ASSUMED COVID-19 MORTALITY IS STRONGLY OVERESTIMATED

The math-logic method to measure the real number of Covid-19 lethal victims

The guideline analysis including the study of the weights of age-subgroups, the U.S. in 2020

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ABSTRACT

BACKGROUND: What do the data presented in the CDC tables „Deaths involving coronavirus” mean? The one objective information is: „xxx thousands of people have died at the age of 76.5 on average and being infected probably with Covid-19”. But how many of these people would for sure still live if not Covid-19 infection? The aim of this paper is to show how to use the math-logic method to reveal the real Covid-19 number of lethal victims in the US. METHODS: The ideas for solutions are fully original, mathematical - logical, including the real number of Covid-19 lethal victims discovering. The calculated data are usually slightly rounded, because the method presentation is the main aim of the article. FINDINGS: Only up to a little over 1/3 of those reported as Covid-19 lethal victims in the US in 2020 died from Covid-19 complicity, and all the rest would have died in the same time anyway, also without Covid-19, because their deaths resulted only from the normal age structure of deaths in the United States, creating the average length of life. Only a minority of the official “Covid-19 related deaths” numbers mean excessive deaths year-over-year. The reasons of the excessive deaths appearing are quite different. INTERPRETATION: The official numbers of Covid-19 lethal victims are in a majority “the double counting” of those who would die whatsoever in the same time even without Covid-19. The ‘ex post’ analysis is necessary to discover the real number of cases with synergy causing earlier deaths. FUNDING: None

INTRODUCTION

In my opinion there is no correct essay analyzing the real Covid-19 net mortality to find. What do the data presented in the CDC tables „Deaths involving coronavirus” mean? The one objective information is: „xxx thousands of people have died at the age of 76.5 on average and being infected probably with Covid-19”. But how many of these people would for sure still live if not Covid-19 infection? The main summary reason of deaths is “aging” = advancing age and all diseases (conditions) the frequency and deadly effects of which are very strongly correlated with it (what means, with the overall weakness of the organism); those conditions sources are in the body itself or a condition progress needs much time and advancing age. Next, there are deaths caused by fully external causes like different injuries. Infections usually have only burdening actions (deadly effects are strongly correlated with the overall weakness of the organism /age). Infant mortality is another quite important group of causes of death. The key point to remember is that life expectancy and the number of chronic conditions are strongly correlated too. The aim of this paper is to show how to calculate the real number of Covid-19 lethal victims. I enhance anyone to repeat or even make the analysis yet more precise.
METHODS

The ideas for solutions are fully original, including the real number of Covid-19 lethal victims calculating. At first I calculated the average expected death age of a close to identical group (like the one assumed to be killed by Covid-19) if nobody was infected. Then I calculated the average further life expectancy for the people from the whole “deaths involving Covid-19” group if they were alive. The calculations widely used the CDC, NSC and other institutions databases, Life Table. I used constructed by me estimators. To understand the procedures of calculations and what the consequences are a reader must follow the resolving and explanations given below. The obtained data are further slightly rounded, but when more precision is needed then even of the 0.01-year accuracy. In general, the data are rounded and the method is a bit simplified to chase calculations, because the idea presentation is the main goal of this article!

DETAILED PROCEDURE & RESULTS

Basing on the CDC.gov tables “Provisional Deaths Counts for Covid-19” (NCHS data) and on ‘actuarial life table’ I calculated/estimated, in January 2021, the average age of those who officially died from Covid-19 to be 76.5 years.

How many of the US “died from Covid-19” had in real their date of death accelerated.

a) At the beginning we must calculate what the average death age should be in a close to identical group (like the one assumed to be killed by Covid-19) if nobody was infected. As the average length of life in the US I take 78.5 years (the last World Bank data, for 2018). But this value needs to be revised upwards due to some factors. People from the “deaths involving Covid-19” group (CDC.gov) just before the death were 76.5 y. old on average so they have already bypassed some risks of death’s causes not directly dependant on aging, plaguing mainly much younger people. Deadly injuries shorten average life expectancy and their impact is unique because they are not derivatives of already 'not far from deadly' health status! Any death due to, for example, a mechanical accident excludes the possibility of assuming the Covid-19 causative participation, so the at-birth life expectancy of our group must exclude the negative impact of injuries in their broad meaning. We can find the CDC.gov data named "Leading Causes of Deaths" and see there are some groups of causes not directly dependent on aging of the organism.

