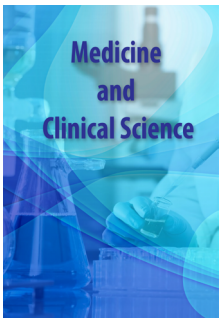
Medicine & Clinical Science

Letter to Editor



Letter Rejoinder: "Körblein A. Letter Re: 'Annual All-Cause Mortality Rate in Germany and Japan (2005 to 2022) With Focus on The Covid-19 Pandemic: Hypotheses And Trend Analyses. Med Clin Sci. 2023; 5(2):16-22.' By Scherb H, Hayashi K." Med Clin Sci. 2023; 5(3):33.

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Sir,

We thank Alfred Körblein [1] for his interest in our article [2]. Körblein quantitatively confirms our estimate of the excess mortality in Germany in the combined years 2020, 2021, and 2022 of approximately 133,000 deaths. However, while we consciously distinguished the three years 2020, 2021, and 2022, Körblein allows for only one 'broken-stick' effect combining the three pandemic years into one single parameter. We had explicitly discouraged such an approach since it obscures relevant differences in deficit or excess mortality of the individual pandemic years. Moreover, Körblein misrepresents our paper claiming "*Scherb and Hayashi examined trends in all-cause mortality in Japan and Germany to determine whether there was excess mortality from the Corona epidemic*". Körblein overlooks that we had also warned [2] against premature causal conclusions as "*... increased mortality ... in 2020 to 2022 could well be due to a multitude of other causes*."

To highlight the necessity of carefully keeping the single pandemic years apart, we may exemplarily look at the weekly gender specific absolute all-cause mortality of young and old people in Germany from 2005 to April 9, 2023 published by DESTATIS and accessed April 18, 2023. To improve comparability of the weekly counts across years, calendar week No 53 in the only three years 2009, 2015, and 2020 with this week has been discarded. Otherwise, overcounting of up to more than 30,000 cases compared to the correct annual counts would be possible.

Figure 1 shows the mortality data for the age-group 0-30 together with an optimum Poisson regression model allowing for a drop from March 22, 2020 (start of the Covid-19 lockdowns) and a change in slope from December 27, 2020 (begin of the Covid-19 mass vaccinations). Table 1 compiles the corresponding parameters, standard errors, and p-values. The significant drops on March 22, 2020, for both sexes are presumably due to less (car) accidents during the lockdowns. However, well before the end of the lockdowns in April 2022, the sex specific counts of weekly deaths begin to rise with the start of the Covid-19 mass vaccinations on December 27, 2020. The interesting observation here is that the change in slope is steeper for females than for males, see Table 1 and Figure 1. This could point to a higher vaccination probability among young females because of more female jobs mandating vaccination. Another driving factor in this context might be the well-known higher vulnerability of females: "*Clear sex differences have been observed within the field of vaccine biology. It is well established that, compared to males, females develop higher antibody responses and report more adverse reactions following vaccination*" [3].

Figure 2 analogous to Figure 1 shows the trend of the absolute all-cause mortality in the age group 70-75. Table 2 compiles the corresponding parameters, standard errors, and p-values. In these data from the age-group 70-75, in contrast to the young people's data, there is no obvious drop from the start of the lockdowns. This could be due to no or little accident-prone mobility of the elderly

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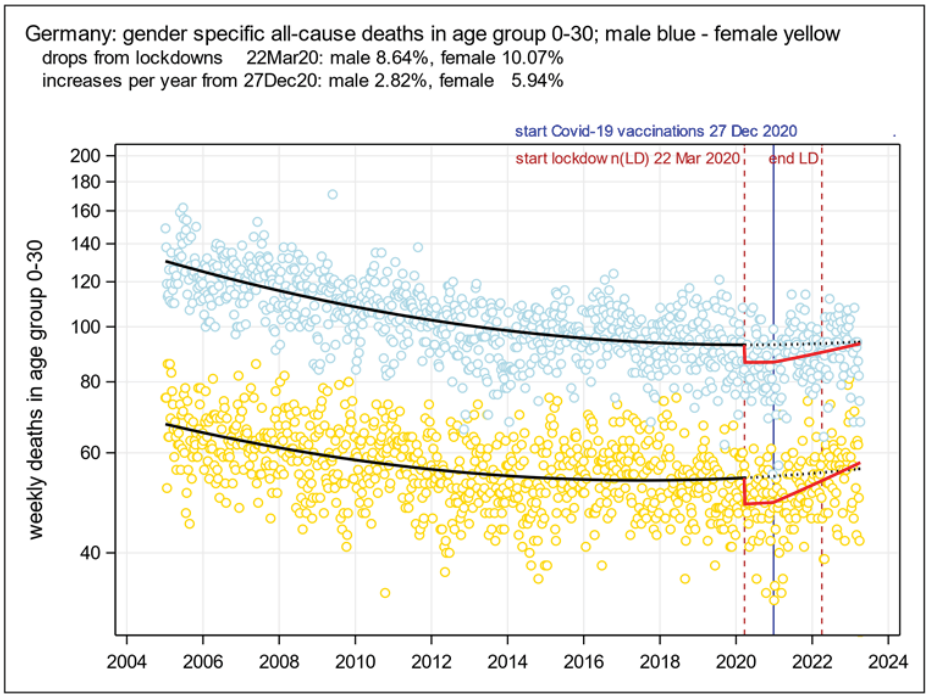

