Factors and Prevention of Severe Symptoms in Elder Patients with Covid-19 Pandemic

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Abstract. The COVID-19 epidemic has exacted an unfathomable toll on humanity, particularly on the elderly. This paper explores the causes of increased mortality and morbidity among middle-aged and elderly people during the pandemic. It's a combination of physical vulnerability, mental diseases and social factors. For older people, their immune systems are weaker than those of younger people and they have a higher likelihood of dying. On a psychological level, older people are more likely to feel lonely and empty than younger people. During the pandemic, the rate of depression among older adults increased by 0.7/8. On a social level, older adults face a greater risk of social isolation. According to various factors, this paper gives corresponding suggestions, such as strengthening personal protection, improving services in the public health system, introducing modern technology and focusing on mental health especially.

Keywords: old population; sever symptoms; prevention; Covid-19; pandemic.

1. Introduction

The Covid-19 pandemics has affected many people in the world through many different ways. The numbers of Covid-19 patients in three waves were 4,819,625 (207,165.3), 3,587,558 (154,206.5), and 1,746,698 (75,079.5) , respectively, suggesting a significant decline in morality and mortality with the disease epidemic and vaccination over time [1]. In addition, Covid-19 incidence rates differed by age groups in these three waves, such as toddlers and children in the first wave, children and teenagers in the second wave, and teenagers in the third wave. Covid-19 is a serious infectious disease which cause great disasters in the world. Globally, the city's lockdown, stay-at-home directives and other steps to contain the virus have had a significant influence on people's daily life. Numerous teenagers reported interruptions in their schoolwork, leisure time and friendship relationships. This review aims to discuss the influential factors of severe illness in elder patients with Covid-19 and supply some improvement measures for elder people health in Covid-19 epidemic.

2. Influential Factors of Severe Illness in Elder Patients with Covid-19

2.1. Physical Vulnerability

First, age can be an influential factor of higher mortality rate during Covid-19. According to data from the WHO, the overall mortality rate in Covid-19 is about 2%, which drastically rises for older patients, especailly for patients over than 80 (15-20%) [2]. Data from a report showed that the ratio of mortality is 27% in aged over than 70, about twice in comparison with lower than 70 population [3].

In the face of this sudden Covid-19 epidemic, although people of all ages may be infected, due to different kinds of factors, their health in elder population is not as good as that of young adults. Actually, older age has been noted as high risk population of death in Covid-19 pandemic. Older people have weaker immune systems than younger people. When they are attacked by new crowns, they have a higher mortality rate. A study in 2020 showed that the Covid-19 mortality rate for people aged 65 years and older rises with age. The mortality rate increased 2.8 times and 7 times for people

aged over 85 years compared with 75 ~ 84 years and 65 ~ 74 years, separately [4]. Another set of data revealed that elderly patients who were hospitalized and had underlying medical issues experienced a higher proportion of deaths in Covid-19, such as obesity, diabetes, and chronic lung disease, especially in elderly patients who were over 70 years.

2.2. Psychological Diseases

During the worst period of the New Crown epidemic, people were not allowed to go out non-essential. Opportunities for socializing were thus greatly reduced, which made the already lonely and isolated elderly even lonelier. This greatly increased the psychological damage done to the elderly and many suffered from mental illnesses of varying degrees. There are roughly 1.4 billion people over the age of 60 in the world, and it is estimated that some 192 million middle-aged and older people suffer from mental and neurological disorders. About 7% of them suffer from major depression and 3.8% from anxiety [5]. These psychological injuries are not only the result of a lack of mental health care, but also the result of a lack of a sense of humor [5]. These psychological traumas aggravate numerous medical diseases and increase death rates. Economic adversity, solitude, relocation, caring, disability and bereavement can cause physiological changes that enhance depression vulnerability or precipitate depression in already sensitive older persons [6]. There is a statistically significant increase in depressed symptoms of roughly 0.7/8 points as judged by the Center for Epidemiologic Studies Depression (CES-D) index in one study with a mean age of 69.. There was also a study questionnaire surveyed 1679 Dutch people aged 65-102 about their feelings of loneliness from October 2019 to May 2020. The study showed that there was an increase of 34 percentage points in the identification of "I miss having people around me" and an increase of 16 percentage points in the number of people who felt empty [7].

2.3. Social Factors

Elderly people are at greater risk of social isolation during the global epidemic. Elderly people living alone have a lower awareness of public health services and a weaker awareness of health. As they live alone, no one can remind them to take protective measures. They may also be unable to obtain protective items such as masks and alcohol, and can not receive timely treatment and care if they are infected with Covid-19, leading to aggravation of illness and even death.