-Accidents (unintentional injuries): 167127 cases in 2018
-Intentional self-harm (suicides): 48344
-Assaults: 18830

Going deeper into it (data for 2018, imported in January 2021 from the website: https://injuryfacts.nsc.org), we can see there are some sub-categories concerning ‘Accidents’, with different age structures of their victims.

-’Poisoning’ 19.9 per 100,000 (deaths per 100,000 population)
-’Motor-vehicle crashes’ 12.4 per 100,000
-’Falls’ 11.2 per 100,000 (before the site revised it to 12.0 in February 2021)
-’Choking’ 1.6 per 100,000
I calculate the negative contribution of ‘Poisoning’- (P) to the average at-birth life expectancy in the following way. The share of all ‘accidental’ deaths in the structure of US deaths is 0.0589 and the share of the ‘Poisoning’ category in ‘accidental’ deaths is 0.37 (0.0589 x 0.37 = 0.0218). I calculate using the following constructed by me estimator [when the average length of life is 78.5 and the average lethal poisoning age is 41.5 years (estimate); LE – life expectancy at age 41.5, taken from ‘actuarial Life Table’] (it would be more exact if used the average actuarial life expectancy of a victim, in all estimators, instead of life expectancy at the given average age, otherwise we can receive a slight underestimation – when the average age of a victim is very advanced):

\[
(1 - 0.0218) \times (78.5 + P \times (78.5 + P - 41.5) / LE)] + 0.0218 \times 41.5 = 78.5
\]
\[
0.9782 \times 78.5 + 0.9782 \times P \times [(37 + P) / 39.13] + 0.9047 = 78.5
\]
\[
P \times (37 + P) = 0.8246 \times 39.13 = 32.2656
\]
\[
P^2 + 37 \times P - 32.2656 = 0
\]
\[
P = 0.8524
\]

The ‘Poisoning’ category by about 0.85 y. has its negative impact on the average at-birth life expectancy of a US citizen. The estimates of the influence of the less important factors in the US: ‘Suicides’, ‘Moto-vehicle crashes’ and ‘Assaults’ give for our group: 0.5, 0.45 and 0.3 year respectively. ‘Drowning’, Choking’, ‘Fires’/‘Smoke’ and ‘Mechanical suffocation’ are all trifles and add up together to the additional 0.2 year. There is one category = ‘Falls’ but the average age of a victim is bigger than the average length of life this time. I estimated (basing on the Injuryfacts.nsc.org table and chart) the average ‘Falls’ victim age as 79.5 years. The share of all ‘accidental’ deaths in the structure of the US deaths is 0.0589 and the share of the ‘Falls’ category in all ‘accidental’ deaths is 0.22. So again: 0.0589 x 0.22 = 0.013. But due to the average age of a victim higher than the average length of life I must construct another (more universal) estimator. If to think a little more, then it has no meaning what the age of someone dying X years earlier, than he otherwise would, is; 10 years subtracted from any age is always 10 years subtracted from the total value/sum that divided into the total number of deaths gives the average length of life.

So the estimator can also be as simple as [LE1 – life expectancy at age 79.5]:

\[
1.0 \times (78.5 + F) - 0.013 \times LE1 = 78.5
\]
\[
78.5 + F - 0.013 \times 9.2675 = 78.5
\]
\[
F = 0.013 \times 9.2675 = 0.1205
\]
Let’s control what we receive if to calculate P (the ‘Poisoning’ negative impact) this way:

\[
1.0 \times (78.5 + P) - 0.0218 \times LE = 78.5 \\
78.5 + P - 0.0218 \times 39.13 = 78.5 \\
P = 0.0218 \times 39.13 = 0.8530 \quad (= \text{the very similar result})
\]

There are some more causes of “preventable injuries” (Accidents) and their share is 9% in total (Injuryfacts). But their age structures are unknown to me, so I take its influence as 0.09 /0.91 of the summed rest of the “preventable injuries” categories what gives 0.148