Figure 1. *Gender specific all-cause deaths in Germany in the age group 0-30 and Poisson regression models not adjusted for calendar week for convenient display, see Table 1 for parameters, standard errors, and p-values; male blue - female yellow; drops from lockdowns starting March 22, 2020: for male deaths 8.64% and for female deaths 10.7%; increases per year from December 27, 2020 onward: for male deaths 2.82%, for female deaths 5.94%; end LD: end of lockdowns in Germany from April 3, 2022.*

Table 1. *Parameter estimates and inference statistics for the synoptic Poisson regression model in Figure 1 for the weekly sex-specific deaths in age-group 0-30 in Germany; the upper and lower parts of the table compile the estimates and statistics not adjusted and adjusted for the calendar week, respectively; the bold entries are the interaction parameters of main interest in the context of the Covid-19 pandemic.*

Maximum likelihood parameter estimates							
Parameter	**DF**	**Estimate**	**Standard Error**	**Wald 95% confidence limits**		**Wald Chi-square**	**Pr > ChiSq**
intercept	1	3.9996	0.0165	3.9673	4.0318	59016.2	<.0001
sex	1	0.533	0.0158	0.502	0.564	1133.66	<.0001
t	1	0.0099	0.0032	0.0036	0.0162	9.57	0.002
t^2	1	0.0014	0.0002	0.0011	0.0018	73.61	<.0001
sex*t	1	-0.008	0.0016	-0.0111	-0.0049	25.74	<.0001
d2020	1	-0.1061	0.0287	-0.1623	-0.0499	13.69	0.0002
sex*d2020	1	0.0353	0.0316	-0.0266	0.0971	1.25	0.2639
t*d2021	1	0.0577	0.0201	0.0183	0.097	8.26	0.004
sex*t*d2021	1	-0.0299	0.0229	-0.0747	0.015	1.7	0.192
scale	0	9.9709	0	9.9709	9.9709		
Maximum likelihood parameter estimates adjusted for calendar week							
Parameter	**DF**	**Estimate**	**Standard Error**	**Wald 95% confidence limits**		**Wald Chi-square**	**Pr > ChiSq**
intercept	1	3.9871	0.0296	3.929	4.045	18177	<.0001
sex	1	0.533	0.0156	0.503	0.564	1173.65	<.0001
t	1	0.0104	0.0032	0.004	0.017	10.94	0.0009
t^2	1	0.0015	0.0002	0.001	0.002	77.96	<.0001
sex*t	1	-0.0081	0.0015	-0.011	-0.005	27.36	<.0001
d2020	1	-0.111	0.0282	-0.166	-0.056	15.46	<.0001
sex*d2020	1	0.0349	0.031	-0.026	0.096	1.26	0.2612
t*d2021	1	0.0603	0.0198	0.022	0.099	9.29	0.0023
sex*t*d2021	1	-0.0295	0.0225	-0.074	0.015	1.71	0.1913
scale	0	9.8006	0	9.801	9.801		

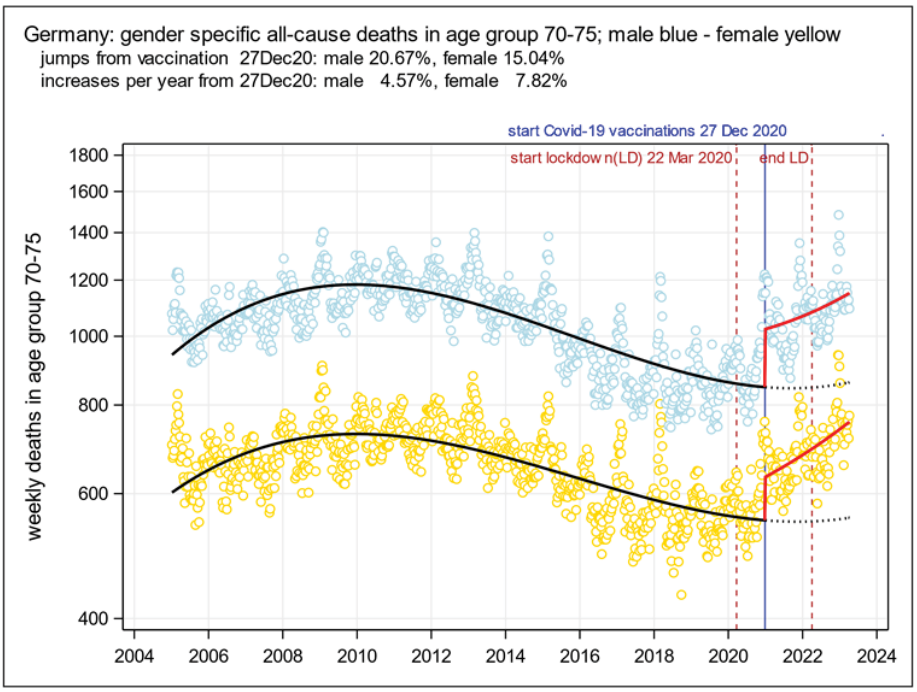

Figure 2. *Gender specific all-cause deaths in Germany in the age group 70-75 and Poisson regression models not adjusted for calendar week for convenient display, see Table 2 for parameters, standard errors, and p-values; male blue - female yellow; jumps from vaccination starting December 27, 2020: for male deaths 20.67% and for female deaths 15.04%; increases per year from December 27, 2020 onward: for male deaths 4.57%, for female deaths 7.82%; end LD: end of lockdowns in Germany from April 3, 2022*