Higher educated people will have a better awareness of how to protect themselves from illnesses, and preventative measures will be more in place. On the contrary, elderly people with lower education levels, who have not received such education, often do not know how to deal with such sudden situations and cannot better protect themselves, especially for the acceptable degree in vaccination. Some people think that they are very healthy, and vaccination has no effect at all. They even think that vaccines may have side effects on their body, so they usually resist to take the Covid-19 vaccines. In Hong Kong, the fifth COVID-19 wave had a death rate that was 0.055%, with a median age of 80+ years. People aged 60 and above accounted for 95.5% of the deaths. 89% of the deaths were unvaccinated or had just one dose of the COVID-19 vaccination. Another report in the Omicron pandemic in Jilin, the ratio of severe patients increased 19 times in people over 60 years with incomplete or without immunization compared to those who had received complete doses vaccination [8].

3. Improvement Measures for Elder People Health in Covid-19 Epidemic

Many investigations show that the spread of Coronavirus has significant general wellbeing suggestions as the world's older populace develops quickly. As a result of their debilitated safe frameworks, the senior individuals are more defenseless to reaching the infection and creating difficult sickness or passing. Also, more restricted wellbeing assets frequently lead to more prominent difficulties in getting to treatment for senior individuals. Consequently, it is essential to improve older people's public health through appropriate responses.

3.1. Strengthening Personal Protection

Immunization ought to be viewed as a significant methodology to forestall contamination, and more seasoned grown-ups ought to be reminded to keep up with great wellbeing through customary clinical check-ups and inoculations. Antibodies against Coronavirus are now accessible on the WHO Crisis Use Rundown and are viewed as protected and compelling in diminishing extreme Coronavirus 19 [9], hospitalization and mortality.Vaccination should be considered an important strategy to prevent infection, and older adults should be reminded to maintain good health through regular medical check-ups and vaccinations. Vaccines against COVID-19 are already available on the WHO Emergency Use List and are considered safe and effective in reducing severe COVID-19 [9], hospitalisation and mortality. According to research, COVID-19 immunisation reduced the risk of elderly people getting SARS-Cov-2 (OR=0.38, 95% CI=0.23-0.65, p=0.0004) and SARS-Cov-2-related mortality (OR=0.16, 95% CI=0.10-0.25, p0.00001) [10]. Secondly, moderate exercising is encouraged, which is essential for older people to maintain good health. Through these activities, older people can enjoy exercise, improve their physical fitness and prevent disease.

3.2. Improving Services of Public Health System

The improvement of the quality and productivity in general wellbeing framework is additionally a significant help for the strength of more seasoned individuals. In the first place, essential medical services framework and the preparation of work force ought to be fortified. It's smarter to lay out more essential medical services habitats in networks or municipalities, giving adequate numbers and nature of clinical staff to look for clinical consideration and designated medicine for more established individuals during plagues helpfully. Studies have shown that more seasoned individuals will generally have a good sense of reassurance and loose while involving administrations in additional expert clinical focuses, and that more expert staff can give ideal and suitable clinical benefits to more seasoned individuals. Second, the inclusion pace of general wellbeing administrations ought to be improved, and local area wellbeing associations ought to reinforce normal wellbeing checks and sickness evaluating for more seasoned individuals to identify and mediate in potential medical conditions ahead of time. The requirements of individuals during a pandemic are that pandemic-prepared essential medical services can further develop wellbeing security and grow the limit of essential medical services. Wellbeing courses ought to be given to the older to illuminate them about SARS-Cov-2 counteraction and ways of changing their ways of life through the association of wellbeing talks and the dissemination of wellbeing advancement materials, particularly vaccination suggestions. The people group can likewise run some activity exercises for more seasoned individuals, like Judo and square moving, while at the same time giving proficient direction and oversight. Networks might lay out mental directing hotlines or set up emotional well-being focuses to offer proficient mental help and guiding administrations for the older. Nowadays, older people can learn how to use digital devices through media, which aids in their mastery of the technology and improves their quality of life while the pandemic is ongoing.

3.3. Introducing Modern Technologies

The Internet of Things (IoT) can provide high-quality solutions using modern technology. In the current pandemic, complex situations can be easily managed and digitally controlled. The IoT can provide a support system in the field of public health and provide a process chart as shown in Figure 1 [11]. One of these can focus on the development of tele-consultation to provide telemedicine services to the elderly using the Internet and modern communication technologies . The problem of difficult and expensive medical treatment for the elderly can be solved by video consultation and online consultation. To narrow the technological gap, the simple and easy-to-use interfaces should be designed and development. Door-to-door advice services can also be provided to help them learn how to use digital devices and the internet. The Finland government has paid particular attention to improving the digital literacy of older people and other disadvantaged groups when developing public services and improving learning opportunities for older people.