There are still factors that will noticeably revise upwards the expected average length of life in our group, but these factors are associated mainly with the lowest age ranges. We can look at the ‘actuarial life table’ [1] to see that the lowest age ranges factors are in a vast majority “consumed” in the 0-1 age range. The negative impact of infant mortality (birth defects, low birth weight, term birth complications and the rest of the causes) on life expectancy is 0.55 year (but 0.05 must be subtracted not to repeat ‘injuries’ -mainly ‘mechanical suffocation’ cases - Injuryfacts). As it could be expected, the weight of this age sub-group in the “deaths involving Covid-19” group (CDC.gov) is close to none (almost 80 times less than the 0-1 sub-group normal weight in all deaths in the society [2]).

Any further upward adjusting of the average expected length of life in our group is necessary if there is a deficit of a lower age subgroup weight, when compared to the usual weight in all deaths, after subtracting deaths due to ‘injuries’. -Those people, who die at age of a lower age range, create this age range negative impact (in years) on life expectancy; that impact diminishes proportionally to the diminishing % of people dying at age of this age range. I compared the weights of the age subgroups in the “deaths involving Covid-19” group with the normal weights in all deaths in the society [2]. Then I corrected the second values by deducting deaths due to ‘injuries’ (Injuryfacts and [3]). Next, the usual negative impacts on life expectancy, of deaths at age of different age ranges, were calculated with the help of the ‘life table’ [1]; then these impacts were corrected by subtracting deaths (in thousands) due to ‘injuries’. Finally, I calculated the values by which the average expected length of life of people of our group should additionally be revised upwards. The final values in the cascade are so small so I give it with the 0.01 accuracy.

the 01-14 subgroup weights: 0.02% vs. 0.33% (0.21% after the correction)

\[
0.15 \times \text{impact on life expectancy, } \frac{(9.28 - 3.90) / 9.28} {0.15} = 0.09 \text{ year without ‘injuries’} \\
0.09 \times (0.21 - 0.02) / 0.21 = 0.08 \text{ year revision}
\]

the 15-24 subgroup weights: 0.14% vs. 1.06% (0.28% after the correction)

\[
0.40 \times \text{impact on life expectancy, } \frac{(30.15 - 22.86) / 30.15} {0.40} = 0.10 \text{ year without ‘injuries’} \\
0.10 \times (0.28 - 0.14) / 0.28 = 0.05 \text{ year revision}
\]

the 25-34 subgroup weights: 0.63% vs. 2.07% (0.81% after the correction)

\[
0.65 \times \text{impact on life expectancy, } \frac{(58.84 - 37.87) / 58.84} {0.65} = 0.23 \text{ year without ‘injuries’} \\
0.23 \times (0.81 - 0.63) / 0.81 = 0.05 \text{ year revision}
\]

the 35-44 subgroup weights: 1.68% vs. 2.83% (1.80% after the correction)

\[
0.75 \times \text{impact on life expectancy, } \frac{(80.38 - 33.49) / 80.38} {0.75} = 0.44 \text{ year without ‘injuries’}
\]
The 45-54 subgroup weights: 4.62% vs. 5.81% (5.04% after the correction)
1.20 year impact on life expectancy, [(164.84 - 33.68) /164.84] x 1.20 = 0.95 year without ‘injuries’
0.95 x (5.04 - 4.62) /5.04 = 0.08 year revision

The 55-64 subgroup weights: 11.76% vs. 13.20% (13.06% after the correction)
2.0 year impact on life expectancy, [(374.84 - 33.75) /374.84] x 2.0 = 1.82 year without ‘injuries’
1.82 x (13.06 - 11.76) /13.06 = 0.18 year revision

The 65-74 subgroup weights: 21.51% vs. 19.15% (19.06% after the correction)
2.0 year impact on life expectancy, [(374.84 - 33.75) /374.84] x 2.0 = 1.82 year without ‘injuries’
1.82 x (19.06 - 17.87) /19.06 = 0.18 year revision

So we can still see considerable weight-deficits in the 01-14 and 15-24 subgroups, but next only very delicate ones in the following subgroups. The reason is child & adolescents mortality [4].

