

Objektive *post hoc* Analyse der angeblichen Übersterblichkeit in Deutschland während der ”COVID-19” pseudo-pandemie

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Konklusion der Analyse (Translation): *”Die weltweite Medienberichterstattung über die ’COVID-19-Pandemie’ ist unübertroffen von jedem Ereignis in jüngster Zeit (oder wahrscheinlich überhaupt). Dementsprechend wurde eine Vielzahl von Daten gesammelt und analysiert, um Informationen und statistisches Wissen über die Infektionsdynamik sowie wichtige Leistungsindikatoren für deren Eindämmung zu gewinnen. Die dramatisch gestiegene Sterblichkeit war eines der wichtigsten Argumente der Politiker, um strenge sozioökonomische Maßnahmen gegen die Bevölkerung zu verhängen. In dieser Arbeit zielten wir darauf ab, die angeblich hohe Übersterblichkeit in den Jahren 2020 und 2021 zu überprüfen. Im krassen Gegensatz zu den Schätzungen der WHO von 101.500–195.000 Übersterblichkeitsfällen in Deutschland in diesen zwei Jahren, fanden wir sogar eine **Netto-Untersterblichkeit von -11.500**, was impliziert, dass nichts anderes als ein **’normales Sterben’** stattgefunden hat, zumindest wenn man die Netto-Verläufe*

über alle Alterskohorten hinweg betrachtet. [Hervorhebung hinzugefügt] Unsere Analyse zeigt, dass die WHO-Schätzungen eine Übertreibung darstellen, die aus (i) einer kurzzeitigen Datenbasis, (ii) fehleranfälligen Spline-Extrapolationen und (iii) fehlenden alterskohorten-spezifischen Merkmalen der Gesamtsterblichkeit resultiert, die ein zugrundeliegendes Simpson-Paradoxon verschleiern. Darüber hinaus werden alle von der WHO geschätzten Übersterblichkeitsfälle ausschließlich COVID-19 zugeschrieben. Hier haben wir ein klares Kriterium vorgeschlagen, um zumindest auf epidemiologischer Ebene zwischen Todesfällen 'aufgrund von COVID-19' oder nur 'mit COVID-19' zu unterscheiden. Basierend auf einer gründlichen Analyse der NAA-abhängigen Sterblichkeit können von den etwa 115.000 vom RKI für 2020 und 2021 zusammen verkündeten COVID-19-Todesfällen nur etwa 59.000 oder grob 50 Aus unserer Analyse ergeben sich mehrere offene Fragen, die eine gründliche nachfolgende Untersuchung erfordern: Leiden die Schätzungen der Übersterblichkeit in anderen Ländern ebenfalls darunter, demografische Entwicklungen zu ignorieren? Wie konnten die übertriebenen, nicht validierten Berechnungen der Übersterblichkeit unter der Schirmherrschaft der WHO in großem Maßstab akzeptiert werden [61]? Sollten politische Maßnahmen nicht im Lichte realistischer und verlässlicher Übersterblichkeitszahlen neu bewertet werden, die jetzt verfügbar sind? Warum wurden bis Mitte 2023 keine der hier vorgestellten Berechnungen von den deutschen Behörden durchgeführt?"

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P.S.

