1022	10.08	20.68	278	2.56	5.69
60-64	1029	9.83	19.45	291	2.61	5.61
65-69	1096	10.10	20.10	342	2.97	6.66
70-74	1301	11.76	22.28	453	4.06	7.84
75-79	1640	14.52	24.26	615	5.48	10.56
80-84	2060	17.82	29.47	747	6.21	12.64
85-89*	1843	19.37	29.90	677	6.93	12.91

* Information is missing for one or more years



SUICIDES

SUICIDES

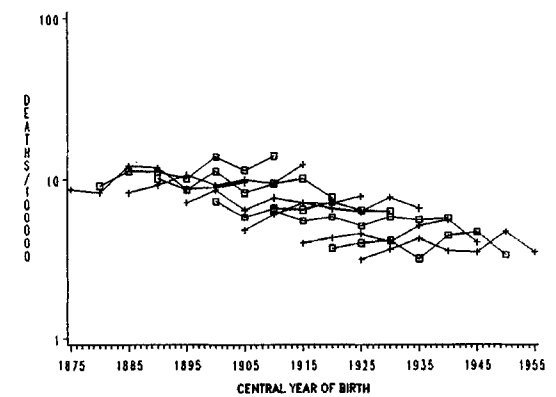
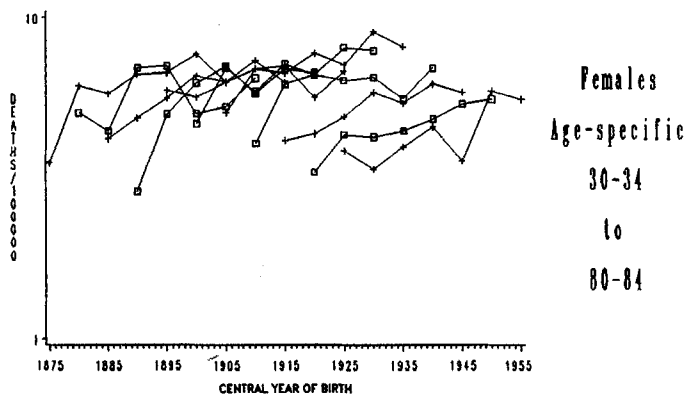
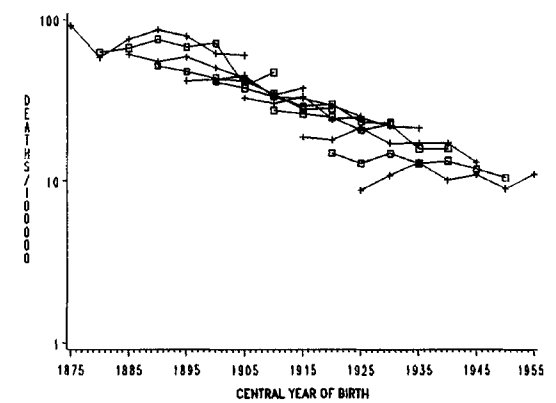
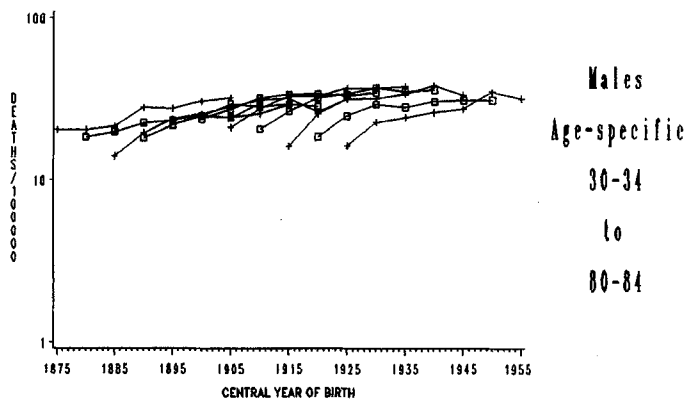
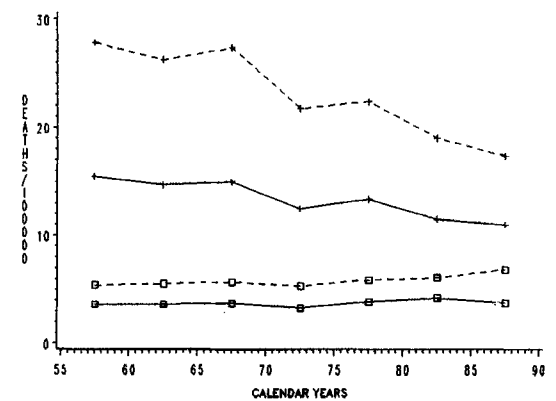
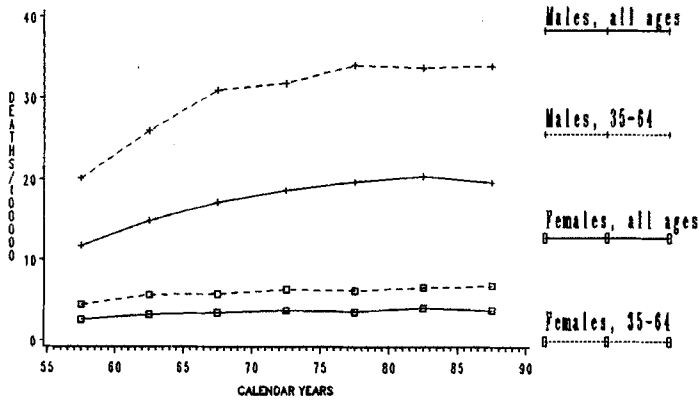
POLAND