There will be the “≤” mark in this a bit simplified way of the calculation; the much more complicated precise way is with the “=” mark, initially the revision values are slightly higher but in the end there are moderate negative revisions, so finally giving a lower total result (available on request). /

…Thus, the total value of the upwards adjusting is:
0.85 + 0.5 + 0.45 + 0.3 + 0.2 + 0.1 + 0.15 + 0.5 + (≤ 0.45) ≤ 3.50
So: 78.5 + (≤ 3.50) ≤ 82.0 years.

……

However, there is also one factor that in turn forces our group’s average expected length of life to be adjusted downwards. This is the group state of health factor. According to the CDC.gov data, 94% of those who died from Covid-19 had chronic conditions, on average, 4.0 per person). At the same time, the CDC.gov presents the tables (“Percent of U.S. Adults 55 and Over with Chronic Conditions”) with the information on how many older adults have conditions (of ‘named conditions’ but where ‘cardiovascular disease’ and ‘cancer’ each are, in fact, bigger groups of different conditions of the C. C. Warehouse predefined chronic condition indicators).

- the group 65+ =85.6%
- the group 55-64 =60.50%.

For the group <55 =on the basis of a number of American and Canadian data, not always very similar, I take a guideline of 45% taking into account the dominance of the 45-54 age subgroup among those <55 y. old from “deaths involving Covid-19”. I calculate taking into account the weights of the groups:

- the group 65 + : 0.79956
- the group 55-64 0.122
- the group <55 : 0.078

0.79956 × 85.6 + 0.122 x 30.5 +0.078 x 45, so: 68.442 + 7.381 + 3.51 = 79.33 (%)

Thus, with the same age composition, only about 79.% of the comparative group of the US citizens has a chronic condition. /Those ‘named conditions’ gave 85.6% for the 65+ group, while the CCW conditions gave 88.1% for the 67+ group [5], when the % for the 67+ group must always be bigger than for the 65+ group./
The share of people without a chronic condition drops to the minimum at age 75, and next, at age 85 this share is the same (not falling more), according to the Canadian data (CIHI.ca 2011). There are studies [6,7] according to which people who do not abuse alcohol +do not smoke +are physically active +eat healthy live on average 9-10 years longer than the US average is, being free, in a majority, of chronic conditions. A similar effect was signaled in other developed countries [8,9]. The approach from the assessment of single added chronic conditions influence [5] in our group would require to subtract 0.2 year from the average, but if there is the lack of the strongest ones in our group (who usually have 0 - 1 condition) then it could require to subtract a year from the average. A separate article with the analysis is needed here, but there is no guarantee that some assumptions would not be obstacles in finishing the analysis. However the deviation by +/- 0.3 year could change the final analysis result by less than 2% only, so to chase further calculations I subtract 0.6. Any underestimation or overestimation, however, is partially reduced by subtracting the corresponding value from the result of the next calculation, in the B part.

…The CDC suddenly increased (noted in early April) the average number of conditions to 4.0 for those 94% with conditions (the number of chronic conditions and life expectancy are strongly correlated -please read the Discussion part!). The difference is not substantial, so this additional analysis will be done here in a much simplified way. Basing on processed data from the work of DuGoff et al. [5] and on Life Table [1] the increased number of conditions (3.8 vs. 3.2) would require to deduct, from the expected average length of life, 1.3 year (but) for a statistical 67-year-old individual, if he then lived with the conditions for 17.9 years, and about 1.75 year for a statistical 59-year-old individual, if he then lived with the conditions for 23.0 years. We do not have such an information about the “deaths involving Covid-19” group. But we can use the British data guideline [10] to see that the crude %-increase in multimorbid patients is stable after age 55 and till about 80 years after what the %-increase quickly slows down. At the same time, in the US, the prevalence of 2+, 3+ and 4+ chronic conditions (not fully of CCW, but the key proportions are similar to the CCW ones) in the group of the average age equal 55 is already about: 77%, 62% and 47%, respectively, of that in the oldest group of age 65++ according to another guideline [11]. Let’s concentrate on 4+ conditioned, because the lower summary values are always much ahead and 3 is rather neutral, on the average age of a potential victim, and on the fact that actuarial life expectancy at age 65 is 19.2 years [1].

\[
0.47 + \frac{4}{(84.2 - 55)} x (1 - 0.47) = 0.543 \quad \text{so:}
\]
\[
0.543 x (17.5 /23) x 1.75 + 0.53 x \frac{[(76.5 - 55) /29.2]}{x 0.5 x ([(10.75 /9.5) x (9.5 /17.9)] x 1.30 =}
\]
\[
0.723 + 0.1523 = 0.9 \text{ (year)}
\]

I diminish the previous 0.6 by 0.1, because it should already be a little incorporated in the second factor, and I deduct, in total, 1.40 year to obtain \(\leq 80.60\) years as the final result.