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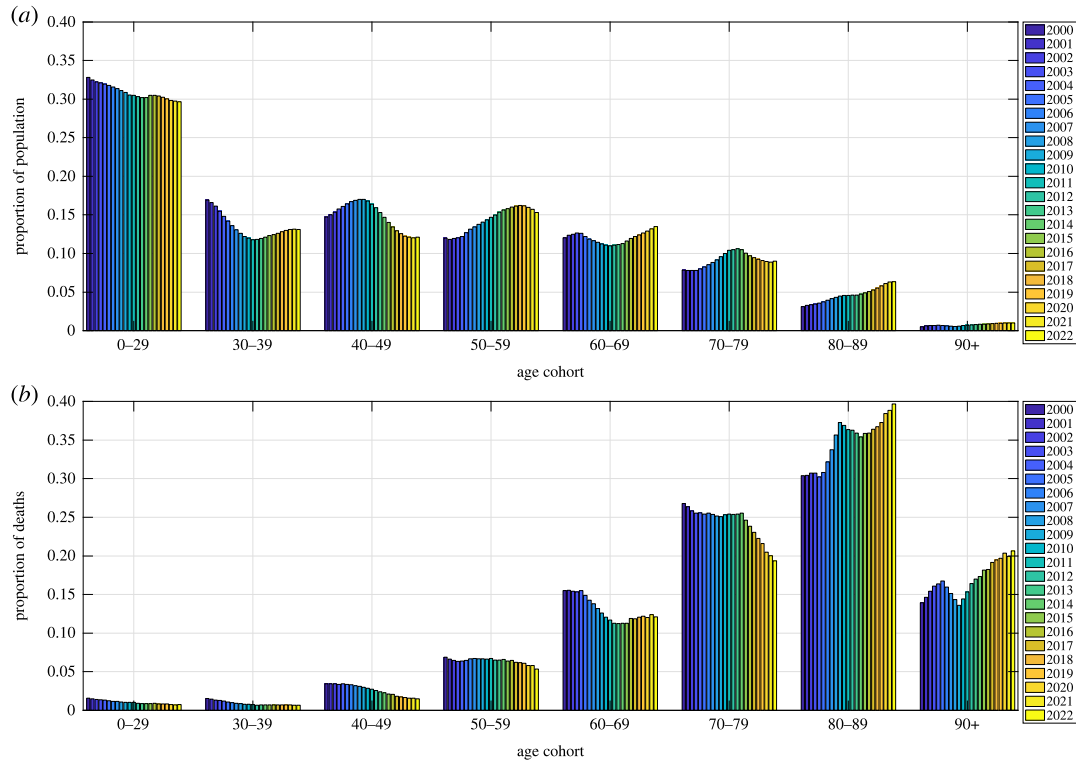


Figure 3. Demographic distribution of the German population's relative proportions (in per cent), between the years 2000 and 2022, of age cohorts (a) and death counts (b). In 2022, the officially stated number of German inhabitants was about $N_{\text{pop}} = 84$ million [32].

slightly more elaborate AMR model (termed 'exponential'), each cohort's expected AMR was assumed to follow an exponential course with time. The function parameters are calculated by demanding this AMR function to best fit over the chosen period to the observed (time) course of AMR data points of which each is an arithmetic mean value across the selected interval within a year (here, either the year itself or a flu season). The AMR functions can be used (i) to interpolate (estimate) potentially missing AMR data points within the fitting period, (ii) to estimate expected AMR (and thus AMC) values at any data point within the chosen fitting period or (iii) to extrapolate (prognosticate) expected AMR (and thus AMC) data points at times beyond 2019, the latter two being the model applications within this study.

In the simpler, 'constant' model, we take advantage of the aforementioned saturation of the German AMR between 2014 and 2019 to calculate a mean annual AMR value for each cohort. We do so by fitting a constant function in a least-squares sense to the six data points, provided by the *fit* routine of the 'Curve Fitting Toolbox' in MatLab (version R2022b). Further using the *predint* routine, we calculate a 90% CI for the AMR in each age cohort. With this, we prognosticate the expected total German AMCs for the years 2020–2022 by calculating a weighted sum of the obtained (time-constant) AMR values (and intervals), with each cohort's size N_{coh} taken from the observed (time-dependent) demographic distribution in the prognosis year. Note that the total CI radius is obtained by taking the square-root of the sum of the squared weighted-age-cohort-CI radii, according to the variance sum theorem. Accordingly, in the constant model for expected AM, the course of the total population's AMC over both the fitting and prognosis time periods is solely due to shifts of the demographic distribution with time (figure 3). This method is comparable to the calculations provided by Destatis, where the weekly AMR medians of the four preceding years in each age cohort are weighted with the population in each cohort of the current year [33].

In the more elaborate, exponential model, we take all available 'pre-pandemic' years 2000–2019, again conducting a fitting procedure, to determine best fitting parameters (two for each cohort: a_{coh} and b_{coh}) of the exponential AMR function

$$\tilde{r}_{\text{AM,coh}}(\text{year}) = (1 - b_{\text{coh}}) \cdot \exp(-a_{\text{coh}} \cdot \text{year}) + b_{\text{coh}} \quad (2.1)$$

to the year-resolved *normalized* AMR data points of each age cohort separately, $\tilde{r}_{\text{AM,coh}} = r_{\text{AM,coh}}/r_{\text{AM,coh,ref}}$. The normalization parameters are the reference values $r_{\text{AM,coh,ref}} = r_{\text{AM,coh}}(2000)$, i.e. the cohorts' AMR values observed in 2000. We then prognosticate the expected AMCs for the years