PORTUGAL

Years of Death	MALES			FEMALES		
	Deaths	World Stand	Trunc 35-64	Deaths	World Stand	Trunc 35-64
	Number			Number		
55-59*	1586	11.75	20.11	394	2.55	4.45
60-64	10523	14.84	25.94	2541	3.19	5.67
65-69	13281	17.12	30.95	3001	3.44	5.76
70-74	15631	18.60	31.78	3545	3.74	6.34
75-79	17868	19.67	34.03	3581	3.56	6.21
80-84*	7972	20.45	33.75	1730	4.05	6.60
85-89	19582	19.64	33.96	4180	3.76	6.82

Years of Death	MALES			FEMALES		
	Deaths	World Stand	Trunc 35-64	Deaths	World Stand	Trunc 35-64
	Number			Number		
55-59	3131	15.49	27.79	885	3.61	5.39
60-64	3153	14.70	26.19	922	3.61	5.53
65-69	3277	14.96	27.32	982	3.70	5.68
70-74	2776	12.46	21.71	869	3.28	5.30
75-79	3223	13.38	22.36	1134	3.86	5.88
80-84	3074	11.51	19.01	1278	4.22	6.09
85-89	3246	10.97	17.34	4180	3.76	6.82

* Information is missing for one or more years



SUICIDES

SPAIN

Years of Death	MALES			FEMALES		
	Deaths Number	World Stand	Trunc 35-64	Deaths Number	World Stand	Trunc 35-64
55-59	5607	7.63	13.40	2083	2.45	4.16
60-64	5796	7.36	12.91	2040	2.24	3.91
65-69	5404	6.31	11.40	1909	1.91	3.60
70-74	5292	5.71	10.06	1966	1.83	3.43
75-79	5405	5.49	9.37	1961	1.73	3.15
80-84	7270	6.80	10.92	2625	2.12	3.65
85-89*	3861	8.52	13.58	1408	2.66	4.36

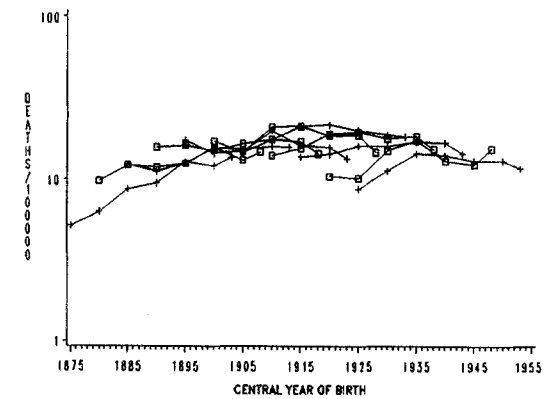
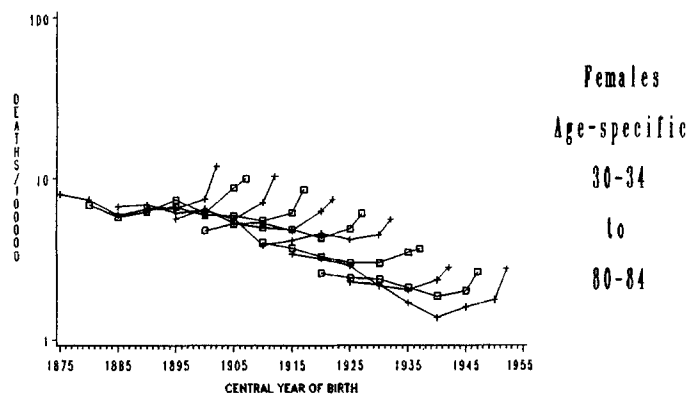
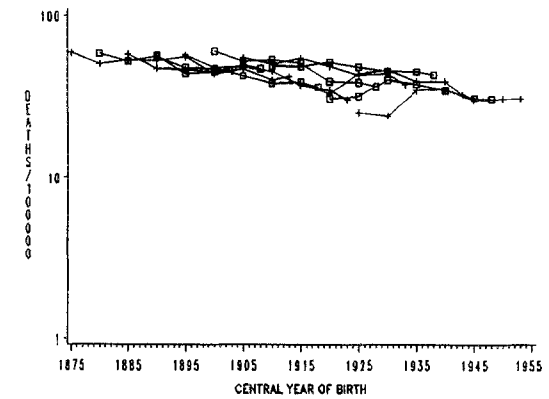
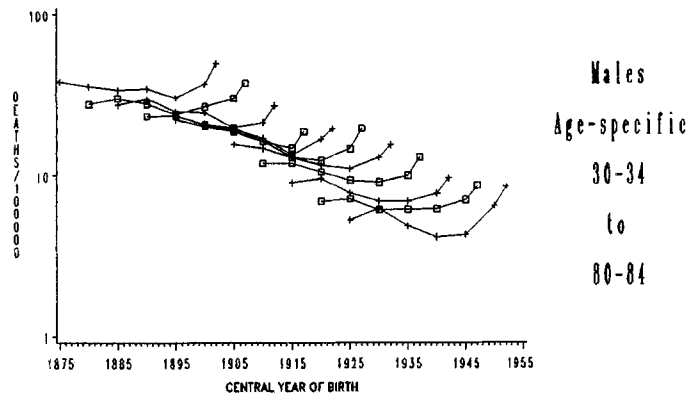
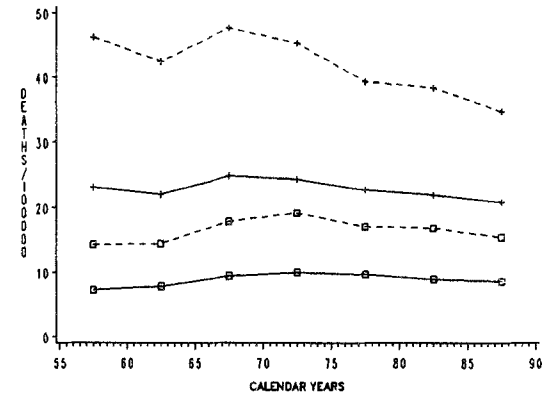
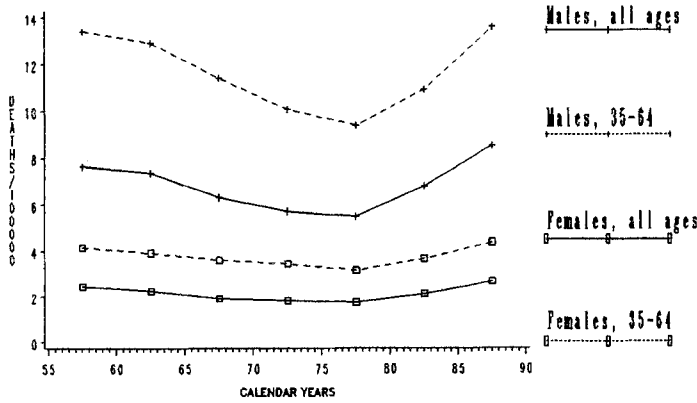
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SWEDEN

