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Commentary

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Several Effective Measures for Minus Excess Mortality of COVID-19 in Japan Including Mutual Interrelationships and Long-Term Care Facilities (LTCF)

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Abstract

The impact of COVID-19 can be shown by life expectancy, excess death and total years of life lost (YLL). United States showed life expectancy minus 1.67 years, excess deaths 375,235 and total YLL 7,362,555. The excess death of Japan has remained minus value for long, in which long-term care facilities (LTCF) may contribute. LTCF has characteristic points as i) mutual interrelationships between hospitals, medical societies and prefectural offices, ii) rapid communication channels for regulatory official authorities, iii) high degree of citizenship and cooperation of all Japanese people for daily life and iv) mild lockdown without any punishment with declaration.

Keywords

COVID-19, Excess Death, Years of Life Lost (YLL), Long-Term Care Facilities (LTCF), National Institute of Infectious Disease (NIID), Excess Mortality

Abbreviations

YLL: Years of Life Lost; LTCF: Long-Term Care Facilities; NIID: National Institute of Infectious Disease

COVID-19 pandemic has been a crucial medical and social problem. Various statistic research worldwide has been reported [1]. Among them, authors presented reports from excess death rate, lifestyle, and integrative medicine (IM) [2]. The excess death in Japan has been minus value and remained extremely low [3]. This continuation for long was evaluated to be rare [4]. The estimation model period was studied using 2005-2020 data concerning the Japanese pneumococcal vaccine and ICD-10 by WHO [5]. Consequently, significantly negative excess mortality in Japan seems to be from long-term people's precautions, such as maintaining social distancing, washing hands with alcohol, and wearing masks. These behaviors seemed to reduce the risk of pneumonia of COVID-19 and others.

For western countries, excess mortality was investigated [6]. Related data were available from the database of EUROSTAT which is the statistical office of the European Union (EU). Some factors including age-specific mortality rate in 2000, 2010, 2017 in the US

were compared to those of European countries [7]. These data will become reference data for successive research concerning COVID-19 in the future. The impact of COVID-19 can be shown by 3 metrics, which are life expectancy, excess deaths, and total years of life lost (YLL). The results showed life expectancy minus 1.67 years, excess deaths 375,235 (attribution direct 83%, indirect 17%) and total YLL 7,362,555 for USA (direct 73%, indirect 27%). These results suggested considerable heterogeneity for the individual level [8]. To understand the mortality of COVID-19, it is important to analyze how earlier the death occurs. The data of YLL were calculated from 81 countries related to COIVD-19 as well as estimated excess deaths [9]. As a result, the loss of 20.5 million YLL was supposed across the world. On Jan 6, 2021, YLL of countries with much influence of COVID-19 showed 2-9 times of seasonal influenza. Furthermore, 3/4 of lost YLL is from the death of <75 years old, 1/3 is from <55 years, and men have 45% more than women.

Unlike other countries, no excess mortality of COVID-19 was shown by the statistics throughout Japan [10]. The study was performed using the research model of the National Institute of Infectious Disease (NIID). There are some peak waves of infection, then excess mortality will be checked in detail in the future. The mortality and morbidity rates of COVID-19 were studied in 14 prefectures of Japan [11]. Each prefecture should have more than 4 deaths and 10 cases per day. As a result, a significant correlation was found between population density and morbidity rate (R2=0.394). For weather factors, lower mortality and morbidity are observed for higher temperature and absolute humidity. By multivariate analysis, the coefficient for the decay, spread, the combined stage was proved to be 0.785, 0.708, 0.615, respectively.

COVID-19 pandemic has brought interruptions of treatment for non-communicable diseases (NCDs) and non-emergency problems [12]. It is reported that about 40% of adults in the US seem to avoid regular medical visits [13]. From surveys in 47 countries, only 14% of healthcare providers could provide usual style treatment as face-to-face situation [12]. The number of prescriptions for a month at the pharmacy has decreased by 25% between May 2019 and May 2020 [14]. For departments of otorhinolaryngology and pediatrics, prescriptions decreased by 50% [14]. Some reasons exist from clinics and patients. Several medical faculties rescheduled the patient's visits for non-emergency cases, to deal with emergent patients with COVID-19 [15]. Patients may refrain from visiting clinics or hospitals, because of the possible risk of receiving infection. Further, they cannot possibly visit clinics from financial impact by COVID-19 [16]. Such social and psychological aspects should be considered from various points of view [17].

For the occupational aspect, socioeconomic status was examined for the interruption of ordinary medical treatment [18]. Out of 9510 cases, 11% experienced treatment interruptions. The odds ratio (RO) showed not married 1.44, manual labor work/desk work 1.30, lost employment and continued unemployment 1.62 and 2.57, feeling unstable finance 2.92. Consequently, treatment interruption may be a health inequality. The impact of COVID-19 on healthcare access was evaluated regarding patient visits. As a result, limited access showed the crucial function of long-term monitoring of vulnerable people and the urgent necessity of supporting medical facilities in the future [19].

Lockdown measures have been continued in many countries associated with several restrictions and punishments. On the other hand, Japan conducted mild lockdown, which was not enforceable or non-punitive with the declaration [20]. Between Japan and western countries, the difference has been suggested concerning the results of COVID-19. The initial and consecutive response to the pandemic was similar. The number of deaths, however, was different and very low in Japan. One of the reasons would be the existence of many long-term care facilities (LTCF) in Japan [21]. Unlike hospitals that are in charge of emergency care, LTCF are facilities that provide consecutive care for elderly people [22]. In LTCFs, a remarkably lower incidence of COVID-19 has been observed in comparison with those in other countries [23].

For LTCFs in Japan, some characteristic and beneficial points have been found [23]. They are i) LTCFs have mutual interrelationships between

hospitals, medical societies, and prefectural offices for long years, ii) especially for managements of COVID-19, effective and rapid communication channels have been always continued between LTCFs and regulatory official authorities, iii) such authorities include each prefectural office and health center, medical societies and media relations, iv) successful routine managements and protocols for control and prevention of COVID-19 have been continued in LTCFs, v) perfect understanding and cooperation of families and related personnel of the patient in LTCFs, vi) high degree of citizenship and cooperation and implementation of all Japanese people for daily life and vii) no official or governmental lockdown is present in Japan without any punishment or crime, but people can continue restricted daily life for long leading to safe and happiness of other people [24].

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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