Alternatively, we could take into account only the average number of chronic conditions in the whole “deaths involving Covid-19” group and compare it with the value of 3.2 which should have the U.S. comparative group with the same age structure. But I think it would be a big mistake /underestimation, because not explaining the huge difference in the shares of condition-free ones.
Since people from the “deaths involving Covid-19” group were allegedly killed by Covid-19 (accelerated deaths), it means that without its ‘intervention’ these people should still live. Thus, I calculate the average further life expectancy for the people from the whole “deaths involving Covid-19” group if they were not killed by Covid-19. I plot their age-of-death structure plus the share of women and men on the ‘actuarial Life Table’ [1]. I calculate the average value for each age-subgroup, and then, taking into account those age subgroups weights, I finally calculate the average ‘further life expectancy’ for the whole group. Careful calculations made by me in January 2021 gave the result of 12.3 year. But these data also have to be revised upwards because our group consists of those who could not die (if to be included into the group) because of external causes. For each mentioned category we must calculate the still existing, after the age at which the deceased formed the “deaths involving Covid-19” group, potential length of life diminishing effect (X). For example, there are still many people in that group at the age range 45-75 which could otherwise be important in number victims of lethal ‘Poisoning’. The calculation is the sum of the partial ones (Xn) for different age ranges (including 75+ too).

\[ 1.0 \times \left[ 78.5 + X_n \times \frac{(S_n \times S_N)}{(C_n \times C_N)} \right] - 0.0218 \times \frac{(P_n \times P_N)}{C_n \times C_N} \times \frac{X_n}{X_N} = 78.5 \]

\[ X_n = LE \times 0.0218 \times \frac{(P_n \times P_N)}{C_n \times C_N} \times \frac{(C_n \times C_N)}{(S_n \times S_N)} \]

Xn -the potential length of life diminishing effect for an ‘n’ age range in the “deaths involving Covid-19” (DIC) group

Pn -the number of Poisoning victims in an ‘n’ age range; PN -the number of all Poisoning victims

Cn -the number of persons in an ‘n’ age range of the DIC group; CN – the whole DIC group size.

S, SN -the same as above (C) but in the whole society

LE –the average actuarial life expectancy of a victim from an ‘n’ age range, or at least life expectancy at the average age

We must repeat the same kind of calculations with all of the mentioned earlier categories. After that, the calculations results concerning different categories must be summed up all together. All needed data, concerning age ranges of victims of different types of injury, are in the tables and charts of https://injuryfacts.nsc.org . The calculations gave me the following final values (the same order like in the A part) to sum up:

0.25 + 0.2 + 0.15 + 0.05 + 0.1 + 0.05 + 0.05 = 0.85

Next I add the calculated 0.85, but at the same time I could subtract 1.40 (the worse state of health of our group; the same value like subtracted in the A part) to obtain 11.75 years, but to keep the proportions:

\[
\frac{80.60}{82.00} = 0.9829
\]

\[
(76.50 + 12.30 + 0.85) \times 0.9829 - 76.50 = 11.617
\]

…I finally take the more diminished value of 11.60 years for the further analysis. But why, for example, for the age of 76 an alive person should live, on average, for over 11 more years (‘life table’)? Because some persons die being (much) younger, and any person aged 76 is the one who is lucky to still live. Those who died being younger lower the average age of death and the still living will increase it. The average ‘length of life’ and the average ‘life expectancy at a given age’ are equal only at birth.
c) What are the conclusions so far and what next?