SUICIDES

Years of Death	MALES			FEMALES		
	Deaths Number	World Stand	Trunc 35-64	Deaths Number	World Stand	Trunc 35-64
55-59	5236	23.08	46.20	1626	7.23	14.24
60-64	5108	21.98	42.38	1786	7.79	14.37
65-69	5949	24.82	47.66	2230	9.42	17.80
70-74	5957	24.33	45.29	2454	9.98	19.12
75-79	5622	22.64	39.33	2430	9.62	17.00
80-84	5545	21.90	38.35	2346	8.92	16.74
85-89*	3225	20.77	34.71	1381	8.58	15.36

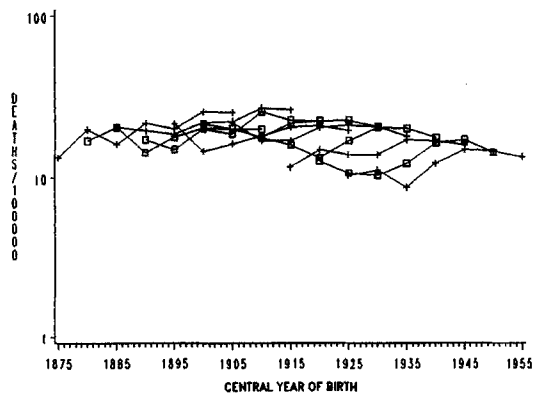
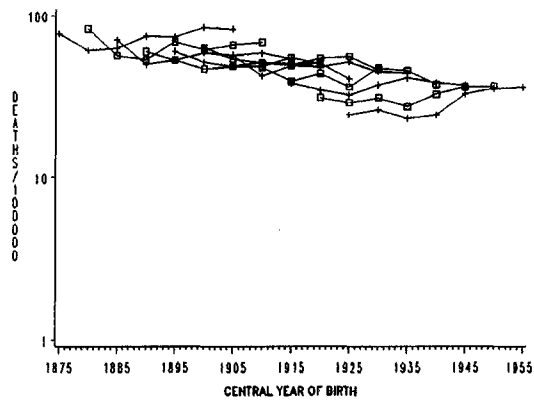
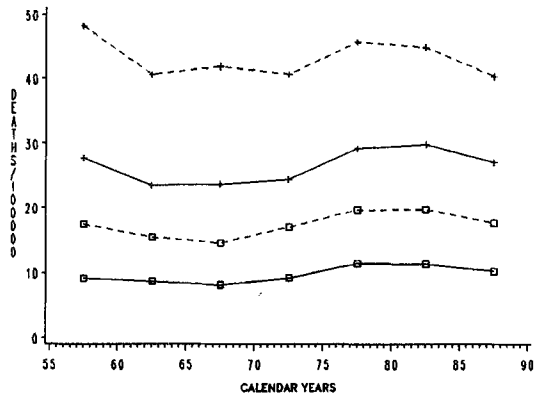
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SUICIDES