Fig. 1 Process chart in the field of public health and medicine [11]

3.4. Focusing on Mental Health

Studies have shown that adjustments of generally speaking life fulfillment in more seasoned grown-ups are adversely and straightly connected with despondency, suggesting that an expansion in gloom is related with a decline in fulfillment with the way of life during Coronavirus. Low mind-set in more established grown-ups because of the pandemic prompts discouragement, yet in addition affects mental capability in more established grown-ups. Measures ought to be taken by the local area as well as by people to care for the psychological well-being of their older folks, for example, expanding the recurrence of visits or phone contact with the old. More established individuals ought to likewise be urged to mingle, and the significance of keeping up with additional strong social connections might be valuable during major distressing occasions, for example, the Coronavirus pandemic. Coordinating get-togethers, for example, vested parties is powerful to assist more established individuals with keeping up with strong social associations and decrease dejection and misery.

4. Summary

Although persons of all ages may be infected owing to the unexpected emergence of COVID-19, the elderly are not as robust as young adults and are not as resilient to risk due to the decrease of physiological and psychological qualities. Sometimes it's difficult for the elderly to deal with the risk because of social isolation, digital gap and education barriers in elderly. In the early days of SARS-CoV-2, the government focused more on physical symptoms. While social isolation is a key response to SARS-CoV-2, attention to mental health is also essential because of the high risk of suicide and mental illness.

According to the above situation, the author gives corresponding effective solutions and strengthen the personal preventive measures for the elderly, including health courses, improvement public health system, using modern divices, and paying attention to mental diseases. For the mental aspect,

communities need to establish or strengthen psychological counselling service. The local healthcare agencies should increase the frequency of visiting the elder or phone-call contacting. In summary, community and family service centres play an important role in the primary health care safety net for older people, which have the responsibility of basic social protection to build a public health system for the elderly in Covid-19 pandemic.

Authors Contribution

All the authors contributed equally and their names were listed in alphabetical order.

References

[1] Chen YH, Cheuh YN, Chen CM, Kuo HW. Epidemiological characteristics of the three waves of COVID-19 epidemic in Taiwan during April 2022 to March 2023. J Formos Med Assoc. 2023 May 26:S0929-6646(23)00196-1.

[2] Alexopoulos GS. Depression in the elderly. Lancet,2005,365(9475):1961-70.

[3] Kompaniyets L, Pennington AF, Goodman AB, et al. Underlying Medical Conditions and Severe Illness Among 540,667 Adults Hospitalized With COVID-19, March 2020-March 2021. Prev Chronic Dis, 2021,18:E66.

[4] Schultz MJ, van Oosten PJ, Hol L. Mortality among elderly patients with COVID-19 ARDS-age still does matter. Pulmonology, 2023, 29(5):353-355.

[5] Grolli RE, Mingoti MED, Bertollo AG, et al. Impact of COVID-19 in the Mental Health in Elderly: Psychological and Biological Updates. Mol Neurobiol, 2021,58(5):1905-1916.

[6] Xiao JY, Su H, Qing QR. A review of the "Novel Coronavirus Pneumonia" epidemic's effects on the mental health of middle-aged and older people. 2021, Psychology Monthly, 16(15): 1-3.

[7] van Tilburg TG, Steinmetz S, Stolte E, et al. Loneliness and Mental Health During the COVID-19 Pandemic: A Study Among Dutch Older Adults. J Gerontol B Psychol Sci Soc Sci, 2021, 76(7):e249-e255.

[8] Tejada-Vera B, Kramarow EA. COVID-19 Mortality in Adults Aged 65 and Over: United States, 2020. NCHS Data Brief, 2022, (446):1-8.

[9] Li QY,YANG XJ. Risk of serious disease in vaccinated elder people significantly reduced. Beijing Daily,2021.

[10] Xu K, Wang Z, Qin M, et al. A systematic review and meta-analysis of the effectiveness and safety of COVID-19 vaccination in older adults. Front Immunol. 2023,14:1113156.

[11] Mukati N, Namdev N, Dilip R, et al. Healthcare Assistance to COVID-19 Patient using Internet of Things (IoT) Enabled Technologies. Mater Today Proc,2023,80:3777-3781.