Table 1. Counted AMC versus model estimates (last three rows: extrapolation) in Germany during the years 2000–2022; significantly deviating death counts (outside the CI) are labelled by superscript ^(**); population in 2022: $N_{\text{pop}} = 84$ million [32]; ‘excess’ (EMC) is counted minus model difference; for the constant model, under-mortality of $-14\,055$ deaths in 2020 (reference: mean of 2014–2019 AMR values) correspond to -16.9 deaths per 100 000 persons, best comparable to Sweden with about -10 per 100 000 [39, fig. 2, bottom] (reference: mean of 2015–2019 AMR values); other than (short-term: 2015–2019) trend models applied to Sweden [39, fig. 2, bottom] (about $+40$ per 100 000), our (longer-term: 2000–2019) trend model (exponential) calculates slightly enhanced magnitude of prognosticated under-mortality: -22.1 per 100 000. As a comparison, the last column shows EMC point estimates that arose from applying the method used by the German bureau for statistics (Destatis).

year	deaths (counted)	excess deaths (exponential model)		excess deaths (constant model)		excess deaths (Destatis method)
		mean	confidence interval	mean	CI radius	
2000	838 797	17 534	19 996	—	—	—
2001	828 541	−11 265	20 912	—	—	—
2002	841 687	5 305	21 908	—	—	—
2003	853 946	22 330	22 662	—	—	—
2004	818 271	−17 831	23 531	—	—	−68 509
2005	830 227	−420	24 413	—	—	−38 433
2006	821 627	−6 344	25 378	—	—	−43 069
2007	827 155	1066	26 268	—	—	−28 514
2008	844 439	17 279	27 254	—	—	188
2009	854 544	16 009	27 863	—	—	−8843
2010	858 768	−1001	28 369	—	—	−28 907
2011	852 328	−10 098	28 355	—	—	−37 263
2012	869 582	−2 215	28 643	—	—	−21 734
2013	893 825	14 603	28 872	—	—	1206
2014	868 356	−26 833	29 771	−7705	33 339	−38 030
2015	925 200	17 144	30 555	32 882	34 391	13 618
2016	910 899	−15 963	31 662	−3081	35 731	−22 924
2017	932 263	−7445	32 791	2742	36 938	−12 150
2018	954 874	−3053	34 180	4905	38 430	461
2019	939 520	−40 458 ^(**)	35 825	−34 381	40 174	−42 132
2020	985 572	−18 471	37 561	−14 055	41 975	−595
2021	1 023 687	6992	38 855	9672	43 168	22 949
2022	1 064 084	41 210 ^(**)	39 423	41 968	43 444	53 879

simplest (constant) model (blue triangles with CIs) match the observed AMCs very well. All estimates by the constant model demonstrate impressively that, in Germany since 2014, the total AMC time course is dominated for the most part by shifts in the demographic distribution with time (figure 3). The differences between both models’ estimates, whether for whole years or flu seasons, are usually smaller than between an exponential model estimate and an observed AMC on a yearly basis. Note that the observed 2019/20 flu-seasonal AMC in Germany is well *below* both model estimates (figure 5), although this season contains the first SARS-CoV-2 wave of infection (start of the ‘Corona pandemic’).

For the total German population, we have listed in table 1 the exact numbers (visualized in figure 4) of observed annual AMCs (deaths) since 2000 and their corresponding differences (excess deaths: EMCs) to both the exponential and constant model estimates. The observed AMCs are generally sums over 365 days, and 366 days in a leap year. The essential numbers are the EMC values in the last three rows of tables 1, 2, and, by our analysis, we can make a clear statement: *fewer* people than expected died in

Table 2. Counted AMC versus model estimates (last two rows: extrapolation) in Germany during the flu seasons 2000/01 to 2021/22; significantly deviating counts (outside the CI) are labelled by superscript (**); population in 2022: $N_{\text{pop}} = 84$ million [32]; ‘excess’ (EMC) is count minus model difference; for comparison, estimated numbers published by the RKI [30, p. 47] are given in the last column.