SWITZERLAND

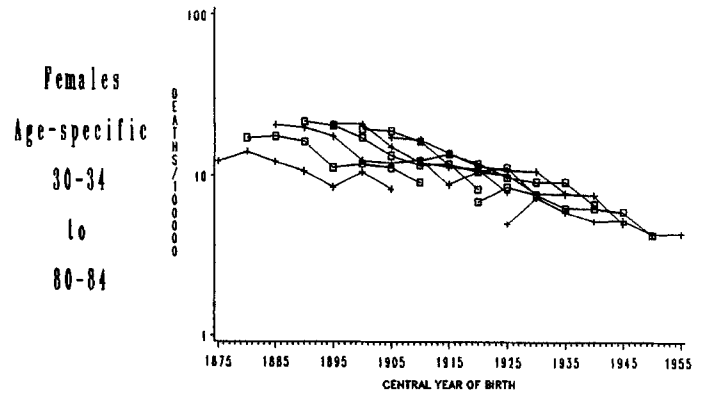
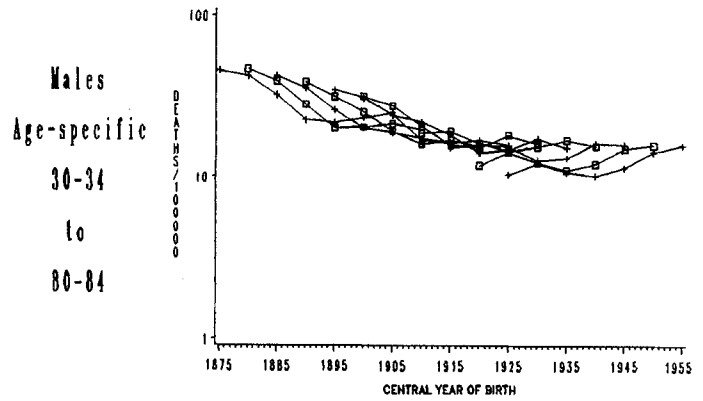
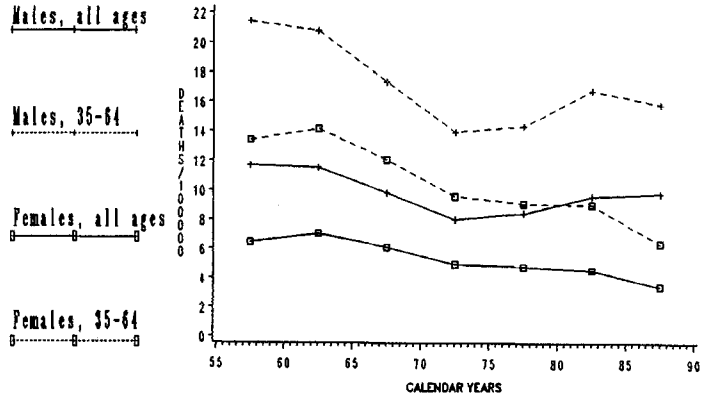
Years of Death	MALES			FEMALES		
	Deaths Number	World Stand	Trunc 35-64	Deaths Number	World Stand	Trunc 35-64
55-59	3888	27.69	48.17	1456	9.11	17.39
60-64	3551	23.44	40.61	1470	8.63	15.41
65-69	3852	23.65	41.87	1483	8.12	14.56
70-74	4245	24.35	40.62	1791	9.20	16.94
75-79	5152	29.16	45.71	2254	11.38	19.63
80-84	5555	29.84	44.85	2373	11.32	19.71
85-89	5384	26.99	40.27	2287	10.18	17.58



SUICIDES

UK, ENGLAND & WALES

Years of Death	MALES			FEMALES		
	Deaths Number	World Stand	Trunc 35-64	Deaths Number	World Stand	Trunc 35-64
55-59	15719	11.68	21.44	10384	6.48	13.42
60-64	15831	11.53	20.80	11353	7.04	14.16
65-69	13719	9.84	17.38	10057	6.12	12.07
70-74	11262	8.03	13.96	8115	4.97	9.59
75-79	11877	8.47	14.36	7793	4.79	9.12
80-84	13842	9.62	16.78	7771	4.57	9.04
85-89	14496	9.79	15.84	5972	3.45	6.40



