



## Fewer Annual Deaths in Japan with Negative Excess Mortality for COVID-19

Hiroshi Bando<sup>1,2\*</sup>

<sup>1</sup>Tokushima University/Medical Research, Tokushima, Japan

<sup>2</sup>Integrative Medicine Japan (IMJ), Shikoku Island Division, Tokushima, Japan

Corresponding Author: **Hiroshi BANDO, MD, PhD, FACP** [ORCID ID](#)

**Address:** Tokushima University/Medical Research, Nakashowa 1-61, Tokushima 770-0943, Japan.

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### Abstract

The excess mortality would be adequate objective indicator for COVID-19 research, and was reported in 77 countries for 2020. Several representative data are: United States 420,000, Mexico 270,000, Russia 270,000, Brazil 170,000, Japan -15,000, Taiwan -4,800, Australia -4,700 and New Zealand -2,100. From demographics in Japan, the number of deaths increased by 18 thousand each year during 2015-2019. However, death in 2020 decreased by 9,373 from 2019, which indicated 27 thousand difference. A meaningful perspective showed that focusing on human life saves the economy. Future crucial factors would be new ways of working with the ability of human resources.

### Keywords

COVID-19, Excess Mortality, Years of Life Lost, Ministry of Health, Labour and Welfare, Japan

### Abbreviations

YLL: Years of Life Lost; MHLW: Ministry of Health, Labour and Welfare

The prevalence of COVID-19 has been a crucial problem across the world. There are various medical, social, and economic implications, and adequate lifestyle and medical care would be indispensable [1]. Various symptoms, signs, and complications have been reported for more than a year [2]. The topics have included the different infectious situations among the countries, therapeutic agents, and several kinds of vaccines. In this article, we have described the most recent status and some perspectives concerning COVID-19.

It has been rather difficult to compare the impact of

pandemic COVID-19 among countries, because their capacity and policy may affect the reporting results. The influence of COVID-19 has been shown by the number of affected cases and its deaths. Daily information has been provided by the John Hopkins University [3]. However, the definition of COVID-19 death is different in each country. Then, the most objective indicator which can be compared among lots of countries has been required. Among them, excess mortality is evaluated as a gold standard for comparison [4]. It is defined as the increased data of the all-cause mortality compared with those of previous average data [5]. The data of excess mortality

Commentary

has been shown to evaluate the COVID-19 impact in academic literature [6-8].

Under such circumstances, a recently obtained result has been presented in late January 2021 concerning 77 countries, which summarized the excess mortality [9]. From these data, several representative items are shown in **Table-1**. Each country has a different population and average mean mortality in a year.

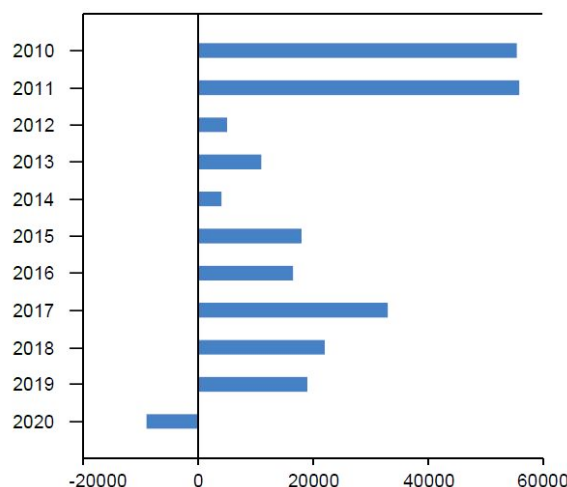
Higher excess mortalities are observed in the United States 420,000, Mexico 270,000, Russia 270,000, Brazil 170,000, and minus excess mortalities are observed in Japan -15,000, Taiwan -4,800, Australia -4,700 and New Zealand -2,100. Consequently, the excess mortality across countries may be useful for the comparison. A variety of discussions and perspectives have been raised concerning the differences among the countries [9].