Table 2. *Parameter estimates and inference statistics for the synoptic Poisson regression model in Figure 2 for the weekly sex-specific deaths in age-group 70-75 in Germany; the upper and lower parts of the table compile the estimates and statistics not adjusted and adjusted for the calendar week, respectively; the bold entries are the interaction parameters of main interest in the context of the Covid-19 pandemic.*

Maximum likelihood parameter estimates							
Parameter	**DF**	**Estimate**	**Standard Error**	**Wald 95% confidence limits**		**Wald Chi-square**	**Pr > ChiSq**
intercept	1	6.3104	0.0126	6.2857	6.335	251872	<.0001
sex	1	0.4324	0.0106	0.4117	0.4531	1673.59	<.0001
t	1	-0.0098	0.0051	-0.0199	0.0003	3.64	0.0563
t^2	1	0.0051	0.0008	0.0036	0.0067	44.03	<.0001
t^3	1	0.0003	0	0.0003	0.0004	96.24	<.0001
sex*t^2	1	0.0013	0.0004	0.0005	0.002	10.78	0.001
sex*t^3	1	0.0001	0	0	0.0001	8.96	0.0028
d2021	1	0.1401	0.0245	0.0921	0.1881	32.73	<.0001
sex*d2021	1	0.0478	0.0273	-0.0058	0.1013	3.06	0.0802
t*d2021	1	0.0753	0.0169	0.0421	0.1084	19.81	<.0001
sex*t*d2021	1	-0.0306	0.0183	-0.0665	0.0052	2.8	0.0942
scale	0	75.8384	0	75.8384	75.8384		
Maximum likelihood parameter estimates adjusted for calendar week							
Parameter	**DF**	**Estimate**	**Standard Error**	**Wald 95% confidence limits**		**Wald Chi-square**	**Pr > ChiSq**
intercept	1	6.3899	0.016	6.3586	6.4213	159561	<.0001
sex	1	0.4323	0.0082	0.4162	0.4483	2785.5	<.0001
t	1	-0.0068	0.004	-0.0146	0.001	2.89	0.0892

t^2	1	0.0055	0.0006	0.0044	0.0067	84.57	<.0001
t^3	1	0.0004	0	0.0003	0.0004	175.22	<.0001
sex*t^2	1	0.0013	0.0003	0.0007	0.0019	18.06	<.0001
sex*t^3	1	0.0001	0	0	0.0001	15.04	0.0001
d2021	1	0.1324	0.0187	0.0957	0.1691	50.07	<.0001
sex*d2021	1	0.0484	0.0208	0.0077	0.0891	5.43	0.0198
t*d2021	1	0.064	0.0128	0.0389	0.0891	24.99	<.0001
sex*t*d2021	1	-0.0306	0.0138	-0.0576	-0.0036	4.93	0.0264
scale	0	58.9273	0	58.9273	58.9273		

that could have been reduced by lockdowns. But right from the beginning of the vaccinations on 27 December 2020, we see strong jumps in addition to escalated slopes already seen in the age-group 0-30. Moreover, due to higher counts and more statistical power, the difference in slopes between the sexes is significant in the age-group 70-75, p-value 0.0264, see Table 2. This underpins again that females are more prone to vaccination detriment than males. Since the elderly had been given vaccination priority, the whole situation is suggestive of a distinct detrimental vaccination effect slowly increasing in the young and abruptly and steeply increasing in the old. According to the regression model in Figure 2, the difference between the total of the observed and expected counts before 2023 is approximately 37,000 (23,000, 51,000). This means that up to about one third of the overall German excess mortality of 133,000 during 2020 to 2022 could alone be due to the excess mortality from the mass vaccinations in the age-group 70-75, and not due to any excess mortality in 2020 without the vaccinations.

Conclusion

The slow increase in deaths in young people and the abrupt increase in old people from the mass vaccinations in Germany on 27 December 2020, could well be a consequence of fatal side-effects of the mRNA vaccinations. The examples presented here point into the same direction as an observation from Malta: "*With every 1% vaccination increase, the absolute numbers of A&E attendees increased by 0.9%*" [4]. It should now be obvious that Körblein's approach of estimating the pandemic excess mortality with only one parameter is insufficient and that the pandemic years 2020, 2021, and 2022 or even distinct periods in the pandemic history must be distinguished carefully to guard against premature or unfounded conclusions.

Competing financial interests declaration

The authors declare they have no actual or potential competing financial interests.

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