SUICIDES

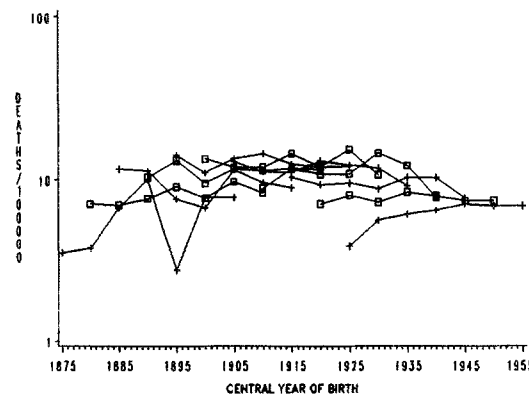
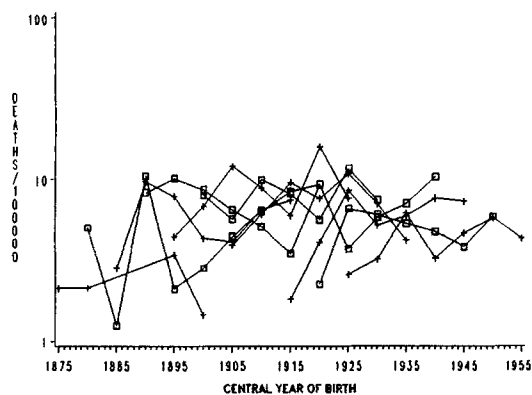
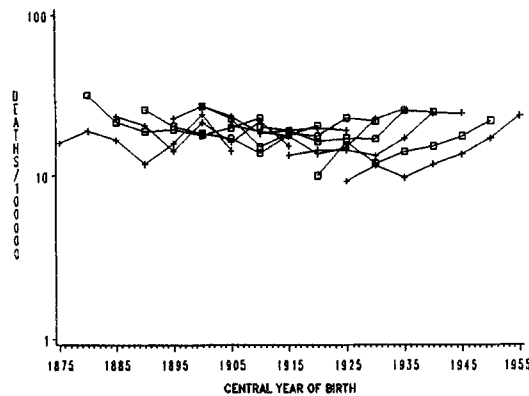
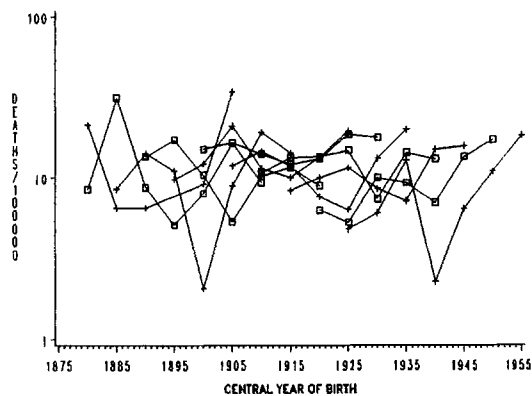
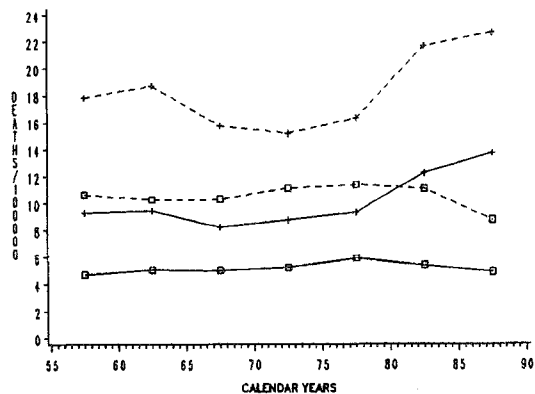
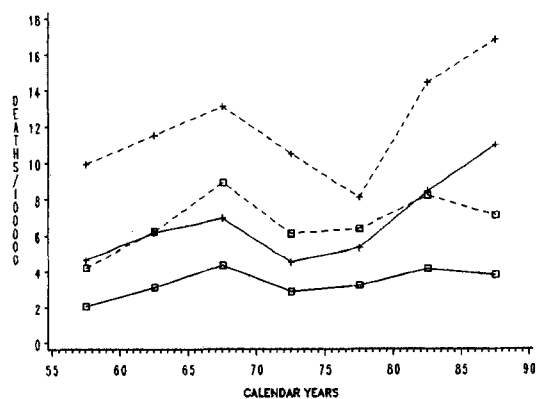
UK, NORTHERN IRELAND

Years of Death	MALES			FEMALES		
	Deaths Number	World Stand	Trunc 35-64	Deaths Number	World Stand	Trunc 35-64
55-59	166	4.63	9.91	85	2.05	4.20
60-64	233	6.15	11.52	128	3.11	6.23
65-69	258	6.98	13.11	183	4.34	8.90
70-74	171	4.51	10.47	121	2.86	6.12
75-79	208	5.30	8.08	132	3.21	6.36
80-84	338	8.41	14.42	177	4.13	8.18
85-89	452	10.95	16.83	166	3.79	7.11