**Table-1: Excess mortality metrics for the countries**

Country	Date until	Official	Excess
Australia	Oct 25,2020	900	-4700
Brazil	Dec 31,2020	2,00,000	170000
France	Jan 03,2021	65000	52000
Germany	Dec 27,2020	30000	30000
Italy	Nov 01,2020	39000	64000
Japan	Nov 30,2020	2100	-15000
Mexico	Dec 13,2020	1,10,000	270000
New Zealand	Jan 03,2021	25	-2100
Peru	Jan 24,2021	40000	93000
Russia	Nov 30,2020	40000	270000
South Africa	Dec 06,2020	37000	96000
Spain	Jan 03,2021	51000	78000
Taiwan	Dec 31,2020	7	-4800
United Kingdom	Dec 20,2020	68000	80000
United States	Jan 03,2021	3,50,000	420000

Data are from Karlinsky (2021) on Jan 27, 2021

The number of excess deaths a year was estimated under different incidence scenarios [10]. It was a population-based cohort study, and the data of the electronic health records were used from the Health Data research UK-CALIBER in the United Kingdom. The results included 3,862,012 cases associated with some different scenarios. They showed that excess deaths were 18 374 in relative risk (RR) 1.5, 36 749 in RR 2.0, and 73 498 RR 3.0 [10]. As regards the deaths related to COVID-19, years of life lost (YLL) in 81 countries were calculated [11]. In heavily affected countries, YLL on Jan 2021 showed 2-9 times of those of seasonal influenza. Furthermore, 3/4 of YLL were from deaths in people below 75 years, and YLL in men was 45% more compared to those of the female [11].



**Fig-1: Changes in death/year compared to previous year in Japan**

In late February 2021, the Ministry of Health, Labour, and Welfare (MHLW), Japan released vital statistics (flash report). During 2020, 1,384,544 people died in Japan, which showed a decrease of 9373 (0.7%) from the previous year [12]. Demographics in Japan have been highly evaluated to be accurate and unrivaled for many years. For 11 years from 2010 to 2020, the number of deaths increased every year, and the graphic data is shown in **Fig-1**. For 5 years of 2015-2019, the number of deaths increased by approximately 18 thousand each year. However, the result in 2020 was minus 9 thousand instead of the expected plus 18 thousand, which indicated a total difference of 27 thousand.

However, the cause of death was not included in this report. Among them, the number of deaths of new corona-infected dead patients was estimated to be about 3,500 per year. As a matter of fact, the number of deaths from the corona is actually lower because it includes many end-stage patients such as cancer with positive CPR for COVID-19. Furthermore, cardiovascular diseases such as myocardial infarction and cerebral infarction decreased by about 8,000 in 2020. The annual number of suicides had declined for 10 years until 2019, but in 2020 it was increased by 750 cases from the previous year.

From these data mentioned above, there were apparently "excessive deaths" in Europe, the United States, and other countries, in which the number of deaths was much higher than normal. On the other hand, significantly negative excess mortality was found in Japan. From Jan 2020 to Mar 2021, the Japanese government has not conducted any lock down strategy or other strict limitation but advised people nationwide to keep social distancing, masking, washing hands, and other attentions [13]. Although infectious disease-related deaths are decreasing in Japan, it is not enough to control or keep the satisfactory level. Various matters of COVID-19 have brought human stress and economic influences [13].

The excess mortality was examined attributable to suicide caused by COVID-19 [14]. From the application of the National Institute of Infectious Diseases (NIID) model from 2009-2020 including the earthquake in

eastern Japan in March 2011, it identified 810 excess cases of mortality [14]. Consequently, excess mortality of suicide seemed to be 1.4 times greater than those of COVID-19 deaths confirmed by PCR testing.

There have been three waves of COVID-19 in Japan during Jan 2020-Mar 2021 [15]. As medical systems in Japan have continued preparation and maintained the treatment, a large burden on medical facilities has been found. Consequently, additional support will be urgently required for the coming few months including vaccines and others. As regards the vaccination, we have just started it, and have not yet reached the process of determining the effect in Japan.

Secondly, there were some meaningful perspectives from an economic point of view. As for the management of COVID-19, Martin Wolf from the Financial times proposed the valuable comment that focusing on human life saves the economy [16]. In other words, the response of each country to COVID-19 can be roughly divided into two situations. One is to suppress the virus as possible, and another is to emphasize the economic factor to some extent. In some countries with the latter concept, too many people have died and the economic damage has increased [17].

What are the crucial factors in the medical and economic world from now on? They are not economic powers but human powers. As to the coming with-corona era, new ways of working with the ability of human resources would become the key for the development of a challenging future.

#### Conflict of Interest

The author has read and approved the final version of the manuscript. The author has no conflicts of interest to declare.

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Commentary

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