If 100% of persons of the group would die due to “aging”, that is, if Covid-19 would not kill any of them, the average age of death should be ≤ 80.60 years. The Covid-19 superimposing cannot increase but only lower this value, because Covid-19 is a life-shortening factor. The average number of chronic conditions in the “deaths involving Covid-19” group is not meaningfully lowered, but it is increased! (what is already taken into account for our group). The worst possible state of health (pre-deadly/deadly) is nothing like at age 85 - 88; the worst one is, on average, at age ≤ 80.60 and only within the whole group some persons have their worst health status even at age 90 or more while at the same time some persons have their worst possible health status at age 70 or less.

At the same time, if Covid-19 killed all persons of the “deaths involving Covid-19” group then it means that without the virus ‘intervention’ all of them should be still alive, for the next 11.60 years on average! It also means that each individual genuine ‘Covid-19 related death’ shortened its victim life, on average, by 11.60 years. //it is nonsensical to believe that Covid-19 kills exclusively the strongest ones, who would otherwise live to the average age of over 88 years; besides, they can never be the strongest ones, judging by the average number of chronic conditions./

-Persons from the “deaths involving Covid-19” group died at the average age of 76.5, not of 80.60, so there is the ≤ 4.10-year loophole caused probably by lethal effects of Covid-19. The average contribution of each individual genuine ‘Covid-19 related death’ to the size of this gap is as follows:

\[ \text{C} \times \frac{11.60}{N} \leq 4.10 \]

(‘C’ is the potential number of real/genuine Covid-19 related deaths *)

\[ \frac{C}{N} \leq \frac{4.10}{11.60} \leq 0.3534 \text{ (≤ 35.34%)} \]

\( \text{C}/\text{N} \) – the potential share of real Covid-19 related deaths in the “deaths involving Covid-19” group in the US *)

/* potential, because the “intrinsic loop” (described later in the text) further diminishes the share

So only up to a bit over 1/3 of those from the official “deaths involving Covid-19” group died from Covid-19 complicity and all the rest would have died in the same time anyway, also without Covid-19, because their deaths resulted from the normal age structure of deaths (due to causes already existing before Covid-19) in the United States, creating the average length of life.

The US genuine “Covid-19 related deaths” share is among larger ones. There are countries in Europe with the official average “Covid-19 death age” as high (or only its contribution to the calculus as big), so the basic share of genuine “Covid-19 related deaths” will be considerably lower than the US one; down even to plane 20%, like in England & Wales with their 82.4 years of the official average “Covid-19 death age” and with the average number of chronic conditions 2.3 in that group (the number still not revised in the end of January 2021). The average number of chronic conditions and the prevalence of multimorbidity within different age groups are meaningfully smaller in England than in the US [10]; and people live, on average, longer in England.
The “intrinsic loop”

Some of patients with other diseases are not provided with immediate help because access to treatment for the diseases that most contribute to deaths (cardiology, oncology and lung diseases) has worsened with the pandemic in a number of countries. Some of hospital clinics have been closed due to revealed Covid-19 outbreaks. There are also people who are afraid of going to the hospital because of their apprehension of becoming Covid-19 infected there (panic). Covering the face with a mask enables the creation of a dangerous concentration of microorganisms and a statistical mask user probably do not change it often enough to limit that problem. Staying at home means limited physical activity what is negative for overall health. When a number of people die because of these reasons earlier that they otherwise would, they additionally reduce the assumed average length of life and the share of genuine Covid-19 deaths. These factors role will be only considerably bigger over time.

Influenza and Pneumonia

I calculated the average flu ‘victim’ age as 72 years in the US in the last 10 years. It seems to me that the role of influenza can be underestimated compared to Covid-19. The lower the average age of death, the lower the share of the overall weakness (aging and diseases the frequency of which is strongly and directly correlated with it) is required for a virus to be effective in killing. The flu reported numbers of cases, even up to 90-95%, diminished in the world in the year 2020. It was already visible in the very beginning of the Covid-19 appearance [12]. Maybe a number of the flu cases is also treated as Covid-19 this year due to the tests limited reliability, or maybe there is another explanation.

Comparative joint counting of Covid-19, influenza and pneumonia-without-Covid-19 cases is necessary because when looking at the CDC data: “Deaths involving coronavirus disease” we can see that virtually all cases of “Deaths involving Covid-19 and Pneumonia” are further claimed to be Covid-19 lethal victims. Also, in the UK when influenza, pneumonia and Covid-19 were on a Medical Certificate Cause of Death (MCCD) together, without a postmortem, then almost 96% of these deaths were counted as Covid-19 deaths; assuming Covid-19 deaths was practiced even without testing for Covid-19 [13].