SUICIDES

UK, SCOTLAND

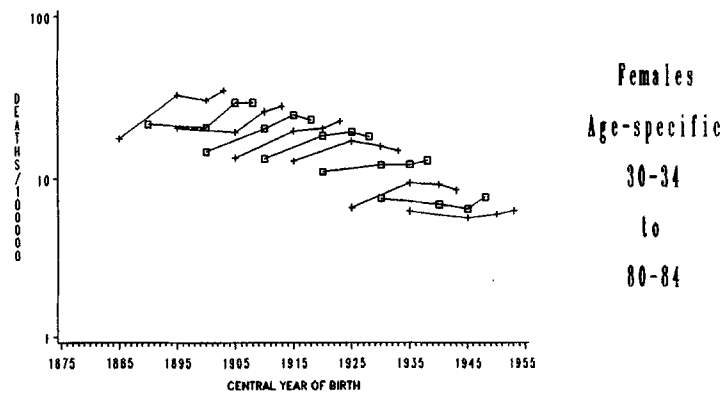
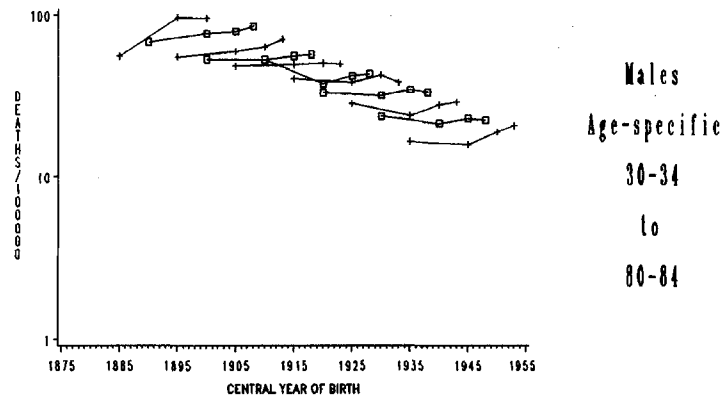
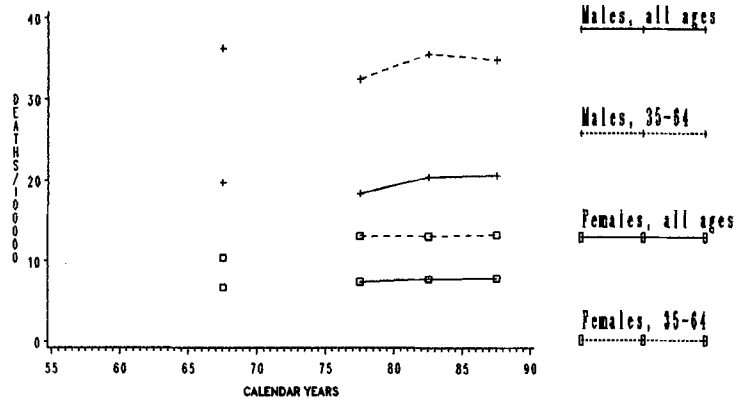
Years of Death	MALES			FEMALES		
	Deaths Number	World Stand	Trunc 35-64	Deaths Number	World Stand	Trunc 35-64
55-59	1316	9.30	17.85	782	4.70	10.62
60-64	1334	9.46	18.72	826	5.07	10.26
65-69	1145	8.20	15.76	809	4.99	10.27
70-74	1208	8.75	15.21	861	5.23	11.11
75-79	1287	9.32	16.32	925	5.88	11.35
80-84	1727	12.22	21.68	889	5.38	11.06
85-89	1972	13.73	22.70	812	4.91	8.77



SUICIDES
YUGOSLAVIA

Years of Death	MALES			FEMALES		
	Deaths Number	World Stand	Trunc 35-64	Deaths Number	World Stand	Trunc 35-64
55-59						
60-64						
65-69*	3855	19.70	36.21	1488	6.77	10.42
70-74						
75-79*	4246	18.41	32.43	1940	7.47	13.16
80-84	12506	20.45	35.52	5405	7.83	13.10
85-89*	7968	20.65	34.77	3456	7.90	13.30