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year	deaths (counted)	excess deaths (exponential model)		excess deaths (constant model)		flu deaths (RKI)
		mean	CI radius	mean	CI radius	
00/01	533 445	1419	21 484	—	—	—
01/02	540 826	−1359	22 670	—	—	0
02/03	563 575	20 504	23 378	—	—	8000
03/04	531 721	−15 675	24 223	—	—	0
04/05	545 301	−1557	24 770	—	—	11 700
05/06	531 520	−14 982	25 191	—	—	0
06/07	528 041	−17 992	25 507	—	—	200
07/08	554 270	6337	25 858	—	—	900
08/09	566 938	17 164	26 231	—	—	18 800
09/10	550 009	−10 965	27 131	—	—	0
10/11	554 481	−13 709	27 817	—	—	0
11/12	568 670	−4 275	28 306	—	—	2400
12/13	597 792	22 875	28 646	—	—	20 700
13/14	552 426	−29 750 ^(**)	29 317	—	—	0
14/15	614 852	24 600	30 102	33 913	34 197	21 300
15/16	584 197	−16 619	31 107	−11 051	35 563	0
16/17	624 984	18 168	31 995	19 983	36 736	22 900
17/18	632 810	16 980	33 182	15 080	38 179	25 100
18/19	604 302	−22 518	34 661	−28 111	39 843	—
19/20	619 348	−22 041	36 538	−31 394	41 782	—
20/21	675 714	27 594	38 141	14 526	43 130	—
21/22	683 875	31 123	39 730	14 372	43 935	—
22/23	706 143	51 677 ^(**)	41 247	31 429	44 217	—

2020 (negative excess value of −18 471), and in 2021, a mild EMC of about 7000 showed up. In both ‘Corona pandemic years’, non-existing EM gives evidence of there having been no exceptional public health situation whatsoever. In contrast to our finding, the WHO calculated a total EMC of about 195 000 during 2020–2021: EMC is the difference between expected numbers, red stars with 95% CIs in figure 4, and actually observed numbers (black dots). Note that the actual AMC data points for 2020 and 2021 are unfathomable 6.8 and 18.5, respectively, standard deviations away from the WHO’s unvalidated point estimates from May 2022. For the corrected prognosis [15,18], these values are still 7.7 and 8.3 standard deviations away and for the latest dataset [19] 5.7 and 18 standard deviations. Further assessment of these models and their prognoses is given in §4.3 and appendix C.

In table 2, the exact numbers (visualized in figure 5) of observed AMCs (deaths) in Germany during the flu seasons—exactly 33 weeks, 13 at a year’s end plus the first twenty of the next: 91 plus 140 days, or 141 in a leap year—are reported. The exponential (flu-seasonal AMR fit) model output representing 33 weeks (231 days) is scaled to a leap year by the factor $\frac{232}{231}$ and, like in table 1, the differences (excess deaths: EMCs) to both the exponential and constant model estimates are also given. Like in the data for the calendar years, the essential numbers are the excess values in the last three rows. In the flu season 2020/21, an excess of 27 594 deaths can be attributed mainly to the second and third waves of putative SARS-CoV-2 infections. The excess of 30 443 deaths was even a little bit higher in the following season 2021/22. These excesses followed two seasons 2018/19 and 2019/20 with mortality