DISCUSSION

The variant like: “Covid-19 kills mainly the very weakest among the elderly” should be rejected. In the US, according to NCOA.org, 77% of persons aged 65+ have two or more chronic conditions each; over 62%, about 48%, and 37% of persons aged 67+ have, respectively, 3+, 4+ and five or more conditions [5]. Some useful info adds the rand.org study: “Multiple Chronic Conditions in the United States” also [14]. But the prevalence of 2+, 3+ and 4+ chronic conditions is about: 2.4 times, five times and up to ten times, respectively, greater in the age group 65+ than in the age group 20-44 years; at the same time, when comparing to the age group 45-64, this prevalence is about 1.3, 1.6 and 2.1 times, respectively, greater in the age group 65+ [11]. So, the average of 3.8 conditions in the “deaths involving Covid-19” group was slightly higher
than the standard number for the U.S. society cluster with the same age structure, which should be about 3.2 according to my estimate.

Life expectancy and the number of chronic conditions are very strongly correlated; the average number of chronic conditions would have to be \( \geq 10.0 \) to diminish life expectancy to 80 years for a still alive 75-year-old US woman, what means shortening the remaining life to five years; at the same time a 75-year-old woman with “only” 5.0 chronic conditions will live, on average, to the age of 87, what is by one year shorter than the average for a 75-year-old woman in the US! [5]. The marginal decline in life expectancy increases with an additional chronic condition when numbers are low, but this decline starts with low values -first ones conditions sum up to the much less effect than the next conditions do [5]. At the same time, selected conditions give differences in life expectancy at age 67, but the differences considerably diminish with morbidity and increasing age [5]. The clear relationship between the number of comorbidities and life expectancy has been discovered also by other authors [15].

So, with only 3.8 chronic conditions on average, the specific variant for the “deaths involving Covid-19” group (= killing by shortening the remaining life, on average, by 4.1 years; = the remaining life to be, on average, by 7.5 years shorter than the norm in the US society !) is a fallacy. Besides, further selective increase in the average number of chronic conditions would only diminish the share of real Covid-19 deaths in the officially announced “Covid-19 related deaths”, because the relation of the final values (in the C-part) would decrease. The most precise calculations have little sense till the result diminishing effect of the “intrinsic loop” is unknown. The needed data will probably be known in the year 2022.

**CONCLUSIONS**

a) Every life ends with death so the causes of death are a kind of competition with each other. Covid-19 is rather a weak factor where, on average, the considerable dominance of the factor of the general weakness of the organism is required in the causality of death. The ‘ex post’ analysis is necessary to discover the real number of cases with synergy causing earlier deaths.

b) The ‘Covid-19 deaths’ official numbers are in a vast majority the double counting of those who would die whatsoever in the same time even without Covid-19. So in the US in the year 2020 there were not about 363,000 “deaths involving Covid-19” but up to about 128,000.

c) The official ‘Covid-19 deaths’ numbers do not mean excessive/net deaths year-over-year but only a limited minority of it. It would be more conspicuous when looked at the analysis results for European countries. The main causes of excessive deaths most likely are:
- the worsened access to treatment for diseases other than Covid-19
- some of patients’ fear of going to the hospital (panic); when they finally go there it is too late
- “deaths of despair”.

d) It can be supposed that another reason of the official numbers of ‘Covid-19 deaths being strongly overestimated is including those who have had only a positive PCR test result (even 2 months prior to the death, like in the US or in the UK).
e) If the official Covid-19 mortality in the US is at the commonly accepted level (= 0.27%, based on antibody tests) then the genuine mortality is up to about: 0.27% x 0.3534 = 0.0954%

f) Comparative joint counting of Covid-19 + influenza + pneumonia-without-Covid-19 cases is necessary.

CONFLICT OF INTEREST

There is no conflict of interest.

REFERENCES


Some links to the detailed www addresses are not given in the references if concern major institutions, while adding in a browser the given in the essay key words should let to find the data easily.

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