* Information is missing for one or more years



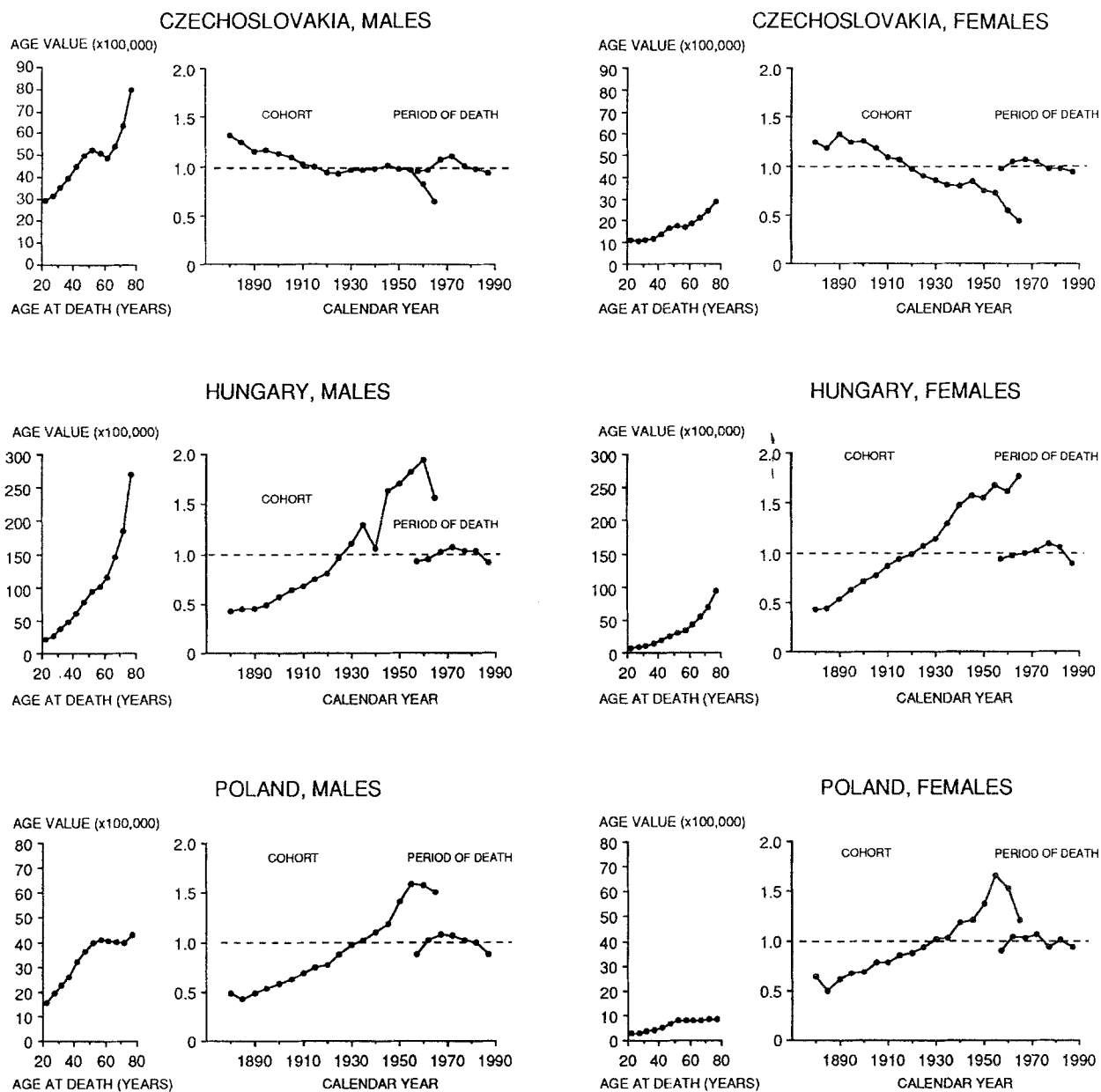


Fig. 3. Age, period and cohort effects in suicide mortality in selected European countries.

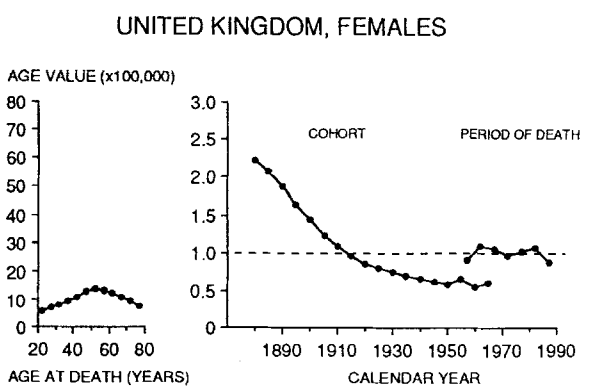
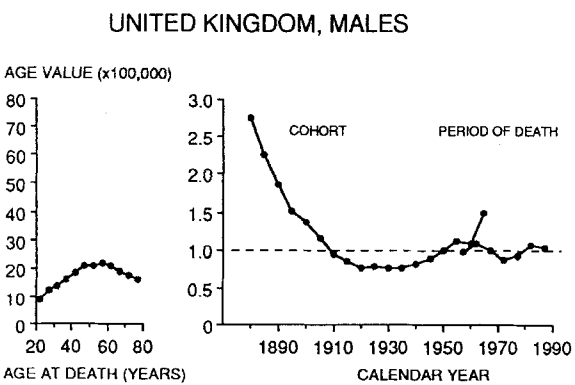
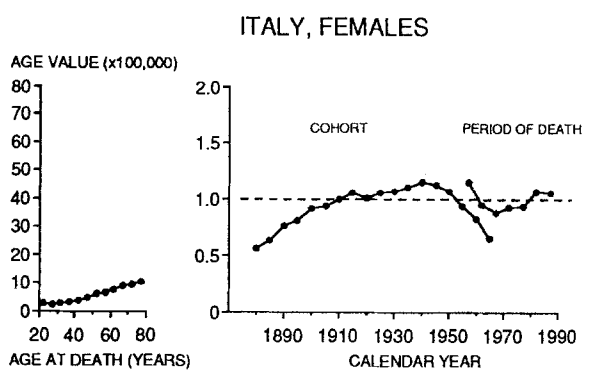
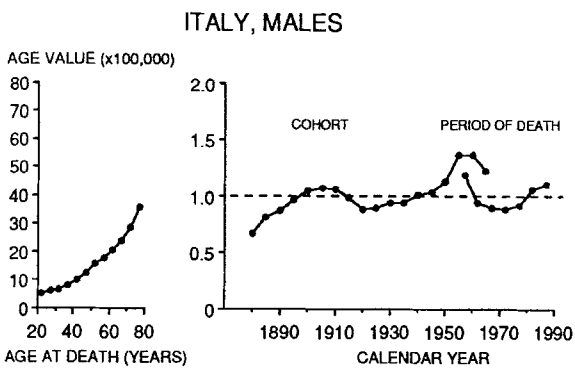
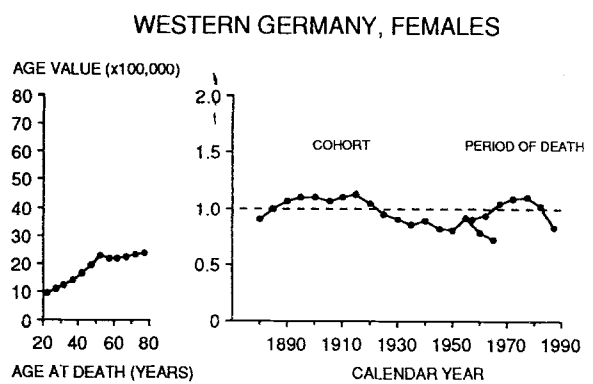
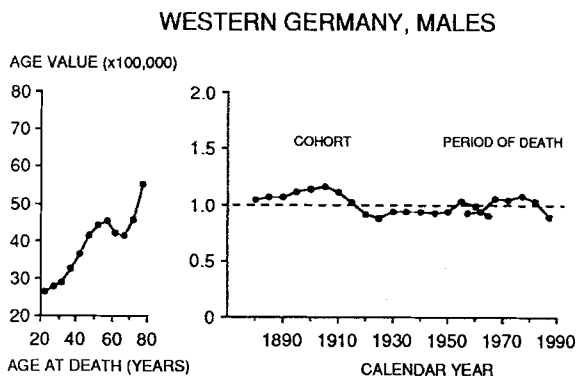
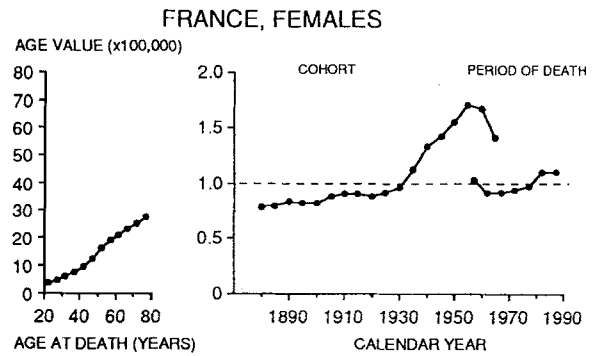
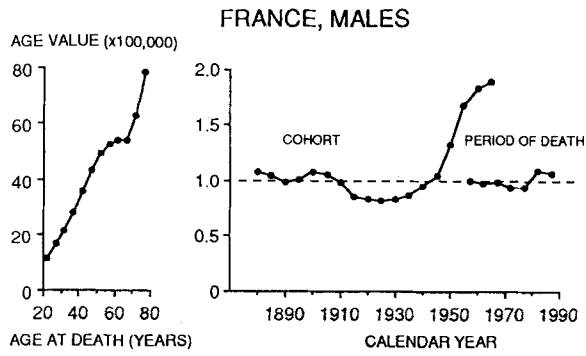
males, younger age groups, and hence in more recent generations.