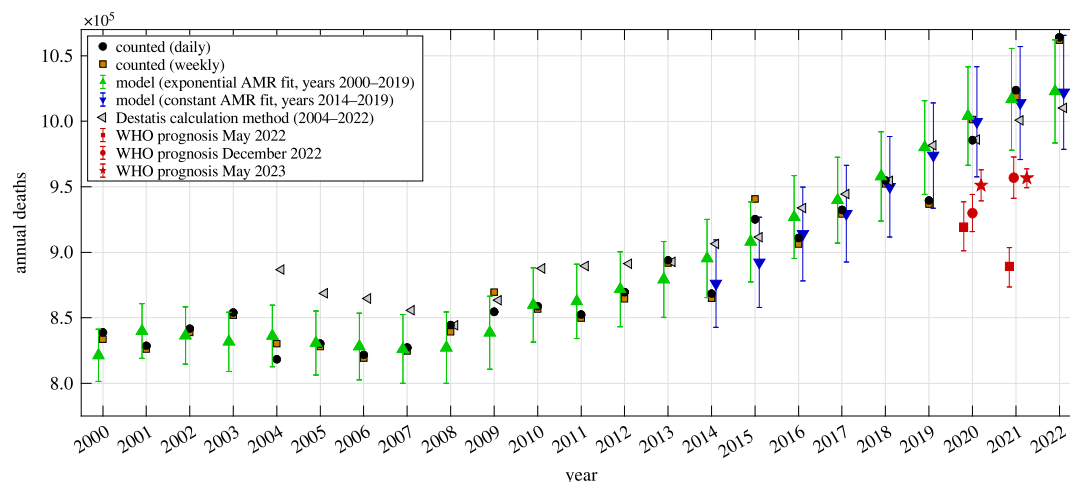


Figure 4. German data of counted annual deaths (derived from daily counts in black dots, from weekly counts in brown squares), versus model estimates or prognoses of expected deaths (exponential model in green upward-pointing triangles, constant model in downward-pointing blue triangles) including 90% CIs for the years 2000–2022, versus AMC calculation using the method from the German bureau for statistics (Destatis), and versus WHO’s AMC prognoses for 2020 and 2021 published in May 2022 (red squares), December 2022 (red circles) and May 2023 (red stars), including their 95% CIs.

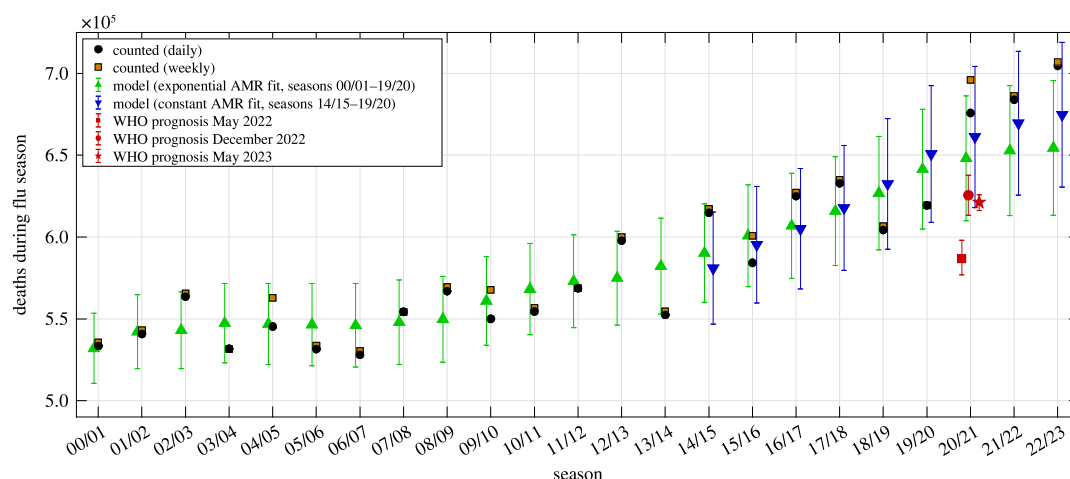


Figure 5. German data of counted flu-seasonal deaths (daily in black dots, weekly in brown squares), versus model estimates or prognoses of expected deaths (exponential model in green upward-pointing triangles, constant model in downward-pointing blue triangles) including 90% CIs for the seasons 2000/01 until 2022/23, and versus the WHO’s AMC prognoses for 2020/21 from May 2022 (red square), December 2022 (red circle) and May 2023 (red star), including their 95% CIs.

below the expected value (negative excess values, i.e. ‘under-mortality’), at almost the same magnitude. This is evidently a typical pattern for seasonal flu waves: sometimes up to four flu seasons of under-mortality in a row are followed by a similar sequence of stronger flu seasons with excess values on a level of 20 000 deaths. Since the last 10 years, the magnitudes of these fluctuations seem to slightly increase, with none of the flu seasons close to the expected value occurring in between anymore. Looking back to 2000, the excess values in the two ‘Corona seasons’ have been just slightly higher than in the strongest influenza seasons of the 20 ‘pre-pandemic’ years (2002/03, 2012/13, 2014/15). The two ‘Corona seasons’ were thus not at all on exceptional mortality levels. Our rating of flu seasonal EM is reconfirmed by published RKI numbers [30, p.47]: since season 2000/01, they specified four excess estimates above 20 000 deaths, the highest (25 100) in the season 2017/18, which may be seen as a calibration value for an EMC occurring in a significant (moderately strong yet usual) flu season in the last decade. Notably, we found a higher excess than the RKI in the season 2002/03, and there are remarkable near-matches in 2008/09, 2012/13 and 2014/15 (referring to our exponential model at least). According to our analysis, the RKI excess values in 2016/17 and 2017/18 even seem to be slight exaggerations.