This is reflected in the estimates from the age, period and cohort model, presented in Figure 3. In France, Italy and the United Kingdom more recent generations of males showed increases in suicide risk, and steady rises for each subsequent generation were observed in Hungary and Poland. Favourable cohort and period values were observed in Germany and Czechoslovakia. Finally, the age curves were largely heterogeneous, with rises with age in France, Italy, Germany (for males), Czechoslovakia and Hungary, but levelling off from later middle age onwards in German females, and in the United Kingdom and Poland in both sexes.

Discussion

The present work has essentially a descriptive value, in terms of documenting and quantifying a picture of substantially heterogeneous patterns and trends in suicide mortality in various European countries. These trends are probably somewhat influenced by changes in certification accuracy, since a variable proportion of suicide deaths may be attributed to other (violent) causes of deaths in various countries and calendar periods^{9,10}.

Other factors which, to a variable degree, may have influenced suicide mortality in various countries are socio-economic and demographic factors, changes in availability of instruments or methods for suicide, and changes in psychiatric care^{4,10-14}.



These factors, in principle, would have different implications on cohort or period of death effects on suicide rates, socio-economic factors being more likely to be linked to changes in the cohort component^{4,15}. Even by the use of age, period and cohort models, however, we were unable to find a unique pattern of trends in various European countries.

Although it is difficult to understand such different patterns of trends in countries like France and Germany or Czechoslovakia and Hungary which, at a superficial sight, should have had considerable similarities in socio-economic aspects and psychiatric care, at least some general consideration is valid for most European countries. One is related to the tendency in most areas of the continent to show considerable upward trends in suicide rates for recent generations of males, which is particularly worrisome in terms of public health, with reference to the potential future perspectives, if the present trends are not modified¹¹. The second is on the absence of generalized favourable impact of newer psychotropic drugs (introduced in the later 1950's) on suicide rates for both sexes and various subsequent age groups.

It appears therefore that deaths from suicide are likely to remain a major – and probably growing – cause of death in Europe, in the absence of effective intervention, particularly in several central European countries where current suicide mortality rates are extremely high.

Acknowledgements

This study has been made possibly by a core grant of the Swiss (Aargau and St-Gall) League against Cancer. This study was conducted within the framework of the CNR (Italian National Research Council) Applied Project "Prevention and Control of Disease Factors" and of the "Europe Against Cancer" Programme of the Commission of the European Communities.

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